INNOVATION AS A KEY DIFFERENTIATOR

KUDELSKI GROUP 2018



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SHAPING THE FUTURE OF THE GROUP

Interview with André Kudelski Chairman and Chief Executive Officer of the Kudelski Group

How would you characterize 2017 for the Kudelski Group?

In 2017, we have seen simultaneously growing demand for cybersecurity, IoT security and public access solutions and softer demand for digital TV solutions. The weaker demand in digital TV is both structural and the result of increased caution by customers concerning new investments.

The slowdown at Conax is a perfect illustration of this trend, in particular in emerging markets. They experienced new demand for Internet TV solutions, but not yet at a level that compensates fully for the weakness of the legacy digital TV market.

To address these market changes, the Group has taken a number of important actions to improve the profitability of its core business, while continuing to ramp up the investments required to seize the new opportunities in cybersecurity, IoT security and Internet TV. The extent of these required investments compounded by the transformation and restructuring constraints have had a negative impact on the Group's profitability.

With that in mind, how do you foresee 2018?

Overall, 2018 will be a challenging year for the Kudelski Group, mainly due to the evolution of the legacy digital TV market. The transformation launched in the second half of 2017 will continue in 2018, with the primary objective of adjusting the Group's structure to the new market reality.

The Group will continue to invest in cybersecurity, IoT security, public access and Internet TV and will simultaneously improve the efficiency of the integrated Digital TV business. The newly appointed DTV COO, Morten Solbakken, will drive the business excellence effort with a special focus on improving the cost structure of the iDTV business.

The Group accelerated the transformation of its iDTV business in 2017 - will it pay off in 2018?

The Group's transformation will not yet realize its full effect in 2018. The process we have launched requires important investments in new high potential sectors together with the streamlining and restructuring of legacy businesses. The restructuring efforts are expected to impact 2018 profitability negatively, and we do not expect to fully realize the returns from new investments this year.

This transformation means building new teams to address new challenges and at the same time launching cost reduction measures, including the downsizing and active reduction of the total number of sites involved with our legacy business. New investments are being made in sectors that are expected to grow fast in future years.

What are the trends in digital TV?

It is well known that the Internet and digitalization are revolutionizing the world, including TV. What is less known is that television is also revolutionizing the Internet. With Internet technologies, the bottleneck of content distribution has disappeared. This means that the major broadcasters and TV operators no longer have the capability of controlling the distribution pipe. This evolution has enabled a number of new small and niche players to enter the market and offer alternative content.

Managing video content requires an in-depth knowledge that is the privilege of those who have worked in the video space for decades. Having this expertise is a clear asset for our Group, and we are positioning ourselves strongly to offer our know-how in this fast-changing and challenging environment.



"Today, Kudelski Security is an important player in the cybersecurity space, uniquely positioned for growth in the future, with innovation as a differentiating factor."

How is the cybersecurity business developing, especially with regards to innovation?

Since the early days of cybersecurity, the Kudelski Group has considered that it had a role to play in this sector; the expertise we gained over three decades in fighting piracy is a real competitive differentiator when fighting cyber hackers.

With Kudelski Security, the Group developed its cybersecurity business first in Switzerland and, since 2015, globally, with a special focus on the US. Today, Kudelski Security is not only an important player in the cybersecurity space, but uniquely positioned for growth in the future, with innovation as a differentiating factor.

The Kudelski Security business is now growing by double digits, both in the US and in Switzerland. We expect this trend to continue in 2018 and beyond. Kudelski Security's recent innovation includes the advanced features in the Cyber Fusion Center, the security enclave solutions and the advanced secure blueprint solution. Kudelski Security's investments in innovation are intended to improve the detection and remediation of cyber-attacks and to deliver secure-by-design solutions. Further innovations will be announced in the future.

In Internet of Things Security, what is the Group's offering and why is it unique?

The Internet of Things is one of the most promising sectors of the future. With the Internet interacting with the real world, security is critical to avoiding major disasters. The skill and experience required to address adequately IoT security issues are precisely the technologies that the Kudelski Group has developed over the past 20 years. We are investing heavily in the design and development of an advanced secure IoT platform with customization capabilities for specific client projects.

Today, more than 400 million of the Group's secure devices are in operation around the world. Our expertise in very low power solutions from the Nagra Audio activities is an additional differentiator versus the competition. The strategy of the IoT Center of Excellence is to deliver end-to-end secure solutions, monitor threats and mitigate the consequences in case of communication disruptions and cyber-attacks.

How is Public Access evolving to ensure future growth?

Public Access has been extremely successful over the last decade in terms of revenue growth. This growth has been both organic and through acquisitions. Going forward, Public Access will focus on further organic growth as well as increased operational excellence for higher profitability and better cash generation. Innovation also plays a key role for Public Access, creating competitive differentiation and enabling the company to deliver a better value for its client base.

What are the new innovation opportunities for 2018?

The main focus of the Kudelski Group's innovation is to further develop its technology portfolio in cybersecurity and IoT security. One of the research areas is the combination of advanced security technologies developed by the Group with blockchain technologies. We consider that this combination is a powerful approach to the future of Internet security.

What will be the distribution to shareholders for fiscal year 2017?

The Group's dividend policy is based on caution and stability. The ongoing Group transformation will have a short-term negative effect on cash generation, mainly due to restructuring costs.

The Board of directors is proposing a reduced distribution through a return of capital of CHF 0.10 per bearer shares (CHF 0.01 per registered share).

We expect that the Group's 2018 revenues will be in line with 2017, with cybersecurity and public access activities experiencing further growth while the legacy part of the Group's digital TV business will remain challenging. Profitability is expected to be under continued pressure due to restructuring costs in connection with the Group's reorganization efforts.

Despite this financial outlook for 2018, we see solid underlying growth opportunities in the areas of cybersecurity, Internet of Things and Internet TV activities, and we are making investments in these areas to develop the sustainable profitability of the Group.

On behalf of the Board of Directors, I would like to take the opportunity to thank our shareholders, employees, clients and partners for contributing to the long-term success of the Group and for supporting us especially during these challenging times.



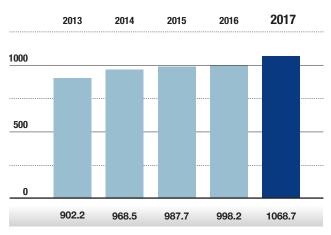
"The Group will continue to invest in cybersecurity, loT security, public access and Internet TV."

KEY FINANCIAL DATA 2017

		31.12.2017	31.12.2016	Change
Total revenues and other operating income	USD million	1068.7	998.2	7.1%
Operating income before depreciation, amortization and impairment (OIBDA)	USD million	64.2	153.8	-58.3%
in % of total revenues	%	6.0	15.4	-30.370
Onevetine income (EDIT)	USD million	05.6	440.5	70.00/
Operating income (EBIT) in % of total revenues	%	25.6 2.4	110.5 11.1	-76.8%
Net income from continuing operations	USD million	2.7	88.5	-96.9%
Earnings per share	USD	-0.2092	1.1728	
Money returned to shareholders (proposed per bearer share)	CHF	0.10	0.35	-71.4%
Share price at December 31 (bearer shares)	CHE	12.05	17.65	-31.7%
Market capitalization at December 31 (bearer shares)	CHF million	599.6	875.8	-31.5%
Equity attributable to equity holders	USD million	476.7	469.8	1.5%
Cash flow from operating activities	USD million	-54.2	124.2	
Cash and cash equivalents	USD million	71.9	174.4	-58.8%
Financial debt	USD million	424.3	374.9	13.2%
Number of employees at December 31 (headcount)		3940	3801	3.6%

TOTAL REVENUES AND OTHER **OPERATING INCOME**

In million USD



REVENUES PER SEGMENT

INTEGRATED DIGITAL TV

65.6%

PUBLIC ACCESS

34.4 %

OPERATING INCOME

	2013	2014	2015	2016	2017
150					
100					
50					
					<u></u>
0					
	58.8	66.8	84.4	110.5	25.6

OIBDA *

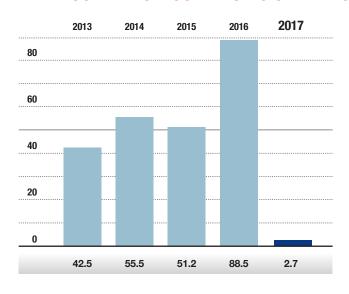
2017

64.2°

2016

153.8°

NET INCOME FROM CONTINUING OPERATIONS



EARNINGS PER BEARER SHARE

2017 0.2092 2016 1.1728

Operating Income Before Depreciation, Amortization and Impairement *

In million USD **

In USD ***





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.

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

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

Public Access solutions are another activity sector of the Group. The world's largest parking facilities, stadiums and mountain resorts use SKIDATA's integrated people and vehicle management solutions.

The Group capitalizes on its intellectual property patent portfolio through cross access to state-of-the-art technology patents and license agreements, demonstrating the relevance of the Group's innovation and the key role it is playing in the industries in which it operates.



