KUDELSKI GROUP

2019 ANNUAL REPORT

NAGRA
KUDELSKI GROUP

CONTENTS

PEACE OF MIND
FOR TODAY'S DIGITAL LIFE

Watching the latest movie at home or while travelling, reaching the mountains using ticketless Park&Ride mobility offers, passing the stadium gates smoothly to watch a game of football, making your banking transactions online, whatever the occupation, the Kudelski Group's technologies make life simpler.

Discreet though efficient, they ensure comfort and peace of mind, providing smooth and secure digital and physical access to a wide variety of essential moments.

TO THE HIGHEST HEIGHTS AND BEYOND, FOR 68 YEARS

First Everest expeditions, Mariana Trench exploration, Apollo missions… NAGRA recorders have been the adventurers’ companions for decades.

Used by Hollywood sound engineers, intelligence agencies, reporters, music lovers and more, NAGRA’s devices testify to the pioneering spirit that the Kudelski Group has demonstrated throughout its 68-year history.

From the revolutionary NAGRA recorders to the first hands-free ski access cards and the more recent intuitive and immersive ultra HD content discovery platforms, the Group’s innovations accompany people in some of their boldest and most entertaining experiences.

INTERVIEW WITH ANDRÉ KUDELSKI

Chairman and Chief Executive Officer of the Kudelski Group

“We expect to see performance improvements in 2020 across all of our segments, reflecting the full effect of the transformation we implemented in 2018 and 2019. The key focus areas are targeted growth initiatives and increased synergies between the Group’s activities.”

What are your perspectives on 2019?

2019 was a challenging year. The Group's overall financial performance did not reach the targets that we set at the beginning of the year, driven in particular by lower revenues and profitability at SKIDATA and weakness in Kudelski Security's resale business in the US. Nevertheless, as part of the ongoing transformation of the Group, we successfully implemented some major changes in 2019 that continue the positive momentum across our business segments.

Nowhere can the effects of our transformation be seen better than with our Digital TV business, which emerged from the transformation with a streamlined organization and management structure that is better able to adapt to fast-changing market dynamics and to address new growth opportunities. In 2019, Digital TV improved its profitability, both in absolute and percentage terms compared to 2018. This increase in profitability was achieved in spite of the challenging market conditions in Asia and Latin America, where we experienced declining revenues.

2019 saw new leadership at both SKIDATA and Kudelski Security as well as other key changes among Group management. These changes are part of the overall effort to streamline the Group's management structure, stimulate synergies between business units and support functions, increase the dynamism among the teams and improve the performance of each segment, both at the top and bottom lines.

In the fourth quarter of 2019, we made the additional decision to accelerate our transformation efforts at SKIDATA and Kudelski Security in order to drive faster change. Although this decision negatively impacted our 2019 financial results, due to restructuring charges and other impacts, we firmly believe that the decision we made is critical to securing the Group's position in 2020 and beyond.

With this in mind, how do you foresee 2020?

We expect to see performance improvements in 2020 across all of our segments, reflecting the full effect of the transformation we implemented in 2018 and 2019. The key focus areas are targeted growth initiatives and increased synergies between the Group's activities. That said, the Group must remain vigilant in the face of the highly volatile crisis involving the coronavirus (COVID-19), which is having a global economic impact of unknown proportions. The Group is monitoring the situation closely and will look to quickly adapt to market developments, on a segment-by-segment and region-by-region basis.

What types of collaboration are you expecting between Group entities to improve financial performance in 2020?

The Group has implemented incentives that are designed to reward collaborative product and sales efforts between business units. This effort is important not only to unlock synergies between our business units but also to unlock new market opportunities for the Group's product portfolio. The first results are already visible today, with the closing of new deals with some of our key Digital TV customers that include managed cybersecurity services provided by Kudelski Security. We expect a similar joint offering to be launched soon between SKIDATA and Kudelski Security in order to address cyber threats in the public access market.

What are the key trends and developments in the Digital TV business?

We expect the revenue erosion of the past few years in the Digital TV business to taper off in 2020. This is due to the resilience of many of our key pay-TV customers in advanced economies and to the success of our new product offerings. One of our most promising new solutions is Insight, our advanced analytics platform for pay-TV operators, which provides high value-added recommendations to reduce churn and optimize subscription upselling.

The Digital TV management team is also developing a medium- and long-term growth strategy for our key new market opportunities, including OTT and sports entertainment solutions.

What are the priorities for Public Access ?

The first priority for Public Access is to improve its profitability and cash flow generation. In order to drive these improvements, we are fundamentally transforming SKIDATA's management structure and its operations with the goals of enhancing organizational agility and better realizing economies of scale. From a Group perspective, we are also looking to achieve important synergies between SKIDATA and our other business units and support functions, both to take advantage of cross-selling opportunities and to realize important cost savings.

What is your analysis of the Group's cyber-security business ? How are its new product offerings developing ?

Kudelski Security's development strategy remains on track, as we have seen the managed security business in EMEA gaining strong traction and the high added-value solutions performing well in the US. The performance of the technology resell business in the US has been more challenging, due to a very competitive market and the underlying trend in the industry to migrate on-premise IT to the cloud.

Going forward, we expect to grow the overall business of Kudelski Security through the positive development of high added-value products and services.

Where do we stand with the IoT growth initiative ?

The IoT center of excellence continues to develop its secure IoT platform and has commenced commercial delivery of its IoT solutions to partners and clients in support of a growing number of verticals. We expect volume delivery of Kudelski IoT- enabled devices to grow and to drive revenue growth for this business.

What is the proposed distribution to shareholders for fiscal year 2019 ?

Taking into account the Group's 2019 results and its 2020 profitability outlook, the Board of Directors is proposing a CHF 0.10 cash distribution per bearer share for approval at the 2020 Annual Shareholders' Meeting. It is proposed that CHF 0.05 of this cash distribution be treated as a return of capital.

What is the outlook for 2020 ?

For 2020, the Group expects the revenue erosion in the Digital TV segment to taper off, as the subscriber churn at established pay-TV operators appears to be slowing down and the Group expects to continue to benefit from multiyear contracts with large pay-TV customers. The Group also expects to drive further revenue opportunities with its clients from new solutions that are to be delivered from Q1 2020.

With Kudelski Security, we continue to drive the development of higher value product lines and expect continued growth of gross margins in this business. We expect to continue adding new clients, expanding geographical coverage and increasing profitability by leveraging strategic offerings and high-value products and services.

Following three years of substantial investments, our secure IoT platform is now available for commercial deployment. In 2020, we expect to see strong growth in the IoT segment.

In the Public Access segment, SKIDATA is implementing measures that are expected to result in a material reduction of operating expenses. These measures are expected to restore an EBITDA margin level in line with prior years.

Overall, for 2020, the Group expects EBITDA to be between USD 70 and 90 million and positive net income.

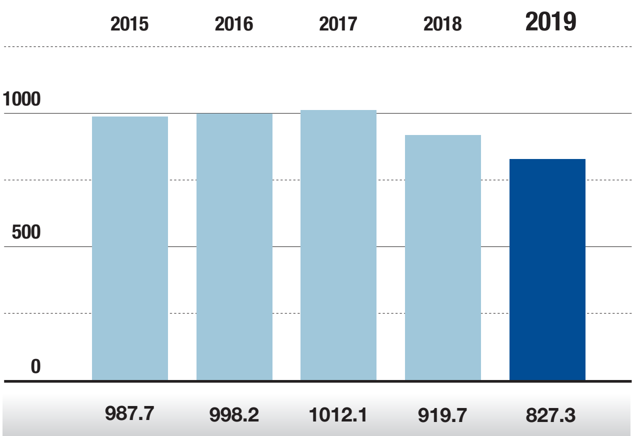
“Nowhere can the effects of our transformation be seen better than with our Digital TV business, which emerged from the transformation with a streamlined organization and management structure that is better able to adapt to fast-changing market dynamics and to address new growth opportunities.”

KEY FINANCIAL DATA 2019

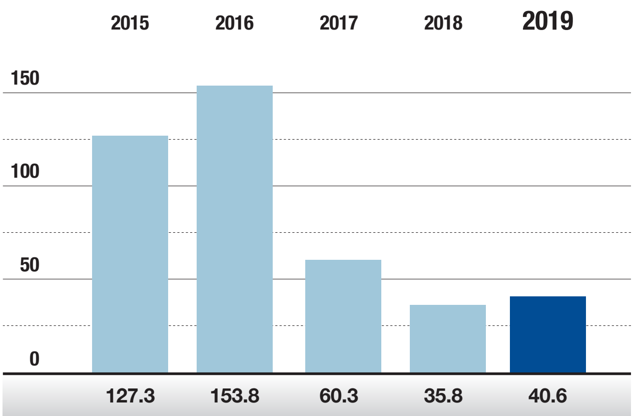
		31.12.2019	31.12.2018	Change
Total revenues and other operating income	USD million	**827.3**	**919.7**	**-10.0%**
Operating income before depreciation, amortization and impairment (OIBDA)	USD million	**40.6**	**35.8**	13.4%
in % of total revenues	%	5.0%	4.0%	
Operating income (EBIT)	USD million	**-15.3**	**-7.3**	-109.6%
in % of total revenues	%	-2.0%	-1.0%	
Net income from continuing operations	USD million	**-38.6**	**-24.3**	-58.8%
Earnings per share	USD	**-0.813**	**-0.5218**	
Money returned to shareholders (proposed per bearer share)	CHF	**0.10**	**0.10**	
Share price at December 31 (bearer shares)	CHF	**5.75**	**5.64**	
Market capitalization at December 31 (bearer shares)	CHF million	**288.2**	**281.5**	
Equity attributable to equity holders	USD million	**366.4**	**406.6**	
Cash flow from operating activities	USD million	**34.2**	**-4.7**	
Cash and cash equivalents	USD million	**74.6**	**86**	
Financial debt	USD million	**-466.7**	**-462.3**	
Number of employees at December 31 (headcount)		**3520**	**3742**	

Total revenues and other operating income

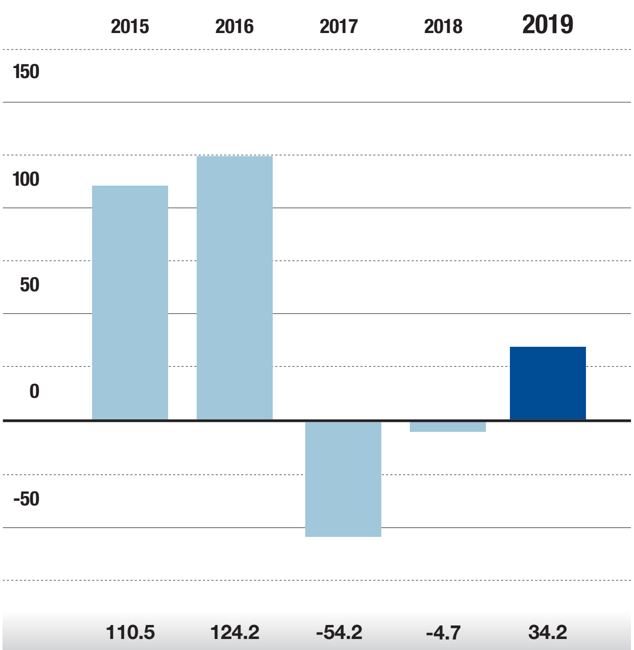
In million USD



OIBDA *



Operating cash flow



Revenues per segment

Digital Television

47.2 %

Public Access

41.9 %

Cybersecurity

10.6 %

Internet of Things

0.3 %

OIBDA *

2019

40.6 **

2018

35.8 **

Earnings per bearer share

2019

-0.8130 ***

2018

-0.5218 ***

*Operating Income Before Depreciation, Amortization and Impairment **

*In million USD ***

*In USD ****

Following an adoption of a new accounting standard, figures include latest restated comparative information published in annual reports.

2015-2016 figures have been restated in USD for comparison purposes.

THE GROUP

A world leader in the creation and delivery of secure state-of-the-art technology solutions

CONSUMER FOCUS

Thanks to highly advanced technologies that enable intuitive interactions, the Kudelski Group's solutions simplify the lives of more than 500 million consumers in the world every day.

TECHNOLOGY PIONEER

The Kudelski Group has been a pacesetter for decades. Every day, passionate and talented people develop innovative solutions that fuel the Group's intellectual property patent portfolio.

ENGINEERING EXCELLENCE

The Kudelski Group is an undisputed expert in securing data, content and access around the globe with the utmost reliability. Kudelski's solutions enable customers to grow in their markets with the necessary confidence.

Innovation
is our mission since 1951

A GLOBAL TECHNOLOGY LEADER

THE KUDELSKI GROUP

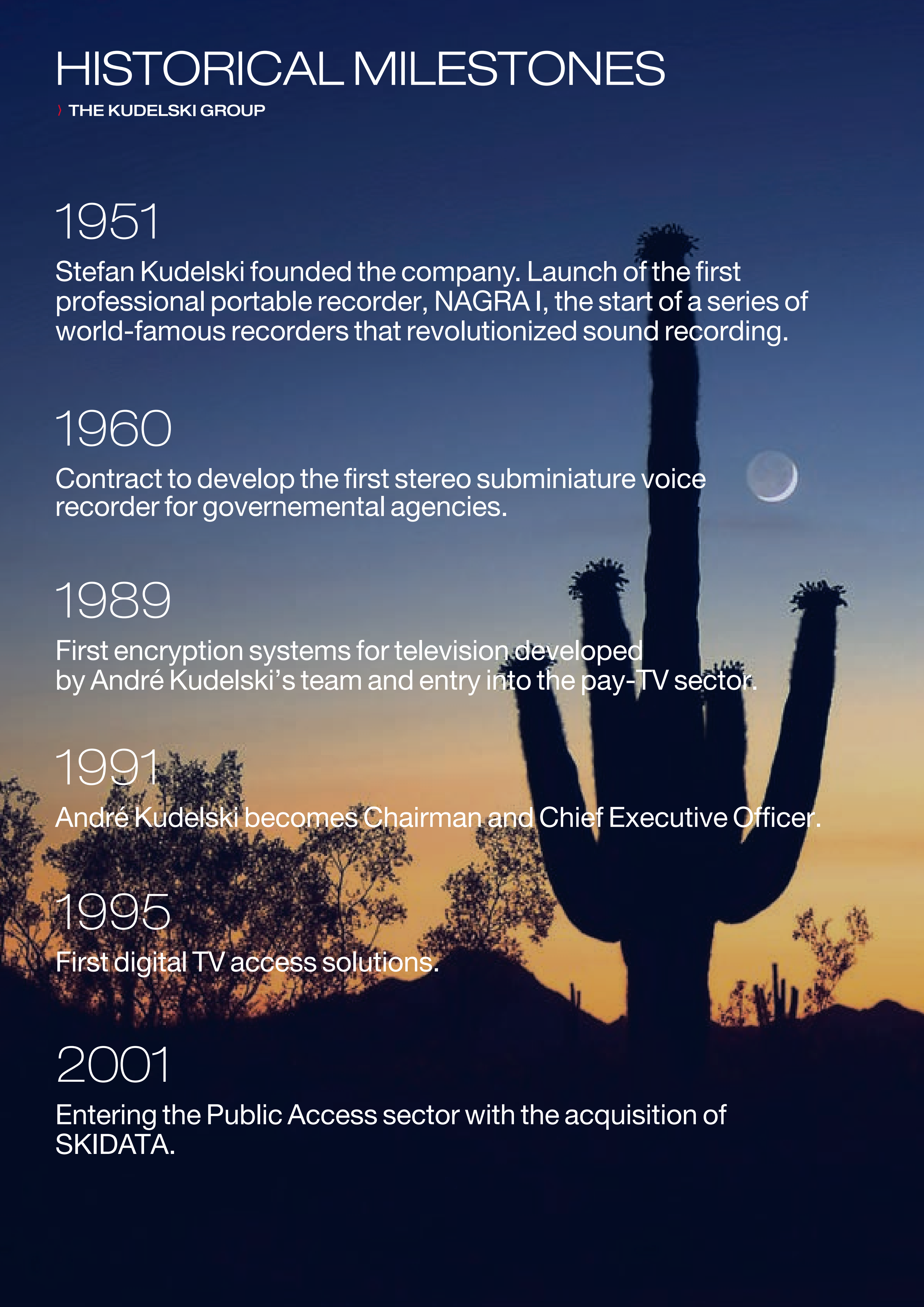
The Kudelski Group is the world leader in the creation and delivery of state-of-the-art technologies to secure the revenues of content owners and service providers for digital television and interactive applications across all network types. The Group's solutions enable consumers to access content seamlessly over any device through a compelling viewing experience.

The Group capitalizes on its leading intellectual property portfolio through cross-licensing agreements that provide access to state-of-the art technologies developed by others in the industry.

The Group is also a global leader in Public Access solutions. The world's leading parking facilities, stadiums and mountain resorts use its SKIDATA people and vehicle management solutions.

Leveraging its long-standing expertise in securing digital content and fighting piracy, the Group is a provider of cybersecurity solutions and services focused on protecting data, processes and systems for companies and organizations around the world.

The company also designs and delivers technology and services to support companies across all industries in securing their Internet of Things innovations.



HISTORICAL MILESTONES

THE KUDELSKI GROUP

1951

Stefan Kudelski founded the company. Launch of the first professional portable recorder, NAGRA I, the start of a series of world-famous recorders that revolutionized sound recording.

1960

Contract to develop the first stereo subminiature voice recorder for governemental agencies.

1989

First encryption systems for television developed by André Kudelski's team and entry into the pay-TV sector.

1991

André Kudelski becomes Chairman and Chief Executive Officer.

1995

First digital TV access solutions.

2001

Entering the Public Access sector with the acquisition of SKIDATA.

2009

Acquisition of 100% of OpenTV: the Group's solutions manage the entire pay-TV ecosystem.

2012

Entering the cybersecurity sector with the creation of Kudelski Security.

2016

Opening of a second headquarters in Phoenix, Arizona. Launch of Insight, the Group's artificial intelligence and big data platform.

2017

Launch of the Group's Internet of Things (IoT) Security Center of Excellence to address demand for increased protection of connected devices.

2019

The Group successfully completed the transformation of its digital TV activities, repositioning its business to benefit from market opportunities in the growing digital video domains.

COMPANY PORTFOLIO

〉THE KUDELSKI GROUP

Digital Television

NAGRA

Integrated content value protection and multi-device user experience solutions, including anti-piracy, watermarking, content certification and artificial intelligence-driven tools and technologies.

Public Access

SKIDATA

Integrated access and management solutions for car parks, ski resorts as well as sports, cultural, entertainment and exhibition facilities.

Cybersecurity

KUDELSKI SECURITY

Cybersecurity solutions and services for enterprises, government and public sector organizations.

Internet of Things (IoT)

IOT SECURITY SUITE

Internet of Things technology and services to help companies across all industries to protect their devices, data and business models.


68
years of innovation
500 million
users
10 000
customers
3 520
employees
Presence in
32 countries

FOUR RESILIENT BUSINESS PILLARS WITH STRONG SYNERGIES

	NAGRA KUDELSKI Digital Television	SKIDATA KUDELSKI GROUP Public Access
DESCRIPTION	Long-standing expertise in content value chain and content integrity protection, as well as in distribution technologies. Strong product range and customer footprint.	World leader in public access and revenue management solutions for ski resorts, off-street parking and events.
MAIN FOCUS	Secure, open, integrated platforms for broadcast, broadband and mobile networks with personalized viewing experiences. Mastering security technologies from silicon up to the cloud. Key technologies for monetizing premium video content. **Secure by design**	Integrated solutions to provide seamless, user-friendly access for people and vehicles to sites and installations such as car parks, ski-lifts, stadiums, arenas and amusement parks. SKIDATA solutions allow infrastructure operators to maximize their revenues. **Secure by design**
MARKET	Worldwide	Worldwide
SINCE	1951 (audio) 1995 (digital)	1977 (since 2001 in the Group)
MATURITY	High, with further development expected	High, with further development expected

Cybersecurity	Internet of Things
Unique positioning in securing large corporations' IT networks and cloud infrastructures from boardroom to field.	Strong skillset and solutions to secure connected devices and device-related data collection and exploitation, as well as decision-making process.
End-to-end cybersecurity solutions for a wide variety of customers across multiple sectors. Protect enterprises & government against cyberattacks. Mastering security technologies include encryption and blockchain.	Resilient and easy-to-integrate and operate IoT security solution. Keep the hackers away from IoT operations and protect strategic assets. Mastering security technologies from silicon up to the cloud. **Secure by design**
USA/Europe	USA/Europe
2012	2017
In development	In development

SEGMENT STRATEGY

Public Access

- Enable digital transformation at our customers
- Transform SKIDATA for increased agility
- Increased profitability & cashflow generation through synergies
- Develop breakthrough solutions using new technologies

Digital TV

- Promote an innovative, consumer-centric culture
- Explore value segments adjacent to the video value chain
- Continuously improve and manage operational excellence agendas
- Make selective investments to develop new solutions

WE EMPOWER OUR CUSTOMERS TO SECURE & GROW THEIR BUSINESS FOR THE LONG TERM

Long-term portfolio management

- Prioritize long-term performance and value creation
- Continuously improve operational efficiency
- Optimize balance sheet
- Carefully select investment opportunities

Establish leadership in growing markets

- Extend our trusted partner role to become leader in new segments
- Focus on high value-added solutions & scalability
- Boost cross-segment synergies to broaden our customer offering

KUDELSKI GROUP PRINCIPLES

Cybersecurity

- Expand position as best-in-class trusted advisor
- Focus on emerging, value-adding technologies
- Grow managed security services
- Accelerate IP generation through R&D and innovation
- Promote secure by design approach

Internet of Things

- Deliver secure by design solutions
- Develop agile, secure and industry-specific IoT solutions
- Address new markets through selective partnerships
- Reach critical scale

Innovating for our customers

- Pioneer the business relevance of new technologies
- Ensure future sustainability of our businesses through R&D and innovation
- Steer our innovation investments with portfolio approach

Taking care of our business ecosystem

- Ensure the sustainability of our solutions to better serve our clients
- Building long-term partnerships
- Sustainable & secure by design
- Promote win-win sustainable business models
- Long-term HR values

CORPORATE SOCIAL RESPONSIBILITY

"Since its inception, our Group has always been at the forefront of innovative product and solution design. In order to provide our customers with the most reliable and robust solutions in the market, we aim for excellence in engineering, and carefully opt for the best material and technology.

A good example is the NAGRA recorder, that has been cherished for decades by journalists, sound engineers and music lovers. Our analog and digital TV solutions have been adopted by professionals, with unparalleled efficiency, for twenty to thirty years.

Being a technology pioneer for 68 years means inspiring our employees and creating the necessary environment to allow innovation to blossom. We are therefore actively promoting fairness and integrity in our personal and business dealings and encouraging continuous skills development. The health, safety and well-being of our employees and other stakeholders does matter to us. In 1968 already, when the company built its headquarters in Cheseaux-sur-Lausanne, we were asking for more efficient insulation in order to optimize the use of energy.

With products and solutions that focus on consumers, the Group is concerned with the communities where it operates around the world. This particularly translates into recruiting locally, where the talents are, getting involved in communities and supporting local economic and cultural events.

A large part of our business involves protecting digital assets and investments as well as fighting illegal content distribution and piracy. By doing this, we are supporting artists, creators and inventors in getting a fair share of the monetization of their work.

An important aspect of corporate social responsibility for a company is to contribute to the vocational training system in order to train the next generation of qualified professionals. This is not only essential for the whole industry to remain competitive, but vocational training also offers career development opportunities for young people who did not or could not choose a purely academic path. We have always been convinced that educational diversity, by offering different possible educational pathways, is better than a single, school-based academic system.

With this conviction, we have successfully launched an apprenticeship program in the United States at our Phoenix headquarters, innovating with a new training program in the field of cybersecurity.

With the Board of Directors and the Management, we have devised a 5-pillar Corporate Social Responsibility Strategy that you will find in the next pages, to ensure that the Group remains true to its principles, ethics and DNA."

André Kudelski

A FIVE-PILLAR STRATEGY

Taking care of our employees

We ensure optimal conditions in day-to-day life at work and we strive to increase our employees' skillsets in order to better grow together.

- The Kudelski Group's values, notably integrity and respect, promote fairness and correctness in all our personal and business dealings.
- The Group promotes personal and environmental health and safety by identifying, controlling and monitoring risks, adapting safety processes to best practices and ensuring appropriate emergency response and crisis management systems are in place.
- The company expands its training programs to develop its talent pool, promote self-development and address market needs. In 2018-2019, the Group launched the Learning Hub, a digital learning platform.
- At the same time, the Group transformed its traditional Training Center into a Learning Lab, boosting the sharing of knowledge and the development of high-level expertise. This Lab is more the result of creativity and cooperation between departments than a financial investment. It has proven to be very popular among employees, with an occupancy rate close to 100%.
- The Group cares about a good work/life balance, enabling flexible working hours and supporting healthy living through the promotion of sports and cultural activities.

Reducing our environmental footprint

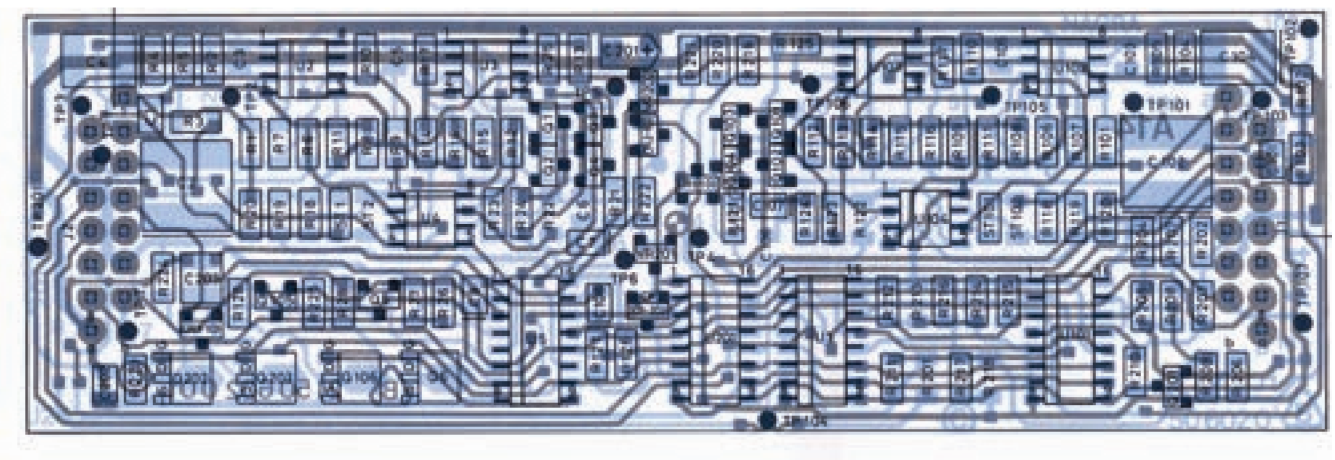
We aim to reduce our environmental footprint through various initiatives related to energy consumption and waste management. In 2019, these included:

- Optimizing energy efficiency in corporate HQ buildings and some other locations by improving thermal insulation and ensuring natural lighting where possible.
- Providing advanced video conferencing tools to reduce corporate traveling.
- Optimizing sustainability at the workplace in actively engaging employees.
- Advising our customers on the most sustainable and energy-efficient solutions.
- Selecting local suppliers where possible, including for company restaurants.

Embedding sustainability and high added value in our products

NAGRA's products have been **sustainable by design** for 68 years and this is a core value of our company.

- The Group's historical products, the NAGRA recorders, are renowned for their low power consumption, robustness and durability: decade-long owners of such devices are still using them today.
- Our digital TV solutions have been adopted by professionals, with unparalleled efficiency, for twenty to thirty years.
- Sustainability is built into the product design, enabling devices and solutions to be maintained easily over time.
- The Group's products are designed with high quality and reliability as well as optimal product lifecycle, pushing away the limits of obsolescence.
- As a key global player in digital security and a pioneer in patent protection, the Group plays an essential role in respecting and protecting content creation, copyrights and international regulations while helping people and companies preserve their reputation and develop their business.
- To address markets needs in the most efficient manner, the Group constantly expands its product portfolio to include sustainable cloud-based solutions.
- The Group is a pioneer in parking management solutions offering charging stations for electric cars that are completely integrated into the operator's global management platform.



NAGRA VPR-5 circuit board showing the test points (TP), especially designed to enable easy maintenance of the device over time.

Supporting local communities

We get involved in the communities where we operate around the world through supporting various social initiatives.

- In terms of recruitment, the Group remains as close as possible to its main markets, where the local talents are.
- The Group maintains a close relationship with local universities and high schools on both the scientific and recruitment fronts.
- The Group promotes apprenticeship programs both in Switzerland and the US by hiring and accompanying apprentices until their graduation. The Group also welcomes interns to provide them with hands-on training within its various divisions.
- Volunteer time off policies encouraging employees to be active members of their community are in place at selected locations, according to local habits and customs.
- The Group uses the services of local associations supporting disabled people.
- The Group is a partner of the Greater Phoenix Economic Council, the World Economic Forum and the Montreux Jazz Festival.

Building trust and responsibility

We actively promote honest and ethical business practices internally and towards our partners.

- The requirement for uncompromisingly ethical behavior is fundamental for the Group.
- We expect employees to adhere to Group values, policies and procedures and to respect the applicable legislation and local laws.
- The Group actively supports its customers and the media industry in fighting illegal content distribution. It is a founding member of Latin-America based Alianza contra Piratería de Televisión Paga, an industry association launched in 2013 that aims to fight pay-TV piracy in Latin America. The company is also involved in several antipiracy alliances such as IBCAP (International Broadcaster Coalition Against Piracy, USA), AAPA (Audiovisual Anti-Piracy Alliance, Europe) or Convergence (Africa).
- The Kudelski Group cares about its employees by providing them with the appropriate work environment. It seeks to ensure that the performance and results of the Group are aligned with responsible HSE (Health, Safety and Environment) awareness and action.
- The Group encourages training and career development for women in the fields of technology and science.
- The company promotes the most respectful rules in the data privacy and GDPR fields.

DIGITAL TELEVISION

Providing innovative solutions for the entire premium content distribution ecosystem

30 YEARS OF EXPERIENCE

Leveraging 30 years of experience in the digital television industry, the Kudelski Group develops and delivers a wide range of state-of-the-art secure content protection solutions addressing the needs of the digital television ecosystem across Internet, satellite, cable, terrestrial and hybrid end-to-end transmission systems.

NAGRA's digital television solutions enable the deployment and monetization of advanced services with the appropriate level of protection, providing consumers with a thrilling viewing experience.

Further improving efficiencies

The Group continued to streamline its digital TV brand portfolio to further improve efficiencies, focus on core activities and deliver a broader end-to-end integrated solution offering.

Unparalleled know-how and experience

NAGRA has unparalleled know-how and experience in the design of complete end-to-end secure digital pay-TV solutions. It is the leading provider of content protection solutions worldwide and the strategic content security partner to more than 550 of the world's largest and most innovative digital television service providers.

Innovative solutions addressing the entire content value chain

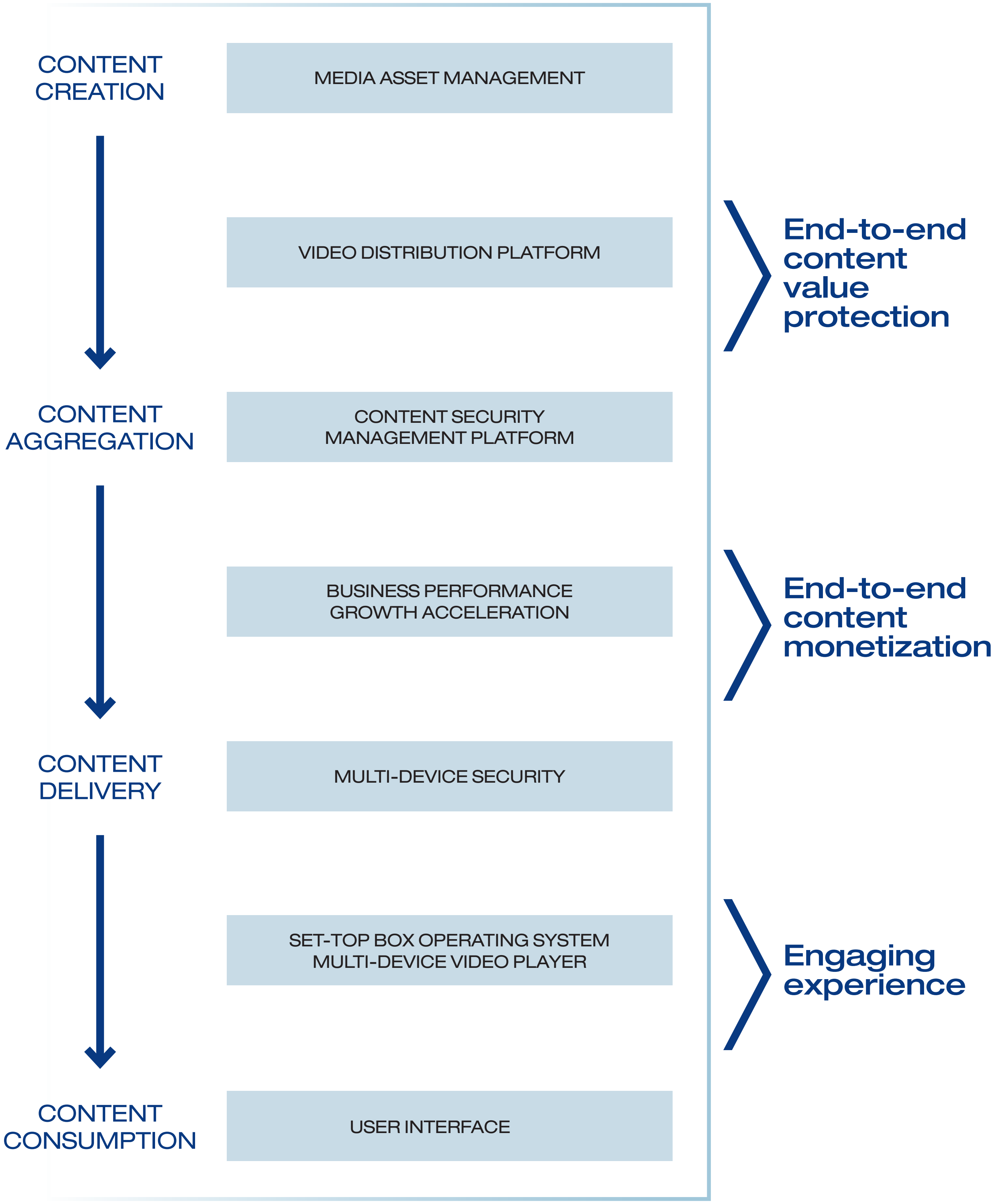
In a world where different business models arise and the lines between them are increasingly blurring, pay-TV service providers are uniquely positioned to become the central gateway to all the content that consumers love. Leveraging the latest cloud, Internet and data technologies, NAGRA solutions ensure content value protection, monetization and personalization, enabling new business models across the entire content value chain from origin to consumption.

Advanced and off-the-shelf offerings

NAGRA's extensive products portfolio provides the best of both worlds when it comes to advanced and off-the-shelf offerings. Service providers can choose from tailor-made solutions that leverage modular products and naturally blend into the environment of larger operators, or lean, off-the-shelf standard Conax solutions optimized for fast time-to-market.

Secure by design from chip to cloud

Security is the cornerstone of NAGRA's solutions. It is embedded at every stage of solution design and maintenance, from the chip design up to the cloud.


CONTENT CREATION
MEDIA ASSET MANAGEMENT
VIDEO DISTRIBUTION PLATFORM
CONTENT AGGREGATION
CONTENT SECURITY MANAGEMENT PLATFORM
BUSINESS PERFORMANCE GROWTH ACCELERATION
CONTENT DELIVERY
MULTI-DEVICE SECURITY
SET-TOP BOX OPERATING SYSTEM MULTI-DEVICE VIDEO PLAYER
CONTENT CONSUMPTION
USER INTERFACE
End-to-end content value protection
End-to-end content monetization
Engaging experience

CONTENT VALUE PROTECTION

› DIGITAL TELEVISION

In today's increasingly connected world, security underpins all elements in the ecosystem, from devices to services to individual pieces of content. NAGRA's unique content value protection concept features security head-ends tailored to the business needs of pay-TV service providers and content owners.

Its solution offering includes a wide range of device security options including third party platforms, forensic watermarking and anti-piracy services, all enabled via the cloud-hosted NAGRA Security Services Platform (cloud.SSP).

A holistic approach to addressing the piracy threat

NAGRA leverages three main components to protect content owners against different forms of piracy and content theft throughout the entire content distribution ecosystem: CAS/multi-DRM platforms and solutions, forensic watermarking and anti-piracy services.

Advanced security to scale to any operation

As strategic security partner to leading pay-TV operators, NAGRA products are the natural choice for modular content value protection solutions that enable premium content delivery services across broadcast and OTT networks and to any screen.

Off-the-shelf security

The Conax off-the-shelf content security solutions address the needs of operators whose primary focus is cost-efficiency and fast time-to-market. The Conax unified content security platform delivers a highly efficient, feature-rich and cost-efficient CAS/DRM solution for any use case.

Growing piracy threat

Piracy against the media industry is a growing threat. NAGRA's solutions combine deep intelligence about global pirate networks with real-time monitoring, take-down and litigation services, and forensic watermarking technologies that improve defense against piracy – including online content sharing – and protect the operator's reputation and bottom line.

Protecting assets throughout their lifecycle

NexGuard provides studios, sports content providers, rights holders and distributors with an extensive portfolio of cutting-edge forensic watermarking applications to protect high value media assets throughout their entire lifecycle.

NAGRA SECURITY SERVICES PLATFORM (SSP) / CLOUD.SSP

An advanced, flexible and modular backend security platform that takes CAS and DRM technologies to the next level.

NAGRA CONNECT

A unified security client that addresses both broadband and broadcast use cases in a single client technology.

BROADCAST CLIENT

The industry reference for premium broadcast security.

CONAX CONTEGO

An all-in-one, off-the-shelf head-end for one-way and two-way CAS use cases including multi-DRM support.

DIRECT-TO-TV CLIENTS

This offering brings linear and on-demand pay-TV services (up to 4K /HDR) directly and securely to TV sets without the need for a set-top box.

NEXGUARD WATERMARKING

NexGuard, the world's leading forensic watermarking technology, provides an extensive portfolio of cutting-edge applications to protect high value media assets throughout their entire lifecycle.

ANTI-PIRACY SERVICES

NAGRA proactively fights the growing scale and sophistication of ever-evolving piracy threats. Whether it's a breach on broadcast systems or IPTV piracy using Kodi add-ons, NAGRA's can manage and disrupt piracy.

SECURE CONNECTED HOME

HomeScout is an Internet of Things (IoT) solution that harnesses the power of hardware and cloud-based security for a secure connected home.

AN ENGAGING USER EXPERIENCE

› DIGITAL TELEVISION

Today, the media consumption industry requires new technologies to facilitate direct access to digital media content on multiple devices.

NAGRA has been at the forefront of entertainment technology and continues to focus on digital content innovation, ensuring the industry has the solutions to allow consumers to always connect to the content they love.

From basic user to content connoisseur

NAGRA's product range offers a diverse set of user experiences that can address simple and/or sophisticated requirements. It provides consumers with the best content discovery possible and satisfies a variety of users, from basic to the content connoisseur and enables operators to offer best-in-class services for each customer profile.

Fully integrated multi-service pay-TV solution

OpenTV Video Platform is built to address the need for unification and simplicity, allowing operators to focus on operational efficiency, business profitability and customer satisfaction. NAGRA's fully integrated OpenTV modules are the building blocks to a complete operational pay-TV solution that delivers exceptional pay-TV services to consumers, whether via broadcast, hybrid or Internet networks, and with different standards such as 4K Ultra HD, HbbTV and ATSC 3.0 readiness.

A consistent experience across all devices

OpenTV's lineup of user interface and user experience products helps pay-TV service providers respond to the challenges created by the rapid evolution of television technology and television consumption habits. These products are designed to deliver an engaging, entertaining and fully immersive, connected entertainment experience to consumers, seamlessly blending the broadcast and Internet worlds.

OPENTV VIDEO PLATFORM

A flexible, multiscreen management platform. Its modular components provide the tools to secure, manage and operate a wide range of media services, whatever the delivery network, device, or content type.

OPENTV EXPERIENCE

The unique ION user interface was created by NAGRA's award-winning design experts after extensive research with users of all ages and backgrounds. It provides a multi-journey and enhanced viewing experience that suits the viewer's individual needs.

OPENTV PLAYER

Provides secure playout on a wide range of open devices. Advanced features, including personalized recommendations, multi-language audio tracks and subtitles, help subscribers get the most from their content.

OPENTV OS

An open architecture for development teams. It brings together the Linux OS, NAGRA's core digital TV components, and the latest Internet technologies, such as HTML5. Advanced PVR and home networking modules are provided as standard, as well as OTT broadband services.

GO LIVE

GO Live is an entry level, turnkey solution for streaming live TV, start-over, catch-up TV and video on demand to unmanaged OTT devices.

The solution enables a smooth and low risk introduction into OTT and multiscreen with minimal investment and an exceptionally fast time-to-market.

It includes a backend provided as a service and white-label applications for mobile phones, tablets and TV based devices.

ENHANCED MONETIZATION

Whether for in-home or on-the-go content distribution, from the sports fields and stadiums to the screens, NAGRA leverages its content protection, content management and artificial intelligence technologies to increase the monetization of content distribution.

Empowering operators to make better strategic decisions

Evolving viewer behaviors and a very dynamic competitive landscape are posing significant challenges to the premium content industry, leading to growing risks of increased churn and reduced ARPU (Average Revenue Per User) in several markets. With its Software-as-a-Services (SaaS) Insight platform, NAGRA helps pay-TV providers drive their business using data.

NAGRA Insight uses artificial intelligence to generate smart actions that improve the business performance and profitability. The platform leverages a cross-functional team that has strong pay-TV experience and that includes premium consultants, marketers, content distribution strategists, data scientists, architects, developers and data technologists.

Leveraging online streaming to deliver sports events

NAGRA's entire portfolio of solutions caters for all the different sports content business models that are unfolding, whether the service is aggregated pay-TV, direct-to-consumer OTT streaming or the combined hybrid broadcast model. Regardless of how content is delivered, NAGRA solutions and partnerships cover all the needs to secure, deliver and monetize it.

Furthermore, NAGRA's security portfolio is a key differentiator in the market as the transition to all-IP brings sports into the ever-increasing world of online piracy. Spanning content security, anti-piracy, cybersecurity as well as IoT security, a growing sector for sports, NAGRA is also leading the way in the fight against piracy not just at a technical level but also at an enforcement level working closely with governmental authorities, industry associations and others who are focused on combatting this issue.

Supporting VOD content expansion and complexity

As the volume of Video-On-Demand content increases and viewer expectations rise, service providers face cost, complexity and video quality challenges. NAGRA's DVnor Media Asset Management solution provides a simplified and automated workflow for VOD content, delivering optimal video quality, advanced audio and subtitling features, secure storage and distribution, as well as quick-start VOD services, leveraging NAGRA's leading security technologies.

