Dear Delegates,
Welcome to the 9th HbbTV Symposium and Award 2021!

This year we are pleased to welcome you, again, after a one year gap, to our most relevant and important event – aimed at sharing information on the status of our technology and what you all have achieved using it. We want to listen to your views, suggestions and ideas on the direction we have to take for a future evolution of HbbTV standards.

Covid-19 is still a menace for everyone; we have taken all the reasonable measures to give you a secure and safe environment to enjoy the conference, the awards reception and the networking; however, this is achievable only with your help, your awareness of the potential risks and your conscientiousness in approaching networking and personal interactions.

Please, keep always your mask covering your nose and mouth and consider the distancing when you are enjoying coffee breaks and networking.

Who we are

Hybrid broadcast broadband TV (or "HbbTV") is a global initiative aimed at enabling the harmonized delivery of advanced interactive TV and entertainment services to consumers through broadcast and broadband networks on connected TVs, set-top boxes and multiscreen devices.

Almost a decade ago, industry leaders started to develop the dynamic industry standard HbbTV as an open, business neutral and flexible technology platform to improve the video user experience for consumers by enabling innovative, interactive services over broadcast and broadband networks. The specification uses elements of existing specifications from other standards including OIPF, CEA, DVB, MPEG-DASH and W3C.
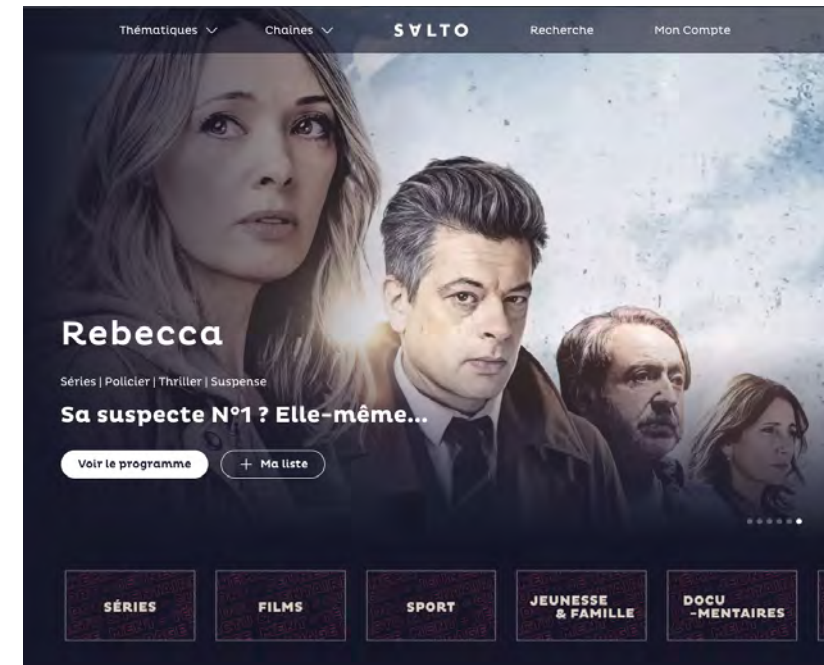HbbTV is a success story. Starting with five members in 2009, the HbbTV Association assembles today almost 80 members who are leading broadcasters, service and content providers, CE manufacturers, technology providers or network operators. HbbTV has been adopted in more than 30 countries, reaching an estimated total of around 600 million people around the globe.

The open platform undergoes a continuous development and is at the technical forefront of the next generation of TV and broadband services. The members of the HbbTV Association define and promote the specifications and standards by working together, sharing knowledge, technical expertise and market experience with other members, and contributing to a variety
of working groups. The resulting standards provide a rich set of business opportunities and enhancements for participants of the content distribution value chain, from content owner to consumer.
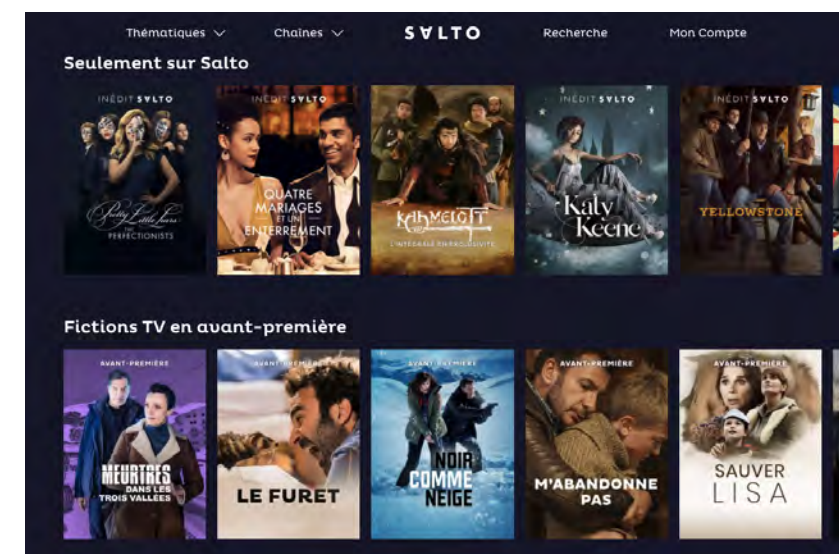
Today, HbbTV offers and supports a broad variety of applications and key advantages for providers and users. It:

· Enriches Broadcast Services
· Maximises Reach for Interactive Services
· Offers Simple Access to Enriched Services
· Enables Enhanced Digital Switchover
· Enables Targeted Ads on TV
· Improves Viewers' TV Experience with OpApps
· Reduces Costs and Accelerates Go-to-Market Deployment with HbbTV OpApps

If you would like to get more information and to participate in this exciting work, join the HbbTV Association by visiting our website www.hbbtv.org or contact anyone of our staff during the event.

SALTO is the French OTT entertainment platform giving unlimited access to the best shows in France. Created through the shared vision of the French groups France Télévisions, M6 and TF1 to facilitate new TV consumption behaviours of the French audience, SALTO gives unlimited access to popular TV shows, as well as brand new contents, to be enjoyed anytime, live, in exclusive previews, or in replay.

Displaying a wide variety of genres, SALTO is the essential platform for a French audience looking for popular home produced series, documentaries or movies, hardly available on the global platforms which promote mainly international catalogues. While 86 French shows ranked in the TOP 100 TV audiences in France last year, only 3 were actually ranking in the TOP 100 streaming audiences. Everyone can find its own favourite program thanks to a wide selection of the best iconic TV Shows, available from the very first episode, worldwide sports events to watch live, insightful news magazines, as well as popular Reality TV Shows.

SALTO is the French option in the streaming market, enabling French audiences to access their favourite audiovisual programs coming from France, as well as programs coming from all over the world and exclusively accessible on the SALTO. French families can enjoy worldwide premières from Friends special episode, "The Reunion", movie collections from David Fincher, or Alejandro gonzález iñárritu, to the James Bond saga with the 24 masterpieces, as well as the very first co-production between France TV, la Rai and SALTO, Germinal, a modern six-episode-series revisiting a French Literature masterpiece.

SALTO is available on connected TV sets , mobile devices and personal computers and can be reached through Channel 51 of the DTT network.