WE ASSEMBLE TEAMS OF HIGHLY SKILLED, CREATIVE AND COMMITTED PROFESSIONALS IN OUR MAIN RESEARCH AND DEVELOPMENT CENTERS AND AS CLOSE AS POSSIBLE TO OUR MARKETS, WHERE THE TALENTS ARE

63
LOCATIONS IN 34 COUNTRIES

3940 EMPLOYEES

COMPANY PORTFOLIO

) THE KUDELSKI GROUP

INTEGRATED DIGITAL TV

CORE ACTIVITIES

Integrated content protection and multi-device user experience solutions that fit large operators' ecosystems perfectly

NAGRA

Off-the-shelf, innovative and cost-efficient solutions for mid-sized operators to deliver pay-TV content securely over broadcast, Internet and connected devices

Conax

Smart devices for digital TV access including Conditional Access Modules and set-top boxes

SmarDTV

Watermarking technologies and solutions to protect media content against illicit redistribution

NexGuard

Media asset management solutions

DVnor

GROWTH INITIATIVES

Cybersecurity solutions and services for enterprises and public sector

Kudelski Security

Development, protection and licensing of the Group's innovations

Intellectual Property

Technology and services to support companies across all industries in securing their Internet of Things innovations

IoT Center of Excellence

PUBLIC ACCESS

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

SKIDATA











INNOVATION AS A GROWTH DRIVER

THE KUDELSKI GROUP

THE AUDIO AGE

1951

CREATION OF THE COMPANY BY STEFAN KUDELSKI.

LAUNCH OF THE FIRST PORTABLE RECORDER, THE NAGRA I. THIS INVENTION WAS THE START OF A SERIES OF WORLD FAMOUS RECORDERS THAT REVOLUTIONIZED SOUND RECORDING IN THE AUDIO AND MOVIE INDUSTRIES, SUCH AS THE NAGRA III, THE LEGENDARY RADIO, TV AND CINEMA RECORDER, AND THE NAGRA SN, A MINIATURE RECORDER.

FROM AUDIO TO VIDEO

1983

LAUNCH OF THE AMPEX-NAGRA VPR-5, THE WORLD'S SMALLEST, LIGHTEST PROFESSIONAL PORTABLE C-FORMAT VIDEO RECORDER.

ENTRY INTO THE VIDEO TECHNOLOGY INDUSTRY.

1986

THE COMPANY IS LISTED ON THE SWISS STOCK MARKET.

PAY-TV: FROM NICHE TO MASS MARKET

1989

DELIVERY OF THE FIRST ENCRYPTION SYSTEMS FOR TELEVISION AND ENTRY INTO THE PAY-TV SECTOR.

1991

ANDRÉ KUDELSKI SUCCEEDS STEFAN KUDELSKI AS CHAIRMAN AND CHIEF EXECUTIVE OFFICER.

CONDITIONAL ACCESS TV SYSTEMS BECOME KUDELSKI'S CORE BUSINESS.

1992

CREATION OF NAGRA+, A JOINT-VENTURE WITH CANAL+.

LAUNCH OF THE NAGRA D, FIRST PROFESSIONAL AUDIO PORTABLE DIGITAL RECORDER.

1995

DELIVERY OF THE FIRST DIGITAL TV ACCESS SOLUTIONS.

1996

ANDRÉ KUDELSKI RECEIVES AN EMMY AWARD FROM THE NATIONAL ACADEMY OF ARTS AND SCIENCES FOR ACHIEVEMENTS IN THE AREA OF PAY-TV CONDITIONAL ACCESS AND SCRAMBLING SYSTEMS.

1997

DIGITAL PAY TELEVISION BECOMES THE COMPANY'S CORE BUSINESS.

NAGRA AUDIO LAUNCHES A RANGE OF HIGH-END HI-FI PRODUCTS.

1998

FIRST SYSTEMS OFFERING MIXED PAY-TV AND INTERNET SOLUTIONS.

CREATION OF NAGRASTAR, A JOINT-VENTURE WITH ECHOSTAR.

1999

THE GROUP CREATES THE FIRST ENCRYPTION SYSTEMS DESIGNED FOR BROADBAND NETWORKS.

ENTRY INTO PUBLIC ACCESS

2001

DIVERSIFICATION INTO THE PUBLIC ACCESS SECTOR WITH THE ACQUISITION OF SKIDATA.

2003

THE GROUP BECOMES THE WORLD LEADER IN THE FIELD OF CONDITIONAL ACCESS SOLUTIONS THROUGH THE ACQUISITION OF CANAL+ TECHNOLOGIES (MEDIAGUARD).

2004

LAUNCH OF SECURITY SOLUTIONS FOR MOBILE DEVICES.

LAUNCH OF PRE-PAID CARDS GIVING ACCESS TO PREMIUM CONTENT ON A TEMPORARY BASIS.

2006

THE GROUP ADDS REMOVABLE SECURITY MODULES TO ITS OFFERING THROUGH THE ACQUISITION OF THE DIGITAL TV ACTIVITY OF SCM MICROSYSTEMS RESULTING IN THE CREATION OF SMARDTV.

2007

ACQUISITION OF A CONTROLLING INTEREST IN OPENTY.

FIRST SOLUTIONS DESIGNED FOR HYBRID NETWORKS.

EXPANDING IN THE DIGITAL TV ECOSYSTEM

2009

LAUNCH OF MULTISCREEN SOLUTIONS.

ACQUISITION OF 100% OF OPENTV: THE GROUP'S SOLUTIONS MANAGE THE ENTIRE PAY-TV ECOSYSTEM.

ENTRY INTO CYBERSECURITY

2012

THE GROUP DIVERSIFIES INTO THE CYBERSECURITY SECTOR WITH THE CREATION OF KUDELSKI SECURITY. CREATION OF THE INTELLECTUAL PROPERTY ACTIVITY TO MANAGE THE GROUP'S STRONG IP PORTFOLIO. CREATION OF DIGITAL TV MULTISCREEN AND HIGH DEFINITION (4K) SECURITY SOLUTIONS.

2013

PRODUCTION LAUNCH OF OPENTV5, THE GROUP'S NEW GENERATION MIDDLEWARE SOLUTION.

#1 IN DIGITAL MEDIA CONTENT PROTECTION

2014

FIRST MAJOR PATENT LICENSE AGREEMENT SIGNED WITH CISCO.

THE GROUP IS THE N° 1 CAS PROVIDER WORLDWIDE WITH THE ACQUISITION OF CONAX.

2015

SUCCESS OF INTEGRATED SECURITY, NEXT-GENERATION MIDDLEWARE AND MULTISCREEN SOLUTIONS.

KUDELSKI SECURITY LAUNCHES THE FIRST SWISS CYBER FUSION CENTER.

SECOND HEADQUARTERS IN THE U.S.

2016

LAUNCH OF NAGRA'S INTUITY, A CUTTING-EDGE, END-TO-END USER EXPERIENCE TURNKEY PLATFORM.

THE KUDELSKI GROUP OPENS A SECOND HEADQUARTERS IN PHOENIX, ARIZONA.

KUDELSKI SECURITY EXPANDS IN THE US MARKET WITH THE ACQUISITION OF MILESTONE SYSTEMS.

ACQUISITION OF NEXGUARD LABS, A LEADER IN WATERMARKING SOLUTIONS, EXPANDING THE GROUP'S PORTFOLIO OF END-TO-END CONTENT PROTECTION SECURITY SOLUTIONS.

THE GROUP LAUNCHES INSIGHT, NAGRA'S ANALYTICS PLATFORM BASED ON BIG DATA AND ARTIFICIAL INTELLIGENCE.

INTENSIFICATION OF THE GROUP'S PATENT LICENSING ACTIVITY.

FURTHER EXPANSION INTO INTERNET OF THINGS SECURITY

2017

FURTHER TRANSFORMATION OF THE DIGITAL TV MARKET INTO INTERNET TV.

CONTINUED EXPANSION OF THE GROUP'S SOLUTION PORTFOLIO WITH THE ACQUISITION OF DVNOR.

ACCELERATED INVESTMENTS IN AND GROWTH OF THE CYBERSECURITY AND INTERNET OF THINGS SECTORS TO ADDRESS INCREASING MARKET DEMAND.

CONTINUED DEVELOPMENTS IN THE INTERNET OF THINGS SPACE WITH THE LAUNCH OF A COMPLETE IOT CHIP-TO-CLOUD SECURITY SOLUTION SUITE AND WHITE NOISE, A SECURE MOBILE COMMUNICATION SOLUTION FOR BUSINESSES AND GOVERNMENT INSTITUTIONS.

STRONG DEVELOPMENT OF THE CYBERSECURITY SECTOR WITH THE LAUNCH OF NEW ADVANCED SOLUTIONS.



END-USER FOCUS

Thanks to highly advanced technologies that enable intuitive interactions, the Kudelski Group solutions simplify the life 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 assets around the globe. Kudelski's solutions enable customers to grow in their markets with the necessary confidence.

More than 500 million users enjoy Kudelski Group solutions every day





CAPITALIZING ON A STRONG FOOTPRINT

INTEGRATED DIGITAL TELEVISION

Leveraging on 30 years of experience in the digital television industry, the Kudelski Group develops and delivers a wide range of highly secure content protection solutions addressing the needs of the digital television ecosystem across Internet, satellite, cable, terrestrial and hybrid end-to-end transmission systems. The Group's solutions enable the deployment of advanced services with the appropriate level of protection, providing consumers with a thrilling viewing experience.