Changing the way to capture and share videos in sports

Sporfie is a sports video platform that gives individuals and teams, from parents at youth games to marketers and officials at the professional level, the power to easily and instantly capture, replay and share personal highlights without the distraction of filming or editing.

Launched in 2016, Sporfie was adopted by the ECHL, the 'AA' professional development league for the American Hockey League and the National Hockey League, in 2019.

Additionally, NAGRA announced in November 2019 a three-year partnership with the American Hockey League (AHL), the premier professional development league for the National Hockey League (NHL).

NAGRA INSIGHT

Insight leverages big data and artificial intelligence to drive every aspect of an operator's business, predict the individual behavior of TV viewers such as propensity to churn, to purchase a package or to consume specific content, every day, at scale.

It provides actionable business recommendations to help operators make better strategic decisions, drive their business more effectively and improve their bottom line.

NAGRA SPORTS OTT STREAMING

NAGRA's integrated solutions facilitate the production, management and monetization of direct-to-consumer sports services to any device, including IOS and Android.

DVNOR MEDIA ASSET MANAGEMENT

Automated all-in-one platform for metadata and digital file management, transcoding, storage, distribution and post-production services.

SPORFIE INSTANT VIDEO REPLAY SOLUTION

Sporfie is a sports video platform that enables users to easily and instantly capture, replay and share personal highlights of an event. The app captures the past few seconds from the official stream.

2019 MARKET HIGHLIGHTS

Americas

In the United States, NAGRA continued to strengthen its long-term relationship with Altice USA, the fourth-largest cable operator in the US with 4.9 million customers, who has launched a mobile service through a full MVNO Agreement with Sprint in 2019.

In 2019 Altice USA has successfully deployed Insight, NAGRA's data and AI-driven business performance platform designed to deliver actionable business recommendations and enable better strategic decisions to enhance the customer experience.

In addition Altice USA and Kudelski Group have expanded their partnership on both Media & Enterprise security; firstly by successfully defeating significant commercial piracy activity on Consumer Video/Broadband segment as well as by deploying Kudelski Security Secure Blueprint solution & advisory service which will help Altice USA to balance complex security needs against business priority.

In Uruguay, Montecable, the leading cable operator in the country, has deployed the cloud-based GO Live solution, NAGRA's turnkey OTT solution, to enable new features for their pay-TV service, including Android TV support and video-on-demand (VOD). The announcement marks the first cloud deployment of the GO Live solution with VOD functionality in the Americas.

In Argentina, Telecom Argentina selected the Contego solution to secure their operations in Paraguay.

Overall, more than 1.7 million active set-top boxes use NAGRA Connect CAS technology in Latin America.

Asia–Pacific

In Singapore, OpenTV Video Platform, OpenTV Player, and Security Services Platform have been selected by a leading South East Asian operator for a converged IPTV-OTT platform.

In Australia, OpenTV Video Platform provides backend services to more than 1 million Foxtel iQ3 HD and iQ4 Ultra HD set-top boxes.

In India, the addition of new cable and satellite subscribers continues with increased focus on OTT opportunities. NAGRA launched the GO Live solution with a leading Multi-System Operator and has commenced proof of concepts for watermarking and anti-piracy services with two large broadcasters.

In South Korea, NexGuard watermarking solution was selected and implemented by CJ group for its OTT service, TVing, to protect the content value chain.

In Taiwan, together with TBC (Taiwan Broadcast Communications), NAGRA launched the country's first Security Services Platform bundled with a new-generation Android TV set-top box for end-to-end integration and project execution.

In Indonesia, PT Linknet deployed their new generation hybrid Android TV set-top box with the NAGRA Protect solution.

In Vietnam, VTVCab selected Conax Core Access for their cardless CAS.

Europe

Vodafone, one of the world's largest telecommunications companies, has deployed its cloud-hosted and cloud-operated Security Services Platform, NAGRA cloud.SSP to help protect Vodafone TV (VTV) services across a large number of operating companies, including Spain, Portugal, Greece, Italy and Romania. The NAGRA Connect client and player complement the end-to-end security solution to enable comprehensive security for VTV across set-top boxes, web browsers, open devices and connected TVs. This announcement marks the first major rollout of NAGRA cloud.SSP at scale, supporting a major service provider operating in different countries.

Discovery chose the Contego multi-DRM for Discovery's Video Delivery Platform (VDP) on a worldwide basis, utilizing AWS. Eurosport Player was operational throughout Europe in October 2019 and Food Network in USA went live in December 2019. Other services are anticipated in 2020.

In France, NAGRA has expanded its digital security and convergent media solution partnership with SFR, a subsidiary of the Altice Group and one of France's largest telecom operators. Firstly, NAGRA has enriched its portfolio of anti-piracy services deployed in order to fight against IPTV commercial piracy services in particular in the case of premium live sports events. In addition SFR has selected NexGuard forensic watermarking technology & NAGRA Connect, the leading two-way broadband content protection solution, to secure and enable the commercial launch of its new-generation ultra-connected device, the SFR Box 8, integrating new-generation features and technology such as voice recognition, assistant and 4K HDR.

NAGRA has partnered with HOT Telecom, Altice property in Israel, to enable and power their recently announced "Direct-To-TV" service which aims is to provide HOT Telecom TV experience directly on smart TVs (starting with LG and Hisense), leveraging OpenTV Video Platform and NAGRA Security Services Platform.

In Spain, the NAGRA Security Services Platform solution secures Telefónica Spain's IPTV offer, totaling 3.5 million set-top boxes.

Telefónica's Movistar OTT service continues to grow successfully in Spain with open devices connecting to OpenTV Video Platform and streaming key sport events such as the La Liga football matches.

In France, CANAL+ and NAGRA successfully collaborated to deploy Netflix on CANAL+'s newest 4K hybrid G10 set-top box using the NAGRA Connect DRM.

In Portugal, NOS launched their latest-generation set-top boxes for cable and IPTV with NAGRA's security solution and cloud-based Security Services Platform.

In Germany, HD PLUS, a subsidiary of SES Group, who has been using a NAGRA conditional access solution for many years, launched a direct-to-TV solution with Samsung and Panasonic based on NAGRA's security solution implemented in TVs and supporting value-added services like catch-up or start-over.

In Belarus, Beltelecom selected NAGRA Connect as a new security solution for a next-generation IPTV platform.

In the Balkans, a major DTH (Direct-to-Home) operator chose NAGRA as its new security and revenue protection platform, planning to replace around 1 million legacy set-top boxes.

In Sweden, Telenor expanded their existing service to include the use of NAGRA Connect clients for their next-generation IPTV platform. The project includes retrofitting of existing card-based set-top boxes as well as deploying next-generation set-top boxes.

In Romania, MX1 started a service based on the Contego-as-a-Service solution.

In Slovakia, Slovak Telekom, a subsidiary of Deutsche Telekom, extended its satellite service with a smartcard-less set-top box relying on NAGRA Protect.

Middle East

MBC Group chose NAGRA Anti-Piracy Services to protect its most valuable content assets. NAGRA monitors and takes down illegal copies from file sharing websites and delists illegal website links from social networks. Furthermore, NAGRA also monitors and takes down illegal applications that carry MBC content.

Africa

In Tanzania, the NAGRA Protect cardless content protection solution is being deployed at Azam TV to secure the operator's pay-TV service on set-top boxes. The new service will deliver affordable pay-TV services to Tanzanians along with access to more local content on the regionalised DTT network.

MANAGING THE PATENT PORTFOLIO

With its nearly 70-year history of innovative and award-winning products, the Kudelski Group has a long tradition of carefully building a strong global intellectual property (IP) portfolio.

The Group's commitment to IP is grounded in the fundamental belief that IP is essential to enabling collaborative development, future competitiveness and economic growth. With its annual investment in research and development approaching $150 million, the Group's IP portfolio represents a critical asset of the company that must be developed and protected.

The Group's IP organization is responsible for setting the Group's overall IP strategy, with a focus on protecting, developing, managing and licensing the Group's worldwide patent portfolio and supporting the overall innovation programs of the Group.

A large and focused patent portfolio

The Kudelski Group and its subsidiaries hold a substantial worldwide portfolio comprised of thousands of patent assets in a variety of technology areas, including digital and cybersecurity, access control, watermarking, digital television and rights management, digital content distribution, and secure communication management, among other areas. Many of these patents relate to fundamental and valuable technologies with broad impact across many businesses and markets.

The Group's IP strategy, like the strategies of its core business units, continues to adapt to evolving technology trends, new product opportunities and changing market conditions. The Group regularly reviews its IP portfolio and pipeline with the goal of optimizing the strategic value of assets that are aligned with the Group's core businesses and that are expected to provide the best return on the Group's IP investment.

Deriving value from intellectual property

In 2019, the Group commenced a licensing program focused on new entrants in the OTT/streaming video market, leveraging the market validation of the Group's patent portfolio by several existing licensees, including Google, AT&T, Disney, Netflix, Hulu, Verizon, and others. In addition, the Group sought to renew and broaden existing agreements with select licensees.

There is no "one-size-fits-all" approach to product partnerships and IP licensing. Different businesses have different needs and different technology requirements. To that end, the Kudelski Group seeks business relationships that extend beyond IP licensing. When appropriate, the Group's IP-based agreements will continue to incorporate product relationships, patent or technology transfers and cross-licenses into the engagement.

The Group's IP will also continue to serve strategic defensive needs and be used to deter competitive threats when appropriate.

Supporting the Group's emerging businesses

In 2019, the Group's IP organization continued to support the Group's growing cybersecurity, Internet of Things (IoT), and blockchain businesses, by filing new patent applications covering promising technologies being developed by the Group in these areas.

Going forward, the Group will continue to execute its plans to invest in innovation and protect and license its IP portfolio, including technology collaboration as well as exploring standards-based technology and participation in standard-setting activities.

In 2020, the Group will look to develop new licensing programs by leveraging its existing IP assets outside of the PayTV and OTT/streaming video markets.

World-class licensing

By having established cross-licensing with the most advanced players in the digital space, the Kudelski Group has not only demonstrated the quality of its R&D-generated IP, but has gained access to the most valuable IP needed for the future of its business.

PUBLIC ACCESS

Comprehensive solutions to optimize revenues for infrastructure operators


Arena

GLOBAL LEADER IN ACCESS AND REVENUE MANAGEMENT

› PUBLIC ACCESS

SKIDATA carries out the Group's Public Access activities.

The company designs and markets comprehensive revenue management solutions which help ski resorts, stadiums, airports, amusement parks and parking facilities to welcome their visitors in the best possible way and optimize profitability by reducing fraud and increasing operational effectiveness.

With a global footprint, SKIDATA manages large-scale, complex projects that involve technological challenges as well as innovative marketing and business models.

SKIDATA stands for more than 40 years of innovation. Since its foundation in 1977, SKIDATA has set standards in access and revenue management with global expert know-how and innovative solutions.

The division's broad spectrum of proven standard to customized solutions guarantees every customer the optimal solution to maximize sales and to offer the best comfort.

MORE THAN 10 000 INSTALLATIONS
WORLDWIDE IN OVER 100 COUNTRIES

OVER 40 YEARS OF SUCCESS
AND INNOVATION

FAST AND SAFE ACCESS FOR PEOPLE AND VEHICLES

› PUBLIC ACCESS

SKIDATA is the global leader in access and revenue management solutions, providing fast and safe access for people and vehicles.

With innovative concepts, SKIDATA has developed to an internationally successful digital solution provider and the world market leader in access and visitor management with over 10 000 installations in over 100 countries. SKIDATA continues to increase its global footprint and steadily expands its cloud-based solution offering to provide the full advantage of digitalization to its customers.

Technological pioneer and innovation driver

SKIDATA is a pioneer and the world leader in the field of access and ticketing solutions for alpine regions. In 1977, SKIDATA introduced a cash register as well as printed ski tickets to the market – a milestone in the history of the mountain sports regions.

Over the last four decades, the portfolio was expanded with innovative solutions like RFID chips for contactless entrance, vehicle access management, and solutions for stadiums, leisure parks and airports. SKIDATA designs its solutions with a focus on quality, usability and technical innovations – and continuously develops the expert know-how of its employees.

A digital solutions provider

SKIDATA continuously strives to offer solutions that provide significant added value to its customer's businesses. With its extensive network portfolio of innovative technologies, SKIDATA solutions enable a wide range of functionalities, from fast and convenient access to venues and parking sites towards offering full benefits of the ongoing digitalization in visitor management, ticketing, fan engagement, data analytics management, dynamic pricing and revenue optimization.

With the new, cloud-based sweb Platform (SKIDATA Web Platform), customers benefit from a growing number of advantages of online ticketing, eCommerce, IoT monitoring & control tools and customizable business intelligence suites, without sacrificing independence.

The Platform is designed to seamlessly integrate with existing on-premise solutions and offers a wide array of cloud-based interfaces for rapid integration of third-party systems to tailor the solution to each individual customer – and to gradually transition the business model towards transaction-based revenue streams.

Investing in growth areas and sustainability

SKIDATA continues to invest in strategic growth areas in the core parking, event and ski segments to deliver leading-edge technical solutions with an increased focus on the ecological footprint of its customers. For example, the recently awarded 55 Ticketless Park & Ride facilities by the Dutch Railway NS enable a seamless integration of the parking and public transport mobility chain. The high level of integration stimulates the usage of public transport systems, reduces congestion and avoids large quantities of paper tickets through SKIDATA's ticketless solutions.

FREEFLOW SOLUTION

The Freeflow solution offers the full convenience of a barrierless parking experience by identifying a vehicle with its license plate and allowing payment via mobile phone. This allows parking operators to avoid paper tickets, significantly limiting waste.

The solution allows for step-by-step transition from current parking infrastructures and supports a wide array of hybrid mode operations.

MOBILE CONTACTLESS SOLUTION

This new solution enables electronic ticketing for stadium access. It is based on integrated Apple Wallet and Google Pay NFC (Near Field Communication) technology. SKIDATA's cloud-based digital gateway delivers e-tickets directly into the guests' mobile wallets (on smartphones and wearables), reducing waste through the elimination of RFID and paper tickets, and providing maximum comfort and fast entry for guests.

This solution won the "Stadium Business Summit Innovation Award 2019".

SWEB ANALYZE

sweb Analyze is the state-of-the-art business intelligence solution that provides customer-specific dashboards and analytics enabling operators to monitor and optimize business processes of any operation, whether a car park, a stadium or a ski resort.

With its comfortable and user-friendly interface, operators can visualize and analyze all business-relevant key performance indicators and other data, anywhere and anytime, and thereby increase their efficiency and the performance of their business.

SWEB CONTROL

This solution enables operators to manage their car parks centrally using a flexible platform that can be accessed from any screen including mobile devices. Operators can standardize their service quality thanks to the automation of processes.

The platform can be integrated with subsystems and external systems (for example fire alarm), providing operators with one single tool to run several systems.

2019 MARKET HIGHLIGHTS

› **PUBLIC ACCESS**

ALLIANZ ARENA
MUNICH – GERMANY
Stadium with 75 000 seats

ESTADIO DA LUZ
LISBON – PORTUGAL
Stadium with 65 000 seats

LES 7 LAUX
AUVERGNE-RHÔNE-ALPES – FRANCE
120 kilometers of ski slopes

AMERICAN DREAM MEADOWLANDS
NEW JERSEY – USA
33 000 parking spaces

JOCKEY PLAZA SHOPPING
CURITIBA – BRAZIL
4 500 parking spaces

KHARKIV AIRPORT
KHARKIV – UKRAINE
500 parking spaces

THE MALL/MID VALLEY SOUTHKEY
JOHOR BAHRU – MALAYSIA
5 000 parking spaces

KATOWICE AIRPORT
KATOWICE – POLAND
7 000 parking spaces

AKASYA SHOPPING MALL
ISTANBUL – TURKEY
257 stores covering 80 000 square meters

PAVILIONS SHOPPING CENTRE
DUBLIN – IRELAND
2 000 parking spaces and 12 million customers per year

SHOPPING CATUAÍ PALLADIUM
FOZ DO IGUAÇU – BRAZIL
1 620 parking spaces

CYBERSECURITY

Portfolio of integrated cybersecurity solutions for enterprises, governments and public sectors

CYBER SOLUTIONS FOR A GLOBAL CLIENT BASE

The growing use of digital technologies in every personal, business or government activity has been accompanied by an exponential rise in cyberattacks and continued increases in data loss and reputational damage. As a result, spending for cybersecurity products and services continues to grow.

Kudelski Security leverages a combination of differentiated services, proprietary technologies and proven commercial products to help clients maximize security postures and minimize risks, while ensuring preparedness should the worst occur.

Comprehensive approach

The Kudelski Group's cybersecurity offerings center on four primary lines of business that help clients develop, operate and manage security strategies and programs, and create solutions where no current solution exists. The span of capabilities and broad market adoption has earned Kudelski Security the trust of security professionals world-wide, accolades from industry analysts, and the praise of client boards and executive committees. The primary lines of business are:

› Advisory – defining security strategies aligned to business that help Chief Information Security Officers minimize exposure and strengthen security posture.

› Technology integration – building, deploying and managing technologies that strengthen security, drive efficiencies and support business goals.

› Managed services – overcoming talent gaps with advanced threat hunting, monitoring and detection services, and rapid effective incident response.

› Innovation – using research and engineering services to generate proprietary technology and custom client solutions.

Continued evolution

Kudelski Security was formed to meet specific client needs around cyber threat monitoring, utilizing core elements of the Group's cryptography, anti-piracy monitoring, and encryption expertise. From the seeds of this pilot service, Kudelski Security was relaunched in 2016 with an established mission to challenge the status quo. The business curated a new portfolio of products, services and solutions that would deliver material impact on cybersecurity postures and enable organizations to close the gap between security investments and breach activity.

The acquisition of two solution providers in the US, Milestone Systems (in 2016) and M&S Technologies (in 2017), enabled Kudelski Security to establish a significant U.S. footprint and further evolve the business toward a global focus. The resulting entity became the largest pure-play cybersecurity solution provider in Switzerland and one of the most recognized cybersecurity solution companies in the United States.

Since 2016, Kudelski Security has continued to evolve its business model and organization. This included a management change in 2019. Kudelski Security is now a streamlined organization focused on leveraging its advanced research and development capabilities to enhance cyber-focused innovation in advisory, technology and managed security services.

Challenge of securing the IT ecosystem

Enterprise IT networks were designed before security was on the agenda. In the current environment, we have to perpetually run faster to make the IT ecosystem more secure in a highly competitive environment, fighting cyber crime around the world.

ADVISORY SERVICES

Advisory Services empower organizations to build, deploy and continuously improve business-aligned security programs through a strategic cyber program approach across program design and development, security assessments and staff augmentation.

TECHNOLOGY & PROFESSIONAL SERVICES

The ability to buy, install, configure and manage security technologies remains a fundamental need for clients around the world. Kudelski Security works with a reference architecture approach to match technology to client requirements, building lean, secure environments that leverage custom automation and orchestration to drive greater value from investments.

MANAGED SECURITY SERVICES

Kudelski Security's proprietary Cyber Fusion Centers in Europe and the United States continue to drive the company's fastest growth. These differentiated services go beyond competitor offerings by providing innovative threat hunting and advanced threat detection, regardless of where client data is located – on premise, in data centers, the cloud or in remote connected systems such as operational technologies, IoT devices, or remote sensors.

RESEARCH AND DEVELOPMENT SERVICES

Kudelski Security has a strong track record in innovation, leveraging the engineering and cryptography experience of the Group, to anticipate future challenges and solutions for modern enterprises. Research Centers, Laboratories and Security Centers of Excellence, such as the IoT and the Blockchain Security Centers, continue to investigate and develop solutions focused on emerging cybersecurity threat vectors. In addition to providing access to seasoned researchers, engineers and developers, Kudelski Security provides DevOps for hire, helping clients adopt an agile approach to security.

PLANNING FOR CONTINUED INNOVATION

› CYBERSECURITY

Kudelski Security has been focused on leveraging the Group's historical strengths in R&D to fuel its differentiation strategy and challenge the traditional cybersecurity approach. A strong innovation philosophy has driven heavy R&D investment in product and services development across each of the four lines of business.

The result is a comprehensive approach that provides clients unique but overlapping capabilities, acting as a force multiplier to significantly improve security business outcomes.

Addressing industry trends and changing buyer behaviors

In 2019, Kudelski Security conducted a strategic planning exercise to review business strategies in light of industry trends and changing buyer behavior. Moving forward, we can expect to see cybersecurity spending driven by three main areas: first, security risks and threats; second, regulatory compliance and risk management; and third, changes in industry.

Other trends that highlight the evolution in buying behavior and will impact Kudelski Security's strategy include:

› Continued staffing shortages – Experts anticipate millions of open cybersecurity positions globally by 2021, driving an opportunity for Kudelski Security products and services that either reduce human involvement or increase efficiencies.

› Rising cost of cybercrime – The pace and scale of cybercrime will continue to increase, and subsequent demand for cybersecurity solutions will remain a strong tailwind.

› Increased pressure on the Chief Information Security Officer (CISO) – The CISO role is evolving to a business executive function that often extends to physical and product security.

› Explosion of emerging technologies – The potential of artificial intelligence, machine learning and automation provides the opportunity to decrease dependencies on hard-to-find cybersecurity professionals.

› Increased platform convergence – Cyber/IT systems will continue to interface closer with IoT and OT environments. This will enable new lines of business and greater efficiency but create new attack vectors that will need securing.

Looking ahead

Kudelski Security's main market approach and priority investment areas are:

› Additional focus on cloud – Cloud adoption continues to accelerate and represents the industry's highest area of growth, in spending as well as strategic mindshare. As a result, all Kudelski Security's offerings and operating models will be aligned to secure this new paradigm.

› Generating IP through innovation – Our capacity to utilize new technologies and develop new solutions is a key differentiator for Kudelski Security. We will seek to realize proprietary Intellectual Property as a result of every client engagement and utilize these resources either as part of new product families or as "foundational" technologies that are licensable to industry partners.

› Preparing for increased demand for Managed Security Services – Talent shortages, increasing threat sophistication and lower risk tolerance are driving clients to look to specialized third parties for support. Adoption of Kudelski Security's offerings is accelerating in both Europe and the United States and the organization plans to continue investment in innovative new offerings that expand its platform and position it as a leader in the industry.

› Strengthening CISO-focused offerings – As organizations increase their visibility and attention to overall enterprise risk, the CISO role is expanding to include threat vectors beyond just cybersecurity. Kudelski Security will continue to expand its focus on security strategy, policy, and governance to aid CISOs as they formalize their security programs. Kudelski Security will also expand its preparedness to address client privacy and data concerns.

› Developing new and emerging technologies – Collectively, Kudelski Security's ability to develop and deliver products and solutions is a key competitive asset. Technologies, such as blockchain, are creating exciting opportunities to leverage its core competencies and develop ancillary high-value proprietary products and differentiated services. Further, as IT, OT, and IoT networks converge, Kudelski Security is well positioned to provide integrated solutions.

Reinforcing operational focus for growth

During 2019, the business executed a number of operational changes, designed to enable ongoing consolidation and responsible growth.

› Regional alignment of management and resources – To better support operations in vastly different global regions, Kudelski Security expanded the availability of specialized resources, such as regional advisory CISOs and service delivery professionals, allowing for closer client relationships and more effective support.

› Expansion plan for Europe – With a successful expansion of operations in Switzerland, Kudelski Security has defined plans and named leaders to broaden European coverage to specifically target clients in Germany, France, and the United Kingdom. By largely focusing on managed security services and innovation, these clients can be effectively supported from operations in the Cheseaux-sur-Lausanne, Switzerland headquarters.

› Evolution of sales management – Kudelski Security refocused the leadership team with the recruitment of a Chief Revenue Officer. This appointment reflects a renewed emphasis on developing long-term client relationships that deliver strategic engagements and higher margins over time.

› CEO transition to drive a high added value strategy – In July, Kudelski Security announced the nomination of Andrew Howard as Chief Executive Officer. Under this new management, Kudelski Security will increase the focus on the development of high added value cyber-security products, increase collaboration with other Kudelski Group business entities, and support the business as it evolves further from a start-up business to a well-established player.

In 2019 Kudelski Security gained significant new traction with its differentiated offerings, specifically through new contracts to provide managed security services with advisory consulting. In addition to adding an increasing number of prestigious clients in both Europe and the United States, these high-value offerings contributed to increasing the total gross margin percentage. This was particularly evident in the United States where revenue associated with acquired businesses was historically more heavily weighted by lower margin revenue associated with technology resale.

European growth is highlight of the year

European operations experienced significant growth in 2019, solidifying Kudelski Security as the premier cybersecurity partner in the French-speaking region of Switzerland, establishing a strong foundation in the German-speaking region, and winning long-term contracts with prestigious new clients in both Germany and France. The success of this business and the prestige of the accounts won in 2019 provide tremendous momentum for 2020 as Kudelski Security continues to expand in other parts of Central Europe.

During the year, Kudelski Security launched an expansion strategy for the United Kingdom. This earned early traction and market adoption by focusing on emerging needs associated with blockchain and developing tools for secure product development.

These strategies were validated through a new partnership with the London Organization for Rapid Cybersecurity Acceleration (LORCA), a UK public-private initiative focused on growing solutions to meet industry's biggest challenges, while building the UK's international cybersecurity profile.

As part of the relationship, Kudelski Security will assist LORCA member companies with product development, encryption and setting up product proof-of-concepts to ensure their solutions meet the market's needs. Kudelski Security will also contribute to LORCA Innovation Forums and Needs Accelerators, which help shape challenge areas as well as enabling the industry to share insights and collaborate.

Differentiated capabilities drive expansion

Managed Security Services (MSS) delivered through Kudelski Security's Cyber Fusion Centers (CFCs) continued to gain significant traction in 2019, representing Kudelski Security's largest and fastest area of growth. In addition to winning new contracts in both Switzerland and the United States, these unique services were the driving force behind Kudelski Security's entry into Germany and France, representing significant new markets for the business.

Another MSS trend in 2019 was the adoption of long-term service contracts, with three- and five-year agreements becoming the norm for new clients.

In addition to client adoption, Kudelski Security continued to earn recognition from industry analysts for its innovation. These include the following:

› Kudelski Security has been recognized for the third consecutive year as part of Gartner's Market Guide for Managed Detection and Response (MDR) Services (July 2019, 2018, 2017).

› Kudelski Security was named a Major Player in the "IDC MarketScape: U.S. Emerging Managed Security Services 2019 Vendor Assessment". According to this report, customers surveyed valued Kudelski Security's threat analysis, incident response, agility, customer focus, and wide spectrum of services as unique compared to other MSS providers in the market (August 2019).

› Kudelski Security ranked #23 of 200 in the MSSP Alert Top Worldwide Managed Security Services Providers. Continued recognition for client wins and innovative new service capabilities differentiated Kudelski Security against legacy service providers and emerging players with lesser capacity (September 2019).

› Gartner Market Guide for Operational Technology Security: large organizations are increasingly concerned with connected systems such as Operational Technologies (OT), Industrial Control Systems (ICS), IoT devices, and remote sensors becoming used as an entry point for cyberattacks. Kudelski Security was the first MSSP to offer OT monitoring services and has signed significant global clients to long-term contracts (November 2019).

› Gartner Market Guide for Digital Forensics & Incident Response: the ability to rapidly respond to cyberattacks is a critical need for clients. Kudelski Security integrates incident response and forensics services in all Managed Security Services contracts and was noted by Gartner for exceptional capabilities (December 2019, 2018).

R&D fuels new offerings

Kudelski Security's strong capabilities in research and development continued to drive innovation that will support future growth for the company. In addition to continued support of internal development initiatives such as the Cyber Fusion Center (CFC) and Secure Blueprint, the R&D team managed several strategic new programs including tools enabling secure, rapid development and the repackaging of products and services for sale through indirect channel partners. This will expand Kudelski Security's reach to new markets, clients and geographies.

Blockchain Security Center

In January 2019, Kudelski Security announced the launch of its Blockchain Security Center (BSC) focused on extending Kudelski Security's cryptography and DevOps expertise through new products and services that secure enterprise blockchain-based solutions. The team carried out audits of high-profile cryptocurrency and crypto exchanges including Binance, KZen, Rust, and Zcash.

In January 2020, Kudelski Security announced that it had successfully completed an industry-leading security assessment on the crypto exchange of Crypto.com, a major digital asset trading platform that is among the first to spearhead a security-by-design approach to its offering. The assessment sets an important industry benchmark in exchange security and aims to encourage other digital asset trading platforms to address the weaknesses inherent in centralized systems with a single point of failure.

In addition, in order to meet a growing demand for specialized services, Kudelski Security partnered with technical and process specialists from around the world to expand the company's specialized security ecosystem and boost the capabilities and offerings of its Blockchain Security Center.

Cloud security monitoring

The R&D team led the native integration of Kudelski Security's CFC with the major cloud service providers, enabling the monitoring of **AWS** and **Microsoft Azure** environments. This new service enables CFC analysts to monitor client data traffic and system security when using SaaS-based applications and data storage. Release of support for **Google Cloud Platform** (GCP) is anticipated in 2020.

Cyber strategy and expanding CISO services

Kudelski Security continued its emphasis on the advisory consulting business designed to help the CISO define, implement and manage cyber strategies. In addition to the 2019 launch of Secure Blueprint in Europe, the company saw a marked increase in strategic services such as staff augmentation to support the CISO. Services such as Kudelski Security's Virtual CISO have proven very effective in delivering high client value as well as helping to define new opportunities to support these clients.

Leading position protecting operational technology

In 2019, Kudelski Security extended its Managed Security Services to Operational Technology (OT) devices and industrial control systems. The market response was positive and several major client contracts signed in the course of the year. This is a first-of-its kind offering, integrating monitoring and threat hunting capabilities with CFC-based services to secure this important new threat vector. Engagements working with international manufacturers and public sector critical infrastructure entities resulted in large, multi-year MSS contracts for OT monitoring that validate the importance of this new market segment.

Continued development of functional encryption technologies

Kudelski Security continues to participate in Functional Encryption Technologies (FENTEC), a two-year project of the European Commission Horizon2020. The initiative brings together 10 partners from across the European Union and several leading universities.

INTERNET OF THINGS

Building an ecosystem of solutions to make IoT simple and secure

SECURITY CENTER OF EXCELLENCE

› INTERNET OF THINGS

The massive shift toward digitalization and device connectivity continues unabated, generating operational efficiency gains and new business models for connected businesses across all industries. A new forecast from IDC estimates that there will be 41.6 billion connected IoT devices in 2025.

By leveraging 30 years of innovation in the fields of digital business models and device protection, the Kudelski Group has unparalleled ability to provide solutions to address demand for increased protection of connected devices along with the data and services they enable.

Becoming a strategic IoT partner to customers

With on-going digitization of many different industries, companies are deploying connected devices and services and need to be able to trust and control them. By protecting the device and its data, new business models can be created and sustained, and operational efficiencies can be drastically improved.

However, the deployment of these devices is outpacing the ability of companies to adequately protect them using important "security by design" principles. The result is millions of connected but unsecure devices, ripe for attack by criminals, competitors and hackers. And there is an increasing realization that traditional cybersecurity methods are unable to fully protect the entire chain of device, identity, data, decisions, commands and actions, which is critical to the success of IoT.

The Kudelski Group's 30 years of real-life experience in deploying and protecting connected embedded systems is what makes it unique in the IoT industry. By working with strategic IoT ecosystem partners, the Group is creating secure solutions that solve specific industry problems and are easy to adopt, easy to implement, and simple to use.

Securing the entire IoT product lifecycle

Kudelski helps its customers and partners to address IoT security at every phase of their IoT security journey.

Kudelski addresses security from a system, end-to-end perspective, protecting all aspects of the connected business' ecosystem, its devices, collected data, intellectual property and associated monetization models. The approach also incorporates Security Lifecycle Management that ensure that security is sustained throughout the lifetime of the device.

Why security matters

When your email is hacked, you feel betrayed and uncomfortable. If your IoT-based car or train is hacked, you can get killed, if the car or train is steered off a cliff.

Secure by design

When you build on soft ground, securing your business becomes a perpetual catch-22. Secure your solution by design, and from day one you will have a solid foundation upon which to build for the long-term success of your business.

DESIGN & EVALUATION SERVICES

Kudelski helps customers analyze and understand threats to their IoT business and quantifies their potential impact. It creates tailored security designs to prevent those threats as well as evaluates the security of existing products in its advanced labs in Switzerland.

IOT SECURITY PLATFORM

The Kudelski Group's IoT Security Platform provides a rich basis to enable business features using its secure foundations in the device (hardware and/or software-based) and its simple device and application API's.

For instance, the solution protects data from the point of collection (e.g. sensor, camera or other device) to the application that utilizes the data, whether that data is at rest or in motion, and ensures that data is only accessible to authorized parties.

LIFECYCLE MANAGEMENT

Security Lifecycle Management is the active protection of the customer's connected business model over time, using security monitoring, the proactive update of security, and response to security incidents through the application of built-in countermeasures or new security features.

EXPANDING THE INDUSTRY ECOSYSTEM

Expanded offering

Kudelski announced its first IoT initiative in 2017, the IoT Security Center of Excellence (CoE), providing IoT device and ecosystem threat assessments, security designs, device evaluations and certification services to IoT device manufacturers. The Center continues to draw new customers who wish to leverage Kudelski's extensive expertise in hardware and software security as well as security architecture and design.

In recognition of the CoE's capabilities to help companies improve their IoT device security posture, Swiss-based u-blox expanded its partnership with the Group by starting to offer Kudelski's CoE services to its customers.

2019 also saw a key milestone in Kudelski's IoT activities when its IoT Security Platform went live on Amazon Web Services (AWS) in March, enabling device manufacturers, communication service providers and their end-customers to establish trust and control between IoT devices and their associated applications. The Kudelski IoT Security Platform runs natively in the AWS cloud, making integration with a customer's AWS-based applications simple and secure.

Additionally, in December, Kudelski announced an IoT partnership with Microsoft. By enabling customers to securely onboard devices into the two leading industry Cloud platforms for IoT data and analytics services, the Group demonstrated its technological compatibility and its ability to support multi-cloud systems, giving customers the choice of using the IoT Data Platform that best meets their needs without compromising on end-to-end device, data and application security.

The Kudelski Group's IoT Security Platform is tailored to deliver value in specific industry ecosystems. Kudelski partners with specialists in these industries to bring a joint offer tuned to the market specificities of each different vertical.

Key industry-specific partnerships

The Group announced an agreement with Arizona-based CoreKinect to create secure, flexible tracking and monitoring devices for multiple industries, starting with the transport of perishable foods. The solution allows end-user companies like grocery stores to validate that goods they purchase have been transported under the correct conditions to ensure product freshness and safety. Both companies are actively selling the solution in North America and Europe.

In 2019, the Group signed an agreement with Indian system integrator LTTS, with Kudelski pledging to provide its security expertise and technologies to LTTS's automotive and industrial customers, and LTTS pledging its vertical-specific expertise to Kudelski's sales efforts.

Kudelski also announced a partnership with Spain-based Idneo, agreeing to integrate the Kudelski IoT Security Platform with devices Idneo designs and manufactures for its industrial, medical and automotive clients.

IOT ARCHITECTURE FROM DEVICE TO CLOUD

Sensors, machines	Edge/modem	Connectivity	Cloud
Secured Actuators	**Secured** Data	**Secured** Data →	**Secured** Data
Secured Sensors	**Trusted** Local AI		**Trusted** Global AI
Secured Machines	**Trusted** Local Decisions	← **Protected** Commands	**Trusted** Decisions

MANAGED SERVICES

Secured IoT Platform

Data. Devices. Control. Connectivity

CORPORATE GOVERNANCE

CORPORATE GOVERNANCE

This report was prepared in compliance with the directive on information relating to corporate governance issued by the SIX Swiss Exchange and in compliance with the Ordinance against Excessive Compensation at Listed Joint-Stock Companies (OaEC). Unless otherwise stated herein, the information provided in this report reflects the situation as of 31 December 2019.

1. Group structure and shareholders

1.1. Group structure

Kudelski SA has its registered offices in Cheseaux-sur-Lausanne. The company has been structured as a holding company since 1999 and its shares have been listed on the SIX Swiss Exchange since 2 August 1999.

The structure of Kudelski SA and its affiliated companies (the "Kudelski Group" or the "Group") is shown below – sections 1.1.1 - 1.1.3.

1.1.1. Description of the issuer's operational Group structure

From an operational point of view, the Group's activities are split into four divisions: Digital TV (formally named iDTV for Integrated Digital Television), Public Access, Cybersecurity and Internet of Things (IoT). The Finance, Legal, Human Resources, Business Development and Innovation and Corporate IT departments support the entire organization.

Each division is responsible for defining and managing its research and development, sales and marketing, services and operation except Internet of Things (IoT) division which is supported by the research and development teams of the Digital TV.

The Digital TV division is organized into three teams: operations (including research and development, services and support); sales and marketing and data analytics.

The Public Access division is comprised of three units: parking; mountain (ski); events.

The Cybersecurity division is organized around four pillars of activity: advisory services, technology resale, managed security services and proprietary research and development.

The Internet of Things (IoT) division is organized around advisory services, technology, security services and product and service design units.

Results by sector are presented in note 5 to the Kudelski Group's 2019 financial statements.

<u>Main operating companies held directly or indirectly by Kudelski SA</u>

The list of the Group's main operating companies is provided in note 54 to the 2019 financial statements.

Additional information is also included in the 2019 Annual Report's key figures.

1.1.2. All listed companies belonging to the issuer's Group

Kudelski SA, the parent company of the Group, is a Swiss holding company based in Cheseaux-sur-Lausanne in the canton of Vaud. Kudelski bearer shares are listed on the SIX Swiss Exchange (Ticker: KUD; Sec. No 001226836/ ISIN: CH0012268360). As of December 31, 2019, the market capitalization of Kudelski SA bearer shares was CHF 288 162 354.

Kudelski SA and its subsidiaries did not hold any bearer shares of Kudelski SA.

1.1.3. The non-listed companies belonging to the issuer's consolidated entities

Information about the company name, registered office, share capital and holdings owned by non-listed Group companies included in the scope of consolidation is shown on pages 167 and 177 of the Kudelski Group's 2019 financial statements.

INTERNATIONAL PRESENCE*

** Indicates countries in which the Group maintained a representation*

		DIGITAL TV	PUBLIC ACCESS	CYBERSECURITY	IOT
EUROPE	Germany	■	■	□	□
	Austria	□	■	□	□
	Belgium	■	■	□	□
	Spain	■	■	□	□
	France	■	■	■	■
	Ireland	□	■	□	□
	Italy	■	■	□	□
	Norway	■	■	□	□
	The Netherlands	■	■	□	□
	Portugal	■	■	□	□
	United Kingdom	■	■	■	□
	Russia	■	■	□	□
	Slovenia	■	□	□	□
	Sweden	□	■	□	□
	Switzerland	■	■	■	■
	Turkey	□	■	□	□
AMERICAS	Argentina	■	□	□	□
	Brazil	■	■	□	□
	Chile	□	■	□	□
	Colombia	■	□	□	□
	Mexico	■	■	□	□
	Peru	■	□	□	□
	USA	■	■	■	■
	Uruguay	□	■	□	□
AFRICA	South Africa	■	■	□	□
	Tunisia	□	■	□	□
MIDDLE EAST	United Arab Emirates	■	■	□	□
ASIA / PACIFIC	Australia	■	■	□	□
	China	■	□	□	□
	South Korea	■	□	□	□
	Hong Kong	■	■	□	□
	India	■	■	■	■
	Indonesia	■	□	□	□
	Japan	■	■	□	□
	Malaysia	□	■	□	□
	Singapore	■	□	□	□
	Taiwan	■	□	□	□

1.2. Significant shareholders

As of 31 December 2019, Kudelski SA has two significant shareholders.

The first one consists of a group of shareholders related to the Kudelski family ("Family Pool") with a total of 58.92% of the voting rights of Kudelski SA (see the table below). The Family Pool comprises Mr. André Kudelski, Mrs. Marguerite Kudelski, Mrs. Isabelle Kudelski Haldy, Mrs. Irène Kudelski Mauroux and their respective descendants. Members of the Family Pool own the shares of Kudelski SA directly or through an investment structure of which they are the beneficiaries.

The second significant shareholder ("Kudelski Family outside the Pool*") is composed of two discretionary and irrevocable trusts, whose beneficiaries are members of the family of Mr. André Kudelski. As of December 31, 2019, the Kudelski Family outside the Pool held a total of 4.15% of the voting rights of Kudelski S.A. (see below). In its capacity as a protector of these trusts, Eigenmann Associés in Lausanne, Switzerland, freely exercises the voting rights of the shares held by these trusts. To the Group's knowledge, no other shareholder or group of shareholders holds more than 3% of the voting rights.

All announcements made by Kudelski SA to the SIX Swiss Exchange can be found on the SIX Swiss Exchange website at the following address: https://www.six-group.com/exchanges/shares/security_info_fr.html?id=CH0012268360CHF4 and then clicking on the "Principal shareholders" link.

1.3. Cross-shareholdings

The Group has no knowledge of the existence of any cross-shareholdings.

AS OF 31 DECEMBER 2019	REGISTERED SHARES	BEARER SHARES	SHARE CAPITAL HELD	VOTING RIGHTS
Family Pool	46 300 000	10 509 423	27.65%	58.92%
Kudelski Family outside the Pool*		4 000 000	7.31%	4.15%

** On the 27th of June 2017, the Ad hoc publicity of the SIX Swiss Exchange has advised that the trustee beneficiaries are not required to report positions held by trusts.*

2. Capital structure

2.1. Amount of ordinary, authorized and conditional capital as at 31.12.2019

Ordinary capital

The share capital of Kudelski SA is CHF 437 831 552. It is divided into 50 098 944 bearer shares with a nominal value of CHF 8.00 per share and 46 300 000 registered shares with a nominal value of CHF 0.80 per share. Each share confers the right to one vote. All shares are fully paid up. Articles 6 and 7 of the articles of association of Kudelski SA, which can be found on the company's website at the following address: https://www.nagra.com/investors/publications, also contain an authorized capital clause and two conditional capital clauses (see section 2.2 below).

2.2. Specific information concerning authorized and conditional capital

Authorized capital

According to Article 7 of the articles of association of Kudelski SA, the Board of Directors is authorized to increase the share capital in one or more stages until 15 March 2020 by a maximum amount of CHF 32 705 312 (representing 7.47% of the existing share capital) through the issuance of 3 768 164 bearer shares with a nominal value of CHF 8.00 per share and 3 200 000 registered shares with a nominal value of CHF 0.80 per share to be fully paid up. The issuance price, the nature of the contributions, the date from which new shares shall give entitlement to dividends and other modalities of any share issuance shall be determined by the Board of Directors.

The preferential subscription rights of shareholders may be excluded and allotted to third parties by the Board of Directors with a view to acquiring companies or parts of companies or in order to finance the whole or partial acquisition of other companies in Switzerland or abroad. The statutory restrictions on the transfer of shares apply to new registered shares issued on the basis of the authorized capital.