Day 1 — 24th November

10:00 am. Registration, Coffee, Networking & Exhibition sponsored by **smartclip**

11:00 am Opening & Welcome: Vincent GRIVET, Chairman of the HbbTV Association
Introduction Master of Ceremony: Julian CLOVER, Media Journalist, Broadband TV News

11:10 am. Keynote: Thomas FOLLIN, CEO Salto

11:25 am. Keynote: Paul GRAY, Omdia—The Global TV Market Review

11:55 am. Panel: HbbTV Success Stories | Moderator Julian CLOVER, Media Journalist, Broadband TV News
Teppo AHONEN, Digita Oy—Finland: HbbTV Country Review
Anaïs LIBOLT, Dolby—A case study launching a HbbTV 2.0.2 service including enhanced viewer experiences
Olivia MAY, Digital UK—Freeview Play's pioneering uses of HbbTV to enhance the hybrid user experience
Sylvain THEVENOT, Netgem—How Netgem TV has become the leading independent TV service in the UK by embracing Freeview Play and HbbTV
Denis KABAKCHI, Teletarget—HbbTV in Russia: Services and Tools
Q & A

01:05 pm. Lunch, Networking & Exhibition

02:05 pm. Panel: Targeted Advertising —The Business and the Technology
Moderator: Vincent GRIVET, Chairman of the HbbTV Association
Jason PATTON, Verance—Targeted Advertising using Watermarking
Leander CARELL, Nowtilus—Case-Study of Live DAS Service with Discovery
Sebastian BUSSE, Smartclip—HbbTV-TA in action. The final breakthrough
Silvia BROGGI, Publitalia'80—Publitalia'80 addressable planning across screens for fluid ad experiences and effective adv measurement.
Q & A

03:15 pm Special Session: Conformance Regimes and Interoperability Part One | Overview of Conformance Regimes in Europe
Kai MYSLIWIEC, Teamlead HbbTV Development—Living without a Conformance Regime
Luca DE BARTOLO, Tivù—The Italian Conformance Regime
James JACKSON, Digital UK—The UK Conformance Regime
Xavier REDON, Cellnex—The Spanish Conformance Regime

03:55 pm. Coffee, Networking & Exhibition sponsored by **eurofins**

04:55 pm. Special Session: Conformance Regimes and Interoperability Part One (cont'd)
Roundtable | Moderator: Dr Jörn KRIEGER, Independent Journalist
Kai MYSLIWIEC, Teamlead HbbTV Development
Luca DE BARTOLO, Tivù
Xavier REDON, Cellnex
James JACKSON, Digital UK
Martin FAEHNRICH, Panasonic

05:25 pm. Special Session: Conformance Regimes and Interoperability Part Two: Application and Device Interoperability
Moderator: Julian CLOVER, Media Journalist, Broadband TV News
Stuart SAVAGE, LGE—Interoperability from a manufacturer point of view
Pedro VALIENTE, Kineton—Interoperability from a Developer point of view

Roundtable | Moderator: Ian MEDLAND, Eurofins Digital Testing
Stuart SAVAGE, LGE
Pedro VALIENTE, Kineton
Franck VÊTU, Salto
Juha JOKI, Sofia Digital
Leticia NORIEGA, TP Vision

06:15 pm. Conformance Regimes Session Wrap-up: Nguyen THI THANH VAN, Samsung

06:25 pm. Closing Remarks DAY 1 by Vincent GRIVET, HbbTV Chairman

08:30 pm. HbbTV Awards 2021 Reception and Ceremony

Day 2 — 25th November

08:30 am. Registration, Coffee, Networking & Exhibition

09:30 am. Keynote: The Chairman's "State of the Nation" Speech
Vincent GRIVET, HbbTV Chairman, on the current state of HbbTV and its strategy for the future.

09:45 am. Keynote: The latest on our Specifications and Activities
Jon PIESING, HbbTV Vice-Chairman

10:00 am. Panel: Accessibility
Introduction Julian CLOVER, Media Journalist, Broadband TV News
Peter MACAVOCK, EBU—An EBU special publication on HbbTV and Accessibility

Panel: OpApp Best Practices | Moderator: Julian CLOVER, Media Journalist, Broadband TV News
Rachel MISCHKE and Franziska KLEEMANN, Zattoo Deutschland GmbH—HbbTV in the OTT world best practice implementations from the Zattoo TV Platform!
Erik GAZZONI, SmardTV—How to provide a perfect Hybrid User Experience by Using CIPLus 2.0 and HbbTV OpApp
Juha JOKI, Sofia Digital and Michiel WILLEMSEN, Irdeto—Monetizing Subscriptions combining CAM and OpApp
Ruth VAN LAEKE, TP Vision—HD+ OpApp development: from take-off to successful landing
Q & A

11:10 am. Coffee, Networking & Exhibition sponsored by **Konodrac**

12:10 pm. Panel: Innovations in HbbTV Apps
Moderator: Andrea MICHELOZZI, Media Journalist, Comunicare Digitale
Martin PRINS, Media Distillery—Enhancing HbbTV video experiences by a better understanding of video
Aniello SAULINO, Kineton—HbbTV Application performance enhancements
Christian VAN BOVEN, Nagra—HbbTV Apps in an OTT Centric World
Louay BASSBOUSS, Fraunhofer FOKUS—WebRTC meets HbbTV
Serge BIDAULT, Fincons and Xavier DARRIGOL, Retency—HbbTV Data Anonymization and GDPR compliancy
Paul MARTIN, OBS—The ORB Project: A Collaborative Project using Javascript to Implement HbbTV within a Standard Browser
Q & A

01:30 pm. Lunch, Networking & Exhibition

02:30 pm Panel: Is standardization still an added value to the future of broadcasting?
Moderator: Julian CLOVER, Media Journalist, Broadband TV News
Peter MACAVOCK, DVB—HbbTV and DVB working together to develop an IP-based future
Alberto BRUNO, Mediaset/RTI—A FTA Broadcaster HbbTV Strategy
Richard LINDSAY-DAVIES, DTG—Transition or radical re-invention? The role of HbbTV in the television of the future

03:20 pm. Roundtable
Peter MACAVOCK, EBU
Richard LINDSAY-DAVIES, DTG
Alberto BRUNO, Mediaset/RTL

03:50 pm. Roundtable: ATSC3 and HbbTV
Moderator: Oliver BOTTI, Fincons
Madeleine NOLAND, ATSC
Sam MATHENY, NAB
Emily DUBS, DVB Project
Susi ELKINS, WKAR3/PBS
Kerry OSLUND, The E.W. Scripps Company

04:20 pm. Closing Remarks:
Vincent GRIVET, Chairman of the HbbTV Association—See you in 2022!