The activities of the Kudelski Group's integrated Digital Television (iDTV) segment are carried out by its affiliated companies operating under the NAGRA, Conax, NexGuard, SmarDTV and DVnor brands.

In 2017, NAGRA and Conax operations were brought together to deliver a broader end-to-end integrated solution offering, stimulate innovation and increase operational synergies between the entities.

The Group also offers cybersecurity services. In charge of this sector, Kudelski Security leverages the Group's long-standing security expertise in pay-TV to other industries, including public and private sector organizations and institutions.

Leveraging its security expertise, the Group offers technology and services to support companies across all industries in securing their Internet of Things innovations.

The innovations resulting from the Group's long-standing experience and pioneering history are integrated in a global Intellectual Property program aimed at optimizing the Group's patent portfolio through a number of development, protection, licensing and cross-licensing initiatives.

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CONTENT PROVIDERS



CONTENT AGGREGATION



SERVICE CREATION



CONTENT DELIVERY



CONTENT CONSUMPTION



VIEWERS

CONTENT PROTECTION

End-to-end multi-device security platform

System integration

BUSINESS EFFICIENCY

Big data and artificial intelligence

Compelling interfaces for a seamless viewing experience

USER EXPERIENCE

INDUSTRY CHALLENGES WE ARE ADDRESSING

Securing content in a connected environment to enable financial viability of the ecosystem \$ 100B enabled pay-TV revenues

Great TV
experience
- seamless,
anywhere, on
any device

+400M
devices
deployed

Support operators and content providers in developing their business \$ 189M R&D investment (2017)

Optimize integration and deployment speed & costs for operators

550 clients operators worldwide

NAGRA PREMIL

PREMIUM CUSTOMIZED SOLUTIONS

) INTEGRATED DIGITAL TELEVISION) CORE ACTIVITIES

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 security solutions worldwide and the strategic content security partner to more than 130 of the world's largest and most innovative digital television service providers.

NAGRA manages overall system integration, from set-top box design and production to the deployment of a complete end-to-end platform featuring linear and on-demand TV services delivered to multiple screens.

INNOVATIVE SOLUTION PORTFOLIO LEVERAGING A LONG-STANDING EXPERIENCE

In order to protect the interests of both pay-TV operators and content owners, NAGRA takes a comprehensive system approach to security. The NAGRA range of content value protection solutions is capable of continuous evolution and dynamic upgrades to counter any security risks, based on the use of state-of-the-art security technology and the extensive experience gained in worldwide broadcast and IP network deployments.

the right combination of content protection technologies and services for the digital ecosystem, providing a holistic approach for true Content Value Protection. No other company provides such a broad and effective arsenal in the fight against piracy.

END-TO-END CONTENT VALUE PROTECTION THROUGH ACTIVE SECURITY

NAGRA's end-to-end content value protection solutions give service providers and content owners the ability to protect their investment in premium content and maximize subscriber revenues by securing the delivery of video across any network to any device and by effectively managing piracy when it does occur. NAGRA provides

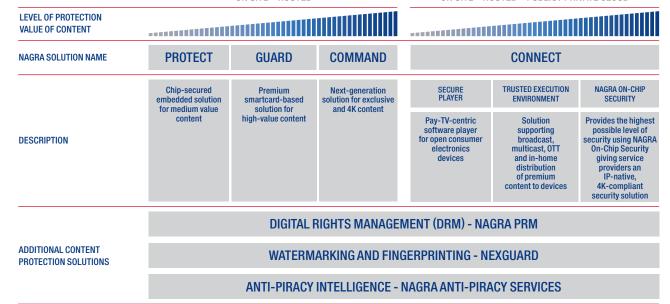
EVOLVING MARKET WITH STRONG OPPORTUNITIES

The continuous evolution of the content distribution industry is bringing new players such as telecommunications and Internet companies into the market, while also enabling traditional pay-TV operators to seize new opportunities, expand their offering and create new business models. NAGRA provides a unified security solution that allows operators to implement the appropriate level of content protection on any network and any device.

BROADCAST

ON SITE - HOSTED

CONNECTED
ON SITE – HOSTED – PUBLIC / PRIVATE CLOUD



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END-TO-END CONTENT PROTECTION

NAGRA CONNECT, the converged CAS/DRM client for connected networks and devices, and the NAGRA Security Services Platform, the cloud-based, modular, scalable CAS and multi-DRM command center for the advanced multi-network operator, provide a unique adaptive security solution that delivers the highest level of content protection achievable in any device.

Anti-Piracy Services

Procedural, technical and legal anti-piracy expertise

NAGRA's multi-disciplinary team of experts provides deep insight into broadcast and online piracy and helps service providers monitor, identify and take down pirated content and illicit services. Leveraging forensic watermarking by NexGuard, NAGRA Anti-Piracy Services apply all necessary procedural, technical and legal means to help both service providers and content owners create the ultimate closed-loop approach to piracy to secure, mark, monitor, detect, identify and act.

NexGuard

Secure framework for implementing, controlling and updating anti-piracy

NexGuard provides session-based watermarking to the entire content ecosystem, with deployment either in end-consumer devices (in set-top boxes for pay-TV) or server-side (for OTT streaming).

Watermarking is becoming one of several key technologies that enable pay-TV service providers to acquire rights to exclusive, high-value content like 4K Ultra HD, and better track and shut down illegal redistribution of exclusive linear content like live sports.

TVkey

Direct-to-TV security technology

Jointly developed by NAGRA and Samsung, TVkey, a CES 2017 Innovation Awards honoree, allows consumers to enjoy premium content directly on new TV sets through a simple sign-up process with their pay-TV provider and experience high-quality services, including 4K Ultra HD and HDR, on premium Samsung Smart TVs using the TV remote control.

The system provides the highest level of content protection and the USB dongle offers a fast and secure way for pay-TV operators to bring advanced services directly to a growing number of models of consumer TV sets.

NASC

Security certification

NAGRA Advanced Security Certification (NASC) is a specification and certification process for the entire pay-TV ecosystem, ensuring that the highest level of protection is maintained over time.

NAGRA INTUITIVE USER EXPERIENCE

) INTEGRATED DIGITAL TELEVISION) CORE ACTIVITIES

New technologies, in particular 4K ultra-high definition, represent another major TV upgrade cycle and bring new opportunities in terms of user experience. The user experience is playing a major role in users' choices and subscriber retention in pay-TV.

A DEDICATED USER EXPERIENCE STUDIO

OpenTV's user experience studio team based in San Francisco develops groundbreaking user interfaces, from standard definition to 4K ultra-high definition. whose simple and efficient design captivates viewers, engenders loyalty and offers operators the opportunity to reduce churn and monetize their services.

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 and fully immersive, connected entertainment experience to consumers, seamlessly blending the broadcast and Internet worlds.

ALL-IN-ONE PLATFORM TO SERVE THE ENTIRE ECOSYSTEM

Media content delivery platforms become more relevant with the increasing complexity of managing a huge range of ultra-high definition screens, smartphones, tablets and other devices that are becoming part of the pay-TV infrastructure. Reducing today's system complexity has become one of the key benefits that a comprehensive, secure, packaged and robust solution from NAGRA delivers and this gives clear operational advantages of deployment speed, performance, and scalability to the market NAGRA delivers to.

OpenTV Suite is a powerful set of innovative digital television solutions from the NAGRA portfolio. It provides secure, engaging and intuitive user experiences via a powerful back-end platform that delivers an all-screen connected home environment. The system is designed and built for operational efficiency to drive down the total cost of operations and is comprised of four key components as shown in the table below.





NAGRA PRODUCTS

CORE FEATURES FOR USERS

Live TV Streaming

CORE FEATURES FOR OPERATORS

PRODUCTION SERVERS OpenTV Platform OPTIMIZATION OPENTV SUITE OpenTV OS **DEVICES MANAGEMENT OpenTV Player** UNIQUE AND ENGAGING **OpenTV Experience USER INTERFACE**

Catch-Up and Start-Over TV **Network PVR** Advanced Video-On-Demand Functionalities Download-To-Go

Electronic Sell-Through

Usage Analytics & Recommendations Multi-source content aggregation

Dynamic Ad Insertion

OpenTV Platform

Cutting-edge end-to-end user experience turnkey platform

OpenTV Platform provides a cloud based, multi-tenanted, highly flexible, componentized multiscreen platform that delivers a vast range of TV services to all devices across multiple networks and offers exceptional monetization capabilities through an e-commerce style, analytics-based content management system.

OpenTV OS

Latest-generation television operating platform

In combination with the OpenTV Platform, OpenTV OS enables all use-cases that are required for today's pay-TV landscape from simple broadcast to sophisticated hybrid networks enabling exceptional user experiences through their device of choice.

OpenTV Player

From TV to mobile phone, from PC to tablet

OpenTV Player leverages NAGRA's expertise and harnesses state-of-the-art user experience, device, content security, streaming and cloud technologies that seamlessly work together in the background.