Conditional capital

The articles of association of Kudelski SA (Articles 6 and 6bis) provide two clauses related to conditional capital for a total amount of CHF 85 718 496 (19.57% of the existing share capital) structured as follows:

– according to Article 6 of the articles of association (conditional capital for option or subscription rights), the share capital of Kudelski SA can be increased by a maximum amount of CHF 5 718 496 (1.31% of the existing capital) through the issuance of a maximum of 714 812 bearer shares with a nominal value of CHF 8.00 per share, to be fully paid up, as and when the option rights or share subscription rights which will be granted to the employees of the company and of affiliated companies are exercised. There are no preferential subscription rights for shareholders. Share option or subscription conditions are determined by the Board of Directors. Issuance at a price below market conditions is authorized; and

– according to Article 6bis of the articles of association (conditional capital for conversion rights), the share capital of Kudelski SA can be increased by a maximum amount of CHF 80 000 000 (18.27% of the existing capital) through the issuance of a maximum of 10 000 000 bearer shares with a nominal value of CHF 8.00 per share, to be fully paid up, as and when the conversion rights related to the convertible bonds of the company or its subsidiaries are exercised.

There are no preferential subscription rights for shareholders. The preferential subscription right of shareholders to the issuance of a convertible bond may be limited or excluded by decision of the Board of Directors on valid grounds, namely (a) if the convertible bonds are placed primarily in markets outside Switzerland, or (b) if the issuance proceeds contribute (i) to the financing or refinancing of acquisitions of companies or firms, (ii) to the financing of other strategic investments of the Group, or (iii) to financing the redemption of all or part of convertible bonds previously issued by the company or its subsidiaries.

If the convertible bond is not offered preferentially to shareholders, (a) the convertible bonds must be sold to the public under market conditions, (b) conversion rights must be exercised within a period of seven years from the day of issuance of the respective bond, and (c) the conversion price must be at least equivalent to market conditions at the time of the issuance of the bond.

As of December 31st, 2019, Kudelski SA had issued 16 248 bearer shares on the basis of conditional capital for option or subscription rights. These new bearer shares will be entered in the commercial register in the first three months of 2020, in accordance with Article 653h of the Code of Obligations. As of December 31st, 2019, the available amount of contingent capital for option and subscription rights was therefore CHF 5 588 512, representing a maximum of 698 564 bearer shares with a par value of CHF 8.00 each.

As at December 31st, 2019, Kudelski SA had not issued any option rights within the meaning of Article 6 of the articles of association and no conversion rights related to debt obligations within the meaning of Article 6bis of the articles of association. The conditional capital for option or subscription rights under Article 6 of the articles of association may, however, be used in the context of the employee share purchase plan (see section 2.7 below).

2.3. Changes in the capital of Kudelski SA

IN THOUSANDS CHF	31.12.19	31.12.18	31.12.17
Registered share capital	37 040	37 040	37040
Bearer share capital	400 922	399 287	398 078
Legal reserve	110 000	110 000	110 000
Capital contribution reserve	74 216	79 689	85 010
Net profit	-63 413	-57 418	-49 369
Retained earnings	24 785	88 198	145 616
TOTAL SHAREHOLDERS' EQUITY	**646 962**	**714 214**	**775 744**

For information relating to changes in capital which have taken place in 2019, 2018 and 2017, please refer to the Group's corresponding financial statements. These reports can be found on the Kudelski SA website at www.nagra.com/investors/publications. Information regarding the capital contribution reserve can be found under note 3.4 to the Kudelski SA financial statements in the Kudelski Group's 2019 financial statements.

2.4. Shares and participation certificates
The structure of the share capital of Kudelski SA is described in section 2.1 above.

In compliance with section 18, 3rd paragraph of the articles of association, class A and B shareholders are represented on the Board of Directors.

Kudelski SA does not have participation certificates.

2.5. Dividend-right certificates
Kudelski SA does not have dividend-right certificates.

2.6. Limitations on transferability and nominee registrations
Shares of Kudelski SA which are listed on the stock exchange are issued to the bearer. For these shares, the exercise of shareholder rights does not depend on an entry in the share register. There are therefore no statutory restrictions on their transfer or the exercise of shareholder rights through nominees.

The registered shares of Kudelski SA are not listed on the stock exchange. As of December 31st, 2019, they were all owned by the Kudelski "Family Pool" (see section 1.2 above). Pursuant to the articles of association of Kudelski SA, subject to the provisions of the Swiss Federal Act on Intermediated Securities, registered shares may be transferred upon delivery of the endorsed share certificate, subject to the approval of the Board of Directors and registration in the share register.

Article 9 of Kudelski SA's articles of association allows the Board of Directors to refuse the approval of the transfer of registered shares in one or more of the following cases:

a) If there exists good cause within the meaning of Article 685b, paragraph 2, of the Swiss Code of Obligations, i.e. if admission of the acquirer as a shareholder would be incompatible with the objective of Kudelski SA or could jeopardize the economic independence of the company. This would in particular be the case if the acquirer could prejudice the company directly or indirectly, or if transfer of the shares could jeopardize the existing majorities.

b) If the company offers the seller of the shares to acquire the shares at their fair value at the time of the request for its own account, for the account of other shareholders or for the account of third parties.

c) If the acquirer does not expressly declare that he is acquiring the shares in his own name and for his own account.

Article 9 of the articles of association also provides that if the shares are acquired by inheritance, division of an estate, marital property rights or as a result of debt enforcement proceedings, the company may only refuse its consent if it offers to acquire the shares at their fair value.

In the event of a dispute, the fair value is determined by the court having jurisdiction in the place where the company has its registered office. The company bears the costs of such valuation. The purchase offer is deemed accepted if the acquirer does not reject it within one month of having been informed of the fair value.

2.7. Convertible bonds and options

Convertible bond
The Kudelski Group has no outstanding convertible bond.

Options
The company has no outstanding options.

Share purchase plan
In 2004, the Kudelski Group introduced a share purchase plan for the employees of certain companies of the Group, enabling those employees to buy Kudelski SA bearer shares on favorable terms. Each participant can subscribe annually to this plan up to a maximum amount of 7.7% of his/her gross annual salary.

The share purchase price is the closing price of the Kudelski SA share listed on the SIX Swiss Exchange on the day of subscription with a discount of up to 42%. However, the shares are subject to a three-year blocking period from the date of purchase.

A chart showing employee participation in this plan for the year 2019 can be found in note 39 to the consolidated financial statements.

3. Board of Directors

The Board of Directors is the highest executive body of the company. It has the non-transferable and inalienable responsibilities set forth by the law and the articles of association. As of January 1st, 2020, the Board of Directors consisted of seven members elected at the Annual General Meeting of Shareholders.

Three Committees, an Audit Committee, a Strategy Committee and a Nomination and Compensation Committee, have been created by the Board of Directors and are responsible for specific tasks (see sections 3.5.1- 3.6).

Mr. Mark Beariault, who is not a member of the Board of Directors, was appointed as Corporate Secretary by the Board of Directors.

3.1. Members of the Board of Directors

	YEAR OF BIRTH	NATIONALITY	EDUCATION	FIRST ELECTION	END OF TERM OF OFFICE
ANDRÉ KUDELSKI* Chairman of the Board and Chief Executive Officer Executive Board Member	1960	Swiss	**DEGREE IN PHYSICAL ENGINEERING** Ecole polytechnique fédérale de Lausanne (EPFL)	1987	15.04.2020
CLAUDE SMADJA Deputy Chairman of the Board and Lead Director Non-Executive Board Member	1945	Swiss	**DEGREE IN POLITICAL SCIENCE** University of Lausanne	1999	15.04.2020
PATRICK FŒTISCH Non-Executive Board Member	1933	Swiss	**DOCTORATE IN LAW** University of Lausanne **BAR EXAM**	1992	15.04.2020
LAURENT DASSAULT Non-Executive Board Member	1953	French	**DEGREE IN BUSINESS LAW** **DEGREE FROM ESLSCA** Ecole supérieure libre des sciences commerciales appliquées, Paris	1995	15.04.2020
PIERRE LESCURE Non-Executive Board Member	1945	French	**DEGREE IN LITERATURE AND JOURNALISM** Centre de formation des journalistes, Paris	2004	15.04.2020
MARGUERITE KUDELSKI Non-Executive Board Member	1965	Swiss	**ENGINEERING DEGREE IN MICROTECHNOLOGY** **DOCTORATE IN MICROTECHNOLOGY** Ecole polytechnique fédérale de Lausanne **EXECUTIVE MBA** IMD Lausanne	2006	15.04.2020
ALEC ROSS Non-Executive Board Member	1971	American	**DEGREE IN HISTORY** Northwestern University, USA	2014	15.04.2020

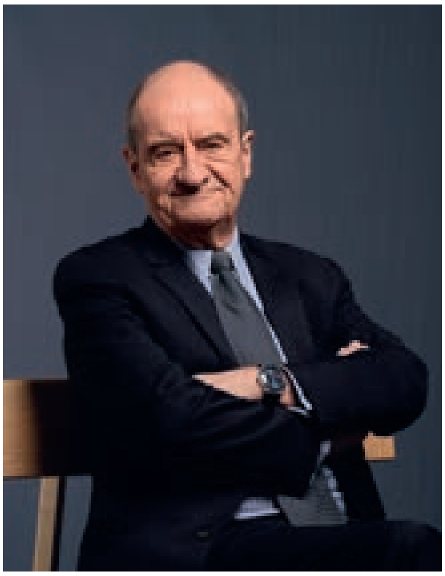
* *André Kudelski is the only member of the Board of Directors to combine his Board duties with an executive function within the Group (Chief Executive Officer). Apart from Mr. Kudelski, no other member of the Board of Directors performed any executive function within the Group during the past three years.*

ANDRÉ KUDELSKI

CLAUDE SMADJA

PATRICK FŒTISCH

LAURENT DASSAULT



PIERRE LESCURE

MARGUERITE KUDELSKI

ALEC ROSS

ANDRÉ KUDELSKI

André Kudelski began his career in 1984 as a Research & Development (R&D) engineer with Kudelski SA. In 1986, after a short-term assignment in Silicon Valley, he returned to work in the family business firstly as Pay TV Product Manager, then as Director of Nagravision SA, a company in charge of the Pay TV sector. Mr. Kudelski then took over from his father Stefan Kudelski and from 1991 became Chairman and Chief Executive Officer of the parent company Kudelski SA.

Current mandates in the Kudelski Group:

- Kudelski Corporate, Inc., in USA, Chairman and Chief Executive Officer
- Kudelski Security, Inc., in USA, Executive Chairman
- Kudelski Security Holdings, Inc., in USA, Chairman and Chief Executive Officer
- Nagravision SA, in Switzerland, Chief Executive Officer
- NAGRA PLUS SA, in Switzerland, Chairman and Chief Executive Officer
- Nagra USA, LLC., in USA, Chairman and Chief Executive Officer
- NagraStar LLC, in USA, Co-Chairman
- OpenTV, Inc., in USA, Chairman and Chief Executive Officer
- SKIDATA AG, in Austria, Member of the Supervisory Board
- SmarDTV SA, in Switzerland, Chairman (until 31st of January 2019)
- Nagravision AS, in Norway, Chairman (until September 2018)

Important mandates outside the Kudelski Group:

- Comité d'economiesuisse, in Switzerland, member
- École polytechnique fédérale de Lausanne (EPFL), in Switzerland, Strategic Advisory Board member
- Fondation du Festival de Jazz de Montreux, in Switzerland, vice-president
- Foundation Bilderberg Meetings, in Netherlands, member of Steering Committee
- Greater Phoenix Economic Council (GPEC), in USA, member of the Executive Committeee
- Innosuisse, in Switzerland, Chairman
- Publicis Groupe, in France, member of the Supervisory Board, Chairman of the Remuneration Committee, member of the Nomination Commitee and of the Audit Committee
- Swiss-American Chamber of Commerce, in Switzerland, Vice-Chairman
- Swiss Board Institute (Swiss foundation), member of the Strategic Advisory Board

- Aéroport International de Genève, in Switzerland, first Vice-Chairman (until 30th of November 2018)

CLAUDE SMADJA

After 15 years with Télévision Suisse Romande (TSR) as Deputy Editor of the Information Department, Claude Smadja joined the management of the World Economic Forum in 1987, a position that he held until 1992. He then returned to TSR as Director of Information until 1996, in which year he was appointed Managing Director of the World Economic Forum. In June 2001, Claude Smadja set up his own strategy consultancy Smadja & Smadja, a strategic advisory firm that collaborates on strategic issues with multinationals and government bodies and organizes international events.

Current mandates in the Kudelski Group:

- Nagravision SA, in Switzerland, Board member

Main mandate outside the Kudelski Group:

- Smadja & Smadja Strategic Advisory SA, in Switzerland, Board member

Neither Mr Smadja nor any organization he represents has any material business relationship with Kudelski SA or any of its subsidiaries.

PATRICK FŒTISCH

Patrick Foetisch is an independent lawyer specializing in contracts and finance at an international level. He acts as legal counsel to Group companies as and when required, bringing to bear his in-depth knowledge of their activities to provide assistance and legal advice.

Current mandates in the Kudelski Group:

- Nagravision SA, in Switzerland, Chairman
- Nagra France SAS, Chairman
- NAGRA PLUS SA, in Switzerland, Board member
- SKIDATA AG, in Austria, member of the Supervisory Board
- SmarDTV SAS, in France, Chairman

Main mandate outside the Kudelski Group:

- AMRP Handels, in Switzerland, Chairman

LAURENT DASSAULT

After a career spanning thirteen years in the banking sector, Laurent Dassault joined the Dassault Group in 1992 where he holds important positions. Today he assumes around thirty mandates, including those of the Dassault Group, mainly in the financial, industrial and wine-producing sectors.

Current mandates in the Kudelski Group:

- SKIDATA AG, in Austria, member of the Supervisory Board

Current mandates Groupe Industriel Marcel Dassault SAS (France)[1]:

- Arqana SAS, in France, advisor to the Directoire (Managing Board)
- Artcurial Développement Sàrl, in France, Co-manager (Co-gérant)
- DASSAULT BELGIQUE AVIATION S.A, in Belgium, Board member
- DASSAULT INVESTESSEMENTS Sàrl, in France, Managing Director
- Dassault Wine Estates SASU, in France, Chairman
- Financière Louis Potel & Chabot SAS, in France, censor
- Immobilière Dassault SA, in France, Chairman of the Supervisory Board
- Groupe Industriel Marcel Dassault SAS, in France, Directeur Général Délégué and Board member
- Les Amis de la fondation Serge Dassault, in France, Chairman
- MIDWAY AIRCRAFT CORPORATION, in USA, Chairman
- SITAM America Corp., USA, Board member
- SOGITEC Industries SA, in France, Board member

Other important mandates outside the Kudelski Group:

- 21Centrale Partners SA, in France, member of the Supervisory Board
- Catalyst Investments II L.P., in Israel, Chairman of the Advisory Board
- FLCP et Associés SASU, in France, member of the Supervisory Board
- LA MAISON SA, in Luxemburg, member of the Supervisory Board
- Laurent Dassault Rond Point (LDRP) SCI, in France, Associé gérant
- Laurent Dassault Rond Point II (LDRP II) SAS, in France, Chairman
- Lepercq, de Neuflize & Co. Inc., in United States, Board member
- L. REAL ESTATE SCA SICAR, in Luxemburg, Chairman of the Investors Committee
- PECHEL INDUSTRIES SAS, in France, member of the Monitoring Committee
- SAGARD PRIVATE EQUITY PARTNERS SAS, in France, member of the Advisory Committee
- WARWYCK Private Bank Ltd, in Mauritius, Board member
- Amis du FRAC (Fonds Régional d'Art Contemporain en Aquitaine), in France, Chairman
- Amis du Musée Centre Pompidou, Association, in France, Board member
- Association pour la Diffusion Internationale de l'Art Français (ADIAF), Board member
- Association pour la Mémoire des Enfants cachés et des Justes (AMECJ), Board member and Treasurer
- Comité des Champs-Elysées, association, in France, Board member
- Fonds pour Paris, association, in France, Board member
- Organisation pour la prévention de la Cécité (OPC), Association, in France, Board member
- Société des Amis des musées d'Orsay & de l'Orangerie, in France, Board member

Neither Mr. Dassault nor any organization he represents has any significant business relationship with Kudelski SA or any of its subsidiaries.

PIERRE LESCURE

Save for a two year period (1972-1974) as a television news presenter for Antenne 2, Pierre Lescure spent the first fifteen years of his professional career with the RTL, RMC and Europe1 radio stations where he successively occupied a variety of positions, in particular Deputy Editor and Director of Programs. In 1981 he returned to television as News Director of Antenne 2. From 1984, he worked with André Rousselet on the launch project for the pay TV channel CANAL+ where he was appointed Director and then Chief Executive Officer. From 1993 to 2002, he was Chairman and Chief Executive Officer of the CANAL+ Group. From 2000 to 2002 Pierre Lescure was also co-Chief Executive Officer of Vivendi-Universal. Since 2002, he has been Chairman and Chief Executive Officer of AnnaRose Production SAS, a company active in audio-visual and cinematographic production as well as in communication consultancy services. From 2008 to 2014, he directed the Théâtre Marigny in Paris. Since 1st July 2014, Pierre Lescure has served as President of the Cannes Festival. Since September 2014, Pierre Lescure has been a regular TV columnist for the daily show "C à vous" which is broadcast on France 5, the French TV channel.

Current mandates with the Festival de Cannes[1]:

- Association française du festival international du film (known as "Le Festival de Cannes"), in France, Chairman
- Société de gestion d'opérations commerciales pour le festival international du film SASU, in France, Président

Current Mandates exercised for the Festival de Cannes:

- Fonds de dotation du festival international du film, in France, Chairman

Other important mandates outside the Kudelski Group:

- ANNAROSE PRODUCTIONS Sàrl, in France, Chairman and CEO
- Molotov SAS, in France, Chairman

Mr. Lescure has never been part of a management body of the Kudelski Group. Neither he nor any organization he represents has any significant business relationship with Kudelski SA or any of its subsidiaries.

[1] *As per section 18 of the articles of association and as described below in section 3.3, mandates for legal entities under common control are deemed to constitute a single mandate.*

MARGUERITE KUDELSKI

Marguerite Kudelski's professional career began at the EPFL's Laboratory of Electromechanics and Electrical Machines, where she worked from 1991 to 1999. During this period she also worked as a research and development engineer within the Nagra Audio division of the Kudelski Group. In 1999, she became the Head of R&D with Précel SA in Neuchâtel (then a Kudelski Group company) before being appointed as CEO and Board member of the same company in 2000, positions that she occupied until the end of 2002. After completing a number of marketing and financial analysis projects for NagraID in 2003, she took responsibility for certain key projects for the Group within the Finance Department from 2004 to 2006. From 2007 to 2011, Marguerite Kudelski worked as a consultant, offering services such as business development and management consulting. In December 2011, she took over the management of Nagra Audio, which was transferred by the Group to Audio Technology Switzerland SA (ATS) for which she serves as Chairman of the Board of Directors. Until the end of 2014, Marguerite Kudelski was in charge of the R&D department of ATS. Since 2017, Marguerite Kudelski is a Board member of Bovay & Partenaires SA and Wire Art Switzerland SA. She is also a member of the Expert Committee of Switzerland Innovation.

Main mandates outside the Kudelski Group:

- AudioTechnology Switzerland SA, in Switzerland, Chairman
- Bovay & Partenaires SA, in Switzerland, Board member
- Swiss Innovation Park, foundation, in Switzerland, member of the Expert Committee
- Wire Art Switzerland SA, in Switzerland, Board member

Apart from the mandates and functions mentioned above, neither Ms. Kudelski nor any organization she represents has any significant business relationship with Kudelski SA or any of its subsidiaries.

ALEC ROSS

Alec Ross began his professional career in 1994 as a teacher with the Teach for America program in underprivileged neighborhoods of Baltimore. He joined Enterprise Community Partners (formerly Enterprise Foundation) two years later, a non-profit organization based in Columbia, Maryland, which develops affordable housing throughout the United States, where he held the position of Special Assistant to the Chairman. In 2000, Alec Ross co-founded the One Economy Corporation, a non-profit organization which organizes programs to help low-income people worldwide, for which he worked for eight years. In parallel, he joined the presidential campaign of President Barack Obama in 2007 as the Coordinator of the Technology, Media & Telecommunications Policy Committee and then as Project Manager and member of the Technology, Innovation and Government Reform Policy Group. From April 2009 to March 2013, Alec Ross was Senior Advisor for innovation to US Secretary of State Hillary Clinton. Since then, he has been Senior Fellow at the School of International and Public Affairs of Columbia University and a Distinguished Senior Fellow at John Hopkins University, and he is the author of the New York Times bestseller "The Industries of the Future" (Simon & Schuster) published in February 2016. He also advises investors, enterprises and government officials, helping them to understand the influence of factors located at the crossroads of geopolitics, markets and disruptive technologies.

Main mandates outside the Kudelski Group:

- Amplo (USA), Board Partner
- Andela Inc., in USA, Advisory Board member
- Jobbatical Inc., in Estonia, supervisory Board member
- Leeds Equity Partners LLC, in USA, Advisory Board member
- Legalpad Inc., in USA, Supervisory Board Member
- Teach for America, in USA, Advisory Board member
- Telerivet Inc., in USA, Board member

Mr. Ross has never been part of a management body of the Kudelski Group. Neither he nor any organization he represents has any significant business relationship with Kudelski SA or any of its subsidiaries.

3.2. Other activities and vested interests
Please refer to the individual profiles of Board members under section 3.1 above.

3.3. Articles of association provisions on the number of permitted activities
In compliance with section 18 of the articles of association, members of the Board of Directors may exercise no more than five mandates in senior management or administrative bodies of third-party legal entities whose shares are listed on a stock exchange and no more than ten mandates in other third-party legal entities. They may also exercise up to ten mandates in senior management or administrative bodies of non-profit or charitable third-party legal entities.

A company is not considered a third-party legal entity according to this provision, and is therefore not taken into account when calculating the maximum number of mandates mentioned above, if:

1. it controls another company directly, indirectly or jointly with third parties for which a mandate is being carried out, or is controlled by such company; or
2. it does not have to be entered in the Commercial Register or in a corresponding foreign register (e.g., corporations and public entities, non-profit associations, religious foundations or family foundations); or
3. the mandate is carried out at the company's request.

Mandates carried out for legal entities directly or indirectly controlled by a single individual or legal entity, or by a single group of individuals or legal entities acting in concert, or at the request of one of these individuals or legal entities, are deemed to constitute a single mandate for the purposes of this provision.

Members of the Board of Directors must notify the Chairman of positions they hold at third-party legal entities.

3.4. Election and terms of office
The Board of Directors is composed of one to ten members. Board members are individually elected at the Annual General Meeting for a period of one year. The term of office ends on the day of the next Annual General Meeting. All members may be reelected. The year of the first election as well as the end of term of office for each member are mentioned under section 3.1 above.

The articles of association of Kudelski SA do not contain any special provisions regarding the election of the Chairman.

3.5. Internal organization structure
The Board of Directors performs inalienable and nontransferable duties prescribed by the law (see section 3.6 below) with the support of its three committees: Audit, Strategy, and Nomination and Compensation. The internal organization of the Board of Directors is defined in the articles of association and in the bylaws. The bylaws are available on request to the Corporate Secretary of the Kudelski Group by calling +41 21 732 07 31 or by post at the following address: Route de Genève 22-24, 1033 Cheseaux-sur-Lausanne.

3.5.1. Allocation of tasks within the Board of Directors
Except for the Chairman who is elected at the Annual General Meeting, the Board of Directors establishes itself by appointing its Vice Chairman. The Board of Directors may delegate the management of the company to one of its members who shall act as Chief Executive Officer of the company. If the Chairman is elected to exercise the function of Chief Executive Officer, the Board of Directors shall also elect a "Lead Director" from among its members. The management of the company is delegated in full to the Chief Executive Officer or to the Executive Board. A Corporate Secretary may be appointed from outside of the Board of Directors.

The Chairman of the Board of Directors leads the discussions of the Annual General Meeting, ensures that the minutes are taken, is in charge of the protocol and directs meetings of the Board, informs the Board members of the business development and the company's financial results, represents the company with administrative and/or judicial authorities, subject to mandates granted by the Board of Directors to a third party, an officer or one of its members.

The Vice Chairman may call meetings of the Board of Directors. He or she shall chair Board meetings and the Annual General Meeting if the Chairman is absent.

According to Article 25 of Kudelski SA's articles of association, the Board of Directors may delegate the management of the company to the Chief Executive Officer, unless otherwise stipulated by the law. In his or her management, the Chief Executive Officer acts according to the directives issued by the Board of Directors and in the interests of the company. He or she also provides before each meeting of the Board of Directors a report outlining key aspects of the current business situation.

In the Group's current structure, Mr. André Kudelski holds the positions of Chairman of the Board of Directors and Chief Executive Officer. This situation guarantees a rapid and fluid information and decision-making process, enabling the company to respond operationally and strategically at the pace required by developments in the sectors of activity pursued by the Group. As the functions of Chairman and Chief Executive Officer are held by the same person, the Board of Directors has appointed Mr. Claude Smadja as Lead Director.

The Lead Director ensures the independence of the Board of Directors vis-à-vis the Chairman and Chief Executive Officer as well as the management of the company; he or she also chairs the Board of Directors' meetings if a conflict arises between the interests of the Chairman and Chief Executive Officer and those of the company. The Lead Director may independently call and lead a meeting of the independent members of the Board of Directors if the interest of the company requires an independent deliberation. He or she ensures a process for evaluating the performance of the Chairman of the Board of Directors and the Chief Executive Officer.

3.5.2. Members list, tasks and area of responsibility for each committee of the Board of Directors

With the exception of the Nomination and Compensation Committee, whose members are elected individually by the Annual General Meeting, the Committees are constituted by the Board of Directors which appoints their members and chairpersons. The Board Committees meet as often as is necessary. The Board of Directors delegates to its committees supervisory and preparatory tasks within their sphere of competence, subject to the provisions of the articles of association. The Committees report on a regular basis to the Board of Directors. Committee reports are used as a decision-making tool by the Board of Directors.

Audit Committee

The Audit Committee is composed of at least three non-executive members of the Board of Directors. At least one of the Committee members must have proven accounting experience. All members have knowledge or practical experience in the field of financial management.

The Audit Committee meets at least three times a year. The Audit Committee may at any time request detailed risk analyses of the Group's various sectors of activity or in any specific area of its choice.

The Committee calls on experts outside the Board of Directors where this is deemed necessary for the successful completion of its tasks.

The Audit Committee supervises the company's internal financial reporting process and ensures its integrity, transparency and quality. It ensures the relevance and consistency of the company's accounting methods. It reviews reports of the company's internal audit department and makes appropriate recommendations to the Board of Directors.

It assesses the quality of work of external auditors. The Audit Committee reviews the auditing fees, ensures execution of the yearly audit plan and assesses the efficiency of the auditors in identifying and solving issues related to the Group or to the financial statements. The Audit Committee provides appropriate recommendations to the Board of Directors concerning renewal of the engagement of external auditors or, where necessary, their replacement. The Committee ensures that the recommendations of external auditors are monitored and ensures their independence.

The Committee provides regular reports offering its recommendations to the Board of Directors with regards to the adequacy, effectiveness and accuracy of accounting procedures.

Strategy Committee

The Strategy Committee is composed of at least four members of the Board of Directors, including the Chairman and Vice Chairman. It meets at least twice a year.

The purpose of the Strategy Committee is to review and define Group strategy. It develops strategic options with a view to ensuring the long-term enhancement of the Group's competitive position and its shareholder value. To this end, the Strategy Committee examines market trends and the Group's competitive position, considers and proposes future growth initiatives, especially through investments, divestments and reorganization.

President (black) / Member (grey)	AUDIT COMMITTEE	STRATEGY COMMITTEE	NOMINATION AND COMPENSATION COMMITTEE
André Kudelski		Member	
Claude Smadja	President	Member	Member
Laurent Dassault		Member	
Patrick Fœtisch			President
Marguerite Kudelski	Member		
Pierre Lescure		President	Member
Alec Ross	Member	Member	Member

To define strategic choices, the Strategy Committee relies upon information supplied by the management, the members of the Board of Directors and, if deemed necessary, by external advisors.

The Strategy Committee periodically reviews the appropriateness of the Group's objectives, structure and organization designed to achieve the strategic objectives. The Strategy Committee makes proposals to the Board of Directors, which has ultimate decision-making power on strategy. It reviews also research and development projects and evaluates the competitiveness, value and coherence of such projects in relation to the strategic objectives

Nomination and Compensation Committee

The Nomination and Compensation Committee is composed of at least three non-executive members of the Board of Directors, who are elected individually at the Annual General Meeting upon recommendation of the Board of Directors. It meets at least twice a year.

The Nomination and Compensation Committee assists the Board of Directors in setting up and periodically reviewing the company's compensation policy and strategy, its guidelines and its performance criteria. The Committee is responsible for setting the compensation for each member of the Board of Directors and the Executive Board. The exception to this principle is the compensation of the members of the Nomination and Compensation Committee, which is fixed by the Board of Directors itself.

The Nomination and Compensation Committee also assists the Board of Directors in making proposals at the Annual General Meeting regarding the compensation of the members of the Board of Directors and of the Executive Board (refer to section 5: Compensation, shareholdings and loans). The Committee presents proposed director nominations to the Board of Directors, which submits them to the Annual General Meeting. At the request of the Chief Executive Officer, the Committee reviews applicants for Executive Board positions or promotions and may interview candidates if desired.

3.5.3. Working methods of the Board of Directors and its Committees

The cooperation and allocation of competencies between the Board of Directors and its Committees are described in section 3.5.2.

The Board of Directors meets at least four times a year, but as often as is required for the proper conduct of business. In 2019, the Board of Directors and its Committees met as follows:

Board of Directors	9 times
Strategy Committee	5 times
Audit Committee	3 times
Nomination and Compensation Committee	3 times

The participation of members of the Executive Board to the discussion and decisions of the Board of Directors are described in section 3.7 below. Average attendance at Board meetings exceeded 97%. Meetings of the Board of Directors lasted on average four hours. Most Committee meetings lasted on average three hours. The auditor in charge of the internal audit attended parts that were relevant for him of two of the Audit Committeee meetings.

3.6. Definition of areas of responsibility

Please see also section 3.5.1 for details of the internal organization of the Board of Directors and the position of Chief Executive Officer.

Board of Directors

The Board of Directors:

- is responsible for the overall management of the company and issues all necessary directives;
- determines the organization of the company;
- determines the organization of the accounting, financial control and financial planning systems as required for management of the company;
- appoints and dismisses persons entrusted with managing and representing the company;
- exercises overall supervision of the persons entrusted

with managing the company, in particular with respect to compliance with the law, articles of association, regulations and directions given;
- prepares the Compensation report;
- compiles the annual report, prepares the Annual General Meeting and implements its resolutions;
- takes decisions on further capital calls with respect to shares that are not fully paid up (Article 634a of the Code of Obligations);
- takes decisions regarding the assessment of an increase in capital and relevant changes to the articles of association (Articles 651 para. 4, 651a, 652a, 652g, 652h, 653g, 653h of the Code of Obligations); and
- notifies the court in the event that the company is overindebted.

Executive Board
The Board of Directors has delegated full management of the company to the Chief Executive Officer, subject to legal requirements and the above-mentioned internal organizational structure. The Chief Executive Officer therefore coordinates the operations of the Group companies.

3.7. Information and control instruments vis-à-vis the Executive Board
Because of the nature of the industry, mechanisms for controlling Group management and information feedback systems are very important. The Kudelski Group has therefore put in place information and control instruments, at different levels, which it improves on a continuous basis. These instruments concern strategy, operations, finance, legal, intellectual property, human resources and information management.

Supervision
- The Chief Executive Officer submits a report to the Board members prior to each meeting outlining key aspects of the current business situation (key contracts, sales trends, market trends, human resources) for each Group entity and activity.

- Board members receive weekly or quarterly press digests concerning the Group, depending on the amount of relevant newsflow; they may also receive other informative documents concerning the Group and its entities, as well as a message from the Chief Executive Officer whenever the CEO deems it necessary.

- At least twice a year, members of the Executive Board are invited to present their activities to the members of the Board of Directors. Members of the Board of Directors may also ask questions directly to company executives as and when they see fit.

- At each Board meeting, if justified by the business situation and depending on the agenda, members of the Executive Board, top managers of the companies of the Group or in charge of specific areas, as well as outside experts, are invited to present specific subjects to the Board of Directors.

Operations and strategy
- Executive Board members coordinate their action and take decisions related to the management of the Group during "Executive Board Committee" meetings, the frequency and duration of which are tailored to the needs of the Group. This committee generally met once every two weeks for an average of three hours in 2019.

- Management of the three divisions Digital TV, Cybersecurity and IoT is supported by an "Executive Board Group Operations" committee composed of the Chief Executive Officer (CEO), the Chief Financial Officer (CFO), the Chief Marketing Officer (CMO), the Chief Operating Officer (COO), as well as senior members of each division. This committee meets in principle twice a month for 2.5 hours and reviews in particular selected relevant topics for each division. In addition, the members of the Executive Board and the General Counsel, Head of Legal Affairs and Corporate Secretary, the Senior Vice President, Head of Human Resources, the Senior Vice President-Business Development & Innovation and the Senior Vice President Executive Affairs meet once a month for at least thirty minutes as part of the "Executive Board Group Functions" committee to discuss relevant topics relating to these functions and not directly related to operations. Finally, the synchronization between the Executive Board and the "Executive Board Group Operations" and the "Executive Board Group Functions" committees is achieved within the "Executive Board Group Management" committee which meets every month for at least one hour.

- Management of the Public Access division is supported by the Supervisory Board which includes one or more members of the Board of Kudelski SA, the Chairman and CEO of the Kudelski Group, the CFO of the Kudelski Group and a non-executive member (currently, Mr. Charles Egli, a former Executive Board member) who is Chairman of the Supervisory Board. The Supervisory Board supervises the whole division. The Supervisory Board meets at least four times a year for an average of

3.5 hours and reviews the specific and pertinent topics for the Public Access division. Senior Managers of the Public Access division establish regular reports for the Supervisory Board and, depending on the topics, are invited to take part in Board meetings.

- For certain specialized activities of the Group, ad hoc committees composed of a cross-disciplinary team of internal experts may be created to evaluate market, strategic, operational, legal and financial risks and opportunities. These ad hoc committees manage processes relating to the evaluation of such risks and opportunities, propose actions and monitor implementation of their decisions. There are several committees such as the security committee, privacy committee and innovation committee. Decisions, activities, information and comments arising from these committees are conveyed to the Executive Board members and other top managers of the Group as appropriate.

Finance
- The Controlling group conducts regular financial and operational analyses intended to identify operational and financial risks throughout the value chain of the various activities of Group companies and proposes and coordinates necessary improvements and corrective actions. This entity makes available a platform of analytical services to the Executive Board and operational departments.

- Every month, the Controlling group prepares a number of reports which are made available to the management. Those reports are then adapted and sent to each regional head and business unit with the corresponding analytical metrics. The reports include: a report providing an overview of the Group's profit and loss broken down by activity and showing profit trends and budget over-runs/shortfalls, with adaptations based on quarterly revisions of the annual forecast by entity, as well as their operational indicators; a sales report including region, client and sales type-specific analysis as well as their respective margins; a report on the operational cost trends broken down by cost center, a report on the financial development of key projects and a monthly and quarterly report on the cash-flow situation for the Group and for each segment for the current year and the coming year.

- In addition, the Group has an internal control system based on the COSO (Committee of Sponsoring Organizations of the Treadway Commission) reference system. This system aims at providing "reasonable assurance" as regards the performance and efficiency of operations, the reliability of financial information and reporting, and compliance with laws and regulations in force. A team is in charge of internal controls. The various processes are periodically reviewed and analyzed by the external auditors (PricewaterhouseCoopers SA).

Legal
- The Legal department provides advice and consultation as part of the Group's decision-making processes and as part of the activities of all Group departments in order to better mitigate and manage legal risks as well as to ensure appropriate levels of compliance with the Group's policies.

- The Legal department is involved with the negotiation and approval of contracts entered into by Group companies and maintains contract management and electronic archiving tools to ensure efficient tracking of contracts.

- The Legal department is responsible for overseeing litigation, government investigations and other regulatory matters for Group companies.

- The Legal department includes the intellectual property team that is responsible for protecting, developing and managing the Group intellectual property portfolio. In addition, the Legal department works in close collaboration with the Business Development and Innovation department to monetize the Group's intellectual property portfolio.

Business Development and Innovation
- The Business Development and Innovation department in close collaboration with the intellectual property team of the Legal department, works to monetize the Group's intellectual property portfolio.

- The Business Development and Innovation department identifies and spearheads multiple business development initiatives to expand beyond the Group's current product and services portfolio.

- The Business Development and Innovation department manages a company-wide innovation process and maintains a positive innovation momentum in the organization to further boost motivation and institutionalize the innovation process.

- The Business Development and Innovation department is responsible for mergers and acquisitions (M&A), Joint Ventures (JV), equity investments and divestments as well as key partnerships for the Group's strategy.

Human Resources

- The Human Ressources department is responsible for recruiting the talent necessary for the Group's needs, developing and promoting high performing employees and ensuring successions. In particular, it maintains a catalog of training tailored to the needs of the Group, managers and employees.

- The Human Resources department is in charge of the processes and the implementation of performance evaluation tools related to the objectives of the Group, the different departments and each employee.

- In respect of the Group's values, the Human Resources department advises employees and senior managers from all Group departments on a daily basis in matters relating to human resources.

Information Management

- The Corporate IT department has developed and implemented a series of policies and procedures concerning IT security (for the use of computer systems, data protection, monitoring, systems management back-up, etc.) to set appropriate risk limits and to provide a reliable Information System environment.

- The Corporate IT department regularly reviews the infrastructure of its systems to ensure their evolution in accordance with the new standards and rules that apply to them.

- The information systems infrastructure is monitored 24/7 by the teams of the Cyber Fusion Center of Kudelski Security.

Main identified risks and treatment

The main identified risks are listed below. The various information and control instruments of the Board of Directors with respect to the Executive Board described above in section 3.7 are used and allow monitoring of each risk appropriately and according to its criticality for the Group.The communications of the Chairman and Chief Executive Officer to the Board of Directors ensure regular and appropriate information flow and the activities of the committees of the Board of Directors guarantee appropriate supervision by the members of the Board of Directors of the decisions of the Executive Board.

- The business segments in which the Kudelski Group's Digital TV division operates are evolving rapidly and constantly require the Kudelski Group to offer products and services that are flexible enough to respond quickly to the commercial and technological changes of the digital media industry.

- The Public Access business demonstrates significant seasonality, including for example within its mountain segment, with the highest revenues typically generated in the last two months of the year. Many of the factors that impact the timing of the segment's revenue generation are outside the control of the Group, including factors such as weather conditions, changes to project scope and customer budget decisions. To the extent these factors impact the timing of customer orders and projects, particularly in the last quarter of the year, the results of operations of the Public Access business for the year can be materially impacted.

- The two new divisions (Cybersecurity and Internet of Things) are in an early phase of development and as such both fields of activities bring substantial losses. The Group has identified attractive opportunities in these markets. However, while the Group believes it has unique assets to profitably address these fields of activities, it will take an extended period of time for these activities to reach break even. Given the nature and degree of maturity of these activities, there is no assurance that the relevant strategies will be successful.

- The markets in which the Group operates and the customers to whom the Group sells its products and services are subject to significant regulation by governmental agencies around the world, particularly in the areas of data privacy, consumer protection, media content distribution and cybersecurity. Significant changes to or uncertainty regarding government regulations may affect our business, our product development decisions and the willingness of market participants to adopt our products and services.

- The Group provides its products and services in many countries with different currencies, but payments are made mainly in US dollars and Euros. The Group's suppliers are paid in different currencies. Fluctuations in foreign exchange rates may affect the Group's results of operations and financial position.

- Kudelski Group's results could be impacted if the security provided by its products is compromised and if the Group fails to put in place adequate countermeasures.

- The operating results and growth of the Kudelski Group could decrease if the customer base of the Group's customers does not continue to increase.

- The Group has outstanding short-term financial debt of USD 73.7 million and long-term financial debt of USD 393.0 million, including a CHF 200 million bond maturing in 2022 and a CHF 150 million bond maturing in 2024. The Group may not generate enough cash to repay such debt and may not be able to raise sufficient funds to refinance such debt.

- The Group's success depends on its ability to attract and retain qualified personnel. Competition for hiring and retaining highly qualified personnel is high.

- A leak of confidential, proprietary or personal information held by the Group could adversely affect the Group's activities.

4. Executive Board

4.1. Executive Board members

MAURO SALADINI, ANDRÉ KUDELSKI, NANCY GOLDBERG AND MORTEN SOLBAKKEN
FROM LEFT TO RIGHT

	DATE OF BIRTH	NATIONALITY	POSITION	EDUCATION
ANDRÉ KUDELSKI	1960	Swiss	**CHAIRMAN AND CHIEF EXECUTIVE OFFICER (CEO) OF THE GROUP**	**Degree in Physical Engineering** Ecole polytechnique fédérale de Lausanne (EPFL)
MAURO SALADINI Executive Vice President of the Group	1966	Swiss	**CHIEF FINANCIAL OFFICER (CFO)**	**Degree in Electrical Engineering** Ecole polytechnique fédérale de Zurich **MBA,** INSEAD, France
MORTEN SOLBAKKEN Executive Vice President of the Group	1970	Norwegian	**CHIEF OPERATING OFFICER (COO), DIGITAL TV**	**Master of Science** Norwegian University of Science and Technology (NTNU)
NANCY GOLDBERG Executive Vice President of the Group	1964	American	**CHIEF MARKETING AND SALES OFFICER**	**High School Diploma** Glendora, CA, USA

Pierre Roy has retired from Executive Board since August 1st, 2019. Information relating to Pierre Roy is available on pages 86 and 87 of the 2018 Annual Report https://www.nagra.com/sites/default/files/2018_Kudelski_Group_Annual_Report.pdf

ANDRÉ KUDELSKI

Please refer to section 3.1 above

MAURO SALADINI

Mauro Saladini started his professional career in 1990 as a financial services consultant with Accenture. In 1995, he joined Thema Consulting, where he set up the Zurich subsidiary and took responsibility for cash-flow and risk management activities. In 1997, he joined McKinsey & Co, where he became a partner in 2001. He worked in particular on corporate finance and strategy projects relating to various industries, mainly media and telecommunications. In addition, Mauro Saladini was in charge of the Swiss Media Practice and joint-head of the European Media Practice. He has been the Chief Financial Officer and Executive Vice President of the Kudelski Group since 1 February 2003.