9th HbbTV Symposium&Award CIUP
Maison Internationale PLANIMETRY

FINCONS GROUP

- covid 19 check point
- registration
- lunch & awards
- expo area & conference

Honnorat

1	TIVU
2	DOTSCREEN
3	FINCONS GROUP
4	MEDIASET
5	KINETON
6	OBS
7	NETGEM
8	MEDIA DISTILLERY
9	SOFIA DIGITAL
10	DOLBY

ENTRANCE

Adenauer
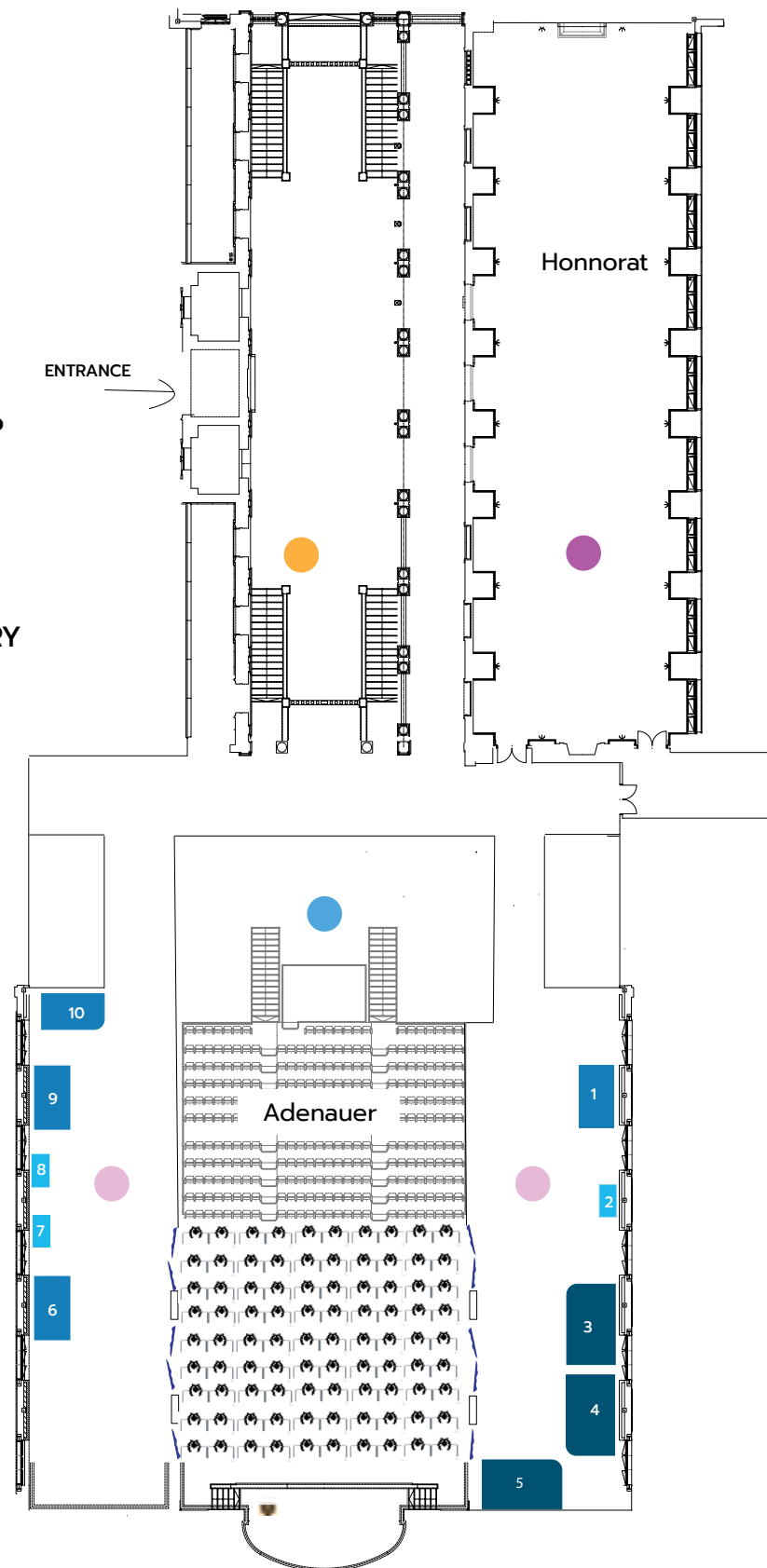
Scan the QR code
or CLICK HERE
to access content:

- Targeted Adv and DAS
- Data Anonymization and GDPR Compliancy
- ADB2 Watermarking
- NextGen TV Innovative Applications

FINCONS FOR MEDIA SMART INDEX

Videos, whitepapers, case studies and more!

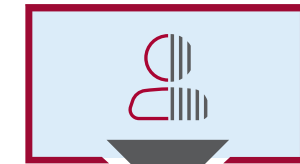The Next Gen of Media: find out what we can do for you

Publitalia: cross-channel addressable Adv and Attribution

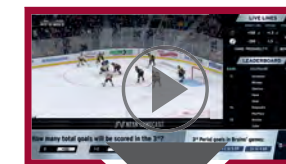Leading French Broadcaster: Broadcast-Driven Connected TV

Reach all audience through ADB2 watermarking

Leverage your audience data through anonymization

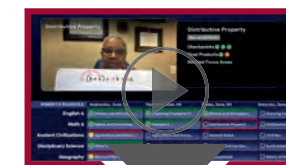Univision: ATSC 3.0 Broadcast App in production
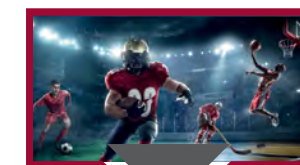
NESN: live Sport Gamification App

CBS: NextGenTV e-commerce App

E.W. Scripps: News Literacy App

Howard University: Distance Learning App

Whitepaper: NextGen TV technologies now at bat in sports

ABOUT FINCONS

With over 2000 employees worldwide and 38 years of experience, Fincons is an international award-winning IT business consultancy, providing a broad range of services and solutions in strategy, digital, technology and operations to a diverse range of industries. In the Media sector, the Group has long term and successful relationships with Tier-1 clients, providing solutions and ICT services covering the entire Digital Supply Chain, from Rights Management, Programming and Scheduling, to Advertising Sales and Omnichannel Video Delivery. Fincons Group has offices in Italy, Switzerland, Germany, France, in the UK and in the US.

https://it.linkedin.com/showcase/fincons-for-media

The Future of TV: Fincons showcase in Paris

Fincons has played a pioneering role in both the HbbTV and the ATSC3.0 launch, with a specific focus on innovative technology enablers and new application development.
At our booth you will discover insights from mature in-production experiences with European and US leading broadcasters, and get a sneak-peek at emerging market needs and latest innovation enablers.

Addressable TV Advertising monetization models

· Display formats and linear DAS (Dynamic Advertising Substitution) several targeting options;
· Cross-screen re-targeting and attribution campaigns based on drive-to-store and drive-to-site models;
· New TV scenarios where Free-To-Air channels combine with Free and Premium OTT services, and where a mix of FTA/AVOD/BVOD delivery models enables highly personalized services with flexible pricing and advertising.

Effective technology enablers to reach a wider audience

· First European implementation of ADB2 watermarking to reach any smart TV set, including all set-top box scenarios;
· A unique Data Anonymization solution, allowing broadcasters to leverage audience data, in a GDPR complaint way, without requiring explicit end-user consent.

Examples from the US: ground-breaking applications to engage citizens

· A range of solutions from remote schooling and news literacy, to hyper-local news and weather forecasts, from TV-driven e-commerce to sport gamification and betting.

ATSC 3.0 Market Update
Three Questions for Madeleine Noland, President ATSC

ATSC 3.0 is the next generation terrestrial broadcast system adopted in the U.S. Designed to improve the television viewing experience with higher audio and video quality, more accessibility, personalization, and interactivity, it was built on the same Internet Protocol (IP) backbone as today's popular streaming media platforms and designed to bring together Over-the-Air with Over-the-Top content.

As an anticipation of the roundtable titled "ATSC 3.0 and HbbTV: common goals when it comes to business and consumer applications", Oliver Botti, Strategic Marketing and Innovation Executive Director, interviews Madeleine Noland, President of ATSC.