OpenTV Experience

Multiple journeys to the same content destination

Open TV's innovative Electronic Program Guide including menu and tile-based navigation, recommendations and voice search, with all of these options packaged into a single user interface providing an unparalleled user experience.

OpenTV Signature Edition

Turnkey, cloud-based and multi-tenant solution

OpenTV Signature Edition provides the most complete, cloud-based and always evolved pay-TV video ecosystem to help service providers build a better video business. Powered by the OpenTV Suite and an analytics-driven content management system, it enables a fully personalized and unique video entertainment experience by optimizing linear and on-demand content and catalogue services to keep subscribers satisfied and coming back for more.

CONAX MODULAR COST-EFFECTIVE SOLUTIONS

) INTEGRATED DIGITAL TELEVISION) CORE ACTIVITIES

Conax provides flexible, cost-effective content security solutions and total service protection for digital TV services for telecommunication companies, cable, satellite, IP, mobile, terrestrial and broadband operations, representing 425 customers in 85 countries.

The company focuses on developing standardized, pre-integrated solutions, tapping a global partner network to provide optimal operator choice in end-to-end complete platforms.

Conax provides mid-sized pay-TV operators with a uniquely packaged, holistic content protection approach that is ready to deploy. Along with this solution Conax provides pay-TV operators with security audits to prevent a wide range of content piracy including attacks from unmanaged networks.

All Conax solutions are based on a single unified Conax Contego security back-end which effectively reduces cost and complexity.

HIGHLY EFFICIENT, MODULAR, COST-EFFECTIVE OFF-THE-SHELF SOLUTIONS

All Conax solutions are based on the Conax Contego unified security back-end. This provides customers with a simplified platform model encompassing flexibility and scalability of operations, with reduced Capital Expenditures and operational complexity. Conax prioritizes open partnering and pre-integrated solutions to enable operators to select from an attractive portfolio of complete ecosystems. Conax provides operators with a 360-degree, holistic security approach encompassing expert guidance, operational audits and content security.

GLOBAL PARTNER HIGHLIGHTS

Conax further developed its network of strategic technology partners, client device partners and reseller agreements for enabling the delivery of end-to-end solutions. This partnering strategy allows Conax to offer its leading security technology with complementary technologies to any operator, on a variety of scales, anywhere in the world.

ISO CERTIFIED FOR ORGANIZATIONAL EXCELLENCE AND DEVELOPMENT STANDARDS

Committed to quality and security, the Conax management system is built on a structure of robust processes for quality and continuous improvement based on the strict regimes required for ISO 9001 and 27001 certificates.

In 2017, Conax' Core Access cardless security client for premium HD content and for 4K/UHD linear content for pay TV DVB operations completed Cartesian's Farncombe Security Audit. Cartesian's multi-phase audit encompassed a 360-degree on-site review of Conax, including product, people and processes, operations in-and-after-deployment and security infrastructure.

Unified content security back-end



The Conax Contego unified security platform provides consistent handling of conditional access and DRM across broadcast, OTT, terrestrial, IPTV, cable and satellite delivery networks and devices.

In 2017, Conax expanded its portfolio with the following products:

- Prime Access and Lynx, targeting premium 4K/UHD content in hybrid set-top boxes.
- A security architecture for **Android**, enabling operators to further simplify their content security operations by easily adding Android set-top boxes to their device portfolio.
- Core Access, a cardless security client for premium HD content and for 4K/UHD linear content for pay-TV DVB operations
- Media Service, a solution that includes DVnor Media Asset Manager solution (Organizer), Conax Contego Multi DRM and NexGuard watermarking technology. It enables Pay TV operators to outsource the preparation of their VOD content in a less expensive, faster and more flexible way, with the appropriate security profiles.
- Arena, a modular multiscreen hub enabling unique flexibility for operators and encompassing all key components needed to launch a complete multiscreen offering with reduced cost, complexity and time-to-market.

CAMs

Best-in-class security-compliant Conditional Access Modules



Conditional Access Modules (CAMs) provide operators with a user-friendly consumer device for accessing digital broadcast content. Removing the need for a set-top box, CAMs are highly suitable for both the main TV and additional TVs in the home.

In 2017, SmarDTV was the first to embed a Conax Cardless Client in a Conditional Access Module. The new SmarCAM-5.0 provides the market with a highly secure cardless solution utilizing a unique combination of hardware and software security resulting in a high level of protection not available in pure software solutions.

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SMARDTV SMART & SECURE DEVICES ENHANCING THE CONSUMER EXPERIENCE

) INTEGRATED DIGITAL TELEVISION) CORE ACTIVITIES

SmarDTV develops state-of-the-art consumer electronic devices for the B2B4C market. The product portfolio includes of a cost-effective range of interactive TV modules and Conditional Access Modules based on the CI Plus standard, a full range of pay-TV operator and retail level set-top boxes (Broadcast, HbbTV), media servers and gateways designed to operate on satellite, cable, terrestrial, IPTV and OTT networks.

SmarDTV includes the latest security solutions from the Group including NAGRA PROTECT, NAGRA CONNECT, NAGRA COMMAND and Conax card-based and cardless conditional access solutions. SmarDTV is starting a new product line for the Internet Of Things market in collaboration with Kudelski Security and the Kudelski Group's Internet of Things product team.

PREMIUM CONTENT DELIVERED DIRECTLY TO TV SETS

SmarDTV is a leader in Conditional Access Modules (CAMs) that use DVB CI (Common Interface) and CI Plus standards. By integrating SmarDTV's Conditional Access Modules in their television ecosystem, operators can deliver premium content directly to integrated TV sets through broadcast or broadband IP networks.

COMPLETE PORTFOLIO OF SET-TOP BOXES

SmarDTV has invested in a complete portfolio of set-top boxes ready for the Android TV set-top box markets. SmarDTV is suporting both OpenTV OS and Android TV for hybrid and OTT deployments. SmarDTV is leveraging the Group assets to prepare pre-integrated solutions including OpenTV platform, NAGRA and Conax CAS and DRM. Pre-integration is a critical aspect to fulfil recent demand of operators who are looking at very quick turnaround in the continuously changing pay-TV market.

FACILITATING LOCAL MANUFACTURING

SmarDTV's System-In-Package (SIP) technology has evolved through market deployments in Asia and Latin America. The technology facilitates local manufacturing since all key elements such as security assets and user interface requirements are all pre-integrated within the SIP silicon. The new SIP version selected by Altech UEC and CANAL+ International for the African market is based on latest generation chipsets that bring the highest level of security to the set-top box and customer-premises equipment market.

EXPLORING THE IOT MARKET

SmarDTV's innovation effort has also been put into a new product line for the Internet of Things (IoT) market. With the DNA of SmarDTV being secured and connected devices, it was a natural move to explore the IoT market starting from a critical market request for a secured video surveillance solution. Working with NAGRA and Kudelski Security, SmarDTV decided to explore the production of a secured device to update legacy cameras with a "bump-in-thewire" approach. SmarDTV presented a demonstration of the device at CES 2018 running onto the Kudelski Group's secure IoT platform and showing live video content encryption out of an existing retail camera.

MAIN PRODUCTS FEATURES KEY BENEFITS

CONDITIONAL ACCESS MODULES

VDOCAST DONGLE

4K CABLE / SATELLITE SET-TOP BOX

ZAPPER / HYBRID HD SET-TOP BOX

OTT/GATEWAY

SMARDTV PRODUCT RANGE

Ultra High Definition

Hybrid Over-The-Top
/ Broadcast

Broadcast only

Directly on TV sets

Companion Apps

High security

Low total cost of ownership

Evolutive definition

Long length of life

Design and User Friendly



SmarDTV develops Conditional Access Modules relying on the DVB CI and CI Plus standards, plugged directly into the TV set to decrypt pay-TV services. SmarDTV is promoting innovation in CAMs as a driver in these standards. The SmarCAM range also includes WiFiCAM modules, which enable the seamless reception of hybrid services without the need for a set-top box.

In 2017, SmarDTV launched a new Conditional Access Module embedding a Conax cardless client. The new SmarCAM 5.0 leverages fundamental innovations in embedded silicon and device security, offering robustness across a broad range of security profiles.

SmarDTV showcased at IBC 2017 its next-generation CI Plus 1.4 and broadcast/broadband hybrid Conditional Access Module. The new solution enables pay-TV operators to offer access to their content portal, catch-up TV and other interactive services directly on the main TV screen. Launch is expected in 2018.

vdoCAST Dongle

OTT / IPTV Modules



SmarDTV vdoCAST Dongle is a direct-to-TV solution allowing consumers to throw and view mobile OTT content on any big screen TV. The Dongle integrates with the operator's managed devices for analytics enabling a closer relationship with subscribers. In addition to OpenTV Platform and Conax GO Live, the device can be integrated with any pay-TV operator back-end with the choice of a NAGRA, PlayReady or Widevine DRM.

OTT and hybrid set-top boxes

Set-top boxes



SmarDTV has a family of set-top boxes supporting broadcast, hybrid and OTT distribution networks up to 4K. Powered by OpenTV Suite, AndroidTV and/or a range of third party solutions, they feature a complete range of NAGRA content value protection solutions to meet the operators' business needs, whether cardless or card-based, on premise or from the cloud.