Current mandates in the Kudelski Group:

- Nagravision AS, in Norway, Board member
- i Wedia, in Switzerland, Chairman
- Kudelski Corporate, Inc., in USA, Board member
- Kudelski Norway AS, Board of Directors, Chairman
- Kudelski Security Inc., in USA, Board member
- Kudelski Security Holdings Inc., in USA, Board member
- Nagra Media Beijing Ltd., in China, Supervisor
- Nagra Media Germany GmbH, in Germany, Managing Director
- Nagra Media UK Limited, in United Kingdom, Director
- Nagra USA, LLC., in USA, Executive Vice-President
- OpenTV, Inc., in USA, Board member
- SKIDATA AG, in Austria, Vice Chairman of the Supervisory Board
- Nagravision SA, in Switzerland, Executive Board member (until 18th of January 2017)
- Nagra IP, Inc., in USA, Board member (until 28th of March 2019)
- Kudelski Corporate Holding, Inc., in USA, Board member (until 19th of February 2019)

MORTEN SOLBAKKEN

Morten Solbakken started his professional career in 1995 as a satellite system engineer in Telenor International. From there on, he held numerous positions in the Telenor structure dealing in particular with strategy and business development around the pay TV assets as well as the management of Telenor's ownership in international satellite organizations. From 2007 to 2011, he was Chief Strategy Officer in Telenor Broadcast Holding AS (owner of Canal Digital, Telenor Satellite, Norkring and Conax). In March 2011, Solbakken was appointed COO at Telenor Broadcast Holding, and Chairman of the Boards of Conax, Telenor Satellite and Norkring. Morten Solbakken joined Conax as acting CEO in September 2011 and was made CEO from December 2011 – driving a transformation of the company including the process which led to the acquisition of Conax by the Kudelski Group in April 2014. He became COO, Digital TV and Executive Vice President of the Kudelski Group on the 1st of January 2018.

Current mandates in the Kudelski Group:

- Digital Video Holding AS, in Norway, Chairman of the Board
- Digital Video Drift AS, in Norway, Chairman of the Board
- Digital Video Health AS, in Norway, Chairman of the Board
- iWedia S.A., in Switzerland, Chairman of the Board
- Kudelski Corporate, Inc., in USA, member of the Board of Directors
- Kudelski Norway AS, in Norway, executive Board Member and Managing Director
- Nagravision AS, in Norway, Board member and CEO (formerly named Conax AS)
- Nagravision SA, In Switzerland, Executive member
- Nagravision Italia Srl, in Italia, Chairman of the Board
- NexGuard Labs B.V., in Netherlands, Director
- NexGuard Labs Netherlands B.V., in Netherlands, Director
- Nagra USA, LLC., in USA, Executive Vice-President
- Techno Venture AS, in Norway, Chairman of the Board and Managing Director
- Conax Access Systems Pvt Ltd, in India, Chairman of the Board (until December 31st, 2017)
- NexGuard Labs France S.A.S., in France, Director (until December 13th, 2018)
- Open TV, Inc., in USA, member of the Board of Directors (until July 31th, 2019)
- SmarDTV SA, in Switzerland, member of the Board of Directors

Other mandates:

- Telenor Satellite AS, in Norway, Member of the Board of Directors

NANCY GOLDBERG

Nancy Goldberg started her professional career in 1982 as an independent athlete (Rock Climber and Snowboarder) and pursued this competitive life until 1992. Nancy Goldberg then started a new and challenging career path in the media & entertainment industry ("M&E industry"). For 6 years she worked in different companies, starting as a line producer and an investment analyst. In 1999, Nancy Goldberg joined Technicolor Inc. as a financial analyst for the Home Entertainment division. During her 5-year tenure, she became VP Operational Finance, Creative Services and negotiated strategic acquisitions and partnerships in the US and Europe for the post-production market within the M&E industry. From 2004 to 2008, Nancy Goldberg was with Ascent Media Group LLC where, in her final role as VP, Corporate Development, she had global responsibilities that included integrated digital service offerings, negotiating strategic partnerships and developing market opportunities with the major film studios, production companies and sports franchises. After 18 months as a VP Strategic Business Development for RealNetworks, Inc., Nancy Goldberg worked for Technicolor, Inc. from 2010 to 2015 as SVP Global Strategic Accounts where she was responsible for all sales and marketing activities for her major studio customers and developed business models enabling new technologies and services for content protection, distribution and consumption activities. In 2015, Nancy Goldberg joined Deluxe Entertainment Service Group Inc. as SVP Head of Global Strategic Accounts where she served as primary account manager for Warner Bros and 21st Century Fox, as well as OTT providers such as Netflix, Amazon, Apple and Google. Additionally, Nancy Goldberg had oversight for the transition of a portion of Warner Bros technical in-house operations to Deluxe. In 2017, Nancy Goldberg decided to become a Strategic Business Consultant for various companies developing key business and partnership opportunities, helping to identify the intrinsic value of technologies, products and services for their customers. In December 2018, Nancy Goldberg joined Amazon Web Services as a consultant within their Professional Services Group, acting as a M&E industry expert and working with the major studios and OTT organizations such as Warner Bros, Disney and Hulu. In June 2019, Nancy Goldberg joined the Kudelski Group as Chief Marketing Officer (CMO), in charge of the sales and marketing of the Kudelski Group's Digital TV division and as Executive Vice President and member of the Executive Board of Kudelski SA.

Current mandates in the Kudelski Group:

- Kudelski Security, Inc, in USA, Board member
- Kudelski Security Holdings, Inc., in USA, Board member
- Kudelski Corporate, Inc., in USA, Board member
- Nagravision India Private Limited, in India, Board member
- Nagra USA LLC., in USA, Executive Vice-President
- NexGuard Labs USA, Inc., in USA, Board member
- OpenTV, Inc., in USA, Board member
- Nagravision Asia Pte. Ltd. in Singapore, Board member

4.2. Other activities and vested interests

Please refer to the individual profiles of members of the Executive Board under section 4.1 above.

4.3. Articles of association on the number of permitted activities

In accordance with section 25 of the articles of association, members of the Executive Board may exercise no more than two mandates in senior management or administrative bodies of third-party legal entities whose shares are listed on a stock exchange and no more than five mandates in other third-party legal entities. They may also exercise up to ten mandates in senior management or administrative bodies of non-profit or charitable third-party legal entities.

A company is not considered a third-party legal entity according to this provision, and is therefore not taken into account when calculating the maximum number of mandates mentioned above, if:

1. it controls the company directly, indirectly or jointly with third parties, or is controlled by it; or
2. it does not have to be listed in the Commercial Register or in a corresponding foreign register (e.g., corporations and public entities, non-profit associations, religious foundations or family foundations); or
3. the mandate is carried out at the company's request.

Mandates carried out for legal entities directly or indirectly controlled by a single individual or legal entity, or by a single group of individuals or legal entities acting in concert, or at the request of one of these individuals or legal entities, are deemed to constitute a single mandate for the purposes of this provision.

For members of the Executive Board who are also members of the Board of Directors, the maximum number of mandates in the senior management or administrative bodies of third-party legal entities is governed exclusively by Article 18, paragraphs 7 to 10 and as mentioned above in section 3.3 of this report.

4.4. Management contracts

As of December 31st, 2019, Kudelski SA and its subsidiaries had not entered into any management contract with companies outside the Group.

5. Compensation, shareholdings and loans

For details relating to the compensation, shareholdings and loans to members of the Board of Directors and Executive Board of Kudelski SA, please refer to the 2019 compensation report.

6. Shareholders' participation rights

The provisions of the articles of association governing the participation rights of shareholders are in compliance with the law as set out in the Swiss Code of Obligations. The articles of association of Kudelski SA may be found on the Kudelski Group website via the following link: https://www.nagra.com/investors/publications

6.1.Voting rights restrictions and representation

6.1.1. In accordance with the articles of association of Kudelski SA, there are no restrictions on voting rights and no statutory Group clauses or rules on granting exceptions.

6.1.2. There are currently no statutory provisions on granting instructions to an independent representative or on any form of participation in the General Meeting by electronic means.

6.2. Quorum required by the articles of association

The articles of association of Kudelski SA do not impose any majority higher than contemplated by law for resolutions of the General Meeting of Shareholders.

The General Meeting is validly constituted regardless of the number of shareholders present and/or the number of shares represented.

6.3. Convocation of the General Meeting of Shareholders

The General Meeting of Shareholders must be called at least 20 days before the date of the meeting. The notice of the General Meeting is published in the Swiss Official Gazette of Commerce.

6.4. Inclusion of items on the agenda

Items on the agenda are mentioned in the notice. Regarding rules for adding items to the agenda, the articles of association of Kudelski SA do not contain provisions that differ from the Swiss Code of Obligations, namely Art. 699 CO, which provides that "shareholders who represent shares totaling a nominal value of CHF 1 million* may request that an item be included in the agenda. The calling and the inclusion of an item on the agenda must be requested in writing listing the items and motions.

* This represents 0.23% of the capital of Kudelski SA or 0.13% of the voting rights.

6.5. Entries in the share register

Kudelski SA shares that can be traded on the SIX Swiss Exchange are bearer shares; consequently there is no register of shareholders for this category of shares.

7. Changes of control and defense measures

7.1. Duty to make an offer

Kudelski SA has no provision in its articles of association on "opting-out" within the meaning of Article 125 para. 3 or 4 of the Federal Act on Financial Market Infrastructure (FMIA) or "opting-up" within the meaning of Article 135 para. 1 LIMF. This means that if a shareholder reaches the limit laid down by the Swiss Financial Market Infrastructure Act (art. 135 LIMF: $33^{1/3}$% of the voting rights), he will be required by the same law to submit a takeover bid on all bearer shares of the company that it does not yet hold, at the minimum price defined in Article 135 para. 2 LIMF.

7.2. Clauses on changes of control

To the knowledge of the Group, no such agreement exists.

8. Auditors

8.1. Duration of the mandate and term of office of the lead auditor

The auditors of Kudelski SA are PricewaterhouseCoopers SA (Lausanne). Some companies affiliated with the Group are audited by other auditors. The auditors were reappointed by the Annual General Meeting of Shareholders of Kudelski SA of 9th April 2019 for a statutory period of one year. The PricewaterhouseCoopers SA mandate began in 1985. It has been under the responsibility of Mr. Luc Schulthess since 1 January 2017. The auditor in charge is replaced at the latest seven years after the year in which he/she first occupied this position, as specified in Article 730a paragraph 2 of the Swiss Code of Obligations.

8.2. Auditing fees

The Kudelski Group paid PricewaterhouseCoopers the sum of CHF 967 416 for auditing services for the year 2019. Auditing services are understood to mean the work required each year to examine the consolidated accounts of the Group and its subsidiaries and to prepare the reports required under the laws of each country.

8.3. Additional fees

The Kudelski Group paid PricewaterhouseCoopers for additional services for the year 2019 the sum of CHF 654 000 representing CHF 575 000 for tax advisory services and CHF 79 000 for other additional services. Additional services mean in particular services such as the occasional accounting review of transactions and other services such as review of new or modified accounting methods.

8.4. Information instruments pertaining to the external audit

The aim of the Audit Committee of the Board of Directors is to provide effective and regular supervision of the company's financial reporting processes in order to ensure their integrity, transparency and quality. To this end, it is responsible for monitoring the work, including additional services, of the external auditors.

PricewaterhouseCoopers provides the Audit Committee with a detailed report before each Committee meeting regarding the execution and results of its work for the Kudelski Group, proposals to correct or improve identified problems and the implementation status of decisions made by the Audit Committee.

The auditor's representatives, including the auditor in charge of the Group's audit, are regularly invited to take part in meetings of the Audit Committee as external participants.

Representatives from PricewaterhouseCoopers were invited this year to all three meetings of the Audit Committee. They do not participate in any discussions and decisions of the Audit Committee regarding the auditors. For more information on the Audit Committee, and particularly on the selection, evaluation and independence criteria please refer to sections 3.5.2 and 3.5.3 above.

9. Information policy

The Kudelski Group keeps investors regularly informed of the following developments:

- progress of business and major new contracts;
- changes in the management of the Group;
- acquisitions or sales of companies; and
- half-year and annual financial results.

Press releases are issued in compliance with the rules in force of the SIX Swiss Exchange concerning factual publicity and are available on the Group's website simultaneously with their publication. A link on the home page of the Group's web site allows direct access to press releases. The Group communicates as often as necessary in this manner. Press releases are generally published in French and in English. In certain specific cases, a German version is also provided. They are available in these languages on the website.

Persons wishing to receive Kudelski Group press releases may subscribe to a mailing list using a form available on the Kudelski Group website https://www.nagra.com/media/subscription.

Financial results are presented to investors and financial analysts during a press conference held twice a year. Persons invited can also follow the conference by audio webcast.

The Group's website is a regularly updated source of information. The Investor Relations section contains a list of the principal dates of the corporate calendar (publication of results, Annual General Meeting and presence at major trade shows) as well as the Group's main publications (annual report and half-year report). Mr. Santino Rumasuglia is in charge of investor relations (+1 480 430 9952, +41 79 373 66 71, santino.rumasuglia@nagra.com).

The Group's main website links and e-mail addresses are on the last page of this report.

Important dates

- 15 April 2020: Annual General Meeting, Cheseaux-sur-Lausanne
- 20 August 2020: Publication of the Interim Financial Report and Press Conference

COMPENSATION REPORT

1. Introduction

This report discloses certain information required by the SIX Swiss Exchange Directive on Information relating to Corporate Governance and the Ordinance against Excessive Compensation at Listed Joint-Stock Companies (OaEC). Sections 7 and 8 of this Compensation Report are audited. Unless otherwise mentioned, the information provided in this report reflects the situation as of 31 December 2019.

This Compensation Report refers to the articles of association of the Company, which are available at the following address: https://www.nagra.com/investors/publications

2. Compensation approval by General Meeting

In compliance with section 28 of the articles of association, upon the proposal of the Board of Directors, each year the Annual General Meeting shall separately approve the maximum aggregate amount of compensation awarded to the Board of Directors and the Executive Board. The Board of Directors shall submit a separate proposal to the vote of the Annual General Meeting regarding:

- the maximum aggregate amount granted to the Board of Directors for the compensation of its members for the period up to the following Annual General Meeting; and
- the maximum aggregate amount granted to the Executive Board for the fixed and variable compensation of its members for the following periods, respectively: as regards fixed compensation, the period from the beginning of July of the current fiscal year through the end of June of the following fiscal year; as regards variable compensation, the current fiscal year.

The Board of Directors may submit proposals to the Annual General Meeting regarding compensation for different periods affecting all members of the Board of Directors or the Executive Board or only certain members.

Votes at the Annual General Meeting on compensation related proposals are binding. If one or more of the aforementioned amounts are rejected at the Annual General Meeting, the Board of Directors shall make an alternative proposal for approval at the same Annual General Meeting or a subsequent General Meeting. Compensation payments for activities by members of the Board of Directors and the Executive Board in other legal entities directly or indirectly controlled by the Company are authorized. Compensation paid by these legal entities is included as part of the compensation submitted for approval at the Annual General Meeting.

The Company, or any other legal entity directly or indirectly controlled by it, may pay compensation prior to its approval at the Annual General Meeting, subject to subsequent approval and an obligation to repay such compensation in the event it is not approved at the General Meeting.

In compliance with section 29 of the articles of association, if the maximum global compensation of the Executive Board already approved at the General Meeting is insufficient to cover compensation of members appointed after this approval, the Company or legal entities controlled by it, may grant an additional amount for the compensation period already approved to remunerate and/or compensate for benefits the new member gave up or lost due to his/her change in employment. The additional amount shall not exceed 150% of the position replaced or the highest fixed compensation of the other members of the Executive Board on a pro rata temporis basis up until the end of the period for which the compensation was already approved.

3. Principles of compensation

The Compensation and Nomination Committee has adopted a compensation policy aligning the interests of Executive Board members with the Group's mid- and long-term strategy and shareholders' interests. Pursuant to this policy, compensation is based on the following principles:

- coherence of compensation levels with the tasks, workload and responsibilities assumed;
- appropriate match between compensation levels and current business, trends and evolution of the market and competitive environment of the Group as well as the mid- and long-term strategy of the Group;
- global assessment (not individually-based) of compensation to encourage a long-term vision of the Group's interests; and
- for Executive Board members, pay for performance to support both short-term and long-term Group objectives.

The Compensation and Nomination Committee (see section 3.5.2 of the Corporate Governance report) strives to maintain a competitive remuneration policy that ensures global compensation of the Executive Board members is comparable with those of their peers at multinational companies operating in the fields of digital television, cybersecurity and the Internet in Switzerland, in high technology centers, such as the West Coast of the United States, and in Western Europe. In addition, the Compensation and Nomination Committee aims to limit dilution of the capital of the Company by using equity as part of compensation only for a limited number of senior members of management, including the Executive Board (see section 4.2 below).

The Compensation and Nomination Committee does not use benchmarks or compensation consultancy services. It makes its own assessment of the compensation practices of the following types of companies:

– high technology companies listed on the Nasdaq or NYSE;

– high technology companies listed on the Euronext;

– high technology companies listed on the SIX Swiss Exchange and belonging to the Swiss Performance Index (SPI), Technology sector; and

– privately held high technology companies.

Specifically, the Committee assesses those companies from which prospective employee candidates may be employed or to which the Group may have lost prospective candidates, as well as competitors that are of a similar size and face comparable operational complexity as the Group. Such assessments also take into account the business environment in which the Group operates and the rapid pace of evolution required for success.

Due to the unique characteristics of the Group, including the breadth and variety of its products and services, the rapid evolution of its technologies and markets and the fast-moving competitive environment in which the Group operates, the Compensation and Nomination Committee considers that it is difficult to make direct comparisons with other companies and believes that the aforementioned elements are sufficient for purposes of its compensation policy.

The level of remuneration of the non-executive members of the Board of Directors is determined by their role with the Board of Directors and its Committees. The elements of their compensation are set out in section 4.1.

The total annual compensation of members of the Executive Board includes a fixed and a variable component. The variable component depends on the Group's results (both economic and strategic), the level of responsibility assumed and individual performance, which factors can in the aggregate have a positive or negative impact on the variable compensation of each Executive Board member. Variable compensation helps align the interests of Executive Board members with company strategy and shareholders' interests and ultimately seeks to reward value creation. The variable component is not expressed as a percentage of fixed compensation (see also section 4.2).

Currently, there are no provisions providing for a particular allowance or benefit – including with regard to blocking or vesting periods applicable to shares – in the event of a termination of the employment contract of an Executive Board member, in the event of a departure of a member of the Board of Directors or in the case of a change of control of the company. Executive Board members have employment contracts with an unlimited term and with a maximum of eleven month's termination notice expiring on the last day of a calendar month, both of which help promote stability within the management of the Group.

4. Elements of compensation

Section 7 sets forth the compensation paid to the members of the Board of Directors and Executive Board in accordance with OaEC requirements.

The elements of compensation for non-executive members of the Board of Directors are different than for executive members of the Board of Directors and the Executive Board members.

4.1. Members of the Board of Directors

In compliance with section 30 of the articles of association, the compensation of non-executive members of the Board of Directors is composed of a fixed annual fee, paid in cash, and an expense allowance.

Specific tasks or services performed for the Group by a non-executive member of the Board of Directors that fall outside of such member's Board responsibilities are generally compensated in cash and based on arm's length terms and conditions.

4.2. Members of the Executive Board

In compliance with section 30 paragraphs 4, 31 and 32 of the articles of association (https://www.nagra.com/sites/default/files/Statuts_KSA_%2026_02_2020.pdf), the total annual compensation of the executive members of the Board of Directors and of the Executive Board members includes a fixed salary and a variable component.

Compensation is generally paid in a combination of cash, shares and payment in kind (including provision of a company car and reimbursement of all or part of health insurance premiums). The fixed salary is in principle paid in cash. The Compensation and Nomination Committee has discretionary authority to determine how the variable component is paid, taking into account such criteria as the dilutive effect of any share issuances.

A maximum of 50% of the variable compensation may be paid in Kudelski SA bearer shares that are blocked for a period of three or seven years at the election of the Executive Board member. Each Executive Board member may also elect to participate in the Group's share purchase plan adopted in 2004 (see section 2.7 of the Corporate Governance Report: Share purchase plan).

The total compensation of each Executive Board member is linked to his/her individual performance as well as the strategic, economic and operational performance of the Group. Key factors impacting variable compensation levels include the overall performance of the Group and its divisions, performance against the applicable member's department budget, contribution to strategic initiatives, achievement of individual objectives and the quality of management by such Executive Board member. Objectives of the Group are discussed and approved on a yearly basis by the Board of Directors, Strategy Committee, Compensation and Nomination Committee and Chief Executive Officer. Once approved, Group objectives are shared with the Executive Board members who, in addition to their individual performance objectives, shall have responsibility for achieving such objectives as determined by the Chief Executive Officer in agreement with the Compensation and Nomination Committee.

The Compensation and Nomination Committee assesses the achievement of Group objectives and of each Executive Board member's individual performance objectives. The Committee has discretionary authority to determine the relative weighting of the Group objectives and individual performance objectives as part of its assessment for determining the total compensation of each Executive Board member. In addition, the Compensation and Nomination Committee has the discretion to apply a positive or negative performance factor to each individual performance objective, which recognizes achievement or failure of individual performance objectives. This practice is designed to encourage each member of the Executive Board to optimize his/her performance against objectives.

5. Procedure for determining compensation

The Compensation and Nomination Committee determines the compensation policy and sets the compensation of each member of the Executive Board and the Board of Directors, other than the compensation of the Committee members which is decided by the full Board of Directors (see section 3.5.2 of the Corporate Governance Report, Compensation and Nomination Committee section). The Compensation and Nomination Committee reports every year on its activities to the Board of Directors.

The Chairman of the Board of Directors is invited to take part in the Committee's discussions related to compensation, other than discussions relating to the Chairman's own compensation.

Each year, the Compensation and Nomination Committee reassesses its compensation policy and determines the annual compensation of the Board of Directors and Executive Board members. Generally, this occurs during the first quarter of the year. During the same period, the Chief Executive Officer reviews the performance objectives of the Executive Board and presents his recommendations to the Board of Directors. The full Board of Directors will also determine the compensation of the members of the Compensation and Nomination Committee.

6. Special information regarding 2019

6.1. Changes to the compensation policy during the year under review

No major change was made to the Group's compensation policy for the 2019 financial year. Shares granted to Executive Board members as part of their variable compensation were blocked for periods of three or seven years (see section 7).

6.2. Special information regarding 2019

The compensation of each Executive Board member is determined globally, and the variable compensation of the Executive Board members is not based on the fixed salary as specified in section 3. The variable compensation of each Executive Board member represented between 35.0% and 50.0% of his total compensation, except for the Chief Executive Officer (see section 7). There is no pre-determined ratio between the variable component and the fixed salary; such ratio may be different from year to year. The different ratios of fixed to variable compensation among Executive Board members are based on their function and responsibilities within the Group and market practices.

Mr. Pierre Roy retired from the Executive Board effective as of the 1st of August 2019. To ensure the smooth transition of job responsibilities to his successor, Ms. Nancy Goldberg, Mr. Roy remained as an employee working at 20% from the 1st of August 2019 to the 31st of January 2020. The elements of his compensation for 2019 were the same as those described in section 4.2 of this Compensation Report, except 1) his variable compensation was primarily based on his activities through 31st of July and will be paid entirely in cash and 2) his fixed salary was pro-rated at 20% for the transitional period . The compensation paid to Mr. Roy related to this transitional period is described specifically in section 7 below (Year 2019/ former management member).

7. Compensation granted to members of the Board of Directors and members of the Executive Board

Total compensation paid directly or indirectly by Kudelski SA or one of its affiliated companies in 2019 and 2018 to former and current members of the Board of Directors and Executive Board is described below. Compensation does not include reimbursement for business expenses incurred by members in the course of performing their responsibilities or representation allowances, which are not considered as compensation by the Swiss fiscal authorities.

The value of shares granted is determined according to the market value at the time of grant, as quoted on the SIX Swiss Exchange and adjusted by a discount factor of 6% for each year that such shares are blocked from sale or transfer. Such discount factor is determined in accordance with the principles applied by Swiss fiscal authorities. 74 372 (2018: 58 138 bearer shares were allocated to members of the Executive Board with a seven-year blocking period and 19 277 (2018: 31 673) with a three-year blocking period. Shares granted as part of variable compensation for fiscal years 2019 and 2018 were granted at the beginning of the respective following year.

YEAR 2019	BASE COMPENSATION IN CASH CHF	VARIABLE COMPENSATION IN CASH CHF	VARIABLE COMPENSATION IN KUDELSKI SHARES (NUMBER)	VARIABLE COMPENSATION IN KUDELSKI SHARES CHF	OTHER * CHF	TOTAL 2019 CHF
BOARD OF DIRECTORS						
KUDELSKI ANDRÉ Chairman	550 004	–	–	–	–	**550 004**
SMADJA CLAUDE Vice-chairman	130 000	–	–	–	6 190	**136 190**
DASSAULT LAURENT Member	63 333	–	–	–	2 545	**65 478**
FOETISCH PATRICK Member	60 000	–	–	–	78 509 **	**138 509**
KUDELSKI MARGUERITE Member	50 000	–	–	–	3 353	**53 353**
LESCURE PIERRE Member	120 000	–	–	–	5 644	**125 644**
ZELLER ALEXANDRE *** Member	–	–	–	–	–	–
ROSS ALEC Member	70 000	–	–	–	4 695	**74 695**
TOTAL BOARD MEMBERS	1 043 337	–	–	–	100 395	**1 144 272**

YEAR 2019	BASE COMPENSATION IN CASH CHF	VARIABLE COMPENSATION IN CASH CHF	VARIABLE COMPENSATION IN KUDELSKI SHARES (NUMBER)	VARIABLE COMPENSATION IN KUDELSKI SHARES CHF	OTHER ***** CHF	TOTAL 2019 CHF
MANAGEMENT						
KUDELSKI ANDRÉ CEO	587 795	2 403 637	35 000	133 424	136 931	**3 261 787**
OTHER MEMBERS	1 683 436	980 620	58 649	242 865	149 408	**3 056 329**
TOTAL MANAGEMENT	2 271 231	3 384 257	93 649	376 290	286 339	**6 318 116**

YEAR 2019	BASE COMPENSATION IN CASH CHF	VARIABLE COMPENSATION IN CASH CHF	VARIABLE COMPENSATION IN KUDELSKI SHARES (NUMBER)	VARIABLE COMPENSATION IN KUDELSKI SHARES CHF	OTHER ***** CHF	TOTAL 2019 CHF
FORMER MANAGEMENT MEMBERS ****	52 458	–	–	–	9 990	**62 448**
FORMER MEMBERS	52 458	–	–	–	9 990	**62 448**

* *This section includes social security charges.*
** *Compensation paid for his legal services rendered to several Group companies.*
*** *Mr. Alexandre Zeller was a member of the Board of Directors until the 1st of March 2019, following his decision to join Lombard Odier as a Managing Partner.*
**** *Ms Nancy Goldberg became a member of the Executive Board on the 3rd of June 2019. Mr. Pierre Roy was a member of the Executive Board until the 1st of August 2019.*
***** *This section includes long service benefits and benefits in kind as well as expenditures constituting or increasing pension benefits.*
****** *Mr. Pierre Roy's retirement from the Group and his compensation for 2019 is described in section 6.2 of this Compensation Report. This row details the compensation received by Mr. Roy from the 1st of August 2019 to the 31st of December 2019.*

Two members of the management received their remuneration in USD. One member received part of the 2019 compensation in USD, which was converted using a 0.9937 exchange rate for 2019 and 0.9680 exchange rate for variable compensation paid in 2020. Another member received part of the 2019 compensation in NOK, which was converted using a 11.2997 exchange rate.

YEAR 2018	BASE COMPENSATION IN CASH CHF	VARIABLE COMPENSATION IN CASH CHF	VARIABLE COMPENSATION IN KUDELSKI SHARES (NUMBER)	VARIABLE COMPENSATION IN KUDELSKI SHARES CHF	OTHER * CHF	TOTAL 2018 CHF
BOARD OF DIRECTORS						
KUDELSKI ANDRÉ Chairman	550 000	–	–	–	–	**550 000**
SMADJA CLAUDE Vice-chairman	130 000	–	–	–	6 190	**136 190**
DASSAULT LAURENT Member	40 000	–	–	–	1 805	**41 805**
DEISS JOSEPH Member	12 500	–	–	–	–	**12 500**
FOETISCH PATRICK Member	60 000	–	–	–	115 210 **	**175 210**
KUDELSKI MARGUERITE Member	50 000	–	–	–	3 353	**53 353**
LESCURE PIERRE Member	120 000	–	–	–	5 644	**125 644**
ZELLER ALEXANDRE Member	110 000	–	–	–	7 377	**117 377**
ROSS ALEC Member	50 000	–	–	–	3 353	**53 353**
TOTAL BOARD MEMBERS	1 122 500	–	–	–	142 932	**1 265 432**

YEAR 2018	BASE COMPENSATION IN CASH CHF	VARIABLE COMPENSATION IN CASH CHF	VARIABLE COMPENSATION IN KUDELSKI SHARES (NUMBER)	VARIABLE COMPENSATION IN KUDELSKI SHARES CHF	OTHER **** CHF	TOTAL 2018 CHF
MANAGEMENT						
KUDELSKI ANDRÉ CEO	604 680	2 338 248	35 000	147 903	182 633	**3 273 463**
OTHER MEMBERS	1 742 686	800 079	54 811	266 750	55 218	**2 864 734**
TOTAL MANAGEMENT	2 347 366	3 138 327	89 811	414 653	237 851	**6 138 197**

* *This section includes social security charges.*
** *Compensation paid for his legal services rendered to several Group companies.*
*** *Mr. Joseph Deiss was a member of the Board of Directors until the Annual General Meeting held on the 15th of March 2018.*
**** *This section includes long service benefits and benefits in kind as well as expenditures constituting or increasing pension benefits.*

Two members of the management received their remuneration in USD, one member received part of the 2018 fixed remuneration in USD, which was converted using a 0.9792 exchange rate, and another received part of the 2018 fixed remuneration in NOK, which was converted using a 12.0282 exchange rate.

8. Shareholdings and loans granted to members of the Board of Directors and members of the Executive Board

In compliance with section 33 of the articles of association, loans may be granted to a member of the Board of Directors or the Executive Board only under market conditions and, at the time they are granted, may not exceed the most recent total annual compensation of the member in question. Moreover, in compliance with section 28, paragraph 6, the Company, or any other legal entity directly or indirectly controlled by it, may pay compensation prior to its approval at the Annual General Meeting, subject to subsequent approval and an obligation to repay such compensation in the event it is not approved at the Annual General Meeting.

As of December 31, 2019 and 2018, no guarantees, loans, advances or borrowings in favor of members of the Board of Directors, members of the Executive Board or individuals closely related to such persons were outstanding.

9. Retirement benefits in addition to pension benefits schemes granted to members of the Board of Directors and members of the Executive Board

In compliance with section 34 of the articles of association, the Company, or legal entities controlled by the Company, may grant retirement benefits in addition to pension benefits schemes offered by the Company, or legal entities controlled by it, to members of the Board of Directors or the Executive Board. For a given annual compensation period, the value of such retirement benefits may not exceed the most recent total annual compensation of the member in question.

In addition, the Company or entities controlled by the Company may grant an annuity payment to former members of the Board of Directors or the Executive Board as retirement benefits in addition to pension benefits schemes offered by the Company or legal entities controlled by the Company. For each individual affected, the amount paid in this manner may not, for a one year period, exceed 30% of the last annual base salary of the person in question prior to his/her retirement. In lieu of an annuity, the Company may pay the retirement benefit as a lump sum payment, in which case, the amount is calculated according to actuarial calculation methods.

As of December 31, 2019 and 2018, no retirement benefits in addition to pension benefits schemes were in favor of members of the Board of Directors, members of the Executive Board or in favor of individuals closely related to such persons.

REPORT OF THE STATUTORY AUDITOR ON THE REMUNERATION REPORT 2019

To the general meeting of Kudelski SA, Cheseaux-sur-Lausanne

We have audited the accompanying remuneration report of Kudelski S.A. (chapters 7 and 8) for the year ended 31December 2019.

Board of Directors' responsibility

The Board of Directors is responsible for the preparation and overall fair presentation of the remuneration report inaccordance with Swiss law and the Ordinance against Excessive Compensation in Stock Exchange Listed Companies (Ordinance). The Board of Directors is also responsible for designing the remuneration system and defining individual remuneration packages.

Auditor's responsibility

Our responsibility is to express an opinion on the accompanying remuneration report. We conducted our audit in accordance with Swiss Auditing Standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the remuneration report complies with Swiss law and articles 14–16 of the Ordinance. An audit involves performing procedures to obtain audit evidence on the disclosures made in the remuneration report with regard to compensation, loans and credits in accordance with articles 14–16 of the Ordinance. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatements in the remuneration report, whether due to fraud or error. This audit also includes evaluating the reasonableness of the methods applied to value components of remuneration, as well as assessing the overall presentation of the remuneration report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Opinion

In our opinion, the remuneration report of Kudelski S.A. for the year ended 31 December 2019 complies with Swiss law and articles 14–16 of the Ordinance.

pwc

PricewaterhouseCoopers SA

Luc Schulthess	Mario Berckmoes
Audit expert	Audit expert
Auditor in charge	

Lausanne, 26 February 2020

FINANCIAL OVERVIEW AND STATEMENTS

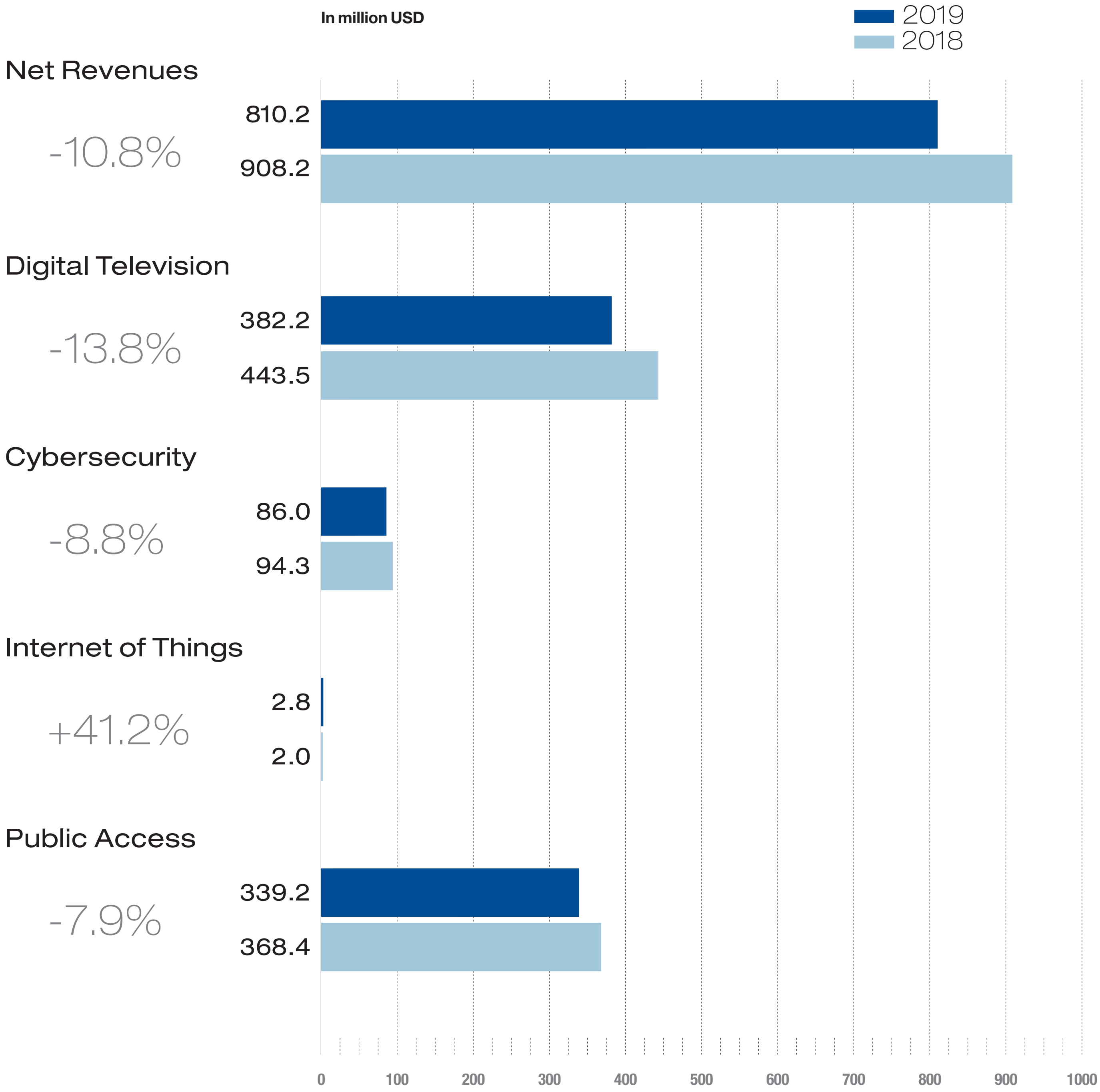
In 2019, total revenues and other operating income decreased from USD 919.7 million to USD 827.3 million. This evolution was mainly driven by the Digital TV segment, which posted a USD 61.3 million decline, reflecting the trend seen in emerging markets.

In the Public Access segment, European sales increased by 8.8% in constant currency, while in the Americas, sales decreased 16.5% compared to the previous year.

Cybersecurity revenues shifted from lower margin technology reselling to higher margin advisory services, managed security services and proprietary technology sales.

IoT generated marginal revenues as the segment's primary focus continues to be the development of a secure IoT platform solution for the market.

GROUP REVENUES
BREAKDOWN BY SEGMENT



Kudelski Group segments

The Digital TV segment provides secure, open, integrated platforms and applications for broadcast, broadband and mobile networks, enabling compelling and personalized viewing experiences. Such platforms allow digital TV operators and content providers to offer a wide range of high value-added video services.

The Cybersecurity segment provides end-to-end cybersecurity solutions to a wide variety of customers across multiple sectors. The portfolio is based on four pillars: advisory services, technology, managed security services and proprietary R&D. The Cybersecurity segment leverages the Group's historical strengths in R&D to fuel a highly differentiated product and service offering across each of the four pillars.

With the IoT segment, Kudelski offers a resilient and easy-to-integrate and operate security solution. The Group's IoT offering includes the Kudelski IoT Security Platform, a pre-integrated, end-to-end solution providing device and data protection, and Kudelski IoT Security Services, such as advanced lab services and managed security services.

In the Public Access segment, SKIDATA, the Group's subsidiary, designs and delivers integrated solutions to provide seamless, user-friendly access for people and vehicles to sites and installations such as car parks, ski-lifts, stadiums, arenas, amusement parks and exhibition halls.

Group results

In 2019, total revenues and other operating income decreased from USD 919.7 million to USD 827.3 million. Net revenues for the Group decreased by 10.8% to USD 810.2 million, an 8.4% decrease in constant currency, mainly driven by the Digital TV segment, which posted a USD 61.3 million decline reflecting the evolution of the emerging markets, and the Public Access segment, which generated USD 29.2 million less revenues than in 2018. Cybersecurity segment net revenues were USD 8.3 million lower compared to the previous year. IoT generated marginal revenues as the segment's primary focus continues to be the development of a secure IoT platform solution for the market.

Other operating income increased by USD 5.6 million to USD 17.1 million, mainly reflecting R&D grants at SKIDATA, the sale of working capital items and the provision of services related to a past M&A transaction, as well as the attainment of an additional earn-out.

Margin after cost of material decreased from USD 648.9 million to USD 572.0 million. Relative to total revenues, margin after cost of material decreased from 70.6% to 69.1%, due to the shift of revenue mix from higher margin Digital TV to lower margin Public Access and Cybersecurity businesses. Relative margins continue to increase in the Cybersecurity segment, reflecting a concerted effort to focus on higher value-added services.

Compared to 2018, the Group reduced personnel expenses by USD 40.5 million. A significant reduction of Digital TV headcount drove this reduction of personnel expenses. Total Group headcount decreased by 224 to 3'520 employees at the end of 2019. Headcount in the relatively high cost locations of Western Europe decreased by 134 units. In Asia, Group headcount decreased by 93 units, as employees previously engaged in SmarDTV-related activities were transferred to the buyer of the SmarDTV assets. Total SKIDATA headcount increased by 8 to 1'527 employees as of the end of 2019.

Compared to 2018, the Group reduced other operating expenses by USD 41.2 million. As of January 1, 2019, the Group adopted IFRS 16, without restating the comparable 2018 numbers. With the adoption of this new standard, USD 16.2 million of operating leases previously recognized as other operating expenses are booked as depreciation in the 2019 income statement. This is the main driver of the USD 16.3 million reduction of building and infrastructure costs. In addition, the Group reduced legal and consultancy costs by USD 4.7 million, reflecting, in particular, a further reduction of legal expenses related to IP licensing activities. Administrative expenses are USD 4.4 million lower than in the previous year, reflecting cost reductions from operational efficiency measures.

The USD 81.7 million net reduction of Group operating expenses in 2019 includes USD 56.8 million of cost savings achieved with the ongoing restructuring program, net of the cost of additional investments in the Group's key growth areas.

The 2019 restructuring program enabled a further substantial reduction of recurring Digital TV expenses. Key measures of this program included the integration of the Security and User Experience R&D organizations into a consolidated unit, the streamlining of the product portfolio with an increased focus on profitable products that address new growth markets, a custom development approach to product areas lacking critical mass, the full integration of Conax and NAGRA operations and a further rationalization of the Group's global presence with the closure of smaller locations and further specialization of existing sites.

The total reduction of Group recurring operating expenses in constant currencies between 2018 and 2019 amounts to USD 56.8 million. The year-on-year development of Group operating expenses benefitted from a favorable currency effect. 2018 operating expenses, at average 2019 currency rates, were USD 15.7 million lower compared to 2018 reported expenses. In 2019, the Group incurred USD 23.4 million of restructuring and run-down costs for the restructuring of its Digital TV activities, compared to USD 40.2 million in 2018. In 2019, the Group also booked USD 17.5 million of one-off costs in the Public Access segment, in conjunction with the rationalization of SKIDATA operations and for the impairment of inventory and receivables. USD 9.8 million of these one-off costs were booked as cost of material and USD 7.7 million were booked as operational expenses.

The Group's operating income before depreciation and amortization net of one-off restructuring costs was USD 81.4 million, a USD 5.5 million increase over the previous year. Reported operating income before depreciation and amortization was USD 40.6 million, representing an improvement of USD 4.8 million from 2018. At USD 55.9 million, depreciation, amortization and impairment were USD 12.8 million higher than in 2018, mainly due to the introduction of IFRS 16. Overall, the Group generated an operating loss of USD 15.3 million, compared to a loss of USD 7.3 million in the prior year.

At USD 10.2 million, interest expense was USD 0.2 million lower than in the prior year. The Group's primary interest-bearing liabilities include the CHF 200 million bond with a 1.875% interest rate maturing in August 2022, the CHF 150 million bond with a 1.5% interest rate maturing in September 2024 and USD 64.6 million of bank debt at SKIDATA. The Group posted USD 1.7 million of net finance expenses. Income tax expense was USD 13.3 million, including, in particular, a one-off effect from the transfer of entrepreneurship from Conax to Nagravision. The Group booked a USD 38.6 million net loss for 2019, compared to a loss of USD 20.0 million in the previous year.

Digital TV

In Digital TV, a significant reduction of the segment's cost base offset the decline in revenues, resulting in a higher EBITDA ex restructuring cost compared to the prior year.