OB: Can you provide an update on the current deployments of ATSC 3.0 in the U.S., and the percentage of the population currently reached by these new services?

MN: There are over 60 markets where at least one station is broadcasting ATSC 3.0 or NextGen TV signals, and we expect about 75% of the U.S. population to be able to receive services by Q2 2022. South Korea adopted the standard in 2017. Recently, Jamaica announced that they will be adopting the ATSC 3.0 standard.

OB: The U.S. market embraced NextGen TV with enthusiasm. Is it possible to identify emerging trends regarding new applications/services that can help with scaling to a wider audience?

MN: TV is TV, but it is the unlimited possibilities of NextGen TV that will enhance consumer acceptance-brilliant video, enhanced audio, interactive content, and advanced emergency messaging. There are also groups working on two interesting use cases: distance learning and automotive applications.

OB: Monetization is a hot topic for discussion both in the ATSC and the HbbTV communities. What do you think will be the real monetization opportunities for NextGen TV in a renewed TV landscape where the traditional FTA TV advertising is now complemented with AVOD, BVOD, subscription fees and TV-Commerce revenues?

MN: There are known business models that have been developed and matured on other platforms such as the internet and streaming. Broadcasters have a template to look at and build a business plan with some confidence because we have examples and models to look at.

Reti Televisive Italiane, part of the Mediaset Group, is the Italian broadcasting company managing the three largest Italy's free TV commercial networks and an extensive portfolio of free and premium thematic channels available on DTT, SAT, IPTV and OTT. They offer a broad range of content including original entertainment, TV series, movies, news and sport. Specifically, RTI manages 24 TV channels of which 18 free-to-air and 6 pay TV channels. RTI channels account for 1/3 of the Italian TV audience share.

RTI has also expanded its operations on radio through its fully controlled subsidiary "Radio Mediaset" that operates the largest national radio stations reaching the rank of first Italian radio publisher with 4 national networks – Radio 105, Radio Monte Carlo, R101, Virgin Radio – and the leading regional stations Radio Subasio (more information on www.mediaset.it/corporate).

Since 2003, RTI was committed to develop interactive services on multiple screens, i.e. TV sets, PCs and mobile devices. In 2015, RTI became member of the HbbTV Association; since then, the HbbTV technology is RTI preferred technology to develop and exploit interactive services on TV sets.

HbbTV services are available all along RTI linear channels since 2017: today our featured service "Mediaset Infinity" includes, among other things, the restart feature, live and on demand video clips, voting, an EPG, a recommendation engine, an extensive catch up library and an AVOD catalogue, protected through DRMs, and the full radio Mediaset channels lineup.

RTI is using the HbbTV technology to offer targeted advertising services – called ADD+ Addressable Offer – as commercial products available to our ad investors through our ad agency Publitalia '80; ADD+ Plus, ADD+ Over and ADD+ Inside are addressable advert enhancement and L-shaped formats; ADD+ Plus Video offers Dynamic Ad Insertion (DAI) and Dynamic Ad Substitution (DAS) services in non-linear and linear live content, all based on HbbTV 2.0 core specifications.
RTI is working, with a few partners, in deploying the new DVB-TA and HbbTV-TA specification as a further step forward to exploit standard technology for addressable services.

Our RTI booth will showcase:
· the new "Mediaset Infinity" HbbTV live service
· the targeted advertising ad services, i.e. all the Publitalia '80 ADD+ Addressable formats.

We look forward to seeing you at our booth!
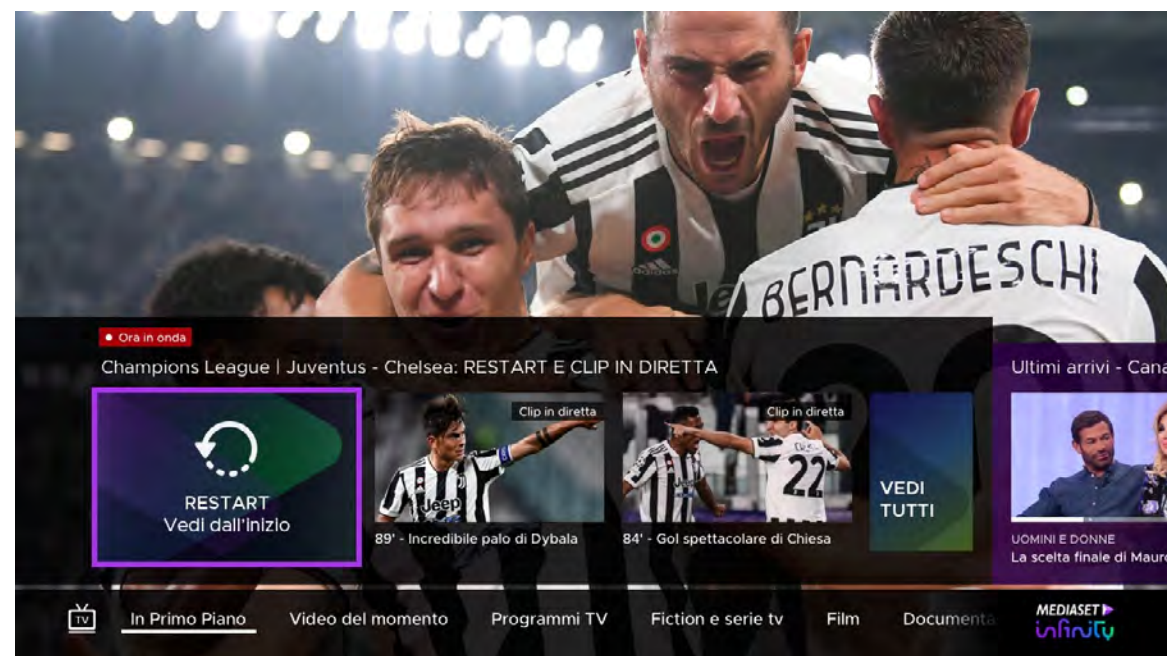
Thanks to the advanced ad tech stack and the amount of data at disposal, Publitalia '80 can provide addressable campaigns applying several profiling criteria resulting from Smart TVs IP addresses, interest segment information gathered from both viewers' preferences on Mediaset TV channels and from content consumption across the digital properties of the Group, and geo-behavioural information provided from the acquired company Beintoo.
Publitalia '80 can also meet the needs of all those advertisers who want to reach specific goals of incremental reach and additional frequency, targeting viewers who were exposed (incremental reach) or not exposed (additional frequency) to a specific linear campaign. Publitalia '80 together with Beintoo developed an attribution model analysis, able to measure the effectiveness of addressable Smart TV campaigns in terms of store and website visits. The analysis compares a group of users exposed to the addressable TV campaign with a control group of unexposed and represents a useful tool to reveal relevant insights for brands, responding to the increasing attention of advertisers at the measurement aspects