INTEGRATED DIGITAL TV FORWARD-LOOKING OFFERINGS

) INTEGRATED DIGITAL TELEVISION) CORE ACTIVITIES

In line with the Kudelski Group strategy to leverage its footprint of customers and to remain as critical as possible to its customers' business, the Group decided to invest in big data and artificial intelligence as well as media asset management.

Based on the large amount of data collected each day on its solutions combined with the most relevant data available on its customers' platforms, the Group developed an artificial intelligence platform aimed at improving the operator's business using top-notch industry, processes and infrastructure knowledge.

With the evolution of the video content distribution landscape, and recognizing the importance and the complexity of handling the versioning and the metadata of each asset, the Group acquired DVnor in 2017.

EMPOWERING OPERATORS TO MAKE BETTER STRATEGIC DECISIONS

With its Software-as-a-Services (SaaS) Insight platform, the Group helps pay-TV providers drive their business using data. Insight uses big data and artificial intelligence to generate smart actions that improve the business bottom line. The platform leverages a cross-functional team that has strong pay-TV experience and that includes high-level consultants, marketers, content distribution strategists, data scientists, architects, developers and data technologists.

Unlike business intelligence generalist platforms, Insight comes with big data and artificial intelligence algorithms already applied to pay-TV business issues. Insight can be used directly by operational, marketing and content teams at pay-TV providers to improve business metrics, as well as by business intelligence teams to enrich their data and predictions.

The infrastructure of pay-TV operators is a strong asset and differentiator. Insight adds an intelligent layer on top of it to make it agile and customer-centric, creating artificial intelligence-driven actions and measuring their impact. It enables pay-TV operators to make more money and make better strategic decisions.

DVNOR STRENTGHENING THE GROUP'S OFFERING

In 2017, the Kudelski Group acquired DVnor, an Oslo-based provider of media asset management services. The company provides technology and competence highly complementary to the Conax content security portfolio, further strengthening Conax' position in the media consumption industry.

DVnor's core product, DVnor Organizer, provides a highly automated all-in-one platform for metadata and digital file management, transcoding, storage, distribution and post-production services. Combining the highly efficient content workflow from the DVnor Organizer with benchmark content security from Conax Contego makes the Conax and DVnor market offerings very attractive to an enlarged set of players in the value chain.

MAKING THE MOST OF THE RELATIONSHIP WITH CUSTOMERS

At the heart of its customers' operations for decades, the Group has the know-how and experience to lead large technology and integration projects, while ensuring the continuity of service all along the transition and implementation phases.



Insight enables operators to address specific business issues through actionable business intelligence and an iterative approach. With Insight, operators can collect and connect multiple data sources, create and share reusable analysis, share actionable outputs with operations for immediate action and measure the impact of these actions with predefined key performance indicators in real time.

DVnor Organizer

Media asset management



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

Integration Services

Design and deployment of end-to-end systems and infrastructures



The Kudelski Group manages full system integration for its customers. Integration projects focus on on-time and on-budget delivery, ensuring no service interruption for the whole duration of projects. These services rely on the Group's extensive knowledge of solutions and ecosystems gained over the past 30 years.

INTEGRATED DIGITAL TV 2017 MARKET HIGHLIGHTS

) INTEGRATED DIGITAL TELEVISION) CORE ACTIVITIES

AMERICAS

In the United States, NAGRA continued to strengthen its long-term relationship with the fast-growing Altice Group. As part of NAGRA's new multi-year agreement with the Altice Group, NAGRA CONNECT and the NAGRA OpenTV platform have been selected to enable content security and multiscreen experience for Altice One. Launched in November 2017 by Altice USA – one of the largest broadband communications and video service providers in the United States –, Altice One is the new connectivity platform which reinvents the way consumers connect to the entertainment and content they want.

Still in the United States, Evolution Digital and Conax announced that Conax will be providing its multi-DRM solution for Evolution Digital's eVUE-TV platform, available on the National Cable Television Cooperative's (NCTC) VU-IT! Platform. Evolution Digital's eVUE-TV delivers IP Video on Demand content, as well as IP linear channels, network DVR and catch-up TV functionalities as a managed-service offering for Tier 2 and Tier 3 cable operators in the United States. The flexible Conax Contego unified security back-end is integrated with the eVUE-TV platform in both operating models: hosted and on premise.

In Argentina, regional pay-TV operators CableVideo and Colsecor selected technology and services from Conax, with regional partner, BOLD MSS, to drive expansion in their pay-TV and multi-DRM content offerings. CableVideo is migrating its existing security platforms to a new system from security vendor Conax, including advanced OTT services. Colsecor, a cooperative composed of operators throughout Argentina, deployed a pay-TV platform secured by Conax Contego content protection, enabling flexibility to easily execute on plans to provide advanced OTT consumer offerings in the future.

In Colombia, AMVL Claro launched an end-to-end solution for providing Network DVR, Catch-up and Start-over to their entire base of installed NAGRA subscribers using the NAGRA MediaLive/OpenTV5 platform. This allows for their clients to store any show

that they wish and watch later. All the technology is provided centrally removing the need for extensive hard drives in the home.

NAGRA also supplied a suite of end-to-end interactive applications to AMVL Claro's clients with NAGRA's partners EchoStar and NagraStar. These are the same applications used today throughout the US for DISH's subscribers. They were integrated with the NAGRA OpenTV5 OS used on their installed base. They are unique as they provide the consumer with an easy way to navigate through a long list of available live sports programs that are provided within the package of linear programming included in the service.

AMVL Claro also continued to add DTH subscribers in the Central America region with NAGRA's CAS products and services.

Claro Brazil continued to roll-out advanced features on their MediaLive/OpenTV5 platform in 2017. These features include Electronic Sell-Through, that allows consumers to buy and store content over their IP devices or the set-top box. NAGRA also begun to transition many of their value-added features from broadcast to IP, such as Video on Demand (NET Now) and live linear channels. What makes the platform unique is the fact that they can also use their legacy set-top boxes with the NAGRA MediaLive platform to deliver all their value-added content over IP, extending the life expectancy of set-top boxes, while enabling new IP-based services. This allows to reduce CAPEX.

NAGRA was selected by VTR, a Liberty Global (LGI Group) company and Chile's largest multi-channel television provider as well as a leading provider of broadband internet and residential voice services to provide its CAS solution.

Telefónica is one of the largest telecommunications companies in the world by number of customers with a comprehensive offering and quality of connectivity that is delivered over world class fixed, mobile and broadband











networks. The company has a significant presence in 21 countries and 346 million accesses around the world. It has a strong presence in Spain, Europe and Latin America, where it focuses an important part of its growth strategy.

NAGRA will provide Telefónica and its subsidiaries with next generation content protection for the operator's IPTV content, including 4K. The NAGRA Security Services Platform (SSP) and CONNECT client provide a single security headend to secure both legacy and new generation set-top boxes deployed by the operator. Deployed in field trials in Brazil and Spain, the solution addresses use cases from live TV to VOD and nPVR, while meeting the Hollywood studio requirements for the protection of premium and enhanced content such as 4K.

NAGRA is also rolling out the next generation of connected set-top boxes including OpenTV5 OS with the Telefónica-supplied User Experience in Peru, Colombia, Chile and Central America. This allows Telefónica to enhance broadcast pay-TV services with value-added services such as its own video-on-demand service as well as third-party video on-demand services.

In 2017, Telefónica began to roll-out and sell their DTH service in multiple Central America countries with NAGRA technologies.

ASIA - PACIFIC

In July 2017, NAGRA successfully delivered a major broadcast headend migration and renovation project with StarHub in Singapore. As system integrator and prime contractor, NAGRA managed over 30 vendors to seamlessly migrate all customer equipment and services to a new location without impact to end-users.

Digital penetration continued to grow in the Taiwan cable market with kbro adding over 1.3 million digital set-top boxes based on NAGRA's DLK (cardless) and smartcard platforms in 2017. OTT also showed strong growth with an additional 300 000 new subscribers. In this market, NAGRA was also selected by Taiwan Broadband Cable as their system integrator for the Disaster Recovery headend and OTT.

In India, the cable digitization momentum continues with millions of subscriber additions. In this market, NAGRA announced in 2017 the launch of the TVKey product in partnership with Samsung.

Indian pay-TV operator Triple Play deployed technology from Conax and partner Corpus to help drive expansion in the blossoming triple-play arena. The new solution includes a Conax-secured multi-DRM offering based on the Conax Contego-as-a-Service cloud-based platform, combined with pre-integrated middleware from partner Corpus, with system integration by Corpus. The operator is targeting its current cable and Internet subscriber base which includes a mix of high and low ARPU consumers, with combined triple-play services, TV everywhere and a compelling new user experience. The contract represented the first deployment of the joint Conax/Corpus offering and the first launch of Conax' cloud-based multi-DRM platform in the Indian market.

An early player in India with operations established in this market in 2002, Conax has played a leading role in guiding Indian operators through digitization. Conax has long-term partnerships serving two of the five largest Multi-System Operators, including Essel Group's Dish TV and SitiCable.