Reported Digital TV revenues decreased by 13.8% to USD 382.2 million, representing a constant currency decline of 12.1%. In 2019, the digital TV market has continued to contract, mainly in emerging markets, as a number of established pay TV operators report lower subscriber numbers. In addition, the Group did not book any material IP licensing revenues in 2019.

The Group's European Digital TV business posted 6.0% lower revenues, largely due to the negative development of the EUR-USD exchange rate. At constant currency rates, European revenues declined by 2.2%. In terms of sales activity, most European markets were resilient in 2019, with the Group benefitting from the extension of partnerships with large customers. Emerging product lines, such as watermarking and the Group's cloud-based security platform, gained traction, as large operators such as Vodafone, Discovery, Altice and Canal selected these Group products.

At USD 143.7 million, the Americas business posted 18.1% lower revenues in 2019. In Latin America, sales to Telefonica were materially lower than in the previous year, as Telefonica stopped most of its new deployments in satellite TV subscriber acquisition activities across South America. A further factor for this revenue decline relates to the IP licensing business, which did not generate any material revenue in 2019. The erosion of satellite subscribers in North America, on the other hand, slowed down in the second half 2019, resulting in a lower revenue decline compared to the previous year.

The Asia Pacific and Africa region posted 20.1% lower revenues in 2019. Sales in India declined compared to the previous year as the pay TV market suffered from overcapacity and increased competitive pressure. Revenues in the Australian market also declined compared to the prior year, due, in particular, to a soft first half.

Digital TV margin after cost of material remains high at 88.5%.

Net of restructuring costs, Digital TV generated USD 114.4 million of operating income before depreciation and amortization, representing a USD 2.5 million improvement from the previous year. This segment's profitability benefits from the reduction of operating expenses driven by improved productivity results from the transformation and the Group's restructuring program. In 2019, the Group reduced Digital TV operating costs by USD 59.3 million net of restructuring costs. Reported Digital TV operating income before depreciation and amortization was USD 91.0 million, compared to USD 71.7 million in 2018, while reported operating income was USD 59.8 million, an increase of USD 15.6 million over the previous year.

Cybersecurity

In 2019, Cybersecurity revenues were lower than in the previous year, while margin after cost of material increased, as the business mix continues to shift from lower margin technology reselling to higher margin advisory services, managed security services and proprietary technology sales.

The Group's managed security service portfolio continues to expand; in 2019, it added native integration of market leading cloud service providers, including Amazon Web Services (AWS), Google Cloud Platform and Azure. The Group's offering has been recognized in Gartner's Market Guide for the third consecutive year and was named one of the top 10 key players in Europe for managed security services. In 2019, the Group's Managed Security Services grew by 34% from the previous year. The Group's Cybersecurity unit also established a set of partnerships with technical and process specialists from around the world in the blockchain domain, boosting the capabilities and offerings of its Blockchain Security Center.

Kudelski's cybersecurity business generated USD 137.1 million of gross revenues in 2019, a 9.2% decrease from 2018. 2019 Cybersecurity net revenues were at USD 86 million. The European region posted strong growth, increasing net revenues to USD 16.5 million, a 30.2% year-on-year improvement. The European region achieved high profiles wins in Germany and France, where it previously had little exposure. The Americas were most affected by the shift of business mix, with net revenues declining by 15.4% to USD 69.0 million.

Margin after cost of material increased to USD 39.5 million. In relative terms, margin after cost of material increased from 41.5% in 2018 to 45.9%.

The Cybersecurity segment generated a USD 22.1 million operating loss before depreciation and amortization, compared to USD 21.3 million in the previous year.

Internet of things (IoT)

In 2019, the Group continued to extend the reach of its IoT security platform, with initial launches salso integrated its IoT security platform and secure element with Deutsche Telekom's nuSIM chipset and cellular module partners and made the IoT Security Platform's Secure Client available on STMicroelectronics' STM32 family of microcontrollers. The Group's IoT unit has secured an initial portfolio of customers that is starting to generate early revenues and is building a funnel of prospects. In 2019, IoT generated revenues of USD 2.8 million, mainly from the IoT Center of Excellence, and an operating loss before depreciation and amortization of USD 21.2 million, reflecting the early development stage of this business.

Public Access

The Public Access segment delivered a weak performance in 2019 with a year-on-year revenue decline and an operating loss. Reported Public Access revenues decreased by 7.9% in 2019. In constant currency, revenues decreased by 4.3%. In the last two years, SKIDATA failed to adjust structures and processes to assimilate the growth of the previous years, suffering from a fragmented organizational structure, lacking coordination between central functions and local entities, and from inefficient processes across the organization.

In the Americas, SKIDATA generated revenues of USD 92.1 million, representing a decrease of 16.5% compared to the previous year. A systematic review of SKIDATA's US entities uncovered several operational issues and a need for operational clean up. An inadequate supply chain setup and poor working capital management led to material inefficiencies in local operations. The integration of subsidiaries acquired in prior years continued to affect local processes. Operational delays pushed the delivery of several projects into 2020. Revenues for Asia/Pacific and Africa declined by 24.0% to USD 56.9 million. The Australian market delivered a weak 2019, following several years of sustained growth. Further drivers of this revenue decline were Russia and Western Asian markets, where we experienced weaker demand for SKIDATA's products.

The Group initiated a turnaround plan for SKIDATA in July 2019. Initial structural measures have already been implemented and a comprehensive restructuring program is defined. Effective July 2019, the Group appointed David Luken as the new CEO of SKIDATA, with the objective of improving both cash flow generation and profitability. In conjunction with his hiring, the Group launched a program to fundamentally transform SKIDATA's operations, drive operational excellence and enhance customer service and support.

At the same time, the Group completed an in-depth review of SKIDATA's operations, defining a blueprint for operating improvements aimed at building an optimized operating model. A first wave of measures was completed with a focus on SKIDATA US, including, in

particular, the merger of formerly independent entities, the introduction of Group ERP and supply chain tools, a clean-up of the project portfolio, and the integration and streamlining of critical functions. To accelerate the implementation of its restructuring plan, the Group also replaced the General Manager of SKIDATA US.
On the positive side, Public Access' European sales increased by 3.8% to USD 190.2 million, representing an 8.8% growth in constant currency. The main markets driving growth were Switzerland and Germany.

Margin after cost of material relative to revenues decreased from 57.7% to 56.6%. Public Access' 2019 cost of material includes a USD 9.8 million one-off charge related to impairments booked in the context of the ongoing restructuring program. In addition, Public Access' 2019 operational expenses include USD 7.7 million of one-off costs related to the rationalization of SKIDATA operations, the consolidation of regional entities and the impairment of receivables and contract assets.

Public Access operating income before depreciation and amortization net of these one-off costs was USD 25.4 million. Reported operating income before depreciation and amortization was USD 8.0 million, representing a USD 13.1 million decline compared to 2018. Public Access reported an operating loss of USD 10.1 million in 2019.

Balance sheet and cash flows

Total non-current assets decreased by USD 0.9 million to USD 695.8 million. Investments in technical equipment and machinery in the Digital TV segment were lower compared to the previous year. As a result, tangible fixed assets decreased by USD 1.4 million. The USD 24.3 million decrease in intangible fixed assets is mainly due the lower investment level and the depreciation of assets capitalized with the acquisition of Conax. Lower intangible assets were mainly driven by a USD 8.9 million year-on-year decrease of customer lists, trademarks and brands, USD 7.4 million decrease of software, and USD 6.1 million decrease of technology.

With the adoption of the IFRS 16 standard, leases are recorded on the balance sheet. As of the end of December 2019, newly recorded right-of-use assets amount to USD 41.5 million. The related liabilities consist of USD 28.5 million of long-term lease obligations and USD 15.5 million of short-term lease obligations. Financial fixed assets at amortized cost decreased by USD 12.9 million, as we cashed in IP licenses accrued during previous periods.

Compared to December 31, 2018, total current assets decreased by USD 40.5 million to USD 486.4 million. The USD 5.6 million increase of inventories is mainly due to USD 5.4 million of higher stock at SKIDATA. The Group decreased trade receivables by USD 42.7 million, including, in particular, a USD 19.8 million reduction of outstanding SKIDATA receivables.

Contract assets consist of amounts due from clients for projects recognized on a percentage of completion basis. Out of the total USD 58.0 million of total contract assets, USD 55.2 million relate to SKIDATA. Other financial assets at amortized costs increased by USD 7.4 million to USD 48.4 million. Short-term government grants receivables and receivables from IP licenses due in the next 12 months drove this increase.

At the end of 2019, cash and cash equivalents amounted to USD 74.6 million.

Total equity decreased by USD 39.7 million, mainly reflecting the negative net income for the period, positive other comprehensive income, negative USD 9.3 million currency translation adjustment, and the USD 5.5 million cash distribution to Kudelski shareholders.

Total non-current liabilities increased by USD 2.3 million to USD 486.7 million. Long-term financial debt decreased by USD 5.2 million to USD 393.0 million. Employee benefits liabilities were USD 15.2 million lower than at the end of the previous year. Changes in financial assumptions, including, in particular, a reduction of the discount rate used for the calculation of defined benefit obligations from 1% to 0.2% led to an increase of such liabilities by USD 27.9 million. On the other hand, a USD 21.3 million return on plan assets and USD 20.6 million improvement due to favorable effects from demographic factors resulted in an overall decrease of pension liabilities. Total current liabilities decreased by USD 6.9 million to USD 303.6 million. Short-term financial debt increased by USD 9.6 million to USD 73.7 million.

In 2019, the Group generated USD 34.2 million cash flow from operating activities, compared with a negative USD 4.7 million in 2018. Cash generation significantly improved in the second half, as first half operating cash flow was USD -2.0 million, while operating cash flow in the second half was USD 36.2 million. The main driver of the year-on-year improvement is the reduction of trade accounts receivable, generating USD 58.8 million in 2019.

The Group used USD 14.9 million cash for investing activities, including USD 3.3 million to purchase intangible fixed assets and USD 13.7 million for tangible fixed assets. The Group reduced cash used for investing activities by USD 2.9 million compared to 2018. Net cash-out for financing activities amounted to USD 30.4 million, compared to net cash-in of USD 39.4 million in 2018. The cash outflow includes the USD 5.5 million cash distribution paid to Kudelski SA shareholders. USD 17.0 million of the reduction of lease liabilities previously booked as operating cash flow are booked as outflow from financing activities.

Outlook

For 2020, the Group expects the revenue erosion in the Digital TV segment to taper off, as the subscriber base erosion at established pay TV operators is slowing down and the Group will continue to benefit from multiyear contracts with large pay TV customers and is successfully introducing new solutions gaining added revenues with existing clients. Following the reduction of operating expenses in the past two years, the Group expects the Digital TV cost base to remain substantially stable in 2020.

With Cybersecurity, the Group will continue to drive the development of higher value product lines and expects continued growth of margin after cost of material. Cybersecurity is expected to continue adding new clients, expanding geographical coverage and increasing profitability by leveraging strategic offerings and high-value products and services. For 2020, the Cybersecurity segment top line is expected to revert to growth, resulting in a lower operational loss compared to 2019.

Following three years of substantial investments, a secure IoT platform is now available for commercial deployment. In 2020, the Group targets a level of revenue contribution from the IoT business that is at least double the level achieved in 2019. At the same time, operating expenses will remain in the same range as in prior years.

In the Public Access segment, SKIDATA is implementing rationalization measures that are expected to result in a material reduction of operating expenses. The organization is shifting to a regional operating model with the consolidation of local, subscale functions into regionalized units (e.g., warehouse consolidation and integration of corporate functions) and the closure of subscale offices. Further measures include the reengineering of selected core processes, the automation of manual processes, the reduction of overhead positions, and the rationalization of low-yield activities. SKIDATA will streamline its R&D portfolio with the discontinuation of non-core developments and by improving the alignment of its project portfolio with business needs. SKIDATA is expected to benefit from the tighter integration of relevant functions in the Kudelski Group. In particular, the Group will drive operating synergies in core operating and support functions. These measures are expected to restore an EBITDA margin level in line with prior years.

CONTENTS

KUDELSKI GROUP CONSOLIDATED FINANCIAL STATEMENTS

KUDELSKI SA FINANCIAL STATEMENTS

CONSOLIDATED INCOME STATEMENTS
(FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018)

In USD'000	Notes	2019	2018
Revenues	5	810 201	908 205
Other operating income	6	17 076	11 482
Total revenues and other operating income		**827 277**	**919 687**
Cost of material, licenses and services		-255 230	-270 791
Employee benefits expense	7	-407 617	-448 087
Other operating expenses	8	-123 850	-165 053
Operating income before depreciation, amortization and impairment		**40 580**	**35 756**
Depreciation, amortization and impairment	9	-55 850	-43 059
Operating income		**-15 270**	**-7 303**
Interest expense	10	-10 182	-10 440
Other finance income/(expense), net	11	-1 705	-310
Share of result of associates	16	1 901	1 495
Income before tax		**-25 256**	**-16 558**
Income tax expense	12	-13 312	-7 741
Net income for the period from continuing operations		**-38 568**	**-24 299**
Net result from discontinued operations	36	–	4 278
Net income for the period		**-38 568**	**-20 020**
Attributable to:			
- Equity holders of the company		*-44 497*	*-28 453*
- Non-controlling interests		*5 929*	*8 433*
Earnings per share (in USD)			
Attributable to shareholders of Kudelski SA for bearer shares : basic and diluted (in USD)	13	-0.8130	-0.5218
- Continuing operations		*-0.8130*	*-0.5826*
- Discontinued operations		*-*	*0.0608*
Attributable to shareholders of Kudelski SA for registered shares : basic and diluted (in USD)	13	-0.0813	-0.0522
- Continuing operations		*-0.0813*	*-0.0583*
- Discontinued operations		*-*	*0.0061*

The accompanying notes form an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018)

In USD'000	Notes	2019	2018
Net income		**-38 568**	**-20 020**
Other comprehensive income to be eventually reclassified into the consolidated income statement in subsequent periods:			
Currency translation differences		-9 307	-14 371
Cash flow hedges, net of income tax		–	-244
		-9 307	**-14 615**
Other comprehensive income never to be reclassified into the consolidated income statement in subsequent periods:			
Change in fair value of equity investments at fair value through other comprehensive income		–	-153
Remeasurements on post employment benefit obligations, net of income tax		18 461	-9 095
		18 461	**-9 248**
Total other comprehensive income, net of tax		**9 154**	**-23 863**
Total comprehensive income		**-29 414**	**-43 883**
Attributable to:			
Shareholders of Kudelski SA		-35 300	-52 018
- Continuing operations		*-35 300*	*-54 883*
- Discontinued operations		*-*	*2 865*
Non-controlling interests		5 886	8 135

The accompanying notes form an integral part of the consolidated financial statements.

CONSOLIDATED BALANCE SHEETS

(AT DECEMBER 31, 2019 AND 2018)

In USD'000	Notes	31.12.2019	31.12.2018
ASSETS			
Non-current assets			
Tangible fixed assets	14	126 783	128 176
Intangible assets	15	407 410	431 723
Right-of-use assets	4	41 517	–
Investments in associates	16	6 309	6 191
Deferred income tax assets	17	57 785	61 612
Financial assets at fair value through comprehensive income	18	517	508
Financial assets at amortized cost	18	54 395	67 251
Other non-current assets	18	1 042	1 227
Total non-current assets		**695 758**	**696 687**
Current assets			
Inventories	19	65 463	59 868
Trade accounts receivable	20	214 397	257 092
Contract assets	20	57 956	59 987
Other financial assets at amortized cost	21	48 396	41 021
Other current assets	22	25 589	22 915
Derivative financial instruments	34	–	64
Cash and cash equivalents	23	74 596	85 979
Total current assets		**486 397**	**526 926**
Assets classified as held for sale	**36**	**11 497**	**14 401**
Total assets		**1 193 651**	**1 238 014**
EQUITY AND LIABILITIES			
Equity			
Share capital	24	335 101	333 456
Reserves		31 280	73 164
Equity attributable to equity holders of the parent		**366 381**	**406 620**
Non-controlling interests	25	37 037	36 541
Total equity		**403 418**	**443 162**
Non-current liabilities			
Long-term financial debt	26	393 029	398 161
Long-term lease obligations	4	28 491	–
Deferred income tax liabilities	17	4 282	6 878
Employee benefits liabilities	28	51 072	66 319
Provisions for other liabilities and charges	35	–	97
Other long-term liabilities	29	9 780	12 946
Total non-current liabilities		**486 654**	**484 400**
Current liabilities			
Short-term financial debt	30	73 679	64 122
Short-term lease obligations	4	15 548	–
Trade accounts payable	31	60 572	79 608
Contract liabilities	32	45 446	50 570
Other current liabilities	33	92 946	95 746
Current income taxes		9 085	8 848
Derivative financial instruments	34	–	190
Provisions for other liabilities and charges	35	6 302	11 368
Total current liabilities		**303 579**	**310 452**
Total liabilities		**790 233**	**794 852**
Total equity and liabilities		**1 193 651**	**1 238 014**

The accompanying notes form an integral part of the consolidated financial statements.

CONSOLIDATED CASH FLOW STATEMENTS

(FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018)

In USD'000	Notes	2019	2018
Net income for the year		**-38 568**	**-20 020**
Adjustments for net income non-cash items:			
- Current and deferred income tax		13 312	8 108
- Interests, allocation of transaction costs and foreign exchange differences		8 375	12 725
- Depreciation, amortization and impairment	9	55 850	43 059
- Share of result of associates	16	-1 901	-1 495
- Non-cash employee benefits (income) / expense		6 015	4 954
- Deferred cost allocated to income statement		360	289
- Additional provisions net of unused amounts reversed		1 512	8 762
- Non-cash government grant income		-8 109	-4 305
- Other non-cash (income) / expenses		-6 675	16 914
Adjustments for items for which cash effects are investing or financing cash flows:			
- Net result on sales of subsidiaries and operations		–	-12 431
- Other non-operating cash items		958	127
Adjustments for change in working capital:			
- Change in inventories		-5 104	212
- Change in trade accounts receivable		58 806	723
- Change in trade accounts payable		-26 448	-16 171
- Change in accrued expenses		-1 117	-23 159
- Change in deferred costs and other net current working capital headings		-17 243	-17 113
Government grant from previous periods received		2 985	6 664
Dividends received from associated companies	16	1 871	937
Interest paid		-8 898	-8 200
Interest received		1 011	1 328
Income tax paid		-2 834	-6 628
Cash flow from operating activities		**34 157**	**-4 722**
Purchases of intangible fixed assets		-3 338	-9 268
Purchases of tangible fixed assets		-13 651	-15 659
Proceeds from sales of tangible and intangible fixed assets		–	641
Proceeds from sale of investment property		2 298	–
Investment in financial assets and loans granted		-434	-2 729
Divestment of financial assets and loan reimbursement		472	3 046
Acquisition of subsidiaries, cash outflow (net of cash acquired):			
- Cash consideration arising from current year business combinations		–	-3 893
- Cash acquired from business combinations		–	3 332
- Payment arising from current years business combinations		–	-1 956
- Payment arising from prior years business combinations		-279	-11 880
Disposal of subsidiaries and operations		–	20 556
Cash flow from investing activities		**-14 931**	**-17 811**
Reimbursement of bank overdrafts, long-term loans and other non-current liabilities		-31 463	-23 225
Increase in bank overdrafts, long-term loans and other non-current liabilities		28 886	68 444
Payments of lease liabilities		-16 966	–
Proceeds from employee share purchase program	39	85	138
Acquisition of non-controlling interests			
Dividends paid to non-controlling interests		-5 390	-382
Dividends paid to shareholders	38	-5 508	-5 568
Cash flow from financing activities		**-30 356**	**39 407**
Effect of foreign exchange rate changes on cash and cash equivalents		-253	-2 807
Net movement in cash and cash equivalents		**-11 383**	**14 068**
Cash and cash equivalents at the beginning of the year	23	85 979	71 911
Cash and cash equivalents at the end of the year	23	74 596	85 979
Net movement in cash and cash equivalents		**-11 383**	**14 068**

The accompanying notes form an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

(FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018)

In USD'000	Notes	Share capital	Share premium	Retained earnings	Fair value and other reserves	Currency translation adjustment	Non-controlling interests	Total equity
December 31, 2017 (published)		**332 222**	**85 345**	**35 549**	**-2 627**	**26 187**	**21 653**	**498 330**
Change in accounting policy		–	–	-9 172	26	-496	803	-8 840
January 1, 2018 (restated)		**332 222**	**85 345**	**26 376**	**-2 601**	**25 691**	**22 456**	**489 489**
Net income		–	–	-28 453	–	–	8 433	-20 020
Other comprehensive income		–	–	-9 120	-397	-14 048	-298	-23 863
Total comprehensive income		**–**	**–**	**-37 573**	**-397**	**-14 048**	**8 135**	**-43 883**
Employee share purchase program	39	218	-19	–	–	–	–	199
Shares issued to employees	39	1 016	133	–	–	–	–	1 150
Dividends paid to shareholders		–	-5 568	–	–	–		-5 568
Dividends paid to non-controlling interests		–	–	–	–	–	-382	-382
Transactions with non-controlling interests		–	–	-4 176	–	–	4 176	–
Sale of non-controlling interest		–	–	–	–	–	-2	-2
Equity contribution from non-controlling interest		–	–	–	–	–	2 158	2 158
December 31, 2018		**333 456**	**79 892**	**-15 373**	**-2 998**	**11 643**	**36 541**	**443 162**
December 31, 2018 (published)		**333 456**	**79 892**	**-15 373**	**-2 998**	**11 643**	**36 541**	**443 162**
Change in accounting policy	4	–	–	-429	–	–	–	-429
January 1, 2019 (restated)		**333 456**	**79 892**	**-15 802**	**-2 998**	**11 643**	**36 541**	**442 733**
Net income		–	–	-44 497	–	–	5 929	-38 568
Other comprehensive income		–	–	18 461	–	-9 263	-43	9 154
Total comprehensive income		**–**	**–**	**-26 037**	**–**	**-9 263**	**5 886**	**-29 414**
Employee share purchase program	39	194	-72	–	–	–	–	123
Shares issued to employees	39	1 451	-576	–	–	–	–	875
Dividends paid to shareholders	38	–	-5 508	–	–	–		-5 508
Dividends paid to non-controlling interests		–	–	–	–	–	-5 390	-5 390
December 31, 2019		**335 101**	**73 737**	**-41 839**	**-2 998**	**2 380**	**37 037**	**403 418**

Fair value and other reserves as of December 31, 2019 include kUSD -2 998 (2018: kUSD -2 998) of unrealized loss on financial assets at fair value through other comprehensive income.

The accompanying notes form an integral part of the consolidated financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

1. SIGNIFICANT ACCOUNTING POLICIES

(A) Basis of preparation

The consolidated financial statements of the Kudelski Group (Group or Company) have been prepared in accordance with International Financial Reporting Standards (IFRS) and interpretations issued by the IFRS Interpretations Committee (IFRS IC) applicable to companies reporting under IFRS. The financial statements comply with IFRS as issued by the International Accounting Standards Board (IASB).

The preparation of the financial statements in conformity with IFRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements, are disclosed in note 2.

These consolidated financial statements were prepared under the historical cost convention, except for items to be measured at fair value as explained in the accounting policies below. The policies set out below are consistently applied to all years presented, except for the changes in accounting policies described in note 4. Prior year figures have been reclassified where necessary to better enable comparison. Due to rounding, numbers presented throughout this report may not add up precisely to the totals provided.

(B) Group accounting

(a) Subsidiaries

Subsidiaries are all entities (including structured entities) over which the Group has control. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect these returns through its power over the entity. Subsidiaries also comprise companies in which the Group does not own, directly or indirectly, more than one half of the voting rights but exercises power to govern their financial and operating policies and bears an over-proportional responsibility for the main risks. Subsidiaries are fully consolidated from the date on which control is transferred to the Group.

Intercompany transactions, balances, income and expenses on transactions between Group companies are eliminated. Profits and losses resulting from intercompany transactions that are recognised in assets are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

(b) Business combinations

The Group applies the acquisition method to account for business combinations. The consideration transferred for the acquisition of a subsidiary consists of the fair values of the assets transferred, the liabilities assumed by the former owners of the acquiree and the equity interest issued by the Group. Acquisition-related costs are expensed as incurred. The consideration transferred includes the fair value of any asset or liability resulting from any contingent consideration.

Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair value at the acquisition date, irrespective of the extent of any non-controlling interests. Identified assets acquired include fair value adjustments on tangible and intangible assets. When determining the purchase price allocation, the Group primarily considers development technologies, customer lists, trademarks and brands as intangibles.

Any contingent consideration which depends on the future financial performance of the acquired company ("earn out clause") is recognized at fair value on the acquisition date using management's best estimate of the final consideration payable. The portion of the contingent consideration deferred to a date more than twelve months after the balance sheet date is discounted to its present value and disclosed within other long-term liabilities.

The Group recognizes non-controlling interests as its proportionate share of the recognized amounts of identifiable net assets. Goodwill is initially measured as the excess of the aggregate value of the consideration transferred plus the fair value of non-controlling interests over the net identifiable assets acquired and liabilities assumed. Transactions with non-controlling interests are accounted for as transactions with equity owners of the Group. The difference between the fair value of any consideration paid and the relevant acquired share of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to non-controlling interests are also recorded in equity.

(c) Disposal of subsidiaries

When the Group ceases to have control over a subsidiary, any retained interest in the entity is re-measured to its fair value at the date when control is lost, with the change in carrying amount recognized in the income statement. In addition, any amounts previously recognized in other comprehensive income in respect of that entity are accounted for as if the

Group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognized in other comprehensive income are reclassified to profit or loss.

d) Associates

Associates are entities over which the Group has significant influence but which are not subsidiaries. Significant influence is the power to participate in the financial and operating policy decisions of the associate but not the control of those policies. Significant influence is presumed to exist when the Group holds at least 20% of the associate's voting power. Investments in associates are accounted for using the equity method of accounting and are initially recognized at cost. Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. Unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred.

Accounting policies of associates have been changed where necessary to ensure consistency with the policies adopted by the Group.

(C) Foreign currencies

The consolidated financial statements of the Group are expressed in U.S. Dollars (USD), which is the presentation currency.

The local currency is generally the functional currency throughout the world. In the respective entity financial statements, monetary assets and liabilities denominated in currencies other than the functional currency are translated at the rate prevailing at the balance sheet date. Transactions contracted in a currency other than the functional currency are recorded using the exchange rate at the time of the transaction. All resulting foreign exchange transaction gains and losses are recognized in the subsidiary's income statement.

Income, expense and cash flows of the consolidated companies have been translated into U.S. dollars using average exchange rates. Assets and liabilities are translated at the closing rate at the date of the balance sheet. All resulting translation differences, including those arising from the translation of any net investment in foreign entities, are recognized in other comprehensive income. The loss of control or total disposal of a subsidiary results in the reclassification of any translation difference to the income statement.

(D) Revenue recognition

Revenue is measured based on the consideration specified in a contract with a customer, and is shown net of value added tax, returns, rebates, discounts, commissions directly attributed to the sale, and after eliminating sales within the Group. The Group recognizes revenue when it satisfies a performance obligation by transferring control of a product or service to a customer.

The Group sells hardware and software products on both a stand-alone basis without any services and as solutions bundled with services.

Generally, when we provide a combination of hardware and software products with the provision of services, we separately identify our performance obligations under the contract as distinct goods and services that will be provided. The total transaction price for an arrangement with multiple performance obligations is allocated at contract inception to each distinct performance obligation in proportion to its stand-alone selling price. The stand-alone selling price is the price at which we would sell a promised good or service separately to a customer. Observable stand-alone selling prices are used when readily available. If not available, we estimate the price based on observable inputs, including direct labor hours and allocable costs.

(a) Hardware

Revenue from hardware sales is recognized when control of the products has transferred, being when the products are delivered to the customer and there is no unfulfilled obligation that could affect the customer's acceptance of the products. Delivery occurs when the products have been shipped to a specified location, the risks of obsolescence and loss have been transferred to the customer, and either the customer has accepted the products in accordance with the agreement, the acceptance provisions have lapsed, or the Group has objective evidence that all the criteria for acceptance have been satisfied. In certain instances, we leverage drop-shipment arrangements with our partners and suppliers to deliver products to our clients without having to physically hold the inventory at our warehouses. We recognize revenue for drop-shipment arrangements on a gross basis as the principal in the transaction when the product is received by the customer because we control the product prior to transfer to the customer. We also assume primary responsibility for fulfillment in the arrangement, we assume inventory risk if the product is returned, we set the price charged to the customer and we work closely with our customers to determine their hardware needs.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

(b) Software, licenses and royalties
Revenue from software sales is recognized at the point in time when the customer acquires the right to use the software under license and control transfers to the customer. Revenue from licensing arrangements is recognized upon commencement of the term of the license agreement or when the renewal term begins, as applicable. Royalty revenue is recognized upon sale or usage of the product to which the royalty relates.

(c) Services
We design, implement and manage security and access solutions that combine hardware, software and services for our customers. Such services rendered may include system integrations, specific developments and customization, maintenance and training, and may be provided by us or by third-parties as part of bundled arrangements or on a stand-alone basis as consulting or managed service engagements.

If the services are provided as part of a bundled arrangement with hardware and software, the hardware, software and services are generally distinct performance obligations. In general, revenue from service engagements is recognized over time as we perform the underlying services by measuring progress toward complete satisfaction of the performance obligation. In contracts that contain a fixed fee per user, revenue is recognized in the amount in which we have the right to invoice the customer for services performed.

Specific revenue recognition practices for certain of our service offerings are described in further detail below.

(i) **Time and materials service contracts**. Revenue for service engagements that are on a time and materials basis is recognized based upon the hours incurred for the performance completed to date for which we have the right to consideration, even if such amounts have not yet been invoiced as of period end.

(ii) **Fixed fee service contracts**. Revenue from fixed fee service contracts is recognized using a proportional performance method based on the ratio of direct labor hours and other allocated costs incurred to total estimated direct labor hours and other allocated costs.

Certain software maintenance agreements provide our customers the right to obtain software upgrades, help desk and other support services directly from the third-party software provider during the term of the agreement. We act as the selling agent in these arrangements and do not assume any performance obligation to the customer under the arrangement. As a result, we are the agent in these transactions and these sales are recorded on a net sales recognition basis. Under net sales recognition, the cost of the service is recorded as a reduction to sales, resulting in net sales equal to the gross profit on the transaction.

(d) Significant financing components
Certain contracts with our customers may include payment terms that exceed one year. To the extent that a significant financing component exists in these arrangements, we record interest income associated with the financing component of the arrangement over the associated payment terms based on the prevailing market interest rate at the date of the transaction.

(e) Variable consideration
For contracts that contain variable pricing elements, the variable consideration is estimated at contract inception and constrained until the associated uncertainty is subsequently resolved. The application of the constraint on variable consideration generally increases the amount of revenue that will be deferred. Variable consideration is reviewed at each reporting period and is measured using the most likely amount method which includes management appropriate estimates.

(f) Payments to customers
Payments made by the Group to customers to enter into or to renew existing customer relationships are generally treated as a reduction to the transaction price of the contract and are recognized to the income statement at the later of when the Group recognizes the revenue for the transfer of the related goods and services or when the Group pays the consideration.

(g) Interest income
Interest income is recognized according to the effective interest rate method.

(E) Government grants
Grants from governments or similar organizations are recognized at their fair value when there is a reasonable assurance that the Group complies with all conditions associated with their grants receipt and use. Where a government grant is subject to audit before payment, the fair value is determined using management's best estimate of the audit risk. Grants are recognized in the income statement as operating income unless they are linked to a capitalized fixed asset, in which case they are deducted from the cost of the fixed asset.

(F) Cost of material, licenses and services
The cost of material, licenses and services includes direct costs which are attributable to selected revenues. The cost of material includes only the cost of materials paid to external suppliers in connection with recognized sales transactions. It therefore does not include other direct and indirect costs associated with the manufacturing process, such as labor costs, utilities or depreciation of manufacturing assets.

Cost of licenses includes amounts charged by external suppliers for sublicenses on a per-unit basis for each unit of delivered product (e.g. CODEC licenses charged on each set-top-box sold). It therefore specifically excludes licenses paid independently of the number of units sold, deployed or used in a development process. Cost of services includes outsourced services that are directly connected to a recognized sales transaction, such as subcontracting a portion of a maintenance agreement or outsourcing the implementation of a revenue-generating customer solution.

(G) Derivative financial instruments
Derivative financial instruments are initially recognized at fair value on the date a derivative contract is entered in to and subsequently remeasured to fair value at the end of each reporting period. The method of recognizing the resulting gain or loss is dependent on whether the derivative is designated to hedge a specific risk and therefore qualifies for hedge accounting.

The currency instruments that are generally used include forward foreign exchange contracts, currency swaps and zero cost option strategies with terms generally not exceeding one year. Derivative financial instruments are entered into with high credit quality financial institutions, consistently following specific approval, limit and monitoring procedures.

(a) Derivatives that do not qualify for hedge accounting
Certain derivatives transactions, while providing effective economic hedging under the Group's risk management policy, do not qualify for hedge accounting under the specific rules of IFRS 9. Changes in the fair value of derivative instruments that do not qualify for hedge accounting under IFRS 9 are recognized immediately in the income statement as part of 'other finance income/(expense), net'.

(b) Cash flow hedge
The Group designates the derivatives which qualify as hedges of a forecast transaction (cash flow hedge). The Group documents at the inception of the hedging transaction the relationship between hedging instruments and hedged items, as well as its risk management objective and strategy for undertaking various hedge transactions. The Group also documents its assessment, both hedge inception and on an ongoing basis, of whether the economic relationship exists between the hedged item and the hedging instrument. The Group enters into hedging instruments that have similar critical terms as the hedged items, such as reference rates, notional amounts and maturities.

Changes in intrinsic value of derivative financial instruments that meet hedge qualifying criteria are recognized in the 'cash flow hedge reserve' within equity. Changes in fair value of derivative instruments attributable to time value are recognized in the 'cost of hedging reserve' within equity. The amounts accumulated in hedging reserves of OCI are reclassified to profit or loss in the same period during which the hedged expected future cash flow affects the income statement.

In hedges of highly probable future sales transactions, ineffectiveness may arise if the timing of the forecast transaction changes from what was originally estimated or if there are any changes in the credit risk of the derivative counterparty.

When a cash flow hedge no longer meets the criteria for hedge accounting, the gains and losses that were previously recorded in equity remain deferred in equity until the hedged cash flow is recognized in the income statement. When the forecast transaction is no longer expected to occur, the cumulative gain or loss and deferred cost of hedging are immediately reclassified to the income statement. Gain or loss, as well as cost of hedging, related to the ineffective portion is recognized in the income statement within 'other finance income/(expense), net'.

(H) Taxes
Taxes reported in the consolidated income statements include current and deferred taxes on profit, as well as non-reimbursable withholding taxes and tax adjustments relating to prior years. Income tax is recognized in the income statement, except to the extent that it relates to items directly taken either to equity or to other comprehensive income, in which case it is recognized either in equity or in other comprehensive income. Taxes on income are accrued in the same periods as the revenues and expenses to which they relate.

Deferred taxation is the tax attributable to the temporary differences that appear when taxation authorities recognize and measure assets and liabilities with rules that differ from those of the con-

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

solidated accounts. Deferred taxes are determined using the comprehensive liability method and are calculated on the temporary differences at the substatively enacted rates of tax expected to prevail when the temporary differences reverse, except for those temporary differences related to investments in subsidiaries where the timing of their reversal can be controlled and it is probable that the difference will not reverse in the foreseeable future.

Temporary differences and tax losses carried forward are recognized only to the extent that it is probable that future taxable income will be available against which they can be utilized. Temporary differences and tax losses which generate deferred tax assets and liabilities based on their future probable use are combined within each legal entity to provide a net deferred tax asset or liability amount. Deferred income tax liabilities have not been recognized for withholding tax and other taxes that would be payable on the unremitted earnings of certain subsidiaries. Such amounts are either permanently reinvested or do not generate any taxation due to the application of tax treaties or tax reliefs.

(I) Tangible fixed assets

(a) General

Property, plant and equipment is measured at cost, less subsequent depreciation and impairment, except for land, which is shown at cost less impairment. Cost includes any expenditure that is directly attributable to the acquisition of the items. Subsequent costs are included in the asset's carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group, and the cost of the item can be measured reliably. All other repair and maintenance expenditures are charged to the income statement during the financial period in which they are incurred.

Building acquisitions or construction and building improvements are allocated to components. The costs less residual values are depreciated over their useful lives on a straight-line basis. Such useful lives may be between 4 to 50 years. Depreciation starts when the underlying assets are ready for use. Depreciation is calculated on a straight-line basis over each asset's useful life, according to the following schedule:

Technical equipment and machinery

	Useful life in years
Machinery and measurement instruments	4 - 7
Digital material and equipment	4 - 5
Computer and information networks	4
Fixed assets made available to clients	4 - 10

Other equipment

	Useful life in years
Office furniture and equipment	5 - 7
Vehicles	4 - 5

Each assets' residual values and useful lives are reviewed, and adjusted if appropriate, at each balance sheet date. An asset's carrying amount is impaired immediately if the asset's carrying amount is greater than its estimated recoverable amount. Gains and losses on disposal or retirement of tangible fixed assets are determined by comparing the proceeds received with the carrying amounts, and are included in the consolidated income statements.

(b) Fixed assets made available to clients

The Group makes equipment as well as smart cards available to clients within the scope of complete security solutions. The assets given to these clients remain the property of the Group and are initially recognized at cost and disclosed in the balance sheet under technical equipment and machinery. These assets are depreciated over the shorter of the duration of the contract and the economic life of the individual components, and the related expense is disclosed under depreciation.

(c) Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production assets which take a substantial period of time to be ready for their intended use of sale, are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

All other borrowing costs are recognised in the income statement in the period in which they are incurred.

(J) Intangible assets

(a) Goodwill

Goodwill arises from the acquisition of subsidiaries and represents the excess of the consideration transferred over the Group's interest in the fair value of the net identifiable assets, liabilities and contingent liabilities of the acquiree and the fair value of the non-controlling interest in the acquiree at the date of acquisition. It is denominated in the functional currency of the related acquisition. Goodwill on acquisition of subsidiaries is included in intangible assets, while goodwill on acquisition of associates is included in investments in associates. All goodwill is considered to have an indefinite life, tested at least annually for impairment, and carried at cost less accumulated impairment losses. Goodwill is allocated to cash generating units for the purpose of impairment testing.
Gains and losses on the disposal of an

entity include the carrying amount of goodwill associated with the entity sold.

(b) Internal research and development
Internal research and development expenses are fully charged to the income statement when incurred. The Group considers that economic uncertainties inherent in the development of new products preclude it from capitalizing such costs.

(c) External research and development
Expenditures with external parties for research and development, application software and technology contracts are charged to the income statement as incurred if they do not qualify for capitalization. When capitalized, they are amortized over 4 to 10 years once development is achieved and the resulting products are ready for sale .

(d) Computer software
Acquired computer software licenses are capitalized in the amount expended to acquire the software and ready it for its intended use. These costs are amortized on a straight-line basis over their estimated useful lives (three to four years). Costs associated with maintaining computer software programs are recognized as expense as incurred.

(e) Customer lists, Trademarks and Brands
Customer lists, trademarks and brands not acquired through a business combination are initially measured at cost. Following initial recognition, they are carried at cost less any accumulated amortisation and impairment losses, and are amortised over their useful economic life. Internally generated customer lists, trademarks and brands are not capitalised.

(f) Other intangibles in connection with business combinations
Under IFRS 3, in-process research and development, core development technologies, customer lists and trademarks are valued as part of the process of allocating the purchase price in a new business combination. The respective values are recorded separately from goodwill and are allocated to cash-generating units. Acquired intangibles are amortized on a straight-line basis over the following periods, with the expense recorded in the income statement:

	Over the useful life, in years
Core development technologies	4 - 10
Customer lists	10
Trademarks and brands	5

(K) Leases
The Group leases various properties, equipment and vehicles. Rental contracts typically cover fixed periods between one and 10 years and may contain extension options as described below. Lease terms are negotiated on an individual basis and include a wide variety of different terms and conditions. The lease agreements generally do not impose financial covenants, however, leased assets are not allowed to be used as collateral for borrowing purposes.

Leases are booked as a right-of-use asset and as a corresponding lease liability at the date at which the leased asset is available for use by the Group. Each lease payment is apportioned between the reduction of the outstanding lease liability and finance cost. The finance cost is charged to profit or loss over the lease period to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The right-of-use asset is depreciated over the shorter of the asset's useful life or the lease term on a straight-line basis.

Assets and liabilties arising from a lease are initially measured on a present value basis. Lease liabilities are valued at the net present value of the future lease payments, which includes fixed lease payments, variable lease payments based on indexes and rates, residual value guarantees, purchase options and termination penalties. Lease payments are discounted using the interest rate implicit in the lease, or if that rate cannot be determined, the Group's incremental borrowing rate based on the currency in which it finances its local operations.

Right-of-use assets are measured at cost, comprising the amount of the initial lease liability adjusted by any lease payments made at or before the commencement date of the lease, any lease incentives received, initial direct costs and any estimated restoration costs.

Payments associated with short-term leases and leases of low-value assets are recognized on a straight-line basis as an expense in profit or loss. Short-term leases are identified as leases with a term of 12 months or less. Low-value assets comprise general office furniture and IT equipment .

Extension and termination options are included in a number of property and equipment leases throughout the Group. These terms are used to maximize operational flexibility, with the majority of extension and terminations options being exercisable only by the Group and not by the respective lessor.

(K) Financial assets
(a) Classification
The Group classifies its financial instruments in the following categories: financial assets or financial liabilities measured at fair value (either through OCI, or through profit or loss), and financial

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

assets or financial liabilities measured at amortized cost. The classification depends on the Group's business model for managing the financial assets and liabilities and the contractual terms of the cash flows.

For assets measured at fair value, gains and losses will either be recorded in profit or loss, or OCI. For investments in equity instruments that are not held for trading, this will depend on whether the Group has made an irrevocable election at the time of initial recognition to account for the equity instrument at fair value through OCI.

(b) Measurement

At initial recognition, the Group measures financial assets and liabilities at fair value plus or minus any transaction costs that are directly attributable to the acquisition of the instrument. For financial assets that are carried at fair value through profit or loss, transaction costs are expensed as incurred.

Subsequent measurement of loans and debt instruments depends on the Group's business model for managing the financial instrument and the cash flow characteristics of the asset or liability. The Group classifies its debt instruments into three measurement categories, amortized cost, fair value through profit or loss, or fair value through OCI.

Assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortized cost. Interest income from these assets is included in 'other finance income/(expense), net' using the effective interest rate method. Any gain or loss arising on derecognition is recognized in profit or loss and presented in 'other operating expenses'. Foreign exchange gains and losses are presented in 'other finance income/(expense), net'.