Publitalia '80, Mediaset Group sales house, launched the addressable advertising solutions for Smart TVs in 2017, integrating the traditional advertising offer with formats exclusively dedicated to the smart TV screen. At present Publitalia '80 reaches 8,5 MIO connected SmartTVs through application and addressable formats running on both MHP and HbbTV standards.
The sales house offer includes display formats on linear TV channels: interactive creatives invite users to land on a TV site allowing them to access to extra contents about the brand products.
Through the OTT platform Mediaset Infinity, Publitalia '80 can also offer video campaigns around "on demand" contents watched through any device.
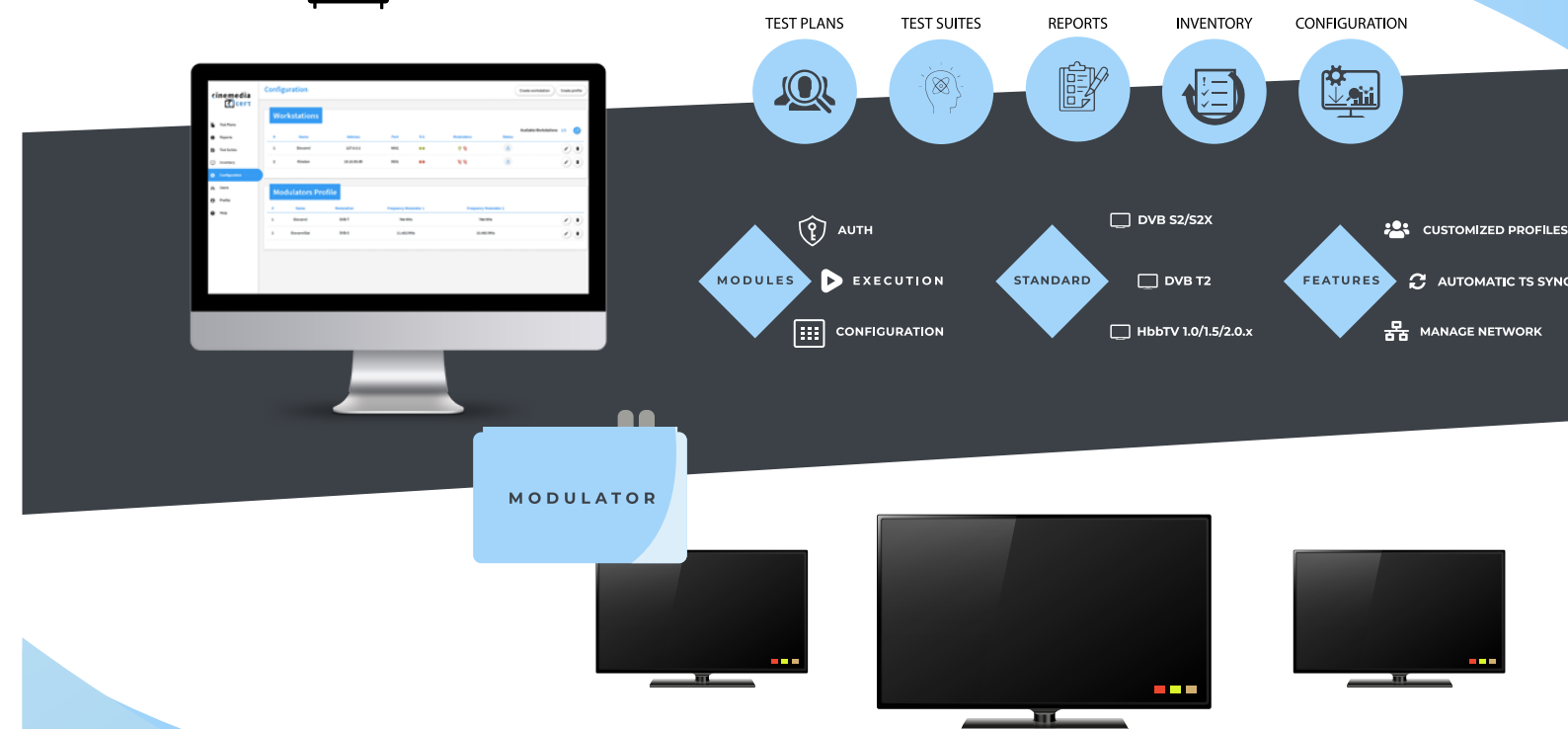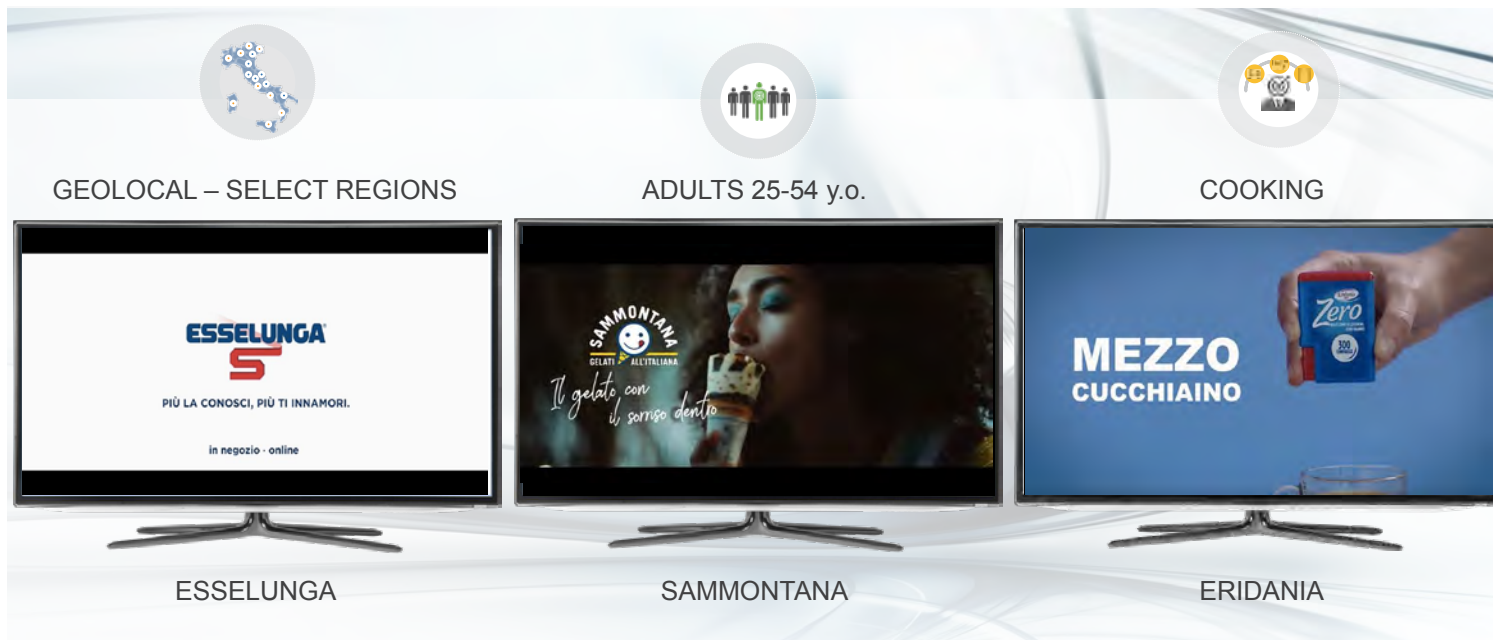In 2019 the video offer was enhanced by the DAI (Dynamic Ad Insertion) technology, an innovative way to dynamically substitute the spot within the linear break without affecting the user experience.

GRUPPO MEDIASET PUBLITALIA '80

kinemedia Cert

kineton

DAI - DYNAMIC AD INSERTION: LINEAR SPOT REPLACEMENT

Technology allows the **client's ad** to be **dynamically inserted** within the **linear commercial break**, so that either different versions of the 30" TV spot (not connected TV vs. connected TV) can be used or the ad can replace select positions within the break.
The video campaign can be planned according to various targeting variables.