INTEGRATED DIGITAL TV 2017 MARKET HIGHLIGHTS

) INTEGRATED DIGITAL TELEVISION) CORE ACTIVITIES

In South Korea, NAGRA expanded its content protection coverage with Korean satellite broadcaster KT Skylife to include watermarking. In addition to the successful deployment of the NAGRA CONNECT two-way cardless security solution in 2017, the NexGuard solution was selected for set-top box forensic watermarking for 4K Ultra HD set-top boxes with premium content. NAGRA now provides end-to-end content value chain protection for KT Skylife.

Additionally, KT Skylife launched the world's first LTE (mobile Internet)/satellite hybrid service with NAGRA's Conditional Access solution, which enables a better viewing experience for users by preventing the DTH signal from freezing or from being lost when vehicles pass through a tunnel.

In Australia, NAGRA was selected by Foxtel for the deployment and managed services of OpenTV's operating system on a DTH/DTT/IP hybrid zapper set-top box in 2018.

AFRICA

SmarDTV's Conditional Access Module was deployed for AZAM TV in Kenya.

Conax' 10-year plus strategic partnership with Chinese operator StarTimes, the fastest-growing pan-African digital TV operator, continued to develop including new DTT deployments and next-generation consumer propositions.

After the successful deployment of first generation SmarDTV satellite set-top boxes, with more than 5 million units delivered to date, SmarDTV renewed its contract for next-generation set-top boxes for the satellite and terrestrial markets with new decoding capabilities to support CANAL+ INTERNATIONAL in delivering high quality content to African consumers. The cost-effective solution provides a high level of quality, reliability and security.

SmarDTV worked actively with NAGRA to integrate security technology to protect CANAL+ INTERNATIONAL assets. The solution is based on NAGRA COMMAND embedded in a low-end set-top box which also incorporates an ASIC developed by SmarDTV.

SmarDTV continued to deploy set-top boxes in South Africa for the analog switch-off. The company also deployed a new-generation high-definition set-top box for OpenView HD (OVHD), South Africa's first free-to-air digital satellite TV platform, working with a new local manufacturer (Tellumat).

EUROPE

NAGRA has renewed and expanded its digital security and convergent media solution partnership with Altice Group, a global leader in the telecom, content, media, entertainment and advertising industry. As part of this new long-term agreement benefitting Altice Group's subsidiaries in the USA, France, Israel, Portugal and the Dominican Republic, NAGRA will provide its wide range of security solutions including NAGRA CONNECT (NAGRA's converged CAS/DRM security solution for broadcast, IPTV, OTT and the connected home), NAGRA GUARD and Nagra PROTECT as well as the OpenTV Service Platform, its multi-screen solution.

As part of the agreement with the Altice Group, OpenTV suite has been selected to power and secure the launch of the new NEXT streaming service, launched in 2017 by HOT Telecommunications Systems Ltd, a subsidiary of the Altice Group and the leading pay-TV operator in Israel. NEXT streaming service is a new digital platform specifically designed to address the young generation of consumers who want have access to their favorite content anytime, anywhere and on the device of their choice.











CANAL+ adopted NAGRA Insight, a pay-TV data intelligence platform that enables operators to pilot their business using data and make better strategic decisions. It leverages big data and artificial intelligence to understand individual TV watcher's taste and recommends actions that will increase both customer satisfaction and bottom line.

In Italy, after thirteen years of partnership, NAGRA and Mediaset Premium S.p.A. signed a multi-year agreement renewal for CAS and PRM to secure premium content on a DVB-T network.

In Spain, NAGRA is working on a project with Telefónica Spain to secure, with the NAGRA CONNECT technology, all Telefónica IPTV set-top boxes, including the new 4K service to be launched in the first half of 2018.

NAGRA has deployed for Vodafone Spain its security solution, NAGRA CONNECT, to secure Vodafone's new-generation set-top box. Vodafone Group and NAGRA have been working together in integrating NAGRA security solutions into the Vodafone Group TV solution. This solution will be deployed across several countries within the next years.

Still in Spain, NAGRA is continuously evolving its end-to-end solution deployed at Euskaltel, including OpenTV back-end, CDN, encoding and security on Android set-top boxes to address Euskaltel's IPTV network, leveraging NAGRA CONNECT's flexibility and NOCS (NAGRA-On-Chip Security) requirements to secure the Android open platform using state-of-the-art security standards.

In Bulgaria, Conax' customer since 2010 Unicoms Services deployed its UnyQTV hosted OTT platform for pay-TV operators deploying advanced technology provided by Conax and Appear TV. The new platform supports Unicoms Services' expansion into the OTT arena. Unicoms Services is already hosting over 50 operators from the Balkans region with Conax Contego conditional access and is the first professional white label OTT solution available in Bulgaria.

JOYNE, the newest Dutch pay-TV operator, deployed pay-TV operations in the cloud with Conax, Eutelsat and SmarDTV solutions. The new multi-channel pay-TV operation is targeting Dutch viewers with second homes and mobile homes as well as public spaces in camping sites and bars, using Conax' Contegoas-a-Service, cloud-based unified security hub for quick time to market and scaling capability. JOYNE has deployed the Conax Cardless CAM, developed by SmarDTV, providing reduced subscriber acquisition cost with simple plug-and-play and including built-in Conax Core Access security client enabling access to premium HD and 4K/UHD content. The new JOYNE service utilizes their multi-year, multi-transponder contract with Eutelsat for uplink services and content distribution.

In Iceland, Vodafone has been a Conax customer since 2004. In 2017, they selected Conax' Connected Access solution to convert their existing IPTV set-top boxes in the field. By replacing the already-existing DRM solution in the set-top boxes, Vodafone will significantly reduce the cost of the transition. Connected Access will also provide the security on Vodafone's next-generation 4K set-top box to be released in 2018, after which they will have a complete, integrated DVB/OTT/IPTV solution from a single headend - with the inherent business benefits this brings.

MIDDLE EAST

In the Middle East, Dubai-based My-HD Media deployed Conax' cloud-based content protection solution to support the growth of its next generations of platforms in the Middle East and Northern Africa. The Conax solution provides the operator with a wide range of modular features and functionality, coupled with the benefits of cloud scalability, providing a natural path for rapid deployment of new and advanced features as the operation expands. My-HD Media uses Conax Contego both for its traditional DTH operation and its OTT service.











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KUDELSKI SECURITY GLOBAL PROVIDER OF CYBERSECURITY SOLUTIONS

) INTEGRATED DIGITAL TELEVISION) GROWTH INITIATIVES

Kudelski Security builds on the Group's deep expertise and investments in digital security innovation to provide cybersecurity that has real business impact. In 2017, the entity experienced solid growth on both sides of the Atlantic, becoming the largest pure-play cybersecurity solutions provider in Switzerland and one of the fastest growing cybersecurity solutions companies in the United States, earning important recognition from industry analysts, technology partners and customers along the way.

Kudelski Security's performance in 2017 is underpinned by a fundamentally different approach to tackling the cybersecurity challenge. It's driven by purposeful and applied innovation, and leverages the Group's pool of talented R&D engineers and dedicated cybersecurity experts across advisory, technology and managed security services.

Kudelski Security's global reach and cyber solutions focus are reinforced by key international partnerships, including alliances with leading Chief Information Security Officers (CISOs) and the world's most powerful security technology companies. Collaboration has been a key theme for Kudelski Security throughout 2017, reflecting the company's conviction that cybersecurity will only deliver on its promise if all stakeholders of the same spirit and vision work together.

CHALLENGING THE STATUS QUO OF CYBERSECURITY

Investment in cybersecurity products and services is at all-time high, yet the severity and frequency of large-scale data breaches continue to increase.

For many clients, the desire to adopt solutions that drive positive results starts with the use of Kudelski Security's proprietary Secure Blueprint.

This programmatic approach helps clients map their current security investments and – based on an analysis of business objectives, risk appetite and threats – articulate a vision of optimal security.

The Secure Blueprint methodology covers all elements of a client's enterprise security – including people, process and technology – and recognizes that every organization is unique in their needs and risks as well as in the assets they can leverage.

This framework establishes a baseline for clients and guides the design and deployment of security solutions, be they through consulting, analysis of technology architectures, deployment of new technology or through outsourced support.

The result is a measurable approach to security that is manageable and aligned with the needs of the business.

Other clients may have specific challenges that are not being served by solution providers or where no solution currently exists.

For these engagements, Kudelski Security leverages resources from across its entire business, defining and delivering solutions that meet the unique needs.



Kudelski Security's Advisory services empower organizations to build business-aligned security programs through a strategic cyber program approach. Consultants provide consulting across four strategic areas: Strategy and Governance, Risk Vulnerability and Threat Management, Incident Response and Cyber Resilience, and Cybersecurity Staffing.

Technology Services



Kudelski Security helps clients select and implement technology that best matches their business and operational requirements. Leveraging long-term relationships with a wide range of leading technology companies, the team of solution architects, and senior engineers offers Technology Assessments, Architecture Design as well as Planning and Solution Implementation services.

Kudelski Security is also able to integrate technologies from multiple vendors and, using the expertise of the Research and Development teams, design custom capabilities to automate and orchestrate security functions.