Assets that are held for collection of contractual cash flows and for selling the financing assets, where the assets' cash flows represent solely payments of principal and interest, are measured at fair value through OCI. Movements in the carrying amount are taken through OCI, except for the recognition of impairment gains or losses, interest revenue and foreign exchange gains and losses, which are recognized in profit or loss. When the financing asset is derecognized, the cumulative gain or loss previously recognized in OCI is reclassified from equity to profit or loss and recognized in 'other finance income/(expense), net'. Interest income from these financial assets is included in 'finance income' using the effective interest rate method. Foreign exchange gains or losses are presented in 'other finance income/(expense), net'.

Assets that do not meet the criteria for amortized cost or fair value through OCI are measured at fair value through profit or loss and presented as 'other finance income/(expense), net' in the period in which it arises.

The Group subsequently measures all equity investments at fair value. Where the Group has elected to present fair value gains and losses on equity investments in OCI, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. Dividends from such investments continue to be recognized in profit or loss as 'other finance income/(expense), net' when the right to receive payments is established.

Changes in the fair value of financial assets at fair value through profit or loss are recognized in 'other finance income/(expense), net' in the statement of profit or loss as applicable. Impairment losses (and reversal of impairment losses) on equity investments measured at fair value through OCI are not reported separately from other changes in value.

(c) Impairment

The Group assesses on a forward-looking basis the expected credit losses associated with its financial assets carried at amortized cost and fair value through OCI. The impairment methodology applied depends on whether there has been a significant increase in credit risk.

The Group applies a simplified approach permitted by IFRS 9 for trade accounts receivables and contract assets, which requires expected lifetime credit losses to be recognized from initial recognition of the receivables.

To measure expected credit losses, trade receivables and contract assets are grouped based on shared credit characteristics and days past due. The Group therefore concludes that the expected loss rates for trade accounts receivables are a reasonable approximation of the loss rates for contract assets.

Expected loss rates are based on the payment profiles of sales over the 36 month period preceding the financial statement reporting date and the corresponding historical credit losses experienced within this period. The historical loss rates are adjusted to reflect current and forward-looking information affecting the ability of the customers to settle the receivables.

(L) Inventories
Inventories are stated at the lower of cost and net realizable value. Cost is determined using the weighted average cost method.
The cost of work in progress and manufactured finished goods is comprised of direct production costs and an appropriate proportion of production overhead and factory depreciation. Net realizable value is the estimated selling price in the ordinary course of business, less applicable variable selling expenses. Inventories which are no longer part of production and sales plans are charged to profit and loss.

(M) Deferred costs
Deferred costs are measured at cost and are allocated to the income statement over the shorter of their useful life and the contract period. The portion of deferred cost to be expensed in the income statement during a period that exceeds 12 months from the balance sheet date is disclosed under other non-current assets.

(N) Trade accounts receivable
Trade accounts receivable are initially measured at fair value and subsequently valued using the amortized cost method.

(O) Contract assets
A contract asset is the entity's right to consideration in exchange for goods or services that the entity has transferred to the customer. A contract asset becomes a receivable when the entity's right to consideration is unconditional, which is the case when only the passage of time is required before payment of the consideration is due. Contract assets relate to unbilled work in progress and have substantially the same risk characteristics as trade receivables.

(P) Cash and cash equivalents
Cash and cash equivalents include cash in hand and highly liquid investments with original maturities of three months or less which are readily convertible to known amounts of cash. Bank overdrafts are included in short-term financial debt in current liabilities on the balance sheet.

(Q) Share capital
Ordinary and preferred shares of Kudelski SA are classified as equity and are presented at their nominal value. The difference between proceeds of share capital less directly attributable incremental costs and the nominal value of the share capital increase are considered as share premium and included in equity.

(R) Borrowings
Borrowings are initially recognized at fair value, net of transaction costs incurred. Borrowings are subsequently carried at amortized cost. Any difference between the net proceeds and the redemption value is recognized in the income statement over the period of the borrowings using the effective interest method.

Fees paid for the establishment of loan facilities are recognized as transaction costs of the loan if all of the facility will be drawn down. If there is no evidence that all of the facility will be drawn down, the fee is capitalized as a pre-payment for liquidity services and amortized over the period of the loan facility.

(S) Provisions
Provisions are recognized when the Group has a present legal or constructive obligation as a result of past events, it is more likely than not that an outflow of resources will be required to settle the obligation, and the amount can be reliably estimated. Provisions are not recognized for future operating losses. Where there are a number of similar obligations, the likelihood that an outflow will be required in settlement is determined by considering the class of obligations as a whole. A provision is recognized even if the likelihood of an outflow with respect to any one item included in the same class of obligations may be small.

A restructuring provision is recognized when the Group has developed a formal plan for the restructuring and has raised a valid expectation in those affected that it will carry out the restructuring by starting to implement the plan or announcing its main features to those affected. Restructuring provisions comprise employee termination payments, lease termination penalties and dilapidation costs.

(T) Employee benefits
(a) Pension obligations
The Group operates a number of defined benefit and defined contribution plans, the assets of which are generally held in separate trustee-administered funds. The pension plans are generally funded by payments from employees and by their employer, taking into consideration the recommendations of independent qualified actuaries. For defined benefit plans, the Group companies provide for benefits payable to their employees on retirement by charging current service costs to income.

The liability for defined benefit pension plans is the present value of the defined benefit obligation at the balance sheet date minus the fair value of plan assets, together with adjustments for actuarial gains/losses and past service costs. Defined benefit obligations are in all material cases calculated annually by independent actuaries using the projected unit credit method, which re-

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flects services rendered by employees to the date of valuation, incorporates assumptions concerning employees' projected salaries and uses interest rates of highly liquid corporate bonds which have terms to maturity approximating the terms of the related liability. Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to equity in other comprehensive income in the period in which they arise.

The Group's contributions to the defined contribution plans are charged to the income statement in the year during which they are made.

(b) Other long-term employee benefits
Other long-term employee benefits represent amounts due to employees under deferred compensation arrangements mandated by certain jurisdictions in which the Group conducts its operations. The cost of such deferred compensation arrangements is recognized on an accrual basis and included within employee benefits expense.

(c) Employee Share Purchase Program (ESPP)
The Group's employee share purchase program allows certain employees to buy a specific number of shares on a preferential basis, subject to certain restrictions on the sales of the shares for a period of 3 years.The difference between the fair value of these shares and the employee' payments for the shares is expensed in the income statement on the subscription date. The fair value of the shares transferred is determined based on the market price of the shares adjusted for the estimated value of the restrictions on sales.

(d) Profit sharing and bonus plan
The Group recognizes a liability and an expense for bonuses and profit sharing where contractually obliged or where there is a past practice that has created a constructive obligation. In addition, the Board of Directors may grant shares to certain employees. These shares may be subject to a blocking period of up to 7 years and are expensed in the income statement at their fair value at grant date taking into account the estimated value reduction due to the blocking period.

(e) Other employee benefits
Salaries, wages, social contributions and other benefits are recognized on an accrual basis in employee benefits expense in the year in which the employees render the associated services.

(U) Trade accounts payable
Trade payables are recognized initially at fair value and subsequently measured at amortised cost using the effective interest method.

(V) Contract liabilities
Contract liabilities represent the Group's current obligation to transfer goods or services to a customer for which the Group has received consideration from the customer. Contract liabilities primarily relate to billed work in progress and service contracts, whereby the customer has been invoiced in advance of the services being performed and are generally recognized within twelve months.

(W) Dividends
Dividends are recorded in the Group's financial statements in the period in which they are approved by the Group's shareholders.

(X) Non-current assets held for sale
Non-current assets and disposal groups are classified as held for sale if their carrying value will be recovered principally through a sale transaction rather than through continuing use. The Group considers this condition to be met when management is committed to a sale and a sale is highly probable of being completed within one year from the date of classification.

When the Group is committed to a sale plan involving loss of control of a subsidiary, all of the assets and liabilities of that subsidiary are classified as held for sale when the criteria described above are met, regardless of whether the Group will retain a non-controlling interest in its former subsidiary after sale.

When the Group is committed to a sale plan involving disposal of an investment, or a portion of an investment, in an associate, the investment or portion of the investment that will be disposed of is classified as held for sale when the criteria described above are met, and the Group discontinues the use of the equity method in relation to the portion that is classified as held for sale. Any retained portion of an investment in an associate that has not been classified as held for sale continues to be accounted for using the equity method. The Group discontinues the use of the equity method at the time of disposal when the disposal results in the Group losing significant influence over the associate.

Non-current assets (and disposal groups) classified as held for sale are measured at the lower of their carrying value or fair value less costs to sell.

(Y) New and amended accounting standards and IFRIC interpretations

Standards and Interpretations effective in the current period and change in accounting policies

The accounting policies adopted are consistent with those followed in the preparation of the Group's annual financial statements for the year ended December 31, 2018, except for the adoption of new standards and interpretations as of January 1, 2019 described below.

The Group applies, for the first time, IFRS 16 Leases. The impact of the adoption of the new standard is disclosed in note 4.

The Group has also applied the following amendments and interpretations effective from January 1, 2019:

- Prepayment Features with Negative Compensation - Amendments to IFRS 9
- Long-term Interests in Associates and Joint Ventures - Amendments to IAS 28
- Annual Improvements to IFRS Standards 2015-2017 Cycle
- Plan Amendment, Curtailment or Settlement - Amendments to IAS 19
- Interpretation 23 Uncertainty over Income Tax Treatments

The adoption of the amendments listed above had no significant impact on the Group's accounting policies, financial position and performance. The Group has not early adopted any other standard, interpretation or amendment that has been issued but is not yet effective.

Standard and Interpretations in issue not yet adopted

Certain new standards, amendments and interpretations to existing standards have been published that are mandatory for the Group's accounting periods beginning after January 1, 2020 or later periods, and which the Group has not early adopted: These standards are not expected to have a material impact on the Group in the current or future reporting periods and on foreseeable future transactions.

2. CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

The Group's principal accounting policies are set out in note 1 of the Group's consolidated financial statements and conform to International Financial Reporting Standards (IFRS).

Significant judgments and estimates are used in the preparation of the consolidated financial statements which, to the extent that actual outcomes and results may differ from these assumptions and estimates, could significantly affect the accounting in the areas described in this section.

Impairment of goodwill

Determining whether goodwill is impaired requires an estimation of the value-in-use of the cash-generating units to which goodwill has been allocated. The value in use calculation requires management's estimate of the future cash flows expected to arise from the cash-generating unit and a suitable discount rate in order to calculate present value (note 15). Actual cash flows and values could vary significantly from the forecasted cash flows and related values derived using discounting techniques.

Complete security solutions generating recurring service revenues

As defined in note 1 D, the Group provides complete security solutions which generate recurring service revenues. Depending on the contract terms with each client, the Group may replace the assets made available or transferred to the client for security or economic reasons. Early replacement due to technical obsolescence would result in an impairment of the assets made available to the client or of the deferred costs, which would impact the profitability of the Group.

Income tax and deferred tax assets

The Group is subject to income tax in numerous jurisdictions. Significant judgment is required in determining the portion of tax losses carried forward which can be offset against future taxable profit (note 17). In order to assess whether there is any future benefit, forecasts are made of the future taxable profits by legal entity. Actual outcomes could vary significantly from forecasts of future profits and could therefore significantly modify the deferred tax asset and the income taxes. Furthermore, subsequent changes in tax laws, such as non-exhaustive changes in tax rates, the proportion of tax losses that could be offset with future profits or changes in forfeiting periods which occur after the accounts have been approved might affect the tax asset capitalized.

Retirement benefit plans

The Group sponsors pension and other retirement plans in various forms covering employees who meet eligibility requirements. Several statistical and other factors that attempt to anticipate future events are used in calculating the expense and liability related to these plans. The factors include both financial and demographical assumptions. Financial assumptions comprise dis-

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count rate, salary and expected pension increases, interest rate credited in savings accounts, and returns on plan assets. Demographic assumptions include employee turnover, retirement payment forms (capital vs. annuity), mortality tables and disability assumptions. Demographic assumptions are based on past experience. In addition, the Group's actuarial consultants use statistical information such as withdrawal and mortality rates for their estimates.

Assumptions used (note 28) may differ materially from actual results due to changing market and economic conditions, higher or lower withdrawal rates or longer or shorter life spans of participants, among other factors. Depending on events, such differences could have a material effect on our total equity.

3. FINANCIAL RISK MANAGEMENT

The Group's Corporate Treasury function provides services to the business, coordinates access to domestic and international financial markets, and monitors and manages the financial risks relating to the operations of the Group through exposure analyses. These risks include market risk (including currency risk, fair value interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk.

The Group seeks to minimize the effects of these risks by using derivative financial instruments to hedge risk exposures. The use of financial derivatives is governed by the Group's treasury policies, which provide written principles on foreign exchange risk, interest rate risk, credit risk, the use of financial derivatives and non-derivative financial instruments, and the investment of excess liquidity. Internal control procedures ensure compliance with these policies. The Group does not enter into or trade financial instruments, including derivative financial instruments, for speculative purposes. The Corporate Treasury function reports periodically to the Group's finance executive committee which monitors risks and policies implemented to mitigate risk exposures.

Market risk

The Group's activities expose it primarily to the financial risks of changes in foreign currency exchange rates and interest rates. The Group applies a natural economic hedging strategy and can enter into a variety of derivative financial instruments to manage its exposure to foreign currencies and interest rate risks, including forward foreign exchange contracts or option strategies to hedge the exchange rate risks and interest rate swaps to mitigate the risk of rising interest rates.

The Group does not enter into any financial transactions containing a risk that cannot be quantified at the time the transaction is concluded (it does not sell assets short). The Group only sells existing assets or hedges transactions and future transactions that are likely to happen. Future transaction hedges are contracted according to treasury policy based on a foreign exchange cash flow forecast. In the case of liquid funds, it writes options on assets it has, or on positions it wants to acquire, and for which it has the required liquidity. The Group therefore expects that any loss in value for these instruments would be generally offset by increases in the value of the hedged transactions.

(a) Foreign exchange risk

The Group conducts business in a variety of countries using a variety of foreign currencies. However, the Group prepares its consolidated financial statements in U.S. Dollars. It is therefore exposed to foreign exchange risk arising from various currency exposures, primarily with respect to the Swiss franc and the Euro. Foreign exchange risk arises from future commercial transactions, recognized assets and liabilities and net investments in foreign operations. In order to manage foreign exchange risks arising from future commercial transactions and certain assets and liabilities, the Group uses forward foreign exchange contracts and foreign currency zero cost option contracts.

The Group enters into zero cost foreign currency option contracts to manage the risk associated with highly probable sales transactions for the next 12 months within a determined portion of the exposure generated, as defined in the treasury policy. These derivatives are generally qualified as cash flow hedges.

The Group also enters into foreign exchange forward and swap contracts in order to hedge the risk attributed to changes in value of recognized assets and liabilities. The Group qualifies these derivatives as held-for-trading with gains and losses recognized through profit and loss.

Net investments in Group affiliates with a functional currency other than the U.S. Dollar are of a long-term nature: the Group does not hedge such foreign currency translation exposures.

(b) Interest rates

The Group is exposed to interest rate risk as entities in the Group borrow funds at both fixed and floating interest rates. The Group manages this risk by maintaining an appropriate mix between fixed and floating rate borrowings. Interest risk exposure is evaluated regularly to align with interest rate views and the Group's defined risk appetite, which ensure that optimal hedging strategies are applied by either neutralizing the balance sheet exposures or protecting interest expense through different interest rate cycles.

Other price risks

The Group is exposed to equity price risks arising from equity investments. Equity investments are held for strategic rather than trading purposes. The Group does not actively trade these investments.

Credit risk management

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to the Group. The Group uses credit rating information supplied by independent rating agencies where available and, if not available, the Group uses other publicly available financial information and its own trading records to rate its major customers. The Group's exposure and the credit ratings of its counterparties are continuously monitored, and the aggregate value of transactions concluded is spread amongst approved counterparties. Credit exposure is controlled by counterparty limits that are reviewed and approved annually by the department in charge.

The Group does not have any significant credit risk exposure to any single counterparty or any group of counterparties having similar characteristics. The Group defines counterparties as having simlar characteristics if they are related entities. Concentration of credit risk did not exceed 10% of gross monetary assets at the end of the year, with the exception of cash balances deposited with a highly rated bank. The credit risk on liquid funds and derivative financial instruments is limited because the counterparties are banks with high credit-ratings assigned by international credit-rating agencies. The maximum amount of credit risk is the carrying amount of the financial assets.

Liquidity risk management

The Group has built an appropriate liquidity risk management framework for the management of the Group's short, medium and long-term funding and liquidity management requirements.
The Group manages liquidity risk by maintaining adequate reserves, banking facilities and reserve borrowing facilities, by continuously monitoring forecasts and actual cash flows and by matching the maturity profiles of financial assets and liabilities.

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4. CHANGE IN ACCOUNTING POLICIES

This note explains the impact of the adoption of IFRS 16 Leases on the Group's financial statements. The Group has adopted IFRS 16 Leases retrospectively from January 1, 2019, but has not restated comparatives for the 2018 financial year as permitted under the specific transitional provisions in IFRS 16. The reclassifications and adjustments arising from the new leasing rules are therefore recognized in the opening balance sheet on January 1, 2019.
Upon adoption of IFRS 16, the Group recognized lease liabilities in relation to leases which had previously been classified as 'operating leases' under the principles of IAS 17 Leases. These liabilities were measured at the present value of the remaining lease payments, discounted using the Group's incremental borrowing rate as of January 1, 2019. The weighted average incremental borrowing rate applied to the lease liabilities on January 1, 2019 was 3.40%. The reconciliation of the lease liability at January 1, 2019 is as follows:

In USD'000	Financial lease liability
Operating lease commitments disclosed at December 31, 2018	44 171
Contracts reassessed as leasing arrangements	13 389
Operating lease commitments at December 31, 2018 - adjusted	**57 560**
Adjustments as a result of different treatment of extension and termination options	3 717
Short-term and low-value leases recognized on a straight-line basis	-824
Discount using the Group's incremental borrowing rate of 3.40%	-4 321
Total lease obligations at January 1, 2019	**56 132**
Of which are:	
Short-term lease obligations	16 775
Long-term lease obligations	39 356
	56 132

The associated right-of-use assets were measured at an amount equal to the lease liabilities, adjusted for any prepaid or accrued lease payments relating the that lease recognized in the balance sheet at December 31, 2018. For leases subject to a sublease arrangement, no right-of-use asset was recognized and instead the amounts to be received were reflected in the balance sheet as financial assets at amortized cost. The recognized right-of-use assets relate to the following types of assets:

In USD'000	31.12.2019	1.1.2019
Land and buildings	35 962	47 128
Vehicles, equipment and other	5 555	5 988
	41 517	**53 116**

The change in accounting policy affected the following items in the balance sheet on January 1, 2019:

In USD'000	1.1.2019
Right-of-use assets	53 116
Deferred income tax assets	-114
Financial assets at amortized cost - long-term portion	1 359
Financial assets at amortized cost - short-term portion	825
Other current assets	-503
Total assets	**54 682**
Reserves	-429
Long-term lease obligations	39 356
Short-term lease obligations	16 775
Other current liabilities	-1 021
Total equity and liabilities	**54 682**

In USD'000	Land	Building & leasehold facilities	Vehicles	Equipment	Other leases	Total
GROSS RIGHT-OF-USE ASSETS						
As of January 1, 2019	–	–	–	–	–	–
Change in accounting policy	786	46 342	5 748	203	36	53 115
Additions	–	3 819	2 640	–	–	6 459
Disposals and retirements	–	-2 220	-381	-2	-36	-2 639
Currency translation effects	-15	-406	-47	-3	–	-471
As of December 31, 2019	**770**	**47 535**	**7 961**	**198**	**–**	**56 464**
ACCUMULATED DEPRECIATION AND IMPAIRMENT						
As of January 1, 2019	–	–	–	–	–	–
Systematic depreciation	-38	-13 113	-2 907	-56	-36	-16 150
Recovery of depreciation on disposal and retirements	–	835	369	2	36	1 243
Currency translation effects	-0	-26	-12	-0	–	-39
As of December 31, 2019	**-39**	**-12 304**	**-2 550**	**-54**	**–**	**-14 946**
Net book values as of December 31, 2019	**732**	**35 230**	**5 411**	**144**	**–**	**41 517**
Useful life in years	4 – 10	5 – 10	2 – 5	2 – 5	2 – 5	

Lease costs, which were previously fully recognized as an operational expense, are now recorded in the income statement as depreciation expense in the amount of kUSD 16 150 and interest expense of kUSD 1 592, and are recognized in the cash flow statement as adjustments to net income non-cash items in operating activities. Lease payments of kUSD 16 966 which represent the reduction of the lease liability are recognized in the cash flow statement as an outflow from financing activities, which were previously fully recognized as an outflow from operating activities. Operating lease costs relating to short-term leases of kUSD 5 935 and low-value leases of kUSD 267 remain fully recognized as an operational expense. The total cash outflow for leases in 2019 was kUSD 24 760.

The Group's remaining contractual maturities of lease obligations at December 31, 2019 are as follows:

In USD'000	2019
Within one year	15 548
In the second to fifth year inclusive	25 283
More than five years	3 208
	44 039

In addition, the Group owns certain property which is leased to third-parties under operating lease arrangements. These arrangements are not significant to the Group's operations or financial results, and therefore no further disclosure is deemed necessary.

In applying IFRS 16 for the first time, the Group has elected to use the following practical expedients permitted by the standard:
- use of a single discount rate to a portfolio of leases with reasonably similar characteristics;
- the exclusion of initial direct costs for the measurement of the right-of-use assets at the date of initial application, and
- the use of hindsight in determining the lease term where the contract contains options to extend or terminate.

The Group has also elected not to reassess whether a contract is, or contains a lease at the date of initial application. Instead, for contracts entered into before the transition date the Group relied on its assessment made applying IAS 17 and IFRIC 4 Determining whether an Arrangement contains a Lease.

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5. OPERATING SEGMENTS

IFRS 8 requires operating segments to be identified based on internal reporting that is regularly reviewed by the chief operating decision maker. Group operating segments represent strategic business units that offer products and services for which such internal reporting is maintained. The chief operating decision maker reviews the internal segment reporting in order to allocate resources to the segments and assess their performance.

The Group reports four operating segments which are reflected in internal management reporting as follows:
- Digital TV
- Cybersecurity
- Internet of Things (IoT)
- Public Access

The Digital TV division provides end-to-end integrated solutions, including open conditional access solutions, which allow TV operators and content providers to operate a wide range of high value-added pay TV services on a secure platform, and middleware software solutions for set-top-boxes and other consumer devices, enabling an advanced end-user experience. The Digital TV operating segment also includes the Group's Intellectual Property activities.

The Cybersecurity division provides end-to-end cybersecurity solutions to a wide range of customers across multiple sectors, including advisory services, technology and resale services, managed security and custom developed proprietary solutions in domains not covered by existing commercial products. The Cybersecurity division is a combination of organic developments and the former acquisitions of Milestone Systems, Inc. and M&S Technologies.

The IoT division extends the existing Digital Television secure platform into new domains, enabling device security through identity authentication and firmware protection, data security to ensure the confidentiality, integrity and authenticity of sensitive data, and access management and active security protections to enable secure processing, local decision making and threat detection and response.

The Public Access division provides access control systems and ticketing services for ski lifts, car parks, stadiums, concert halls and other major events.

The measure of income presented to manage segment performance is the segment operating income. Segment operating income is based on the same accounting policies as consolidated operating income except that intersegment sales are eliminated at the consolidation level. Income and expenses relating to Corporate include the costs of Group headquarters and the items of income and expense which are not directly attributable to specific divisions. These elements are reported under the 'Corporate common functions'. Reportable segment assets include total assets allocated by segment with the exclusion of intersegment balances, which are eliminated. Unallocated assets include assets managed on a centralized basis, included in the reconciliation to balance sheet assets.

In USD'000	Digital TV 2019	Public Access 2019	Cyber-security 2019	Internet of Things 2019	Total 2019
Revenues from external customers	382 199	339 218	85 962	2 822	810 201
Other operating income	11 400	5 615	–	62	17 076
Total segment revenue and other operating income	**393 599**	**344 832**	**85 962**	**2 884**	**827 277**
Cost of materials, licenses and services	-55 371	-152 935	-46 457	-467	-255 230
Operating expenses	-247 226	-183 915	-61 590	-23 607	-516 338
Operating income before depreciation, amortization and impairment	**91 002**	**7 982**	**-22 085**	**-21 190**	**55 709**
Depreciation, amortization and impairment	-31 250	-18 095	-5 796	-709	-55 850
Operating income - excluding corporate common functions	**59 752**	**-10 113**	**-27 880**	**-21 899**	**-140**
Corporate common functions					-15 129
Interest expense and other finance income/(expense), net					-11 887
Share of result of associates	846	1 055	–	–	1 901
Income before tax from continuing operations					**-25 256**
	31.12.2019	31.12.2019	31.12.2019	31.12.2019	31.12.2019
Total segment assets	**633 379**	**360 517**	**144 195**	**37 241**	**1 175 332**

In USD'000	Digital TV 2018	Public Access 2018	Cyber-security 2018	Internet of Things 2018	Total 2018
Revenues from external customers	443 520	368 395	94 290	1 999	908 205
Other operating income	9 156	2 115	91	120	11 482
Total segment revenue and other operating income	**452 676**	**370 511**	**94 381**	**2 119**	**919 687**
Cost of materials, licenses and services	-57 633	-157 863	-55 292	-4	-270 791
Operating expenses	-323 366	-191 562	-60 431	-21 589	-596 947
Operating income before depreciation, amortization and impairment	**71 678**	**21 086**	**-21 342**	**-19 474**	**51 949**
Depreciation, amortization and impairment	-27 497	-10 407	-4 355	-800	-43 059
Operating income - excluding corporate common functions	**44 181**	**10 679**	**-25 697**	**-20 273**	**8 890**
Corporate common functions					-16 193
Interest expense and other finance income/(expense), net					-10 750
Share of result of associates	355	1 140	–	–	1 495
Income before tax from continuing operations					**-16 558**
	31.12.2018	31.12.2018	31.12.2018	31.12.2018	31.12.2018
Total segment assets	**671 105**	**351 272**	**148 105**	**36 290**	**1 206 772**

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In USD'000	31.12.2019	31.12.2018
Total segment assets	1 175 332	1 206 772
Cash and cash equivalents	2 523	13 021
Other current assets	98	1 193
Financial assets and other non-current assets	4 201	2 627
Asset of disposal group classified as held for sale	11 497	14 401
Total Assets as per Balance Sheet	**1 193 651**	**1 238 014**

GEOGRAPHICAL INFORMATION

The company's country of domicile is Switzerland. The Group's revenue from external customers and information about its non-current assets by country are presented below:

	Revenues from external customers		Non-current assets	
In USD'000	2019	2018	31.12.2019	31.12.2018
Switzerland	42 668	35 672	69 077	76 126
United States of America	226 823	269 544	242 627	249 459
France	60 163	53 836	8 751	10 687
Norway	7 820	11 228	131 774	139 638
Rest of the world	472 726	537 925	89 139	91 021
	810 201	**908 205**	**541 368**	**566 931**

Non-current assets exclude financial instruments, deferred tax assets and employment benefit assets. Revenues are allocated to countries on the basis of the end-customer's location.

INFORMATION ABOUT MAJOR CUSTOMERS

No aggregate revenues resulting from transactions with a single external customer amount to 10% of the Group's total revenues.

REVENUE CATEGORIES

	Digital TV		Public Access		Cybersecurity		Internet of Things	
In USD'000	2019	2018	2019	2018	2019	2018	2019	2018
Europe	161 846	172 166	190 206	183 309	16 535	12 713	2 029	1 999
Americas	143 685	175 476	92 138	110 251	68 994	81 577	755	–
Asia and Africa	76 668	95 878	56 874	74 835	434	–	38	–
	382 199	**443 520**	**339 218**	**368 395**	**85 962**	**94 290**	**2 822**	**1 999**
Sale of goods	96 835	116 650	202 375	230 344	26 523	30 532	211	–
Services rendered	194 188	223 156	94 684	103 806	37 299	37 965	2 520	1 999
Royalties and licenses	91 176	103 715	42 159	34 245	22 140	25 793	91	–
	382 199	**443 520**	**339 218**	**368 395**	**85 962**	**94 290**	**2 822**	**1 999**

2019 total revenues and other operating income amount to kUSD 827 277 (2018: kUSD 981 029 including revenues from discontinued operations).

6. OTHER OPERATING INCOME

In USD'000	2019	2018
Government grants (research, development and training)	8 863	5 878
Gain on disposal of subsidiary	–	790
Income from rental of property	4 487	3 634
Gains/(losses) on disposal of assets	-502	-127
Contingent consideration received	1 000	–
Services rebilled to discontinued operation	2 000	–
Others	1 229	1 307
	17 076	**11 482**

7. EMPLOYEE BENEFITS EXPENSE

In USD'000	Note	2019	2018
Wages and salaries		325 748	358 125
Social security costs		46 711	51 074
Defined benefit plans expenses	28	11 803	10 659
Defined contribution plans expenses		8 513	10 091
Other personnel expenses		14 843	18 139
		407 617	**448 087**

8. OTHER OPERATING EXPENSES

In USD'000	2019	2018
Development and engineering expenses	14 034	17 755
Travel, entertainment and lodging expenses	31 365	34 833
Legal, experts and consultancy expenses	20 787	25 565
Administration expenses	21 799	26 223
Building and infrastructure expenses	14 235	30 533
Marketing and sales expenses	5 613	6 405
Taxes other than income tax	3 251	3 908
Change in provisions	4 667	8 850
Insurance, vehicles and others	8 100	10 980
	123 850	**165 053**

9. DEPRECIATION, AMORTIZATION AND IMPAIRMENT

In USD'000	Note	2019	2018
Land and buildings	14	4 638	5 050
Equipment and machines	14	11 281	11 751
Total depreciation and impairment of tangible fixed assets		**15 919**	**16 801**
Land and buildings	4	13 151	–
Vehicles, equipment and other	4	2 999	–
Total depreciation and impairment of right-of-use assets		**16 150**	**–**
Intangible assets	15	23 781	26 258
Total amortization and impairment on intangible fixed assets		**23 781**	**26 258**
Depreciation, amortization and impairment		**55 850**	**43 059**

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10. INTEREST EXPENSE

In USD'000	Note	2019	2018
Interest expense:			
- Bond 2015-2022	27	3 921	3 976
- Bond 2016-2024	27	2 363	2 397
- Net interest expense recognized on defined benefit plans	28	822	609
- Other and bank charges		3 076	3 458
		10 182	**10 440**

11. OTHER FINANCE INCOME/(EXPENSE), NET

In USD'000	Note	2019	2018
Interest income		1 796	3 007
Net gains/(losses) on foreign exchange related derivative financial instruments		319	246
Net foreign exchange transaction gains/(losses)		-1 865	-2 299
Others		-1 955	-1 264
		-1 705	**-310**

Changes in the fair value of financial assets at fair value through OCI were kUSD 0 (2018: kUSD -153) and recognized directly in other comprehensive income.

12. INCOME TAX EXPENSE

In USD'000	Note	2019	2018
Current income tax		-13 310	-12 365
Deferred income tax	17	1 574	6 643
Non-refundable withholding tax		-1 577	-2 019
		-13 312	**-7 741**

The tax on the Group's income before tax differs from the theoretical amount that would arise using the weighted average tax rate applicable to profits of the consolidated companies as follows:

In USD'000	2019	2018
Income before tax	**-25 256**	**-16 558**
Expected tax calculated at domestic tax rates in the respective countries	3 422	4 835
Effect of income not subject to income tax or taxed at reduced rates	2 489	2 280
Effect of tax restructuring	-2 331	–
Effect of utilization of previously unrecognized tax asset on tax losses carried forward and temporary differences	3 185	4 435
Effect of temporary differences and tax losses not recognized and deferred tax assets written-off	-16 441	-14 207
Effect of changes in tax rates	-294	1 299
Effect of associates' result reported net of tax	468	285
Effect of disallowed expenditures	-4 353	-6 163
Effect of prior year income taxes	668	-329
Effect of non-refundable withholding tax	-1 577	-2 019
Other	1 452	1 843
Tax expense	**-13 312**	**-7 741**

Income before tax for tax-transparent companies includes the full income before tax of non-fully-owned subsidiaries whose income taxes are paid by the subsidiaries' shareholders. However, the Group only recognizes its ownership percentage tax portion. The theoretical tax impact if the Group had recognized 100% of the taxes on these subsidiaries amounts to kUSD 1 385 (2018: kUSD 1 426) and is included in 'Other' in the above table.

During 2019, the Group transferred the entrepreneurship of Conax operations in Norway and the ownership of the Conax subsidiary in India to other Group companies. As a consequence, the difference of tax rate applied between the gain realized and the elimination of the transferred assets between the companies, together with the withholding tax incurred on the transfer, resulted in a tax expense of kUSD 2 331 which is shown under 'Effect of tax restructuring' in the table above.

The weighted average applicable tax rate decreased from 29.2% in 2018 to 13.6% in 2019. The decrease can be explained by a different revenue split between countries and an overall global decline in tax rates, resulting in a more favorable tax rate in several jurisdictions.

13. EARNINGS PER SHARE (EPS)

Basic and diluted earnings per share

Basic and diluted earnings per share is calculated by dividing the profit attributable to equity holders of the company by the weighted average number of shares outstanding during the year.

In USD'000	2019	2018
Net income attributable to bearer shareholders	-40 733	-26 037
- Continuing operations	*-40 733*	*-29 071*
- Discontinued operations	*-*	*3 034*
Net income attributable to registered shareholders	-3 764	-2 416
- Continuing operations	*-3 764*	*-2 698*
- Discontinued operations	*-*	*282*
Total net income attributable to equity holders	**-44 497**	**-28 453**
Weighted average number of bearer shares outstanding	50 103 651	49 897 528
Weighted average number of registered shares outstanding	46 300 000	46 300 000
Basic and diluted earnings per share (in USD)		
Attributable to shareholders of Kudelski SA for bearer shares : basic and diluted (in USD)	-0.8130	-0.5218
- Continuing operations	*-0.8130*	*-0.5826*
- Discontinued operations	*-*	*0.0608*
Attributable to shareholders of Kudelski SA for registered shares : basic and diluted (in USD)	-0.0813	-0.0522
- Continuing operations	*-0.0813*	*-0.0583*
- Discontinued operations	*-*	*0.0061*

The company has no share options nor share subscription rights outstanding which could lead to a dilution of earnings per share.

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14. TANGIBLE FIXED ASSETS

In USD'000	31.12.2019	31.12.2018
Land and buildings	94 722	94 952
Equipment and machines	32 061	33 224
	126 783	**128 176**

LAND AND BUILDINGS

In USD'000	Land	Buildings	Building improvements	Total
GROSS VALUES AT COST				
As of January 1, 2018	**21 644**	**110 088**	**19 137**	**150 869**
Additions	–	2 362	1 655	4 017
Disposals and retirements	–	-157	-4 877	-5 034
Currency translation effects	-135	-1 428	-382	-1 945
Reclassification & others	–	-1 288	315	-973
As of January 1, 2019	**21 509**	**109 577**	**15 848**	**146 934**
Additions	2 493	886	1 003	4 381
Disposals and retirements	–	-5	-226	-231
Currency translation effects	323	677	-12	988
Reclassification & others	–	–	-444	-444
As of December 31, 2019	**24 325**	**111 134**	**16 170**	**151 629**
ACCUMULATED DEPRECIATION AND IMPAIRMENT				
As of January 1, 2018	**–**	**-40 385**	**-12 543**	**-52 928**
Systematic depreciation	–	-3 174	-1 876	-5 050
Disposals and retirements	–	437	4 601	5 038
Currency translation effects	–	691	197	888
Reclassification & others	–	79	-8	71
As of January 1, 2019	**–**	**-42 352**	**-9 629**	**-51 981**
Systematic depreciation	–	-2 868	-1 770	-4 638
Disposals and retirements	–	–	145	145
Currency translation effects	–	-457	-14	-471
Reclassification & others	–	–	38	38
As of December 31, 2019	**–**	**-45 677**	**-11 229**	**-56 906**
Net book values as of December 31, 2018	**21 509**	**67 224**	**6 220**	**94 952**
Net book values as of December 31, 2019	**24 325**	**65 457**	**4 941**	**94 722**
Useful life in years	Indefinite	10 – 50	4 – 8	

In USD'000	31.12.2019	31.12.2018
Corporate buildings on land whose owner has granted a permanent and specific right of use	13 708	14 033

EQUIPMENT AND MACHINES

In USD'000	Technical equipment and machinery	Other equipment	Total
GROSS VALUES AT COST			
As of January 1, 2018	**168 584**	**14 917**	**183 501**
Additions	9 636	1 892	11 528
Impact of business combinations	77	–	77
Disposals and retirements	-75 319	-3 806	-79 125
Currency translation effects	-1 829	-605	-2 434
Reclassification & others	-4 351	4 800	450
As of January 1, 2019	**96 800**	**17 197**	**113 997**
Additions	7 518	1 752	9 270
Disposals and retirements	-3 429	-1 835	-5 264
Currency translation effects	150	40	190
Reclassification & others	1 016	1 040	2 056
As of December 31, 2019	**102 054**	**18 195**	**120 249**
ACCUMULATED DEPRECIATION AND IMPAIRMENT			
As of January 1, 2018	**-134 466**	**-10 307**	**-144 774**
Systematic depreciation	-9 573	-2 036	-11 609
Impairment	-142	–	-142
Disposals and retirements	71 001	3 726	74 727
Currency translation effects	714	388	1 102
Reclassification & others	3 499	-3 576	-76
As of January 1, 2019	**-68 967**	**-11 806**	**-80 773**
Systematic depreciation	-8 358	-2 306	-10 664
Impairment	-260	-357	-617
Disposals and retirements	2 923	1 488	4 410
Currency translation effects	-460	-46	-506
Reclassification & others	-20	-19	-38
As of December 31, 2019	**-75 142**	**-13 046**	**-88 188**
Net book values as of December 31, 2018	**27 832**	**5 392**	**33 224**
Net book values as of December 31, 2019	**26 911**	**5 149**	**32 061**
Useful life in years	4 – 10	4 – 7	

Technical equipment and machinery includes assets made available to clients which generate recurring service revenue. 2018 disposals and retirements relate to assets made available to customers where the customer agreements have been renegotiated and the assets are no longer made available to such customers.

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15. INTANGIBLE ASSETS

In USD'000	Technol-ogy	Customer lists, Trade-marks & Brands	Software	Goodwill	Other intangibles	Total
GROSS VALUES AT COST						
As of January 1, 2018	**130 985**	**72 383**	**89 517**	**358 999**	**503**	**652 388**
Additions	1 979	3 322	7 087	–	–	12 388
Impact of business combinations	–	2 389	–	3 464	–	5 853
Disposals and retirements	-0	–	-3 831	–	-0	-3 831
Reclassification & others	57	-3 322	3 844	–	-57	522
Currency translation effects	-3 106	-3 203	-1 230	-9 245	-15	-16 798
As of January 1, 2019	**129 915**	**71 570**	**95 387**	**353 217**	**431**	**650 521**
Additions	927	292	2 119	–	–	3 338
Disposals and retirements	-16 547	-20	-1 193	–	–	-17 760
Reclassification & others	-1 613	-49	49	–	–	-1 613
Currency translation effects	282	-492	1 242	-1 972	-5	-944
As of December 31, 2019	**112 965**	**71 302**	**97 604**	**351 246**	**426**	**633 543**
ACCUMULATED DEPRECIATION AND IMPAIRMENT						
As of January 1, 2018	**-108 926**	**-26 420**	**-65 412**	**–**	**-492**	**-201 250**
Systematic amortization	-7 951	-9 402	-8 483	–	-5	-25 841
Impairment	-398	–	-19	–	–	-417
Recovery of amortization on disposal and retirements	–	–	3 809	–	–	3 809
Reclassification & others	-52	–	–	–	57	5
Currency translation effects	2 546	1 498	840	–	14	4 898
As of January 1, 2019	**-114 782**	**-34 324**	**-69 264**	**–**	**-426**	**-218 797**
Systematic amortization	-4 834	-8 902	-9 491	–	-5	-23 232
Impairment	-345	-12	-191	–	–	-548
Recovery of amortization on disposal and retirements	16 531	20	1 189	–	–	17 740
Currency translation effects	-459	241	-1 082	–	5	-1 295
As of December 31, 2019	**-103 889**	**-42 978**	**-78 840**	**–**	**-426**	**-226 133**
Net book values as of December 31, 2018	**15 133**	**37 245**	**26 123**	**353 217**	**5**	**431 724**
Net book values as of December 31, 2019	**9 076**	**28 324**	**18 763**	**351 246**	**0**	**407 410**
Useful life in years	4 – 10	5 – 10	3 – 4	Indefinite	4	

Intangible assets with indefinite useful lives are subject to a yearly impairment review. The impairments of Technology assets in 2018 and 2019 were due to commercial initiatives abandoned during such years. The impairment of Software assets in 2019 relates to an ERP system that was discontinued following the integration of a subsidiary.

Goodwill is tested for impairment at least annually and when there is an indication of impairment. The impairment tests of goodwill are performed at the same time each year and at the cash generating unit (CGU) level, defined within the framework of the Group as its operating segments. In accordance with IFRS 8, the Group reports four operating segments: Digital TV, Cybersecurity, Internet of Things (IoT) and Public Access (note 5).

Goodwill allocated to each operating segment is tested for impairment using a value-in-use calculation, which corresponds to the segment's future projected cash flows discounted at an appropriate pre-tax rate of return. Cash flow projections are based on the financial plans and business strategies of Group management covering a period of five years and projected to perpetuity using a multiple which corresponds to a steady or declining growth rate. The Group assesses the uncertainty of these estimates by making sensitivity analyses. The discount rates used reflect the current assessment of the time value of money and the risks specific to each operating segment. Any impairment loss in respect of goodwill is never subsequently reversed.

The following sets out the allocated goodwill and key assumptions used in the impairment test for each segment:

2019	Carrying amount	Period of cash flow projections	Annual sales growth	Annual margin evolution	Terminal growth rate	Pre-tax discount rate
Goodwill CGU						
Digital TV	214 666	5 years	-5% to 3%	Declining	1.5%	9.00%
Public Access	35 701	5 years	1% to 5%	Stable	2.0%	10.25%
Cybersecurity	65 001	5 years	14% to 23%	Improvement	2.2%	9.00%
IoT	35 878	5 years	28% to 150%	Improvement	2.2%	9.00%
	351 246					

2018	Carrying amount	Period of cash flow projections	Annual sales growth	Annual margin evolution	Terminal growth rate	Pre-tax discount rate
Goodwill CGU						
Digital TV	215 832	5 years	-12% to 0%	Declining	1.5%	10.00%
Public Access	35 959	5 years	3% to 5%	Stable	2.0%	11.00%
Cybersecurity	65 354	5 years	14% to 21%	Improvement	3.0%	10.00%
IoT	36 072	5 years	71% to 155%	Improvement	3.0%	10.00%
	353 217					

The following has been taken into consideration in the impairment tests:

• assumed cost of capital for each segment is based on the cost of equity of comparable businesses adjusted for the segment capital structure. The resulting weighted average cost of capital is then adjusted to include tax effects specific to the jurisdiction in which the segment operates. Net operating loss carryforwards are not considered when determining the tax effects.
• cash flows for the first five years were based upon financial plans approved by Group management which are consistent with the Group's approved strategy for this period. They are based upon past performance and current initiatives.
• terminal growth rates have been determined to reflect the long-term view of the nominal evolution of the business.