DAI - DYNAMIC AD INSERTION

GEOTARGETING   SOCIO-DEMO TARGETING   AUDIENCE & INTEREST TARGETING

BROADBAND

BROADBAND: ADDRESSABLE AD

CONNECTED TV

BROADCASTING   BROADCASTING

ADD+ ADDRESSABLE OFFER

DAI - DYNAMIC AD INSERTION: DYNAMIC REPLACEMENT OF THE LINEAR SPOT

GEOLOCAL – SELECT REGIONS   ADULTS 25-54 y.o.   COOKING

ESSELUNGA   SAMMONTANA   ERIDANIA

ADD+ ADDRESSABLE OFFER

TEST PLANS   TEST SUITES   REPORTS   INVENTORY   CONFIGURATION

AUTH   DVB S2/S2X   CUSTOMIZED PROFILES
MODULES   EXECUTION   STANDARD   DVB T2   FEATURES   AUTOMATIC TS SYNC
CONFIGURATION   HbbTV 1.0/1.5/2.0.x   MANAGE NETWORK

MODULATOR

The testing process in a single solution and from any location.

KineMediaCert is a modular, decentralized, and user-friendly platform to provide support to CE manufacturers and operators to certify HbbTV compliance. The platform allows to create, modify and import or export proprietary test suites or other test cases based on HbbTV standard. It is able to create costumized test profiles, which can be used in the testing phase, and to add support information to the tests performed, reporting errors and warnings during the execution.
The new Kineton product configures and manages the network environment for dedicated tests and can simulate the real condition to adapt the bitrate of the TS.
An automatic synchronization of files between the platform and the host is performed for the execution of TS.
With an easy configuration of the modulators used, KineMediaCert is compatible with DekTec modulators.

Supports DVB-T2/S2/S2X and HbbTV 1.0/1.5 and the new HbbTV 2.0.x.

Cloud-based platform to manage the entire test lifecycle of an HbbTV certification.

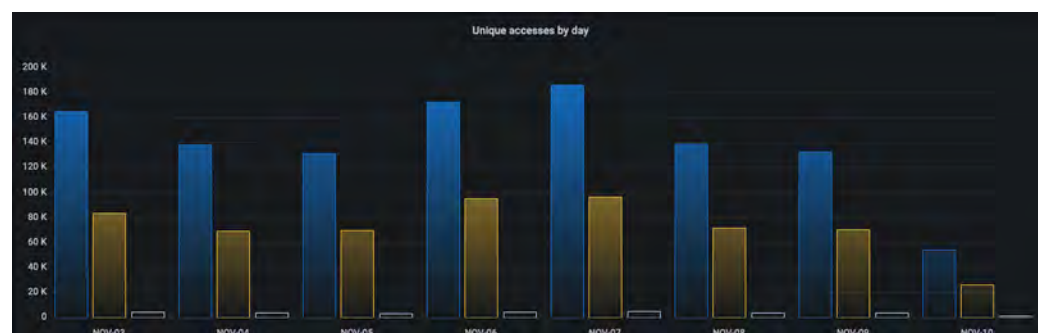Manage multiple workstations with the same profile to execute tests simultaneously.

Report creation for Logo Certification.

Kineton

The Kineton Audience Measurement Platform, delivered as SaaS, is able to collect all the data sent by the applications and display calculations and different views of the data. The platform is flexible and easy to update, so the client could ask to add views or request changes at any time.

By using an **SDK** or a standard communication protocol it is possible to send data from any type of client application to this platform that collects, aggregates and anonymizes data. Through the application, all data and all interactions of the end-user with the application are tracked; furthermore, through an intelligent audience service, users' behavior and preferences are learned in order to create clusters based on geolocation or viewing preferences. The data collected is available to the broadcaster, who is the sole owner, and is accessible through a web application (Saas). It is also possible to generate periodic and customized PDF and CSV reports that are automatically sent to different customers.

KARP, Kineton Announcement Real-Time Platform; its Kineton's new service that allows its users to create, schedule, and monitor the announcement campaigns.

With the term "announcement" it is meant both self-promotions, with which a broadcaster can promote its own events without asking third-party entities, and classic targeted advertising in its most common forms, thanks to which it is possible to obtain revenue from viewing or interacting with the creations shown by entering into commercial agreements with advertising agencies.

The basic idea of **KARP** is to allow end-users to manage announcement campaigns in the simplest possible way, guaranteeing through precise technological choices the real-timing in showing the ad hoc produced creatives. **KARP** allows the production of various asset types: broadcast related, creatives in overlay, animated images.

The **KARP** client provides a set of analytics functions that tracks assets views, eventual actions performed by the user (skip, enter) and other user information about the user in order to allow profiling actions.

KARP is designed to be integrated with broadcasters' schedules, so as to facilitate the setup of the schedule, but it is also possible to create from scratch the calendar of creations to be scheduled

Smartclip: The leading European platform for Addressable TV
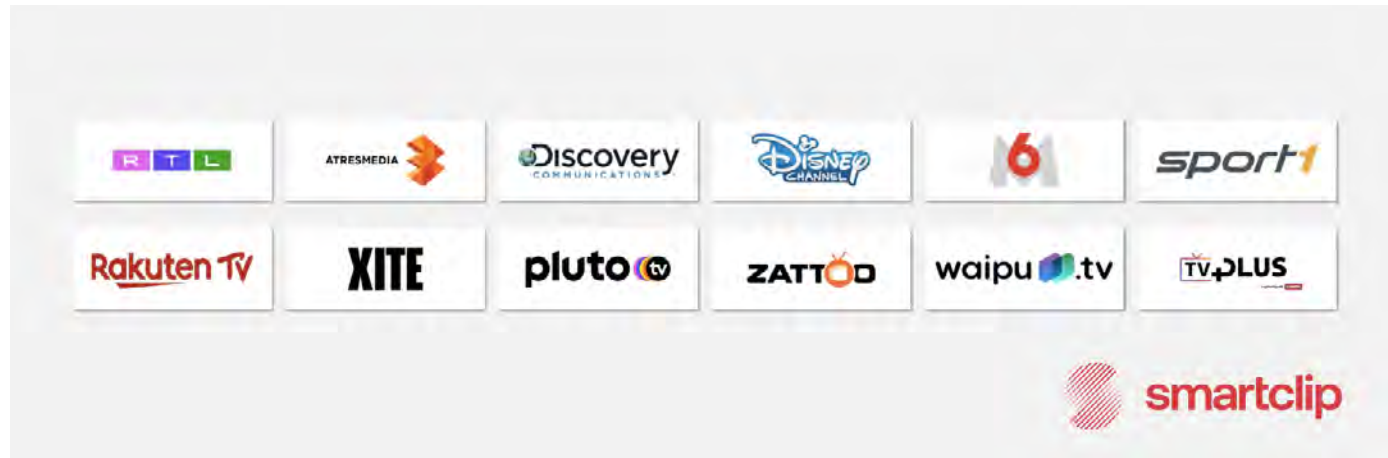
About smartclip

At smartclip, we are shaping the future of digital video and TV advertising. We are the only European-grown adtech and media sales company that breaks down walled gardens by offering local, non-monopolised video marketplace alternatives for broadcasters, publishers, and advertisers across TV, online video, and gaming.

Our solution

· We combine media sales and adtech
We offer full-service media sales and custom-tailored advertising technology that ensure the successful monetisation of your Addressable TV inventory.