Managed Security Services



Kudelski Security's Managed Security Services, delivered from its Cyber Fusion Centers in Europe and the U.S., are built from the ground up to address gaps in the traditional managed security market and drive greater value to clients.

The services combine expert analysts, innovative technologies as well as detection and hunting approaches to rapidly discover and block threats, outpacing the modern cyber adversary and building stronger cyber resilience.

Research and Development – Custom Solutions



At the Research Center, Laboratories and IoT Security Center of Excellence, teams of security experts and engineers engage in cutting-edge research and the development of technology that provide innovative solutions to the clients' toughest security challenges.

KUDELSKI SECURITY GLOBAL PROVIDER OF CYBERSECURITY SOLUTIONS

) INTEGRATED DIGITAL TELEVISION) GROWTH INITIATIVES

COMPREHENSIVE OFFERING BUILT ON FOUR BUSINESS PILLARS

Part of the Kudelski Security advantage stems from the depth of experience offered across its four business pillars – Advisory Consulting, Technology, Managed Security Services, and Research and Development. Part also lies in the fact that Kudelski Security can scale up to support clients from Switzerland and Central Europe to across the United States.

This global capacity is sustained by industry leading expertise, including dedicated consultants, engineers and technical specialists, who are based close to the client organizations.

Bringing consulting, technology, outsourcing and custom R&D capabilities to bear, Kudelski Security offers clients a multi-dimensional view of the challenge as well as a range of multifaceted solutions. The result is that clients have a trusted advisor capable of comprehensively addressing threats, enabling them to reduce enterprise risks, maintain compliance and increase overall efficiencies across their security organization.

CONTINUED MARKET MOMENTUM

Since launching its new business strategy in early 2016, Kudelski Security has continued to gain market momentum through client adoption and positive recognition for its multidimensional approach to cybersecurity from partners and industry analysts.

Building on two recent acquisitions in the U.S., Kudelski Security continues to expand with new organic growth, broader client relationships, new and innovative market offerings, and additions to its experienced team of cyber professionals.

STRONG NEW PRODUCTS AND SERVICES, ALONG WITH AGGRESSIVE GEOGRAPHIC EXPANSION, ARE EXPECTED TO DRIVE CONTINUED INCREASES IN MARKET SHARE AND ACCELERATE GROWTH FOR KUDELSKI SECURITY IN 2018



KUDELSKI SECURITY 2017 MARKET HIGHLIGHTS

) INTEGRATED DIGITAL TELEVISION) GROWTH INITIATIVES

Kudelski Security continued to expand in 2017, creating disruption in a global market that recognizes that in order to get ahead of cyber threats, it needs to innovate, evolve and take a new approach to cybersecurity.

STRONG ADOPTION OF NEW CYBER SOLUTIONS

Throughout 2017, Kudelski Security continued to launch innovative products and services and expand geographically to drive significant new business. The philosophy of working together to challenge the status quo has resonated with the market, resulting in a significant increase in new clients in Switzerland and the United States.

The year started with the Group's acquisition of M&S Technologies, a complementary add on for Kudelski Security in the South Central United States. The addition of this experienced team and its bench of marquee clients provided Kudelski Security with proven technical and sales resources as well as a strong client base to cross sell its products and services.

In the first quarter of 2017, Kudelski Security relaunched its Managed Security Services, featuring a new Cyber Fusion Center (CFC) with redesigned processes, infrastructure and capabilities to efficiently support large-scale global growth. The new CFC features a proactive approach to security services including cyber threat hunting and attacker deception services as well as an innovative portal for clients to monitor security events and activities.

The response to the new managed security offerings has been exciting and the business added major clients in both Switzerland and the United States, including international firms requiring support on a global basis. Further, Kudelski Security was recognized as one of the top 100 Managed Security Service Providers by MSSP Alert, and by Gartner for Managed Detection and Response services.

Kudelski Security also launched a portfolio of Advisory services aimed at enabling Chief Information Security Officers (CISOs) to better manage security program strategies, with a specific focus on developing effective reporting to communicate with business executives and boards of directors. These services created an immediate pipeline of services opportunities, as well as a future pipeline for Secure Blueprint SaaS, which is expected to launch in the second quarter of 2018.

INNOVATION IS THE KEY TO CYBER SUCCESS

The strategic importance of Kudelski Security's Research and Development expertise came clearly into focus in 2017.

The ability to work directly with clients on unique solutions is a clear differentiator for Kudelski Security, and an essential component of the strategy to challenge the cybersecurity status quo. These efforts resulted in new high-profile clients for services that ranged from security evaluations of IoT devices to the integration of physical and cybersecurity systems and the orchestration and automation of security platforms to create efficiencies and save manpower.

As with all innovation, the starting point is real-world problems for which no efficient or workable solution exists. Key innovations in 2017 were driven by the following client challenges:

- A global law services firm needed better threat visibility on a sprawling global IT infrastructure. They leveraged Kudelski Security's Cyber Fusion Center and Managed Attacker Deception services to improve responsiveness and increase overall security posture.
- A international engineering firm sought to improve the efficiency and decrease the complexity of managing confidential client data. They selected Kudelski Security to develop a high-assurance monitored data enclave to improve access and security, while enabling them to meet the demands of regulatory compliance.
- A worldwide vacation rental company needed to improve the speed and responsiveness of managing their network security architecture. They engaged with Kudelski Security to develop a custom automation and orchestration solution to integrate multiple security technologies and define workflows for security teams around the world.

LOOKING AHEAD: PURPOSEFUL INNOVATION IN 2018

Kudelski Security develops products and services that meet a growing market demand for more effective and workable solutions to evolving cybersecurity challenges. Its purposeful innovation makes complex IT environments more efficient, supports business growth, and strengthens security postures.

Kudelski Security plans to launch several flagship innovations in 2018:

- Secure Blueprint SaaS: A web-based cyber business management platform. A first-of-its-kind product, the software calculates current and target program maturity and enables Chief Information Security Officers (CISOs) to track Key Performance Indicators and prioritize security investments. It also generates executive dashboards to enable CISOs to communicate effectively with senior leadership. Already in use by major clients acting as development partners, Secure Blueprint SaaS is expected to be launched commercially in mid-2018.
- Managed Enclave: A solution addressing the safe storage of sensitive data, such as intellectual property, client personal information or other regulated data. More often today, due to increasing threats, contractual demands, or regulatory requirements, organizations are segregating this data from regular IT data in secure, high assurance data enclaves to minimize the risk of data loss.
- Automation & Orchestration: Custom scripts
 to automate and orchestrate a company's IT and
 security operations. Working with the organization's
 existing technology, Automation and Orchestration
 services result in faster, more scalable and more
 efficient delivery of operations and security services.
- Cryptography Services: Audit, design and implementation expertise by world-class cryptography experts, enabling enterprises to obtain target security levels for products and systems.

INTELLECTUAL PROPERTY MANAGING THE PATENT PORTFOLIO

) INTEGRATED DIGITAL TELEVISION) GROWTH INITIATIVES

With over 65 years of innovation in developing award-winning products and investing on average some \$200 million annually in research and development, the Kudelski Group and its subsidiaries have carefully developed and strengthened their global intellectual property position over decades. The Group has benefited broadly from its long-standing commitment to protecting its intellectual property rights and believes they are essential to ensuring collaborative development, future competitiveness and economic growth that would not be possible otherwise.

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, among other areas. Many of these patents relate to fundamental and valuable technologies with broad impact across many businesses.

The Group's IP strategy, like the strategies of its core businesses, continues to adapt to changing market conditions and the emergence of new opportunities. As such, the Group continues to review and optimize its approach to intellectual property protection, including its patent portfolio holdings, to emphasize strategic value and return on investment.

DEVELOPING VALUABLE INTELLECTUAL PROPERTY

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

In 2017, the Group continued its successful execution on its strategic intellectual property and innovation plan by expanding its patent holdings, securing access to valuable IP rights of third parties. The Group completed licensing agreements and/or settled litigation with industry leaders like AT&T, Roku, Arris, Scripps Networks Interactive, Advance Magazine Publishers, Twitte and Comcast; this in addition to many of the marquee agreements concluded in prior years such as Apple, Cisco, Google, Netflix, Disney, Hulu, Yahoo and Verizon.

2017 also brought an increased focus in supporting the Group's growing cybersecurity business, Kudelski Security. The Intellectual Property organization is enhancing the Group's patent portfolio in this area with new patent filings and developing patentable technology based on Kudelski Security's integration of the Group's best-in-class security architectures developed for pay-TV with Research & Development in the cybersecurity marketplace.

BUILDING RECIPROCAL IP PRODUCT PARTNERSHIPS WITH KEY PLAYERS

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

The Group continues to engage with a number of other companies around licensing, technology collaboration and cross-licensing. The Group will keep executing its plans to invest in innovation and protect and license its intellectual property portfolio.



INTERNET OF THINGS SECURITY CENTER OF EXCELLENCE

) INTEGRATED DIGITAL TELEVISION) GROWTH INITIATIVES

In early 2017, capitalizing on the expertise of Kudelski Security and decades of innovation in protecting digital TV contents and devices, the Kudelski Group launched its Internet of Things (IoT) Security Center of Excellence to address demand for increased protection of connected devices.