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Digital TV
Digital TV revenue assumptions are based on bottom-up projections by product groups, key accounts and regions. Such projections are completed by segment management in collaboration with product managers and account managers. Projections are subsequently adjusted at the Group management level to include contingencies related to uncertainties of the business development. Margin assumptions are derived from historical performance, pricing trends, and expected product mix. Operating cost assumptions are based on historical expenditures and projected based on anticipated business actions and outlook over the forecast period.

Segment management assumes declining revenues over the first years of the planning period, as the subscriber base of established pay-TV operators is expected to continue shrinking. In the later years of the planning period, revenues are expected to stabilize and revert to growth, as emerging product lines (e.g. anti-piracy activities) gain traction.

Cybersecurity
Cybersecurity revenue projections are based on segment management's assumed development of the segment's business lines for each key market. Projections are subsequently adjusted at the Group management level to include contingencies related to the uncertainties of the business development. Margin assumptions are derived from current pricing trends and are based on the ongoing shift of product mix towards higher value-added business pillars including advisory and managed security services. Operating cost assumptions are forecasted based on anticipated business actions and business outlook over the planning period.

In 2019, Cybersecurity revenues were lower than in previous business plans, as the segment continues to see the market increasingly moving from on-premise solutions to software based and service deployments. In 2020, Cybersecurity is expected to return to growth and maintain momentum over the planning period, as the segment continues to gain traction in the higher margin managed security services space and innovation space.

Internet of Things (IoT)
IoT revenue projections have been developed by the segment management based on forecast volumes and prices for existing customers and prospects. Projections are subsequently adjusted at the Group management level to include contingencies related to the uncertainty of the business development. Operating cost assumptions are mainly based on the cost base required for the implementation of the current product roadmap as the Group expects to maintain the current run rate of R&D spending in the IoT segment.

As the IoT segment is still in its infancy stage with the commercial release of its security platform in 2019, initial contracts signed during 2018 began generating their first revenues in 2019. Segment management forecasts material revenue growth to occur by the end of 2021, with total segment revenues exceeding USD 10 million at this time. Based on the high operating leverage of the IoT product line, the Group expects that this segment will reach break-even towards the end of the planning period following a cumulative investment of over USD 100 million.

Public Access
Public Access revenue assumptions are based on continued development from existing products and customers. Projections are subsequently adjusted at the Group management level to include contingencies related to the uncertainty of the business development. Margin assumptions are derived from historical performance, pricing trends, and expected product mix. Operating cost assumptions are based on historical expenditures and projected based on anticipated business actions and outlook over the forecast period.

During 2019, the Group initiated structural measures within the Public Access segment aimed at simplifying the corporate entities and management structure, integration of regional subsidiaries to the Group's ERP and supply chain tools and overall streamlining of overhead functions. These efforts are expected to stabilize the segments cost base and allow for continued top line growth.

Management believes that reasonably possible changes to any of the above key assumptions would not cause the operating segment's recoverable amount to fall below the carrying value of the segment, except for goodwill of Cybersecurity and IoT, for which material changes in recurring revenues and revenue growth assumptions could result in a potential goodwill impairment. A loss of recurring revenues of USD 4 million or a 3% reduction of the assumed annual growth rate in the Cybersecurity segment and a 12% reduction of the assumed annual growth rate in the IoT segment, without any adjustment of operating expenses, would lead to a value-in-use equal to the carrying amount of goodwill at the end of the planning period.

16. INVESTMENTS IN ASSOCIATES

In USD'000	2019	2018
At January 1	**6 191**	**5 858**
Share of profit	1 901	1 495
Dividends received	-1 871	-936
Currency translation effects	89	-226
At December 31	**6 309**	**6 191**

The Group's interests in its principal associates, all of which are unlisted, were as follows:

		Interest held	
Name of associate	**Principal activity**	**2019**	**2018**
APT-SkiData Ltd, United Kingdom	Sales of Public Access products	26%	26%
SKIDATA Parking Systems, Hong-Kong	Sales of Public Access products	26%	26%
SKIDATA India Private Limited, India	Sales of Public Access products	49%	49%
SJack GmbH, Austria	Sales of Public Access products	26%	26%
Swiss Peak Experience SA, Switzerland	Sales of Public Access products	45%	45%
iWedia SA, Switzerland	Middleware for set-top-boxes	40%	40%
Kryptus Segurança da Informaçao Ltda.	Cyber Security activities	* 16%	* 16%

*Through a shareholder agreement, Kudelski Group is entitled to appoint and has appointed one board member of Kryptus Segurança da Informaçao Ltda. and participates in significant financial and operating decisions. The Group has therefore determined that it has significant influence over this entity, even though it only holds 16% of the voting rights.

SUMMARIZED FINANCIAL INFORMATION OF THE GROUP'S ASSOCIATES

In USD'000	31.12.2019	31.12.2018
Total assets	38 070	34 502
Total liabilities	22 438	18 586
Net assets	15 632	15 904
Group's share of associates' net assets	4 952	4 837

	2019	2018
Revenue	46 505	50 211
Result of the period	6 494	4 987
Group's share of associates' result for the period	1 901	1 495

17. DEFERRED INCOME TAXES

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income taxes relate to the same fiscal authority. The offset amounts are as follows:

In USD'000	31.12.2019	31.12.2018
Deferred tax assets	57 785	61 612
Deferred tax liabilities	-4 282	-6 878
	53 504	**54 734**

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Movement on the deferred income tax account is as follows:

In USD'000	Note	2019	2018
At January 1		**54 734**	**48 732**
Exchange differences		116	-1 937
Recognized against other comprehensive income		-2 921	1 506
Change in scope of consolidation		–	-210
Income statement (expense)/income	12	1 574	6 643
At December 31		**53 504**	**54 734**

The movement in deferred tax assets and liabilities during 2019, without taking into consideration the offsetting of balances within the same tax jurisdiction, is as follows:

In USD'000	At January 1, 2019	Income statement effect	Change in scope of consolida-tion	Other Compre-hensive income	Currency translation effects	At December 31, 2019
Deferred tax assets associated with						
- intangibles	5 001	-1 392	–	–	49	3 658
- employee benefits	9 115	821	–	-2 946	33	7 023
- tax losses	38 425	42	–	–	76	38 543
- provisions and other elements tax deductible when paid	7 183	1 138	–	25	-21	8 325
- inter-company profit elimination	5 160	336	–	–	-109	5 388
- others	818	-174	–	–	-16	628
Total deferred tax assets (gross)	**65 703**	**771**	**–**	**-2 921**	**12**	**63 565**
Deferred tax liabilities associated with						
- intangibles	-5 817	835	–	–	63	-4 919
- provisions and accelerated tax depreciation	-4 268	146	–	–	24	-4 097
- leases	–	-169	–	–	-1	-169
- others	-884	-9	–	–	17	-876
Total deferred tax liabilities (gross)	**-10 969**	**803**	**–**	**–**	**104**	**-10 061**
Net deferred tax asset/(liability)	**54 734**	**1 574**	**–**	**-2 921**	**116**	**53 504**

And for 2018:

In USD'000	At January 1, 2018	Income statement effect	Change in scope	Other Compre-hensive income	Currency translation effects	At December 31, 2018
Deferred tax assets associated with						
- intangibles	7 442	-2 387	–	–	-53	5 001
- employee benefits	7 607	182	–	1 475	-150	9 115
- tax losses	35 164	4 162	–	–	-901	38 425
- provisions and other elements tax deductible when paid	1 893	5 906	322	31	-969	7 183
- inter-company profit elimination	5 544	-339	–	–	-46	5 160
- others	-150	1 250	-162	–	-120	818
Total deferred tax assets (gross)	**57 501**	**8 774**	**160**	**1 506**	**-2 238**	**65 703**
Deferred tax liabilities associated with						
- affiliates and allowances for Group companies	6	–	-6	–	–	–
- intangibles	-8 187	2 526	-465	–	308	-5 817
- provisions and accelerated tax depreciation	-1 054	-3 270	100	–	-45	-4 268
- others	466	-1 388	–	–	38	-884
Total deferred tax liabilities (gross)	**-8 769**	**-2 131**	**-371**	**–**	**302**	**-10 969**
Net deferred tax asset/(liability)	**48 732**	**6 643**	**-210**	**1 506**	**-1 937**	**54 734**

Included in change in scope are the impacts of business combinations and reclassification of deferred taxes to discontinued operations at December 31, 2018.

UNRECOGNIZED TAX LOSSES CARRIED FORWARD

At the balance sheet date, the Group has unused tax losses and temporary differences of mUSD 1 440.0 (2018: mUSD 1 177.9) available for offset against future profits. A deferred tax asset has been recognized in respect of mUSD 475.8 (2018: mUSD 404.1) of such losses and temporary differences. No deferred tax asset has been recognized for the remaining mUSD 964.2 (2018: mUSD 773.8) due to the unpredictability of future profit streams. The amount of unused tax losses carried forward which have not been capitalized as deferred tax assets, with their expiry dates, is as follows:

In USD million	2019	2018
Expiration within:		
One year	38.8	4.3
Two years	36.2	46.2
Three years	44.7	34.3
Four years	31.1	40.5
Five years	120.4	69.4
More than five years	693.0	579.1
Total	**964.2**	**773.8**

18. FINANCIAL ASSETS AND OTHER NON-CURRENT ASSETS

In USD'000	31.12.2019	31.12.2018
Financial assets at amortized cost:		
Loan – third party	12 579	11 506
State and government institutions	13 078	18 273
Trade accounts receivable (long-term portion)	26 155	34 725
Guarantee deposits	2 445	2 249
Prepaid expenses and accrued income (long-term portion)	139	497
Total financial assets at amortized cost	**54 395**	**67 251**
Financial assets at fair value through comprehensive income:		
Equity instruments (level 3)	517	508
Total financial assets at fair value through comprehensive income	**517**	**508**
Other non-current assets:		
Deferred contract cost	176	386
Deferred rent	866	841
Total other non-current assets	**1 042**	**1 227**
Total	**55 953**	**68 985**

The equity instruments are measured using a discounted cash flow method provided by the company on a yearly basis.

The effective interest rate on third party loans is 1.93% (2018: 2.00%). State and government institutions include government grants for R&D projects that will not be received within the next 12 months. The long term portion of trade accounts receivable includes, among others, discounted revenues related to the licensing of the Group intellectual property portfolio.

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19. INVENTORIES

In USD'000	31.12.2019	31.12.2018
Raw materials	3 212	3 423
Work in progress	5 379	5 917
Finished goods	56 872	50 529
	65 463	**59 868**

The cost of inventories recognised as an expense includes kUSD 2 716 (2018: kUSD 180) in respect of write-downs, and has been reduced by kUSD 22 (2018: kUSD 399) in respect of the reversal of such write-downs.

Changes in inventories of finished goods and work in progress included in cost of material are kUSD 7 397 (2018: kUSD -3 070).

20. TRADE ACCOUNTS RECEIVABLE AND CONTRACT ASSETS

In USD'000	31.12.2019	31.12.2018
Trade accounts receivable	241 431	291 641
Less: provision for impairment	-29 397	-36 780
Trade accounts receivable related parties	2 363	2 231
Trade accounts receivable - net	**214 397**	**257 092**
Contract assets	58 084	60 345
Less: provision for impairment	-128	-358
Contract assets - net	**57 956**	**59 987**

Before accepting a new customer, the Group performs a credit scoring to assess the potential customer's credit quality and defines specific credit limits. Limits and scoring are regularly reviewed. Furthermore, for low value added business deliveries, the Group usually works on a back to back basis.

The following table summarizes the movement in the provisions for impairment of trade accounts receivable and contract assets:

	Contract assets		Trade accounts receivable	
In USD'000	**2019**	**2018**	**2019**	**2018**
December 31,	**-358**	**-30**	**-36 780**	**-26 453**
Amounts restated through opening retained earnings	–	-79		-2 345
January 1,	**-358**	**-109**	**-36 780**	**-28 797**
Reclassified to (from) held for sale	–	–	–	-1 668
Provision for impairment charged to income statement	-19	-285	-7 645	-10 645
Utilization	–	–	11 904	122
Reversal	245	30	3 272	3 798
Change in scope	–	–	–	-753
Translation effects	4	6	-149	1 164
December 31,	**-128**	**-358**	**-29 397**	**-36 780**

The creation and release of the provision for impairment are included in other operating expenses in the income statement. Provisions recognized for the impairment of trade receivables amount to kUSD -7 645 (2018: kUSD -10 645). Amounts charged to the provision for impairment account are written-off when there is no expectation to recover additional cash.

The Group applies the IFRS 9 simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade accounts receivables and contract assets. On that basis, the provisions for impairment of trade accounts receivable and contract assets as of December 31, 2019 and 2018 were determined as follows:

In USD'000	Gross carrying amount	Expected loss rate	Provision for impairment 31.12.2019	Gross carrying amount	Expected loss rate	Provision for impairment 12.31.2018
Trade accounts receivable not overdue	121 184	0.1%	123	144 167	0.1%	114
Past due:						
- not more than one month	37 964	0.4%	141	40 771	0.3%	134
- more than one month and not more than three months	25 807	0.9%	239	28 849	0.6%	184
- more than three months and not more than six months	12 023	6.7%	805	22 169	1.7%	377
- more than six months and not more than one year	15 562	45.8%	7 124	19 909	28.1%	5 591
- more than one year	28 890	72.6%	20 966	35 776	84.9%	30 380
Total	**241 431**		**29 397**	**291 641**		**36 780**
Contract assets	58 084	0.2%	128	60 345	0.6%	358
Total	**58 084**		**128**	**60 345**		**358**

The expected loss rates are based on payment profiles of sales from the individual Group companies and corresponding historical credit losses. The average loss rates displayed above may vary due to the mix of outstanding receivables within the Group companies.

21. OTHER FINANCIAL ASSETS AT AMORTIZED COST

In USD'000	31.12.2019	31.12.2018
Other receivables - third parties	11 293	7 488
Other receivables - related parties	1 307	1 279
Advances to suppliers and employees	3 151	2 276
State and government institutions	32 646	28 773
Loans third parties - short-term portion	–	1 204
	48 396	**41 021**

The effective interest rate on short-term third party loans was 2.86% (2018: 4.34%).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

22. OTHER CURRENT ASSETS

In USD'000	31.12.2019	31.12.2018
Prepaid expenses	10 580	11 518
Accrued income	14 632	10 408
Deferred contract cost (short-term portion)	217	364
Other receivables - third parties	160	625
	25 589	**22 915**

23. CASH AND CASH EQUIVALENTS

In USD'000	31.12.2019	31.12.2018
Cash at bank and in hand	65 929	83 082
Short-term deposits	8 667	2 897
	74 596	**85 979**

The effective interest rate on short term deposits was 0.71% (2018: 0.98%). The Group only enters into transactions with highly rated banks.

24. SHARE CAPITAL

ISSUED AND FULLY PAID SHARE CAPITAL

The share capital consists of 50 115 192 (2018: 49 910 873) bearer shares at CHF 8.00 par value each and 46 300 000 (2018: 46 300’000) registered shares at CHF 0.80 par value each. Each share confers the right to vote and is fully paid up. The counter-value for the share capital is kUSD 335 101 (2018: kUSD 333 456).

The registered shares are neither listed nor traded on any stock exchange. The bearer shares have been listed on the main market of the SIX since August 2, 1999 (ticker: KUD, security number: 1 226 836; ISIN CH0012268360).

AUTHORIZED SHARE CAPITAL

The Board of Directors is authorized to increase the share capital in one or more stages until 15 March 2020 by a maximum amount of CHF 32 705 312 through the issuance of 3 768 164 bearer shares with a nominal value of CHF 8.00 per share and 3 200 000 registered shares with a nominal value of CHF 0.80 per share to be fully paid up. The issuance price, the nature of the contributions, the date from which new shares shall give entitlement to dividends and other modalities of any share issuance shall be determined by the Board of Directors. The preferential subscription rights of shareholders may be excluded and allotted to third parties by the Board of Directors with a view to acquiring companies or parts of companies or in order to finance the whole or partial acquisition of other companies in Switzerland or abroad. All statutory restrictions on the transfer of shares are applicable to new registered shares.

CONDITIONAL SHARE CAPITAL

Conditional share capital consists of 10 000 000 (2018: 10 000 000) bearer shares at CHF 8.00 each to satisfy convertible bond exercise right and 698 564 (2018: 402 883) bearer shares at CHF 8.00 each to satisfy option exercise or share subscriptions to employees.

25. NON-CONTROLLING INTERESTS

The following table summarizes the information relating to each of the Group's subsidiaries in which it has material non-controlling interests, before any intercompany elimination:

As at December 31, 2019 (in USD'000)	**Nagrastar**	**275, Sacramento Street LLC**
Non-controlling interests percentage	**50.0%**	**50.1%**
Non-current assets	1 558	36 730
Current Assets	43 699	750
Non-current liabilities	–	4 550
Current liabilities	12 402	178
Total Equity	**32 855**	**32 752**
Non-controlling interests percentage	50%	50.1%
Theoritical amount of non-controlling interests	16 427	16 409
Carrying amount of non-controlling interests	**16 427**	**16 409**
Revenue	23 620	4 139
Net result	8 734	2 329
Total comprehensive income	8 734	2 329
Total comprehensive income allocated to non-controlling interests	4 367	1 167
Dividend paid to non controlling interests	-5 000	–
Net increase /(decrease) in cash and cash equivalents	-1 206	334

As at December 31, 2018 (in USD'000)	**Nagrastar**	**275, Sacramento Street LLC**
Non-controlling interests percentage	**50.0%**	**50.1%**
Non-current assets	1 660	36 772
Current Assets	42 769	552
Non-current liabilities	–	6 700
Current liabilities	10 308	201
Total Equity	**34 121**	**30 422**
Non-controlling interests percentage	50%	50.1%
Theoritical amount of non-controlling interests	17 060	15 242
Carrying amount of non-controlling interests	**17 060**	**15 242**
Revenue	22 979	4 292
Net result	8 588	2 383
Total comprehensive income	8 588	2 383
Total comprehensive income allocated to non-controlling interests	4 294	1 194
Net increase /(decrease) in cash and cash equivalents	10 363	-56

These companies are treated as subsidiaries because the Group controls them either by financing or bearing an over-proportional responsibility for the main risks.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

26. LONG TERM FINANCIAL DEBT

In USD'000	Note	31.12.2019	31.12.2018
CHF 200 million 1.875% bond 2015/2022	27	206 279	202 591
CHF 150 million 1.5% bond 2016/2024	27	154 547	151 795
Long-term bank loans		32 203	43 715
Other long-term financial liabilities		–	60
		393 029	**398 161**

Long term bank loans effective interest rate is 0.75% (2018: 0.78%).

27. BONDS

On May 12, 2015 Kudelski SA issued a CHF 200 million bond with a subscription price of 100%, bearing an annual interest rate of 1.875% and maturing on August 12, 2022 at par, with denominations of CHF 5 000 nominal and multiples thereof. The proceeds amounted to kCHF 200 000 (kUSD 214 891) less issuance costs of kCHF 870 (kUSD 939) totaling an initial net proceed of kCHF 199 130 (kUSD 213 952) and resulting in an effective interest rate of 1.97%.

On September 27, 2016 Kudelski SA issued an additional CHF 150 million bond with a subscription price of 100%, bearing an annual interest rate of 1.5% and maturing on September 27, 2024 at par, with denominations of CHF 5 000 nominal and multiples thereof. The proceeds amounted to kCHF 150’000 (kUSD 154 384) less issuance costs of kCHF 665 (kUSD 684) totaling an initial net proceed of kCHF 149’335 (kUSD 153 700) and resulting in an effective interest rate of 1.58%.

Bonds are recognized in the consolidated balance sheets as of December 31, as follows:

In USD'000	2019	2018
Initial balance	**354 386**	**357 443**
Amortization of transaction costs less premium	211	210
Currency translation effects	6 229	-3 267
Liability component as of December 31	**360 826**	**354 386**
of which:		
- long-term portion (bond 2015/2022)	206 279	202 591
- long-term portion (bond 2016/2024)	154 547	151 795
	360 826	**354 386**

28. EMPLOYEE BENEFITS LIABILITIES

Defined benefit plan income, expense, plan assets and defined benefit obligations are determined by independent actuaries. Defined benefit obligations are calculated using the “Projected Unit Credit” method, and plan assets have been measured at fair market values. Most of the employee benefit obligation results from the Swiss pension plan.

SWITZERLAND

In addition to the legally required social security schemes, the Group has an independent pension plan. Swiss legislation prescribes that both the employer and the employee contribute a fixed percentage of the employee’s insured salary to an external pension fund. Additional employers or employees’ contribution may be required whenever the plan’s statutory funding ratio falls below a certain level. The pension plan is run by a separate legal entity, governed by a Board of Trustees which consists of representatives nominated by the Group and by the active insured employees. The Board of Trustees is responsible for the plan design and the asset investment strategy. This plan covers all employees in Switzerland and is treated as a defined benefit plan with associated risks exposure being:

- Mortality risk: the assumptions adopted by the Group make allowance for future improvements in life expectancy. However, if life expectancy improves at a faster rate than assumed, this would result in greater payments from the plans and consequently increases in the plan's liabilities. In order to minimize the risk, mortality assumptions are reviewed on a regular basis.
- Market and liquidity risks: these are the risks that the investments do not meet the expected returns over the medium to long term. This also encompasses the mismatch between assets and liabilities. In order to minimize the risks, the structure of the portfolios is reviewed on a regular-basis.

ABROAD

Outside Switzerland, the Group sponsors sixteen (2018: twelve) other post-employment benefit plans treated as defined benefit plan according to IAS 19 revised. Post-employment benefit plan may include jubilee and termination benefits. Other post-employment benefit plans are not funded.

The following table sets forth the status of the pension plans and the amount that is recognized in the balance sheet:

In USD'000	**31.12.2019**	**31.12.2018**
Fair value of plan assets	191 568	166 457
Defined benefit obligation	-242 640	-232 775
Funded status	**-51 072**	**-66 319**
Other comprehensive income	-4 277	-25 879
Prepaid/(accrued) pension cost	-46 795	-40 440
Funded status	**-51 072**	**-66 319**

In accordance with IAS 19, the following amount is recorded as net pension cost in the income statement for the financial years 2019 and 2018:

In USD'000	**Note**	**2019**	**2018**
Service cost		-17 247	-17 989
Employees contributions		5 202	5 500
Amortization of gains/(losses)		242	167
Curtailment gain / (loss)		–	1 845
Impact of plan amendment		–	-181
Total recognized in employee benefits expense	**7**	**-11 803**	**-10 659**
Interest cost		-2 472	-2 190
Interest income		1 650	1 582
Total recognized in interest expense	**10**	**-822**	**-609**
Net pension (cost)/income		**-12 624**	**-11 267**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

The main assumptions used for the calculation of the pension cost and the defined benefit obligation for the years 2019 and 2018 are as follows:

	31.12.2019	31.12.2018
Switzerland		
Financial assumptions:		
- Discount rate	0.20%	1.00%
- Rate of future increase in compensations	1.50%	1.50%
- Rate of future increase in current pensions	0% for 5 years, then 0.75%	0.75%
Demographic assumptions:		
- Interest rate credited on savings accounts	1.00%	1.00%
- Turnover *(on average)*	12.0%	10.0%
- Demographic basis	LLP 2015 generational probability risk for disability reduced 50%	LLP 2015 generational
- Retirement payment form	75% pension, 25% lump sum	100% pension
Abroad		
- Discount rate	1.23%	2.17%
- Rate of future increase in compensations	2.80%	3.13%
- Turnover *(on average)*	9.7%	8.5%

The weighted average duration of the defined benefit obligation is as follows :

	31.12.2019	31.12.2018
Weighted average duration of the defined benefit obligation in years		
Switzerland	20.5	23.5
Abroad	11.9	11.8

The changes in defined benefit obligation and fair value of plan assets during the years 2019 and 2018 are as follows:

A. Change in defined benefit obligation

In USD'000	2019	2018
Defined benefit obligation as of 1.1.	**-232 775**	**-226 517**
Service cost	-17 247	-17 989
Interest cost	-2 472	-2 190
Change in demographic assumptions	20 547	-1 148
Change in financial assumptions	-27 909	3 762
Other actuarial gains / (losses)	7 731	-967
Benefits payments	13 194	7 951
Exchange rate difference	-3 707	2 659
Curtailment	–	1 845
Plan amendment	–	-181
Defined benefit obligation as of December 31,	**-242 640**	**-232 775**

Changes in demographic assumptions compared to prior year result from analysis of trends over the last six years and the impact is disclosed in the above table under 'Changes in demographic assumptions'. Other actuarial gains/(losses) are experience gains/(losses) arising due to differences between assumed and actual results.

B. Change in fair value of plan assets

In USD'000	2019	2018
Fair value of plan assets as of 1.1.	**166 457**	**174 206**
Interest income	1 650	1 582
Return on plan assets excluding interest income	21 255	-12 226
Employees' contributions	5 202	5 500
Employer's contribution	6 700	6 901
Benefit payments	-13 194	-7 951
Exchange rate difference	3 497	-1 555
Fair value of plan assets as of December 31,	**191 568**	**166 457**

The actual return on plan assets amounts to kUSD 22 905 in 2019 (kUSD -10 644 for the year 2018) and includes an assumed interest income. The estimated employer's contribution to the pension plans for the year 2020 is kUSD 6 311.

The categories of plan assets, all of which are easily convertible to cash, are stated at their fair value at December 31, 2019 and 2018 as follows:

In USD'000	31.12.2019	Proportion in % 31.12.2019	31.12.2018	Proportion in % 31.12.2018
Cash	5 894	3.1%	6 706	4.0%
Swiss bonds	19 034	9.9%	14 063	8.4%
Foreign bonds	50 839	26.5%	41 509	24.9%
Swiss shares	35 932	18.8%	31 994	19.2%
Foreign shares	33 002	17.2%	30 820	18.5%
Real estate	39 101	20.4%	34 405	20.7%
Alternative investments	7 765	4.1%	6 960	4.2%
Total	**191 568**	**100.0%**	**166 457**	**100.0%**

Plan assets are quoted on liquid markets. The investment strategy pursues the goal of achieving the highest possible return on assets within the framework of its risk tolerance and thus of generating income on a long-term basis in order to meet all financial obligations. This is achieved through a broad diversification of risks over various investment categories, markets, currencies and industry segments.

The expected benefit payments for the next ten years are as follows :

In USD'000	Switzerland	Abroad
2020	9 691	34
2021	9 513	22
2022	8 334	340
2023	7 916	125
2024	7 699	136
2025-2029	36 958	1 057

The following table shows the sensitivity of the defined benefit pension obligations to the principal actuarial assumptions based on reasonably possible changes to the respective assumptions occurring at the end of the reporting period:

	Change in 2019 year-end defined benefit obligation		Change in 2018 year-end defined benefit obligation	
	Switzerland	Abroad	Switzerland	Abroad
	In USD'000	In USD'000	In USD'000	In USD'000
50 basis point increase in discount rate	-21 542	-815	-23 473	-740
50 basis point decrease in discount rate	25 266	885	27 779	807
50 basis point increase in rate of salary increase	300	n/a	275	n/a
50 basis point decrease in rate of salary increase	-311	n/a	-289	n/a
50 basis point increase in rate of pension increase	9 021	n/a	15 758	n/a
50 basis point decrease in rate of pension increase	-8 263	n/a	-14 197	n/a
50 basis point increase of interest in saving accounts	7 707	n/a	8 249	n/a
50 basis point decrease of interest in saving accounts	-7 283	n/a	-7 763	n/a
50 basis point increase of turnover	-1 915	n/a	-2 112	n/a
50 basis point decrease of turnover	1 799	n/a	1 972	n/a

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions the same method (present value of the defined benefit obligation calculated with the projected unit credit method at the end of the reporting period) has been applied as when calculating the defined benefit liability recognised in the balance sheet. The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to the prior period.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

29. OTHER LONG TERM LIABILITIES

In USD'000	31.12.2019	31.12.2018
Long-term loans - third parties	5 270	7 383
Deferred consideration	1 558	1 440
Contingent consideration	1 558	2 142
Other long-term liabilities	993	1 649
Deferred income	400	332
	9 780	**12 946**

The effective interest rate on long-term loans is 2.00% (2018: 2.00%.)

Deferred and contingent consideration balances include the long-term portions of deferred fixed and contingent earn-out payments in connection with business acquisitions. Assumptions for contingent consideration include a discount rate of 10.0% and are dependent on the achievement of certain financial performance targets of the acquired companies and are reviewed by management on a periodic basis.

30. SHORT TERM FINANCIAL DEBT

In USD'000	31.12.2019	31.12.2018
Short-term bank borrowings	73 214	63 729
Other short-term financial liabilities	465	394
	73 679	**64 122**

The average effective interest rate paid in 2019 for short term bank borrowings was 1.29% (2018: 1.07%).

31. TRADE ACCOUNTS PAYABLE

In USD'000	31.12.2019	31.12.2018
Trade accounts payable – third parties	60 518	79 607
Trade accounts payable – related parties	55	2
	60 573	**79 608**

32. CONTRACT LIABILITIES

In USD'000	31.12.2019	31.12.2018
Amounts due to customers for contract work	3 962	4 731
Advances from clients	19 129	26 228
Deferred income	22 355	19 611
	45 446	**50 570**

33. OTHER CURRENT LIABILITIES

In USD'000	31.12.2019	31.12.2018
Accrued expenses	73 624	74 738
Deferred consideration	–	57
Contingent consideration (level 3)	682	352
Payable to pension fund	1 921	1 045
Other payables	16 719	19 554
	92 946	**95 746**

Deferred and contingent consideration balances include the short-term portion of deferred fix and earn-out payments in connection with business acquisitions.

34. DERIVATIVE FINANCIAL INSTRUMENTS

Derivatives are only used for economic hedging purposes and not as speculative instruments. However, where derivatives do not meet the hedge accounting criteria or where the Group chooses not to designate derivatives as hedging instruments, they are classfied as "held-for-trading" for accounting purposes and are accounted for at fair value through profit or loss.

	Assets		Liabilities	
In USD'000	**31.12.2019**	**31.12.2018**	**31.12.2019**	**31.12.2018**
Cash flow hedge:				
- Foreign currency options	–	64	–	–
Held-for-trading:				
- Foreign currency options	–	–	–	-190
Total of derivatives financial instruments	**–**	**64**	**–**	**-190**

There were no long-term derivative instruments at December 31, 2019 and 2018.

In USD'000	Cost of hedging reserve	Intrinsic value of options	Total hedge reserves
Balance at January 1, 2018	31	219	250
Change in fair value of hedging instruments recognized in OCI	–	42	42
Cost of hedging deferred and recognized in OCI	-42	–	-42
Reclassified from OCI to profit or loss	-31	-219	-250
Balance at December 31, 2018	**-42**	**42**	**0**
Reclassified from OCI to profit or loss	42	-42	-0
Balance at December 31, 2019	**–**	**–**	**–**

The amounts included in cost of hedging reserve relate to the time value of options. All the amounts in the hedging reserve are in respect of transaction-related items, namely forecast sales transactions. The notional amount of options qualifiying for hedge accounting amounted to mUSD 54 in 2019 (2018: mUSD 92) with maturities between January and December and average strike rate of USD/CHF 0.98 in 2019 (2018: USD/CHF 0.97). The foreign currency options are denominated in the same currency as the highly probable future sales transactions, therefore the hedge ration is 1:1. There was no hedge ineffectiveness during 2019 and 2018 relating to foreign currency options.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

35. PROVISIONS FOR OTHER LIABILITIES AND CHARGES

In USD'000	Restructuring provisions	Provision for warranty	Litigations and others	Total 2019	Total 2018
As of January 1	**8 933**	**2 327**	**205**	**11 465**	**10 430**
Additional provisions	1 893	186	–	2 079	9 362
Unused amounts reversed	-88	-358	-121	-568	-466
Used during the year	-6 492	-12	–	-6 504	-7 409
Exchange differences	-141	-26	-3	-170	-452
As of December 31	**4 105**	**2 117**	**81**	**6 302**	**11 465**
Thereof:					
- Short-term	4 105	2 117	81	6 302	11 368
- Long-term	–	–	–	–	97
	4 105	**2 117**	**81**	**6 302**	**11 465**

Restructuring provisions

Restructuring provisions in 2019 and 2018 primarily relate to headcount reduction measures impacting the Group's Digital TV operations. In addition, the 2019 and 2018 provisions include amounts related to the non-achievement of sales commitments on an abandoned initiative.

Litigations and others

A number of Group companies are the subject of litigation arising out of the normal conduct of their business, as a result of which claims could be made against them. Such claims, in whole or in part, might not be covered by insurance. This provision disclosed in short-term covers legal fees and lawsuits and is valued according to management's best estimate.

Long-term provisions include an amount for corporate social responsibility actions mandated by the government.

Provision for warranty

Provisions for warranty-related costs are recognised when the product is sold or service provided. Initial recognition is based on historical experience. The initial estimate of warranty-related costs is revised annually.

36. DISCONTINUED OPERATIONS AND ASSETS HELD FOR SALE

In August 2018, the Group reached an agreement to transfer SmarDTV's Conditional Access Module (CAM) and Set-Top-Box businesses to SmarDTV Global, a newly formed entity affiliated with a third-party Buyer. Upfront cash consideration for this transfer amounted to kUSD 20 000, subject to customary closing adjustments relating to the transfer or workforce, selected tangible and intangible assets. Inventories were partially transferred for additional consideration at their net book values. The Group retained certain assets, including buildings, debtors and patents.

In connection with the sale agreement, the Buyer and the Group entered into a commercial relationship whereby the Group would continue to distribute CAMs to Group customers. Continuing operations for the Group primarily represent revenues recognized from the sale of licenses to thrid parties in connection with retained patents, and licenses, sales of CAMs as well as sales commissions.

At December 31, 2019 and 2018, assets classified as held for sale represent buildings retained upon the disposal of the SmarDTV operations. During 2019, one building was sold for gross proceeds of kUSD 2 298. The Group is actively seeking a buyer for the remaining building and anticipates a sale to be completed within the next 12 months.

In USD'000	31.12.2019	31.12.2018
Assets classified as held for sale:		
- Tangible fixed assets	11 497	14 401

37. RESEARCH AND DEVELOPMENT

The following amounts were recognized as expense and charged to the income statement:

In USD'000	2019	2018
Research and development	145 915	162 629

38. DIVIDEND

On April 6, 2019, the Group paid a distribution of CHF 0.10 per bearer share and CHF 0.01 per registered share. The distribution amounted to kUSD 5 508. Since year end, the Board of Directors have proposed a distribution of kUSD 5 656, representing CHF 0.10 per bearer share and CHF 0.01 per registered share respectively. The final distribution may fluctuate upon the issuance of additional share capital for employees by utilization of conditional share capital or utilization of authorized share capital for acquisitions. The proposal calls for the distribution of CHF 0.05 per bearer share (CHF 0.005 per registered share) from capital contribution reserves and CHF 0.05 per bearer shares (CHF 0.005 per registered share) from retained earnings at December 31, 2019 and is subject to shareholder approval at the Annual General Meeting. This proposed distribution has not been recorded as a liability in these financial statements.

39. EMPLOYEE SHARE PARTICIPATION PLANS

EMPLOYEE SHARE PURCHASE PROGRAM (ESPP)

The Group has set up a plan to allow employees of certain Group companies preferential conditions to buy Kudelski SA bearer shares. All such shares purchased, and the additional shares obtained through this plan, are subject to a three-year blocking period.

	Shares 2019	Shares 2018
Shares underwritten by employees	20 100	22 270
Bonus shares from ESPP	4 020	4 454
Total employee share program	**24 120**	**26 724**
Amount paid by employee (In USD'000)	85	138
Booked corporate charges (excluding social charges) (In USD'000)	38	61
	123	**199**

SHARES ISSUED TO EMPLOYEES

In 2019, 180 199 (2018: 124 394) bearer shares of Kudelski SA were given to employees for no consideration as part of their compensation, of which 89 226 (2018: 64 767) include a seven-year blocking period, 84 723 (2018: 47 127) include a three-year blocking period and 6 250 (2018: 12 500) with no restriction to sale. The fair value recognized for this equity based compensation is kUSD 875 (2018: kUSD 1 150).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

40. RELATED PARTIES

Trading transactions

Transactions between the Group and its subsidiaries, which are related parties of the Group, have been eliminated in consolidation and are not disclosed in this note.

During the year, Group entities entered into the following significant trading transactions with related parties, associates or joint ventures that are not members of the Group:

In USD'000	Sale of goods and services 2019	Sale of goods and services 2018	Purchase of goods and services 2019	Purchase of goods and services 2018	Amounts owed to related parties 31.12.2019	Amounts owed to related parties 31.12.2018	Amounts owed by related parties 31.12.2019	Amounts owed by related parties 31.12.2018
APT-Skidata Ltd	5 595	7 053	–	–	55	–	1 792	1 260
SKIDATA Parking System Ltd	1 600	1 493	–	–	–	–	90	171
SKIDATA India Private Limited	246	496	–	–	–	–	97	251
iWedia SA	–	155	120	608	123	125	–	29
Total associated companies	**7 441**	**9 197**	**120**	**608**	**177**	**125**	**1 979**	**1 710**
Audio Technology Switzerland SA	–	–	–	–	–	–	1 673	1 644
Total other related	**–**	**–**	**–**	**–**	**–**	**–**	**1 673**	**1 644**

APT SKIDATA, SKIDATA Parking System Ltd and SKIDATA India Private Limited are sales representative companies for SKIDATA Group. iWedia SA is a partner in providing middleware and other software components for digital TV solutions. Audio Technology Switzerland SA is considered as a related party as some Kudelski Board members invested in the company.

Services provided to/by associates and other related parties are performed at arm's length. The associates are listed in note 16. Outstanding balances are unsecured and are repayable in cash.

Key management compensation

Key management includes directors (executives and non-executives) and members of the Executive Committee. The compensation paid or payable to key management is shown below:

In USD'000	2019	2018
Salaries and other short-term employees benefits	7 131	7 138
Post-employments benefits	50	35
Share-based payments	379	423
	7 560	**7 596**

41. SHAREHOLDINGS AND LOANS

PRINCIPAL SHAREHOLDERS

	Voting rights		Shareholdings	
	31.12.2019	31.12.2018	31.12.2019	31.12.2018
Kudelski family pool	59%	59%	28%	28%
Kudelski family interests outside Kudelski family pool	4%	4%	7%	7%

The Kudelski family pool includes Mr. André Kudelski, Mrs. Marguerite Kudelski, Mrs. Isabelle Kudelski Haldy, Mrs. Irene Kudelski Mauroux and their respective descendants. The Kudelski family interests outside Kudelski family pool are two discretionary and irrevocable trusts of which the beneficiaries are family members of M. André Kudelski.

BOARD OF DIRECTORS AND MANAGEMENT

As of December 31, 2019 and 2018, the members of the Board of Directors and members of Group management had the following interest in the company (without including shares from 2019 and 2018 variable compensation - issued in 2020 and 2019 respectively):

	31.12.2019	31.12.2018
	Bearer shares	Bearer shares
Board of Directors		
Kudelski André, chairman (as member of the family pool)	10 509 423	10 474 423
Smadja Claude, vice chairman	1 300	1 300
Dassault Laurent, member	705 790	705 790
Foetisch Patrick, member	1 000	1 000
Kudelski Marguerite, (as member of the family pool)	see above	see above
Lescure Pierre, member	2 000	2 000
Zeller Alexandre, member	–	–
Ross Alec, member	1 250	1 250
Total board members	**11 220 763**	**11 185 763**
Management		
Kudelski André, CEO	see above	see above
Saladini Mauro, CFO	132 325	109 187
Roy Pierre, COO (until August 1, 2019)	–	47 213
Solbakken Morten, COO	26 216	10 834
Goldberg Nancy, CMO	–	–
Total Management (excluding CEO)	**158 541**	**167 234**

The Kudelski family pool also owns 46 300 000 registered shares of Kudelski SA as of December 31, 2019 and 2018.

No loans were granted in 2019 and 2018 to the members of the Board of Directors and Group management.

M. Alexandre Zeller was a member of the Board of Directors until March 1, 2019. In addition, M. Pierre Roy was a member of Group management until August 1, 2019.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

42. CATEGORIES OF FINANCIAL INSTRUMENTS

The financial assets and liabilities are classified as follow as of December 31, 2019:

Assets as per balance sheet date December 31, 2019 (in USD'000)	Note	Derivatives used for hedging	Financial assets at fair value through profit or loss	Financial assets at fair value through OCI	Financial Assets at amortized costs	Total 31.12.2019
Financial assets and non-current assets:						
- equity instruments with no quoted market price (level 3)	18	–	–	517	–	517
- long-term loans	18	–	–	–	12 579	12 579
- state and government institutions	18	–	–	–	13 078	13 078
- trade accounts receivable - long-term portion	18	–	–	–	26 155	26 155
- guarantee deposits	18	–	–	–	2 445	2 445
- prepaid expenses and accrued income (long-term)	18	–	–	–	138	138
Trade accounts receivable	20	–	–	–	214 397	214 397
Other current assets:						
- state and government institutions	21	–	–	–	32 646	32 646
- other receivable (third and related parties)	21	–	–	–	12 599	12 599
Cash and cash equivalents	23	–	–	–	74 596	74 596
		–	**–**	**517**	**388 633**	**389 150**

Liabilities as per balance sheet date December 31, 2019 (in USD'000)	Note	Derivatives used for hedging	Financial liabilities at fair value through profit or loss	Financial Liabilities at amortized costs	Total 31.12.2019
Long-term financial debt	26	–	–	393 029	393 029
Long-term lease obligations	26	–	–	28 491	28 491
Other long-term liabilities:					
- deferred consideration	29	–	–	1 558	1 558
- contingent consideration (level 3)	29	–	1 558	–	1 558
- loans and others	29	–	–	6 263	6 263
Short-term financial debt	30	–	–	73 678	73 678
Short-term lease obligations	30	–	–	15 548	15 548
Trade accounts payable	31	–	–	60 573	60 573
Other current liabilities:					
- contingent consideration (level 3)	33	–	682	–	682
- payable to pension fund	33	–	–	1 921	1 921
- other payables	33	–	–	16 719	16 719
- current income tax		–	–	9 085	9 085
		–	**2 240**	**606 865**	**609 105**

And for 2018:

Assets as per balance sheet date December 31, 2018 (in USD'000)	Note	Derivatives used for hedging	Financial assets at fair value through profit or loss	Financial assets at fair value through OCI	Financial Assets at amortized costs	Total 31.12.2018
Financial assets and non current assets:						
- equity instruments with no quoted market price (level 3)	18	–	–	508	–	508
- long-term loans	18	–	–	–	11 506	11 506
- state and government institutions	18	–	–	–	18 273	18 273
- trade accounts receivable - long-term portion	18	–	–	–	34 725	34 725
- guarantee deposits	18	–	–	–	2 249	2 249
- prepaid expenses and accrued income (long-term)	18	–	–	–	497	497
Trade accounts receivable	20	–	–	–	257 092	257 092
Other current assets:						
- loans	21	–	–	–	1 204	1 204
- state and government institutions	21	–	–	–	28 773	28 773
- other receivable (third and related parties)	21	–	–	–	8 767	8 767
Cash and cash equivalents	23	–	–	–	85 979	85 979
Derivative financial instruments (level 2)	34	64	–	–	–	64
		64	**–**	**508**	**449 065**	**449 637**

Liabilities as per balance sheet date December 31, 2018 (in USD'000)	Note	Derivatives used for hedging	Financial liabilities at fair value through profit or loss	Financial Liabilities at amortized costs	Total 31.12.2018
Long-term financial debt	26	–	–	398 161	398 161
Other long-term liabilities:					
- deferred consideration	29	–	–	1 440	1 440
- contingent consideration (level 3)	29	–	2 142	–	2 142
- loans and others	29	–	–	9 032	9 032
Short-term financial debt	30	–	–	64 122	64 122
Trade accounts payable	31	–	–	79 608	79 608
Other current liabilities:					
- deferred consideration	33	–	–	57	57
- contingent consideration (level 3)	33	–	352	–	352
- payable to pension fund	33	–	–	1 045	1 045
- other payables	33	–	–	19 554	19 554
- current income tax		–	–	8 848	8 848
Derivative financial instruments (level 2)	34	–	190	–	190
		–	**2 684**	**581 867**	**584 551**

43. FAIR VALUE OF FINANCIAL INSTRUMENTS

IFRS requires disclosure of fair value measurement by level according to the following fair value measurement hierarchy:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2: inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly (as prices) or indirectly (derived from prices)
- Level 3: inputs for the assets or liabilities that are not based on observable market data (unobservable inputs)

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The table below illustrates the three hierarchical levels for valuing financial instruments carried at fair value as of December 31, 2019 and 2018:

In USD'000		Note	31.12.2019	31.12.2018
Financial assets at fair value through comprehensive income:				
- derivative financial instruments	Level 2	34	–	64
- equity instuments with no quoted market price	Level 3	18	517	508
Total financial assets			**517**	**572**
Financial liabilities:				
- derivative financial instruments	Level 2	34	–	190
- contingent consideration (short-term portion)	Level 3	33	682	352
- contingent consideration (long-term portion)	Level 3	29	1 558	2 142
Total financial liabilities			**2 240**	**2 684**

The fair value of Level 3 equity instruments with no quoted market price is determined using a discounted cash flow method provided by the company. Level 3 contingent consideration consists of earn-out payments on companies that have been acquired. The fair value is measured using projections reviewed by management and discount rate comprised between 6.6% and 10.2% (2018: 6.6% and 10.2%).