· Holistic, Addressable TV platform
Our full-stack platform serves broadcasters and streaming services with powerful tools including our proprietary ad server and SSP, our HbbTV framework, and SSAI.

· European focus
The platform is specifically designed for the needs of European broadcasters and streaming services with technology made in Europe.

· Experienced local support
Our local market experts understand the specific requirements of each market and provide best in-class local support.

· Scalable ad inventory packages
We have more than 120 sales specialists across Europe, ready to connect you with the most relevant advertisers via direct sales as well as programmatic demand.

Addressable TV Advertising: New Opportunities for International Advertisers to Reach European Audiences

The newest smartclip white paper explores the latest trends in Addressable TV advertising and the advantages it brings to every type of advertiser

Smartclip, Europe's largest open adtech provider for broadcasters and streaming services, has published a comprehensive white paper, entitled "Addressable TV Advertising: New Opportunities for International Advertisers to Reach European Audiences". The results of this research serve as a guide for advertisers and include strategies and opportunities, as well as information on various Addressable TV (ATV) ad formats and targeting capabilities available in European TV markets.

This white paper is underpinned by smartclip data, which reveals a significant year-over-year growth for ATV in Europe. ATV advertising is steadily attracting new brands. When smartclip launched its first commercial ATV solution in 2017, 70% of all ATV campaigns were booked by four industries: automobile, consumer goods and FMCG, entertainment and media, and technology and telecommunications. Since then, ATV has been embraced by many more industries, including finance, real estate, and insurance.

In addition, the research bundles findings from interviews with executives from leading companies such as Atresmedia, M6 Publicité, RTL AdConnect, Ad Alliance, and Amobee, who make use of ATV advertising solutions to varying extents.

While 85% of ATV campaigns across smartclip's European portfolio are still booked via IO, there is a growing demand for programmatic ATV buying. In response to these market needs, Amobee and smartclip recently announced the formation of TechAlliance, a new broadcaster-centric, cross-screen advertising platform.

Other key topics highlighted in the white paper:

· Investigation into the challenges of defining ATV, from a technology perspective versus a media sales perspective.

· Thorough analysis of the state of Addressable TV advertising across European TV markets, including local trends and opportunities, hurdles, and future predictions.
· Exploration into the ways in which advertisers — not only traditional TV buyers — benefit from ATV advertising

· Access to case studies that show how major international brands and agencies — such as Nissan, Spark Foundry, iglo, and MediaCom — as well as small and medium-sized enterprises, leverage ATV advertising.

"Addressable TV Advertising: New Opportunities for International Advertisers to Reach European Audiences" is available for free download in its entirety at smartclip.tv.
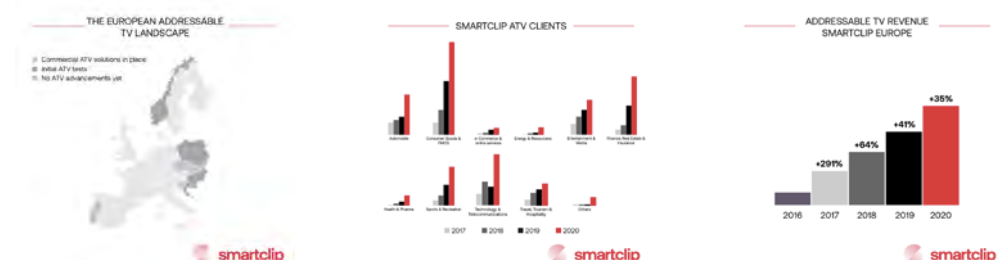
Addressable TV
White Paper

smartclip

Explore new opportunities
for international advertisers
to reach European audiences

DOWNLOAD AT SMARTCLIP.TV

▶◀ Dolby Audio

Grâce à Dolby et ARTE, de nouvelles fonctionnalités AC-4 débarquent dans le paysage audiovisuel européen

Jan Mueller, Directeur, Streaming Media Standards

L'offre télévisuelle en Europe connaît actuellement un véritable âge d'or dont nous sommes un acteur à la fois actif et enthousiaste.

On assiste en effet à l'émergence de nouveaux services proposant un choix incomparable et une qualité quasi cinématographique, à l'antenne comme en ligne. En parallèle, la baisse des prix des téléviseurs UHD à grand écran plat rend désormais ces contenus très abordables. En résulte une bataille acharnée entre diffuseurs pour attirer, accroître et conserver l'attention et l'engagement des téléspectateurs. Avec le format AC-4, embarqué sur 70 % des nouveaux téléviseurs 4K, les chaînes possèdent aujourd'hui une arme de choix.

C'est ainsi que la chaîne culturelle européenne ARTE et Dolby Europe, en partenariat avec des fabricants de téléviseurs, unissent leurs forces pour développer des fonctionnalités innovantes. Parmi les nouveaux outils d'ARTE, le pilote de sa nouvelle génération de plateforme de streaming HbbTV équipé de Dolby Vision et Dolby Atmos via le nouveau format audio Dolby AC-4.

Le standard HbbTV (Hybrid Broadcast Broadband TV) offre aux diffuseurs toute la flexibilité jusqu'ici réservée aux services de streaming. Sa dernière version 2.0.2 est désormais compatible avec la vidéo HDR et le format audio Dolby AC-4, deux nouvelles fonctionnalités que l'on retrouve dans le pilote d'ARTE.

Conçue autour d'objets sonores, la technologie audio Dolby AC-4 est d'une efficacité extrême qui permet aux créateurs de contenus et diffuseurs de concevoir des programmes qui élargissent l'accès et le choix des options audio des téléspectateurs.

Lancé il y a un an, le pilote s'apprête à ajouter la personnalisation audio à son bouquet de fonctionnalités. Concrètement, des objets audio distincts remplacent le processus de mixage classique, ce qui permet aux téléspectateurs de choisir la langue, le fond sonore et d'autres paramètres. L'AC-4 et l'HbbTV encapsulant les métadonnées sur les flux audio, les téléviseurs peuvent afficher sur l'interface utilisateur les différentes options disponibles pour chaque contenu, notamment le rehaussement des dialogues par rapport à la musique et aux bruits de fond et la sélection automatique de la langue par défaut.

Tout un éventail de programmes peut profiter de ces fonctionnalités. Dans le cas de magazines de voyage, les spectateurs peuvent se voir proposer une variété de commentaires, une ambiance sonore locale immersive pour plonger au cœur de la région visitée, ou bien une bande originale spécialement conçue pour accompagner une visite touristique, le tout à mélanger selon leurs goûts et leurs envies. Côté concerts, les possibilités sont grandes : variété des prises de son, commentaires activables/désactivables, etc. Une telle flexibilité dans les paramètres audio améliorera aussi l'accessibilité pour les téléspectateurs malentendants.

Ce haut niveau de personnalisation, nous le devons au standard NGA du consortium DVB qui exploite les nouvelles fonctionnalités des téléviseurs dernier cri. Le but ? Offrir aux publics de programmes linéaires des expériences d'écoute foisonnantes et immersives, condition essentielle pour rivaliser à armes égales avec les services de streaming en ligne sur le long terme.

L'intégration simultanée de toutes ces options audio dans un même flux binaire présente de nombreux avantages. En particulier pour les créateurs de contenus, qui n'ont plus à concevoir, mixer et manipuler de multiples ressources pour produire différentes versions audio. Un seul master suffit.