The Center provides solutions to help companies across all industries secure their IoT devices and business models during the design phase and throughout their entire product lifecycles.

It offers product developers the ability to focus on their core products while being assured that security is maintained over time; a strategy that can both accelerate time-to-market and enable and protect competitive advantage.

LEVERAGING THE GROUP'S 25 YEARS OF INNOVATION

The Group's Security Center of Excellence focuses on addressing demand for increased protection of connected devices, leveraging the Group's 25 years of innovation in the fields of digital content and device protection.

The Group has an unparalleled ability to develop and implement security assessment and certification programs for a wide variety of silicon and device vendors, and has been doing this in the pay-TV space for decades.

It is now applying those same skills and procedures to IoT device manufacturers and service providers in order to help them launch secure solutions and ensure their security over the long term.

The Security Center of Excellence works with clients to build security into the design and architecture of their products and reduce risks throughout the entire product lifecycle.

For existing products, the Center carries out in-depth assessments and evaluations and creates security recommendations supporting business objectives.

EXPANDED OFFERING AND LAUNCH OF INNOVATIONS

Building on the successful first year of the Center, the Kudelski Group launched its IoT Security Suite during CES 2018 in Las Vegas. The comprehensive suite of services and technologies targets device manufacturers and service providers who need solid security foundations in order to enable long-term monetization, privacy and safety of their devices and enable new sustainable business models.

The Suite uses best-in-class technologies and patented mechanisms to implement security controls in embedded systems, software/firmware, communication protocols, platforms and applications to protect IoT devices and services at every level. It also embeds sleeper countermeasures that can be activated against emerging threats over time, driven by threat intelligence from the Group's Cyber Fusion Center.

The Group's legal teams also provide support for litigation.

Two real-world applications of the IoT Security Suite include WHITE NOISE Secure Communications, a secure hardware-based mobile communication solution, and a Surveillance Camera Security solution.

By leveraging its unique heritage in both pay TV and cybersecurity, the Kudelski Group is uniquely positioned to provide companies with design, implementation and long-term security lifecycle management of their connected business models across a variety of industries.

At the end of 2017, the Kudelski Group announced the expansion of its Internet of Things (IoT) security Center of Excellence with the launch of its IoT Security Suite. The Suite targets device manufacturers and service providers who need to address the long-term privacy and safety issues of their devices and protect their business models from attack.

The comprehensive IoT Security solution provides the ability to ensure network and device integrity as well as control access to business-critical data coming from IoT devices, thereby enabling and protecting new IoT business models, both at launch and when the system comes under attack.

The first release of the IoT Security Suite contains a dedicated secure element designed to resist the highest level of attacks even when operating in IoT battery-powered devices. The secure element comes provisioned with credentials that are authenticated directly by the Kudelski Group's cloud-based servers using techniques proven in the highly competitive pay-TV space and guaranteeing the identity and authenticity of devices embedding the chip.

WHITE NOISE

Secure mobile communication solution



In November 2017, the Kudelski Group also announced the launch of WHITE NOISE, a secure mobile communication solution for businesses and government institutions. WHITE NOISE can support the highest security levels, up to "Secret", while allowing people to continue using the mobile devices they already own. The solution leverages the IoT Security Suite from the Kudelski Group.

WHITE NOISE is deployed as a simple hardware add-on to existing devices available either as an SD card for Android devices, as a security case for iPhones, or a secure headset. The WHITE NOISE application enables and protects both voice calls as well as group chat messaging using highest encryption standards. The proprietary hardware secure element (SE) used to secure WHITE NOISE communications is from the Kudelski Group's IoT Security Suite, a flexible, multi-purpose solution for protecting a wide variety of different IoT devices and their associated services.

Surveillance Camera Security

Video and camera protection technologies



As part of the IoT Security Suite, the Kudelski Group has developed a solution that has the ability to re-secure security cameras already deployed in the field that may be vulnerable to cyberattacks and interception of the video. The solution uses a small appliance that protects the video and the camera using strong encryption and firewall technologies. The solution incorporates key technologies from partners like Ionic Security Inc. (policy and enterprise key management system), 42Crunch (API Firewall), and SmarDTV (hardware design and manufacturing), a Kudelski Group subsidiary.





PUBLIC ACCESS COMPREHENSIVE SOLUTIONS

) PUBLIC ACCESS

SKIDATA carries out the Group's Public Access activities.

The company designs and markets comprehensive solutions which help infrastructure operators optimize their revenues and drive their business forward, and enable them to manage access to ski resorts, stadiums, fairs, amusement parks and parking facilities.

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









SKIDATA GLOBAL LEADER IN ACCESS AND REVENUE MANAGEMENT SOLUTIONS

) PUBLIC ACCESS

SKIDATA is the global leader in access and revenue management solutions, providing fast and safe access for people and vehicles. With innovative ideas, the company 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 increased its international footprint during the past year by entering new markets and with some 800 new installations in 2017.

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. The skiing experience to which guests are accustomed today has been fundamentally shaped by SKIDATA.

It wasn't only the printed SKIDATA ski ticket in the late 1970s that conquered the ski slopes. Over the last four decades, the portfolio was expanded with additional business units and innovative solutions like RFID chips for contactless entrance, vehicle access management, and solutions for stadiums, leisure parks and trade fairs. In addition to the portfolio, strong growth has also been seen in the sales network.

COMPLETE SOLUTION FROM A SINGLE SOURCE

With its extensive network of innovative technologies as well as access to thousands of international patents, SKIDATA offers solutions that provide a significant added value and continually drive the customer's business forward. This starts with ensuring quick and convenient access and visitor management, profiting from the evaluation results of data collected and extends all the way to customizing an efficient workflow as well as generating sales – with technology that helps streamline processes and boost productivity.

INVESTING IN STRATEGIC GROWTH AREAS

SKIDATA will continue to invest in the strategic growth areas that have brought success since the beginning: further expanding its global presence, delivering complete solutions with a focus on quality, usability and future-readiness of systems and innovations and continuously developing the know-how of its employees.

Capitalizing on its steady growth and technological expertise, SKIDATA is well on track to continue shaping the future of access management by delivering innovative, intelligent and customer-oriented solutions.

In order to grow qualitatively and profitably, the company will also continue placing a major focus on the development of structures and processes, targeting to deliver as much benefit as possible for customers, operators and end-users.

Ampere.Gate



The electric charging station enables convenient handling of the entire charging procedure of an electric car in carparks. Fully integrated into the SKIDATA solution, operators and guests benefit from a single billing for parking and charging and an optimized, convenient workflow. An environmentally friendly all-round service for a sustainable future.

Summit.Logic



Centralized management solutions for alpine resorts

Electric Charging: Power with Intelligence

The Summit.Logic management software is the core element of the SKIDATA Mountain solution. Its three central elements directly control the complete solution. The Management Center combines all configuration and administration tools, while the Operation Center controls and monitors all lifts and accesses in the ski area. The Summit Server provides a secure data base. Key benefits include centralized as well as local management, faster processes and proven workflows with intuitive operation together with shorter training times and easier supervision. With its many preconfigured interfaces, Summit.Logic allows for optimal customization to meet specific needs.

Online sales platform (DTA)



Value-added, convenient and efficient advance sales

Whether from home or on the road, guests have numerous opportunities to get their tickets. In this area SKIDATA has already connected more than 3 800 online distribution channels and manages over 600 million euros in sales volume per year – trend rising sharply.

SKIDATA's DTA online sales platform offers customers and sales partners the service of convenient and efficient advance sales. As a core component of the Business Enabling Platform, DTA (Direct-to-Access) forms the basis for SKIDATA's own cloud-based sales, allowing for the connection with third-party solutions by integrators. The combination of the sales solutions of more than 100 partners in the fields of e-commerce and m-commerce, B2C and B2B sales, vending machines and more, is proof of this capability.

Expert Services



Services supporting implementation and daily system operation

Along with hardware and software, services are an important part of SKIDATA's offering. They include support processes, coordinated solution delivery, know-how transfer through training sessions as well as on-call support available 24/7 provided by specialists in their respective areas.

SKIDATA 2017 MARKET HIGHLIGHTS

) PUBLIC ACCESS

WESTFIELD CENTURY CITY CENTER - LOS ANGELES - USA



SKI DUBAI – DUBAI – UNITED ARAB EMIRATES



LOVEFIELD AIRPORT - DALLAS - USA



FRANCEVILLE STADIUM - FRANCEVILLE - GABON



ROZAFA CASTLE - SHKODËR - ALBANIA



CONFINS INTL. AIRPORT – BELO HORIZONTE – BRAZIL



A WORLD LEADER IN THE PUBLIC ACCESS SECTOR WITH MORE THAN 10 000 INSTALLATIONS CURRENTLY DEPLOYED

CSKA ARENA - MOSCOW - RUSSIA



MINNEAPOLIS - USA



AMITIE STADIUM - LIBREVILLE - GABON



PALLADIUM CURITIBA SHOPPING CENTER - CURITIBA - BRAZIL



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