RECONCILIATION OF LEVEL 3 FAIR VALUES:

The following table shows a reconciliation for the level 3 fair values:

In USD'000	Equity instruments with no quoted market price	Contingent liabilities
Balance at January 1, 2018	410	-7 781
Settlements	–	6 049
Impairment	-406	–
Remeasurement (recognized in other operating income)	–	-116
Reclassification	512	–
Discount effect (recognized in interest expense)	–	-824
Exchange difference	-4	-54
Currency translation adjustment	-4	232
Balance at December 31, 2018	**508**	**-2 494**
Settlements	–	279
Remeasurement (recognized in other operating income)	–	-170
Discount effect (recognized in interest expense)	–	6
Currency translation adjustment	9	139
Balance at December 31, 2019	**517**	**-2 240**

Reclassifcation relates to available-for-sale equity instruments with no quoted market price that were previously measured at cost less impairment, which has been reclassifed at fair value through OCI.

Except as detailed in the following table, management considers that the carrying amounts of financial assets and financial liabilities recorded at amortized cost in the financial statements approximate their fair values:

In USD'000	Carrying amount 2019	Fair value 2019	Carrying amount 2018	Fair value 2018
Financial liabilities				
- CHF 200 million bond	206 279	189 134	202 591	143 046
- CHF 150 million bond	154 547	123 339	151 795	86 878

The fair values of the bonds are based on their market prices as of December 31. Limited trading liquidity results in material volatility of such prices.

44. MATURITY ANALYSIS FOR FINANCIAL LIABILITIES

The following table analyses the Group's remaining contractual maturities for its non-derivative financial liabilities. The table is based on the undiscounted cash flows of financial liabilities based on the earliest date on which the Group can be required to pay. The table below includes both interest and principal cash flows. The adjustment columns represent the possible future cash flows attributable to the instrument included in the maturity analysis which are not included in the carrying amount of the financial liability on the balance sheet. Balances due within one year equal their carrying amounts as the impact of discounting is not significant.

In USD'000	Due within 1 year	Due within 1 year	Due > 1 year < 5 years	Due > 1 year < 5 years	Due > 5 years	Due > 5 years	Adjust-ment	Adjust-ment	Total book value	Total book value
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Bonds	6 235	6 127	378 755	223 746	–	154 599	-24 164	-30 086	360 826	354 386
Long-term bank loans	–	–	32 729	39 106	–	5 373	-526	-764	32 203	43 715
Short-term financial debt	73 679	64 122	–	–	–	–	–	–	73 679	64 122
Trade accounts payable	60 573	79 608	–	–	–	–	–	–	60 573	79 608
Other payables	16 719	19 554	–	–	–	–	–	–	16 719	19 554
Total	**157 205**	**169 411**	**411 484**	**262 852**	**–**	**159 972**	**-24 689**	**-30 850**	**544 000**	**561 386**

45. SENSITIVITY ANALYSIS

Foreign currency

The Group undertakes certain transactions denominated in foreign currencies. Hence, exposure to exchange rate fluctuations arises. Exchange rate exposures are managed within approved policy parameters utilizing derivative instruments.

The Group is mainly exposed to the CHF and the EUR. The following table details the Group's sensitivity to a 10% (2018: 10%) increase and decrease in the CHF and a 10% (2018: 10%) increase or decrease in the EUR compared to the presentation currency. The sensitivity rate used approximates the fluctuation considered by management when performing risk analysis. The sensitivity analysis includes only outstanding foreign currency-denominated monetary items and adjusts their translation at period end for the above mentioned change in foreign currency rates. The sensitivity analysis includes external loans as well as loans to foreign operations within the Group where the denomination of the loan is in a currency other than the currency of the lender or the borrower. A positive number indicates an increase in post-tax profit when the foreign currency strengthens against the relevant currency.

In USD'000	CHF 2019	CHF 2018	EUR 2019	EUR 2018
Post-tax net income				
- Increase	-10 502	-5 592	-1 062	-2 758
- Decrease	10 502	6 755	1 062	2 758
Comprehensive income (post-tax effect)				
- Increase	-23 502	-21 741	–	-1 100
- Decrease	23 502	23 631	–	1 100

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Interest rates

The sensitivity analysis below is based on the exposure to interest rates for financial instruments at the balance sheet date and the stipulated change taking place at the beginning of the financial year and held constant throughout the reporting period in the case of financial instruments that have floating rates. The following rates, corresponding to each currency, represent management's assessment of the reasonable possible change in interest rates for purposes of reporting interest rate sensitivity:

- USD: increase of 200 basis points and decrease of 50 basis points (2018: 200 basis points increase or 50 decrease)
- EUR: increase of 100 basis points and decrease of 100 basis points (2018: 100 basis points increase or 100 decrease)
- CHF: increase of 100 basis points and decrease of 100 basis points (2018: 100 basis points increase or 100 decrease)

If interest rates had been higher/lower on the above mentioned possible change in interest rates and all other variables were held constant, the Group's:

- post-tax profit for the year ended December 31, 2019 would increase by kUSD 415 and increase by kUSD 78, respectively. (2018: increase by kUSD 578 and increase by kUSD 78). This is mainly due to the interest rate exposure on cash balances.
- other comprehensive income would not be impacted in 2019 and 2018.

Equity prices

The Group is not materially exposed to any equity price fluctuation.

46. COLLATERAL RECEIVED AND GIVEN

In USD'000	31.12.2019	31.12.2018
Guarantees in favor of third parties	21 402	34 120

47. RISK CONCENTRATION

At December 31, 2019 and 2018, no financial asset exposure was more than 10% of the financial assets.

48. FINANCIAL INSTRUMENTS - UNREPRESENTATIVE RISK EXPOSURE AT REPORTING DATE

The quantative data required for IFRS 7 disclosures encompassing market, credit and liquidity risk for the year ended December 31, 2019 was representative of the Group risk profile at that date and is determined by Group management to be representative for future periods.

49. CAPITAL RISK MANAGEMENT

The Group's capital management focus is to maintain a sound capital base to support the continued development of its business. The Group is not subject to externally imposed capital requirements.

The Board of Directors seeks to maintain a prudent balance between different components of the Group's capital. Group management monitors capital on the basis of operating cash flow as a percentage of net financial debt. Net financial debt is defined as current and non-current financial liabilities less liquid assets.

The operating cash flow to net financial debt ratio as at December 31, 2019 was 8.7% (2018: -1.3%).

2019 operating cash flow was positive USD 34.2 million. 2018 operating cash flow was negative USD 4.7 million mainly due to additional working capital requirements at SKIDATA.

50. NET DEBT RECONCILIATION

In USD'000	31.12.2019	31.12.2018
Cash and cash equivalents	74 596	85 979
Long-term financial debt	-393 029	-398 161
Long-term lease obligations	-28 491	–
Short-term financial debt	-73 679	-64 122
Short-term lease obligations	-15 548	–
Net debt	**-436 151**	**-376 304**

In USD'000	Note:	Cash and cash equivalents	Long-term debt	Short-term debt	Lease obligations	Total
Net debt at January 1, 2018		**71 911**	**-357 528**	**-66 902**	**–**	**-352 519**
Cash flows		16 875	–	–	–	16 875
Reimbursment of bank overdrafts, long-term loans		–	20	23 205	–	23 225
Increase in bank overdrafts, long-term loans		–	-45 067	-23 377	–	-68 444
Foreign exchange adjustments		-2 807	4 624	2 952	–	4 769
Amortization of transaction cost less premium	27	–	-210	–	–	-210
Net debt at December 31, 2018		**85 979**	**-398 161**	**-64 122**	**–**	**-376 304**
Cash flows		-11 130	–	–		-11 130
Change in accounting policy		–			-56 132	-56 132
Lease addition		–			-6 459	-6 459
Reimbursment of bank overdrafts, long-term loans and lease obligations		–	10 630	18 584	18 558	47 772
Increase in bank overdrafts, long-term loans		–	–	-28 809	–	-28 809
Foreign exchange adjustments		-253	-5 287	668	-6	-4 878
Amortization of transaction cost less premium	27	–	-211	–	–	-211
Net debt at December 31, 2019		**74 596**	**-393 029**	**-73 679**	**-44 039**	**-436 151**

51. EVENTS OCCURRING AFTER THE REPORTING PERIOD

The group is not aware of any significant events occuring after the reporting period that could have a material impact on the Group financial statements.

52. PRINCIPAL CURRENCY TRANSLATION RATES

	Year end rates used for the consolidated balance sheets		Average rates used for the consolidated income and cash flow statements	
	2019	**2018**	**2019**	**2018**
1 CHF	1.0331	1.0152	1.0063	1.0212
1 EUR	1.1229	1.1452	1.1195	1.1792
100 CNY	14.3595	14.5279	14.4795	15.1070
100 NOK	11.4029	11.5086	11.3713	12.2837
1 GBP	1.3254	1.2802	1.2767	1.3333
100 BRL	24.8967	25.7868	25.3799	27.4918
100 INR	1.4050	1.4315	1.4205	1.4608
1 SGD	0.7438	0.7340	0.7331	0.7407
100 ZAR	7.1281	6.9442	6.9236	7.5674
100 RUB	1.6105	1.4315	1.5462	1.5957
1 AUD	0.7025	0.7046	0.6954	0.7461

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS 2019

53. APPROVAL OF FINANCIAL STATEMENTS

The consolidated financial statements were approved by the Board of Directors and authorised for issuance on February 26, 2020.

54. PRINCIPAL OPERATING COMPANIES

Company	Place of incorporation	Activity	Digital TV	Cyber-security	Internet of Things	Public Access	Corporate	Percentage held 2019	Percentage held 2018
Nagravision SA	CH – Cheseaux	Solutions for Digital TV	•	•	•			100	100
Nagra France SAS	FR – Paris	Solutions for Digital TV	•					100	100
Nagra USA, LLC	US – New York	Sales and support	•		•			100	100
Nagravision Asia Pte Ltd	SG – Singapore	Services	•					100	100
SmarDTV SA	CH – Cheseaux	Conditional access modules and set-top-boxes	•					100	100
NagraStar LLC	US – Englewood	Smartcards and digital TV support	•					50	50
OpenTV Inc	US – Delaware	Middleware for set-top-boxes	•					100	100
Nagravision AS	NO – Oslo	Solutions for Digital TV	•					100	100
Kudelski Security, Inc.	US – Minneapolis	Cybersecurity Solutions		•				100	100
SKIDATA Group	AT – Gartenau	People and car access systems				•		100	100
Kudelski SA	CH – Cheseaux	Holding, parent company of the Group					•	100	100
Kudelski Corporate, Inc.	US – Delaware	Support					•	100	100

These principal companies are all subsidiaries.

55. RISK ASSESSMENT DISCLOSURES REQUIRED BY SWISS LAW

REQUIRED BY SWISS LAW

Risk assessment and management is an integral part of the Group-wide enterprise risk management. The risk management approach is structured around a global risk assessment and management, and financial risk management. Both are governed by policies initiated by the Board of Directors. The internal control system is based on the COSO framework with a dedicated internal control team in place.

Global risk management

The global risk management process led to the identification and management of security, operational, strategic, asset and market risks. Daily management of the global risks is performed and monitored by the executive management. Risks related to market dynamics include foreign exchange movements, interest rate changes and financing risks. They are described in more detail in section 3 of this report.

Financial Risk Management

The major financial risks consist of accounting complexity and the control environment. Risks related to the control environment include information systems complexity, timely review of results and the robustness of the documentation of processes. Executive management continues to address these risks with process documentation initiatives as well as establishment of process and entity level controls. Financial risk management is described in more details in note 3.

The most critical accounting policies to address accounting complexity include revenue recognition, accounting for acquisitions and strategic alliances, intangible assets and impairments, tax provisions, equity based compensation and contingencies.

Kudelski SA

Cheseaux-sur-Lausanne

Report of the statutory auditor
to the General Meeting

on the consolidated financial statements 2019

pwc

Report of the statutory auditor

to the General Meeting of Kudelski SA

Cheseaux-sur-Lausanne

Report on the audit of the consolidated financial statements

Opinion

We have audited the consolidated financial statements of Kudelski SA and its subsidiaries (the Group), which comprise the consolidated income statements and consolidated statements of comprehensive income for the year ended 31 December 2019, the consolidated balance sheets as at 31 December 2019, the consolidated cash flow statements, consolidated statement of changes in equity for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the consolidated financial statements (pages 113 to 167) give a true and fair view of the consolidated financial position of the Group as at 31 December 2019 and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with the International Financial Reporting Standards (IFRS) and comply with Swiss law.

Basis for opinion

We conducted our audit in accordance with Swiss law, International Standards on Auditing (ISAs) and Swiss Auditing Standards. Our responsibilities under those provisions and standards are further described in the “Auditor’s responsibilities for the audit of the consolidated financial statements” section of our report.

We are independent of the Group in accordance with the provisions of Swiss law and the requirements of the Swiss audit profession, as well as the IESBA Code of Ethics for Professional Accountants, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our audit approach

Overview

Overall Group materiality: USD 4'100'000

We conducted full scope audit work at eight reporting components in six countries. In order to increase our coverage, we also performed certain specified procedures at one entity. Our audit scope addressed 70% of the Group’s revenue.

As key audit matter the following area of focus has been identified:

• Goodwill impairment Cybersecurity and Internet of Things

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Materiality

The scope of our audit was influenced by our application of materiality. Our audit opinion aims to provide reasonable assurance that the consolidated financial statements are free from material misstatement. Misstatements may arise due to fraud or error. They are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the consolidated financial statements.

Based on our professional judgement, we determined certain quantitative thresholds for materiality, including the overall Group materiality for the consolidated financial statements as a whole as set out in the table below. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures and to evaluate the effect of misstatements, both individually and in aggregate, on the consolidated financial statements as a whole.

Overall Group materiality	USD 4'100'000
How we determined it	0.5% of revenues
Rationale for the materiality benchmark applied	We have chosen revenue as a benchmark for determining materiality, as it represents an important characteristic and Kudelski Group had volatile results in the past.

We agreed with the Audit Committee that we would report to them misstatements above USD 410'000 identified during our audit as well as any misstatements below that amount which, in our view, warranted reporting for qualitative reasons.

Audit scope

We tailored the scope of our audit in order to perform sufficient work to enable us to provide an opinion on the consolidated financial statements as a whole, taking into account the structure of the Group, the accounting processes and controls, and the industry in which the Group operates.

The Group financial statements are a consolidation of 79 reporting components. Following our assessment of the risk of material misstatement to the Group's consolidated financial statements and considering the significance of the reporting components' business operations relative to the Group, we selected 9 reporting components which represent the principal business operations of the Group. 8 of the reporting components were subject to an audit of complete financial information and 1 entity was subject to specified audit procedures. For the remaining reporting components, we performed other procedures to test or assess that there were no significant risks of material misstatement in relation to the Group's consolidated financial statements.

The Group audit team, in addition to the audit of the consolidation, was directly responsible for auditing 3 of the 8 reporting components which were subject to a full audit. For the other reporting components, the Group audit team directed and supervised the audit work performed by the PwC component teams at all stages of the audit.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Goodwill impairment Cybersecurity and Internet of Things

Key audit matter	How our audit addressed the key audit matter
As described in Note 15 to the consolidated financial statements, the Group has Goodwill totaling USD 351.2 million at December 31, 2019, comprising USD 65 million related to the Cybersecurity segment and USD 35.9 million related to the Internet of Things segment.	We assessed the Company's allocation of goodwill to the CGUs Cybersecurity and Internet of Things by assessing the reasonableness of the CGUs taking into consideration management reporting and that CGU's for goodwill impairment testing purposes are not larger than any of the Group's operating segments.

We focused on these areas in view of the significance of the amounts involved, the business segments' operating performance during 2019 and judgement involved by management about future results. The assessment of the carrying value of the goodwill balances is dependent on the estimation of future cash flows. Judgement is required to estimate future cash flows and a suitable discount rate. Refer to note 2 – Critical accounting estimates and judgements and note 15 – Intangible assets for details of management's impairment test and assumptions.	We obtained the Group's impairment analysis for CGUs Cybersecurity and Internet of Things and performed the following procedures: - Tested the mathematical accuracy of the model and traced amounts to underlying financial statement and other information, as applicable. - Assessed the quality of the cash flow projections by comparing the actual results to prior year budget to identify in retrospect whether any of the assumptions might have been too optimistic. - Reconciled the 5 year projections to the budget that was subject to scrutiny and approval by the Board of Directors and gained an understanding of the process undertaken to develop the projections. - We challenged management to substantiate its key assumptions in the cash flow projections during the forecast period and its intention and ability to execute their strategic initiatives. - We tested, with the support of our valuation specialists, the reasonableness of the cash flows growth rate after the forecast period assumption of 2.2% for both the Cybersecurity and Internet of Things divisions. - Together with our specialists, we evaluated the reasonableness of the discount rate of 9% applied to those future cash flows. We obtained the Group's sensitivity analyses around key assumptions to ascertain the effect of changes to those assumptions on the value in use estimates and re-calculated the sensitivity. We reviewed and validated disclosures regarding Goodwill and intangible assets of the annual report. On the basis of the evidence obtained from our audit, we consider the valuation method and the assumptions used used by the Group to be an appropriate and adequate basis for the impairment testing of goodwill.

Other information in the annual report

The Board of Directors is responsible for the other information in the annual report. The other information comprises all information included in the annual report, but does not include the consolidated financial statements, the stand-alone financial statements and the remuneration report of Kudelski SA and our auditor's reports thereon.

Our opinion on the consolidated financial statements does not cover the other information in the annual report and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information in the annual report and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Board of Directors for the consolidated financial statements

The Board of Directors is responsible for the preparation of the consolidated financial statements that give a true and fair view in accordance with IFRS and the provisions of Swiss law, and for such internal control as the Board of Directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Board of Directors is responsible for assessing the Group’s ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Auditor’s responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor’s report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Swiss law, ISAs and Swiss Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Swiss law, ISAs and Swiss Auditing Standards, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group’s internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made.
- Conclude on the appropriateness of the Board of Directors’ use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group’s ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor’s report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor’s report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

We communicate with the Board of Directors or its relevant committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Board of Directors or its relevant committee with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Board of Directors or its relevant committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor’s report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Report on other legal and regulatory requirements

In accordance with article 728a paragraph 1 item 3 CO and Swiss Auditing Standard 890, we confirm that an internal control system exists which has been designed for the preparation of consolidated financial statements according to the instructions of the Board of Directors.

We recommend that the consolidated financial statements submitted to you be approved.

PricewaterhouseCoopers SA

Luc Schulthess	Mario Berckmoes
Audit expert Auditor in charge	Audit expert

Lausanne, 26 February 2020

BALANCE SHEETS AT DECEMBER 31, 2019 AND 2018

ASSETS

In CHF'000	Notes	31.12.2019	31.12.2018
Current assets			
Cash and cash equivalents		2 443	798
Accounts receivable from Group companies		81 940	74 044
Loan to third party		–	1 066
Other current receivables and prepaid expenses	3.1	816	1 040
Total current assets		**85 199**	**76 948**
Fixed assets			
Loans to Group companies		594 521	670 500
Loan to third party		1 038	–
Investments	3.2	364 256	371 362
Total fixed assets		**959 815**	**1 041 862**
Total assets		**1 045 014**	**1 118 810**

SHAREHOLDERS' EQUITY AND LIABILITIES

In CHF'000	Notes	31.12.2019	31.12.2018
Short-term liabilities			
Short-term interest-bearing liabilities :			
- Bank overdraft		–	3 644
- Bank, short-term borrowings		21 000	–
Other short-term liabilities :			
- due to third parties		205	817
- due to Group companies		24 925	47 880
Accrued expenses		1 922	2 255
Total short-term liabilities		**48 052**	**54 596**
Long-term liabilities			
Long-term interest-bearing liabilities :			
- Bonds	3.3	350 000	350 000
Total long-term liabilities		**350 000**	**350 000**
Total liabilities		**398 052**	**404 596**
Shareholders' equity			
Share capital		437 961	436 327
Legal reserves:			
- from retained earnings		110 000	110 000
- from capital contribution		74 216	79 689
Retained earnings		88 198	145 616
Net (loss) / income		-63 413	-57 418
Total shareholders' equity	**3.4**	**646 962**	**714 214**
Total liabilities and shareholders' equity		**1 045 014**	**1 118 810**

INCOME STATEMENTS AND PROPOSAL FOR APPROPRIATION OF AVAILABLE EARNINGS FOR THE YEAR 2019

INCOME STATEMENTS FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018

In CHF'000	Notes	2019	2018
Financial income	4.1	23 596	39 953
Gain on sale of investments		2 418	252
Administrative and other expenses		-3 128	-2 755
Financial expenses and exchange result	4.2	-14 800	-10 893
Impairment of financial fixed assets	4.3	-70 454	-82 779
Income/(loss) before tax		**-62 368**	**-56 222**
Direct taxes (other than income tax)		-1 045	-1 196
Net income/(loss)		**-63 413**	**-57 418**

PROPOSAL FOR APPROPRIATION OF AVAILABLE EARNINGS FOR THE YEAR 2019

In CHF'000	Legal reserves from capital contribu-tion	Retained earnings
Balance brought forward from previous year	79 689	88 197
Dividend	-5 473	–
Net result	–	-63 413
Total available earnings	**74 216**	**24 784**
Proposal of the Board of Directors:		
Ordinary distribution:		
- CHF 0.10 on 50'115'192* bearer shares (of which CHF 0.05 out of capital contribution reserve and CHF 0.05 out of retained earnings)	-2 506	-2 506
- CHF 0.01 on 46'300'000 registered shares (of which CHF 0.005 out of capital contribution reserve and CHF 0.005 out of retained earnings)	-231	-231
Balance to be carried forward	**71 479**	**22 047**

* This figure represents the number of bearer shares which are dividend bearing as of December 31, 2019 and may fluctuate upon issuance of additional share capital for the employees by utilization of the conditional share capital or utilization of the authorized share capital to acquire companies.

NOTES TO THE FINANCIAL STATEMENTS 2019

1. INTRODUCTION

Kudelski SA, with registered office in Cheseaux, is the ultimate holding company of the Kudelski Group, which comprises subsidiaries and associated companies.

2. ACCOUNTING POLICIES

BASIS OF PREPARATION

The financial statements of Kudelski SA, comply with the requirements of the Swiss accounting legislation of the Swiss Code of Obligations (SCO).

These financial statements were prepared under the historical cost convention and on an accrual basis.

Kudelski SA is presenting consolidated financial statements according to IFRS. As a result, these financial statements and notes do not include additional disclosures, cash flow statement and management report.

FINANCIAL ASSETS

Investments and loans are initially recognized at cost. They are assessed annually and in case of an impairment adjusted to their recoverable amount within their category.

Investments and loans are allocated to four buckets for impairment testing. The four buckets are the cash generating units, which are defined within the framework of the Group as the operating segments; Digital TV, Cybersecurity, Internet of Things (IoT) and Public Access.

The recoverable amount of the cash generating units (CGUs) was determined based on value-in-use calculations. The calculations use cash flow projections approved by management covering a five-year period. Cash flows beyond the five-year period are extrapolated using estimated growth rates in perpetuity.

CASH AND CASH EQUIVALENTS

Cash and cash equivalents include cash at bank and short-term deposits. Cash at bank consists of all funds in current accounts available within 48 hours. Short-term deposits generally include bank deposits and fixed term investments whose maturities are of three months or less from the transaction date.

EXCHANGE RATE DIFFERENCES

Transactions in foreign currencies are accounted for in Swiss francs (CHF) at the exchange rate prevailing at the date of the transaction. Assets and liabilities in foreign currencies are accounted for at year-end rates.

Any resulting exchange differences are included in the respective income statement caption depending upon the nature of the underlying transactions; the aggregate unrealized exchange difference is calculated by reference to original transaction date exchange rates and includes hedging transactions. Where this gives rise to a net loss, it is charged to the income statement, while net gains are deferred.

NOTES TO THE FINANCIAL STATEMENTS 2019

3. NOTES TO THE BALANCE SHEETS

3.1 OTHER CURRENT RECEIVABLES AND PREPAID EXPENSES

In CHF'000	31.12.2019	31.12.2018
Prepaid expenses	730	958
Withholding tax	69	51
Other accounts receivable	17	31
	816	1 040

Prepaid expenses mainly includes the amortized cost of the difference between nominal value and net proceeds less issuance costs of the bonds (note 3.3). These amounts are allocated against income statement over the contractual periods of their underlying borrowings.

3.2 INVESTMENTS

DIRECT INVESTMENTS

Company	Location	Activity	Share capital		Percentage held and voting rights 2019	2018
Nagravision SA	CH – Cheseaux	Solutions for Digital TV	kCHF	20 000	100	100
Nagravision Iberica SL	ES – Madrid	Sales and support Digital TV	kEUR	3	100	100
Nagra France SAS	FR – Paris	Solutions for Digital TV	kEUR	32 833	100	100
Nagra Media Germany GmbH	DE – Ismaning	Services	kEUR	25	100	100
Nagra USA, LLC	US – Phoenix	Services, sales and support	kUSD	10	100	100
SKIDATA AG	AT - Salzburg	Public access	kEUR	3 634	100	100
Nagra Plus	CH – Cheseaux	Analog Pay-TV solutions	kCHF	100	50	50
SmarDTV SA	CH – Cheseaux	Conditional access modules and set-top-boxes	kCHF	1 000	100	100
Kud SA	LU – Luxembourg	Finance	kCHF	100	100	100
Leman Consulting SA in liquidation	CH – Nyon	Intellectual property consulting	kCHF	100	100	100
Nagravision Asia Pte Ltd	SG – Singapore	Services	kSGD	100	100	100
Nagra Media UK Ltd	UK – London	Research & development	KGBP	1 000	100	100
Nagravision Italy Srl	IT – Bolzano	Sales and support	kEUR	10	100	100
Nagra Travel Sàrl	CH – Cheseaux	Travel agency	kCHF	50	100	100
Nagravision India Pvt Ltd	IN – Bangalore	Research & development	kINR	100	100	100
Acetel Co Ltd	SK – Séoul	Digital broadcasting solution provider	kKRW	1 460	17	17
Nagra Media Private Limited	IN - Mumbai	Sales and support	kINR	100	100	100
Nagra Media Beijing Co. Ltd	CN - Beijing	R & D, Sales and services	KCNY	9 032	100	100
Nagra Media Korea LLC	KR - Anyang	Sales and support	kKRW	200 000	100	100
Nagra Media Brasil LTDA	BR - São Paulo	Sales and support	kBRL	553	100	100
Nagra Media Japan K.K.	JP - Tokyo	Sales and support	kJPY	10 000	100	100
Nagra Media (Taiwan) Co., Ltd	TW - Taipei	Sales and support	kNTD	500	100	100
Kudelski Norway AS	NO - Oslo	Holding	kNOK	200	100	100
iWedia SA	CH - Lausanne	Solutions for Digital TV	kCHF	750	40	40
Kryptus Segurança da Informaçao Ltda.	BR - Sao Paulo	Cyber Security Solutions	kBRL	298	16	16
E.D.S.I. SAS	FR - Cesson Sévigné	Research & development	KEUR	163	100	100
Nagra Media Australia Pty Ltd	AU - New South Wales	Sales and support	kAUD	50	100	100
OpenTV Australia Holding Pty Ltd	AU - New South Wales	Holding	kAUD	0	100	100
NexGuard Labs B.V.	NL - Eindhoven	Watermarking Solutions	kEUR	25	100	100
NexGuard Labs France SAS	FR - Cesson Sevigne	Watermarking Solutions	kEUR	420	100	100

SIGNIFICANT INDIRECT INVESTMENTS

Company	Location	Activity	Share capital		Percentage held and voting rights 2019	2018
Nagravision AS (form. Conax AS)	NO - Oslo	Solutions for Digital TV	kNOK	1 111	100	100
OpenTV Inc	US - Delaware	Middleware for set-top-boxes	kUSD	112 887	100	100
NagraStar LLC	US – Englewood	Smartcards and digital TV support	kUSD	2 043	50	50
Kudelski Security Inc.	US - Minneapolis	Cyber Security Solutions	kUSD	0	100	100
Sentry Control Systems LLC	US – Van Nuys	Public access	kUSD	45	M	60
SKIDATA Benelux BV	NL – Barenbrecht	Public access	kEUR	90.6	100	100
SKIDATA (Schweiz) AG	CH - Adliswil	Public access	kCHF	150	100	100
SKIDATA Inc	US – Van Nuys	Public access	kUSD	5 510	100	100
SKIDATA Australasia Pty Ltd	AU – Melbourne	Public access	kAUD	5 472	100	100

3.3 BONDS

On May 12, 2016 the company issued a CHF 200 million bond with a subscription price of 100%, bearing an interest rate of 1.875% and maturing on August 12, 2022 with denominations of CHF 5 000 and multiples thereof.

On September 27, 2016 the company also issued a CHF 150 million bond with a subscription price of 100%, bearing an interest rate of 1.5% and maturing on September 27, 2024 with denominations of CHF 5 000 and multiples thereof.

Each bond is measured at its nominal value. The initial difference between nominal value and net proceeds less issuance costs is considered as a prepaid expense and allocated against the income statement over the period of the bond.

3.4 CHANGE IN SHAREHOLDERS' EQUITY

In CHF'000	Share capital	Legal reserves from retained earnings	Legal reserves from capital contribution	Retained earnings	Total Shareholders' equity
As of December 31, 2017	**435 118**	**110 000**	**85 010**	**145 616**	**775 744**
Dividend	–	–	-5 452	–	-5 452
Share capital increase	1 209	–	131	–	1 340
Net Income	–	–	–	-57 418	-57 418
As of December 31, 2018	**436 327**	**110 000**	**79 689**	**88 198**	**714 214**
Dividend	–	–	-5 473	–	-5 473
Share capital increase	1 634	–	–	–	1 634
Net Income	–	–	–	-63 413	-63 413
As of December 31, 2019	**437 961**	**110 000**	**74 216**	**24 785**	**646 962**

NOTES TO THE FINANCIAL STATEMENTS 2019

SHARE CAPITAL

In CHF'000	31.12.2019	31.12.2018
50'115'192 / 49'910'873 bearer shares, at CHF 8 each	400 922	399 287
46'300'000 registered shares, at CHF 0.80 each	37 040	37 040
	437 962	**436 327**

The registered shares are neither listed nor traded on any stock exchange. The bearer shares have been listed on the main market of the SIX since 2 August 1999 (ticker: KUD, security number: 1 226 836; ISIN CH0012268360).

CONDITIONAL SHARE CAPITAL (ARTICLE 6 OF ARTICLES OF INCORPORATION)

In CHF'000	2019	2018
Conditional share capital as of January 1	83 223	84 432
Increase of conditional share capital	4 000	–
Employee share purchase plan	-193	-214
Shares allotted to employees	-1 442	-995
Conditional share capital at December 31	**85 588**	**83 223**
Of which may be utilized as of December 31 for:		
- Convertible bonds:		
10'000'000 bearer shares, at CHF 8 each	80 000	80 000
- Options or share subscriptions to employees:		
698'564 / 402'833 bearer shares, at CHF 8 each	5 588	3 223
	85 588	**83 223**

AUTHORIZED SHARE CAPITAL (ARTICLE 7 OF ARTICLES OF INCORPORATION)

In CHF'000	31.12.2019	31.12.2018
3'768'164 bearer shares, at CHF 8 each	30 145	30 145
3'200'000 registered shares, at CHF 0.80 each	2 560	2 560
Authorized share capital as of December 31	**32 705**	**32 705**

The Board of Directors is authorized to increase the share capital in one or more stages until March 15, 2020, for the purpose of acquiring companies or parts of companies.

MAJOR SHAREHOLDERS

	Voting rights		Shareholdings	
	31.12.2019	31.12.2018	31.12.2019	31.12.2018
Kudelski family pool	59%	59%	28%	28%
Kudelski family interests outside Kudelski family pool	4%	4%	7%	7%

The Kudelski family pool includes Mr. André Kudelski, Mrs. Marguerite Kudelski, Mrs. Isabelle Kudelski Haldy, Mrs. Irene Kudelski Mauroux and their respective descendants. The Kudelski family interests outside Kudelski family pool are two discretionary and irrevocable trusts of which the beneficiaries are family members of M. André Kudelski.

4. NOTES TO THE INCOME STATEMENTS

4.1 FINANCIAL INCOME

In CHF'000	2019	2018
Dividends received from Group subsidiaries	5 425	15 282
Interest on loans to Group subsidiaries	18 042	24 377
Interest income third parties	129	294
	23 596	**39 953**

4.2 FINANCIAL EXPENSES AND EXCHANGE RESULTS

In CHF'000	2019	2018
Net currency exchange result	-7 849	-3 808
Interest on loans from Group subsidiaries	-460	-257
Interest expenses and bank charges	-6 491	-6 828
	-14 800	**-10 893**

4.3 IMPAIRMENT OF FINANCIAL FIXED ASSETS

In CHF'000	2019	2018
Change in provision on Group investments and loans	-70 454	-82 778
Value adjustment on investments	–	-1
	-70 454	**-82 779**

The change in provision on Group investments relates to capital contributions (stabilization measures) of kCHF 59 631 (2018: kCHF 69 811), subsidiary substance dividend for kCHF 0 (2018: kCHF 12 966) and an impairment of kCHF 10 823 recognized for an entity that has transferred all its activities to another Group and is no longer active.

NOTES TO THE FINANCIAL STATEMENTS 2019

5. COMMITMENTS AND CONTINGENCIES

In CHF'000	31.12.2019	31.12.2018
Guarantee commitments		
Commitment in favor of third parties	786	828
Other commitments		
Penalty risk for non-completion of contracts	p.m.	p.m.
Subordinated loans in favor of Group companies	p.m.	p.m.
Support letters and guarantees signed in favor of Group companies	p.m.	p.m.
Jointly responsible for VAT liabilities of Swiss subsidiaries (VAT Group)	p.m.	p.m.

6. FULL-TIME EQUIVALENTS

The annual average number of full-time equivalents for 2019 and 2018 did not exceed ten people.

7. BOARD AND EXECUTIVE INTEREST DISCLOSURES

The disclosures required by article 663c of Swiss Code of Obligations on Board and Executive interest are shown in the Kudelski Group consolidated financial statements.

Kudelski SA
Cheseaux-sur-Lausanne

Report of the statutory auditor
to the General Meeting

on the financial statements 2019

pwc

Report of the statutory auditor

to the General Meeting of Kudelski SA

Cheseaux-sur-Lausanne

Report on the audit of the financial statements

Opinion

We have audited the financial statements of Kudelski SA, which comprise the balance sheets as at 31 December 2019, income statements and notes for the year then ended, including a summary of significant accounting policies.

In our opinion, the financial statements (pages 174 to 181) as at 31 December 2019 comply with Swiss law and the company's articles of incorporation.

Basis for opinion

We conducted our audit in accordance with Swiss law and Swiss Auditing Standards. Our responsibilities under those provisions and standards are further described in the "Auditor's responsibilities for the audit of the financial statements" section of our report.

We are independent of the entity in accordance with the provisions of Swiss law and the requirements of the Swiss audit profession and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our audit approach

Overview

Overall materiality: CHF 10'000'000

We tailored the scope of our audit in order to perform sufficient work to enable us to provide an opinion on the financial statements as a whole, taking into account the structure of the entity, the accounting processes and controls, and the industry in which the entity operates.

As key audit matter the following area of focus has been identified:

Valuation of investments in subsidiaries and loans to Group companies

Materiality

The scope of our audit was influenced by our application of materiality. Our audit opinion aims to provide reasonable assurance that the financial statements are free from material misstatement. Misstatements may arise due to fraud or

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error. They are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

Based on our professional judgement, we determined certain quantitative thresholds for materiality, including the overall materiality for the financial statements as a whole as set out in the table below. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures and to evaluate the effect of misstatements, both individually and in aggregate, on the financial statements as a whole.

Overall materiality	CHF 10'000'000
How we determined it	1% of total assets
Rationale for the materiality benchmark applied	We chose total assets as the benchmark because Kudelski SA is a holding company that mainly holds investments in subsidiaries. Total assets is a generally accepted benchmark for determining the materiality according to auditing standards.

We agreed with the Audit Committee that we would report to them misstatements above CHF 1'000'000 identified during our audit as well as any misstatements below that amount which, in our view, warranted reporting for qualitative reasons.

Audit scope

We designed our audit by determining materiality and assessing the risks of material misstatement in the financial statements. In particular, we considered where subjective judgements were made; for example, in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. As in all of our audits, we also addressed the risk of management override of internal controls, including among other matters consideration of whether there was evidence of bias that represented a risk of material misstatement due to fraud.

Report on key audit matters based on the circular 1/2015 of the Federal Audit Oversight Authority

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Valuation of investments in subsidiaries and loans to Group companies

Key audit matter	How our audit addressed the key audit matter
Kudelski SA's investments and loans to Group companies are valued at CHF 364m and CHF 595m respectively. The company has allocated the investments in subsidiaries and loans to Group companies to 4 Cash Generating Units (CGU's): Digital TV (DTV): CHF 682m Public Access (PA): CHF 179m Cybersecurity (CS): CHF 56m Internet of Things (IoT): CHF 42m We focused on these areas in view of the significance of the amounts involved, the business segments' operating performance during 2019 and judgement involved by management about future results.	We obtained an understanding of management's process and controls over the valuation of investments and loans to Group companies. We obtained the Group's impairment analysis for all 4 CGUs and performed the following procedures: - Tested the mathematical accuracy of the model and traced amounts to underlying financial statement and other information, as applicable. - Assessed the quality of the cash flow projections by comparing the actual results to prior year budget to identify in retrospect whether any of the assumptions might have been too optimistic. - Reconciled the 5 year projections to the budget that was subject to scrutiny and approval by the Board of Directors and gained an understanding of the process undertaken to develop the projections. - We challenged management to substantiate its key assumptions in the cash flow projections during the forecast period and its intention and ability to execute their strategic initiatives.

The recoverable amount of the CGUs is determined by management based on value-in-use calculations, which depend on cash flow projects and judgement of growth rates. The outcome of the impairment test results in no need for impairment. The change in provision on Group investments and loans relates to a loan forgiveness of CHF 60m to a Group company and an impairment of CHF 11m recognized for an entity that has transferred all its activities to another Group company and is no longer active. Refer to note 2 – Accounting policies: Financial Assets and note 4.3 – Impairment of financial fixed assets	- We tested, with the support of our valuation specialists, the reasonableness of the cash flows growth rate after the forecast period. - Together with our specialists, we evaluated the reasonableness of the discount rate applied to those future cash flows. On the basis of the evidence obtained from our audit, we consider the valuation method and the assumptions used by the Group to be an appropriate and adequate basis for the valuation of Kudelski SA's investments and loans to Group companies.

Responsibilities of the Board of Directors for the financial statements

The Board of Directors is responsible for the preparation of the financial statements in accordance with the provisions of Swiss law and the company's articles of incorporation, and for such internal control as the Board of Directors determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board of Directors is responsible for assessing the entity's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the entity or to cease operations, or has no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Swiss law and Swiss Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Swiss law and Swiss Auditing Standards, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made.
- Conclude on the appropriateness of the Board of Directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the entity to cease to continue as a going concern.

We communicate with the Board of Directors or its relevant committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Board of Directors or its relevant committee with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Board of Directors or its relevant committee, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Report on other legal and regulatory requirements

In accordance with article 728a paragraph 1 item 3 CO and Swiss Auditing Standard 890, we confirm that an internal control system exists which has been designed for the preparation of financial statements according to the instructions of the Board of Directors.

We further confirm that the proposed appropriation of available earnings complies with Swiss law and the company's articles of incorporation. We recommend that the financial statements submitted to you be approved.

PricewaterhouseCoopers SA

Luc Schulthess	Mario Berckmoes
Audit expert Auditor in charge	Audit expert

Lausanne, 26 February 2020

INTERNET LINKS

GROUP WEBSITE
www.nagra.com

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DISCLAIMER

This report contains forward-looking statements, including, but not limited to, statements that are predictions of or indicate future events, trends, plans or objectives. These statements are subject to known and unknown risks and uncertainties and could be affected by other factors that could cause actual results, plans and objectives to differ materially from those expressed or implied in the forward-looking statements. Potential risks and uncertainties include such factors as general economic conditions, performance of the financial markets, competitive factors and changes in laws and regulations.

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This report is published in English and French, except for the Financial statements which are only published in English. In case of inconsistency between the French and the English version of the Corporate Governance report and the Compensation report, the French version prevails.

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