Forte des fonctionnalités proposées par sa plateforme pilote, ARTE démontre l'importance concrète de l'audio nouvelle génération et le potentiel des nouveaux modèles de téléviseurs. Par cette initiative, la chaîne donne naissance à de nouvelles options plébiscitées par les créateurs, les diffuseurs et, surtout, les spectateurs.
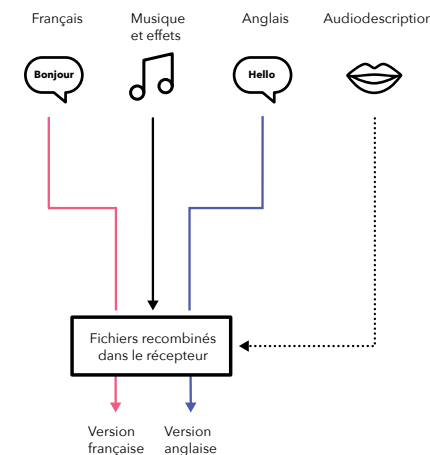
L'expérience et les exigences toujours plus élevées du public ne manqueront pas de faire émerger de nouveaux usages, dessinant ainsi l'avenir de l'audiovisuel autour de trois axes : concurrence permanente, pertinence des contenus et engagement des téléspectateurs.

Mode de livraison actuel

Version française · Version anglaise · Version française

Bonjour · Hello · Bonjour

Récepteur
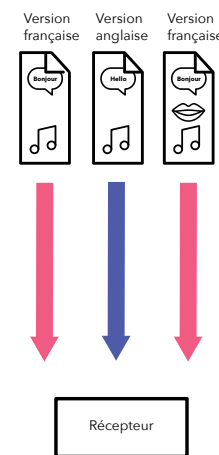
Chaque version requiert son propre flux audio.

La version en audiodescription est généralement disponible en stéréo. Chaque version requiert un livrable spécifique, ce qui entraîne la duplication d'éléments individuels.

Flux AC-4

Français · Musique et effets · Anglais · Audiodescription

Bonjour · Hello

Fichiers recombinés dans le récepteur

Version française · Version anglaise

Le flux AC-4 livre chaque élément audio séparément au récepteur.

Le récepteur compose ensuite la version sélectionnée par l'utilisateur.

Les utilisateurs qui ont recours à l'audiodescription bénéficient d'une expérience immersive en Dolby Atmos. Chaque élément étant livré une seule fois et séparément, le nouveau codec AC-4 réduit la consommation de bande passante et ouvre une multitude de nouvelles possibilités.

tivùsat the Italian free to air satellite platform.

tivùsat, offering digital **TV** and radio services, gives free access to more than **140** television and **45 radio channels** including **sixthy HD channels**, **seven 4K Ultra HD channels** and a large selection of **HbbTV interactive services**.

tivù has been present in the main free-to-air Italian platforms with its quality labels for **HbbTV** devices since the early adoption of **HbbTV** back in 2016. The **HbbTV** Italian certification regime was designed and improved by **tivù** to **simplify the whole certification process**, reduce certification cost, better support to tv and stb manufacturer and facilitate remote testing to address the covid emergency.

7 4K UHD channels

Rai 4K	my zen 4K	NASA UHD	4K1 VIA HOT BIRD	fashiontv	MUSEUM	travelxp 4K HDR

60 HD channels

Rai 1 HD	Rai 2 HD	Rai 3 HD	4 HD	5 HD	HD	LA7 HD	8	NOVE HD	Rai 4 HD	Rai 5 HD	Rai Movie HD
Rai Premium HD	cielo	TV2000	20 HD MEDIASET	Rai Sport + HD	Rai Storia HD	Rai News 24 HD	DMAX HD	Real Time HD	QVC HD	Rai Scuola HD	RADIO FRECCIA HD
RADIO ITALIA	RTL 102.5	Giallo HD	Rai Gulp HD	Rai Yoyo HD	arte	RDS SOCIAL TV	UNIRE SAT HD	food HD	RADIO TV	Paramount NETWORK HD	ZETA HD
HGTV HOME & GARDEN	MOTORTREND HD	KISS KISS	FRANCE 24 english	Alaraby Television	aljazeera	CNBC	TRT WORLD	NHK WORLD JAPAN	FRANCE 24 français	i24 NEWS ENGLISH
i24 NEWS FRENCH	DW	euronews HD	VH1	Spike	CGTN	CGTN DOCUMENTARY	KBS WORLD	CCTV 4 中文国际	Rtv SAN MARINO	HORSE TV	TELEPACE

more info www.tivusat.tv

ORB The Open Red Button Project

What Is ORB?
- An HbbTV 2.0.3 browser solution leveraging the latest innovations in browser technology
- Collaboratively developed by OBS and several large HbbTV members
- Majority implemented in JavaScript
- Facilitates the use of the default browser in the platform (Android WebView/RDK WPE)
- Royalty free with a route to full open source

The Benefits
- Lowers system costs
- Increases innovation rate

How To Get Involved?
- Royalty free source code licence for Supporters and Contributors
- Supporters need only support the objectives of ORB
- Contributors must contribute to development and/or maintenance

www.orb-tv.org
info@orb-tv.orb

Founded By

obs

Next Level Testing for HbbTV Systems Worldwide

LIGADA ISUITE FOR HBBTV UPDATES

Ligada iSuite for HbbTV now includes a feature that delivers automated testing of receiver compliance to the HbbTV Targeted Advertising specification. Ligada iSuite's automation hardware simplifies the task of verifying the performance of broadcast to broadband video switching.

❯ Learn how to use our highly regarded Ligada Test Harness to test targeted advertising as part of HbbTV receiver tests.

❯ Discover our latest CI Plus developments, including our CI Plus Host Tool and Module Testing tools.

MEETING THE CHALLENGES OF INTEROPERABILITY IN THE HORIZONTAL MARKET

HBBTV SYMPOSIUM ROUND TABLE EVENT
17:45 - 24 NOVEMBER 2021

Join Eurofins' Ian Medland who will be chairing the round table discussion focusing on the increasingly important subject of interoperability and the challenges faced by manufacturers and OEMs, and is joined by some leading experts.

Contact digitaltesting@eurofins.com to find out more about how we assist you with automated testing of receiver compliance to the HbbTV Targeted Advertising specification

eurofins | Digital Testing

With more than 25 years of experience in the digital entertainment market, Netgem develops, markets and operates the NetgemTV digital entertainment platform which allows telecommunications operators and digital content publishers to create or boost their entertainment offers in streaming mode, accessible on all screens, supplemented if necessary by optimized Wifi SuperStream.

Netgem deploys NetgemTV in Europe and the United States, according to a B2B "Content-as-a-Service" model, requiring no infrastructure investment and generating recurring income over time, indexed to the number of active end-users.

Netgem has acquired the recognition of leading telecommunications operators with 30 operators running Netgem solutions across the World, including 15 ISPs launched in the UK, the know-how necessary to conclude agreements with the largest content owners including Broadcaster partners such as BBC, ITV, Channel4, and 5 in the UK via Freeview Play, and the right combination of hardware and software technological skills to offer its customers the most robust solutions. Netgem has also recently announced TalkTalk launching their 4K TV service powered by NetgemTV, with Freeview Play at the heart - leveraging the HbbTV 2.01 capabilities.

AWARDED AS THE BEST DIGITAL BRAND OF THE YEAR (2020) IN CONTENT & UX

ERTFLIX also took the **1st place** as a Greek streaming platform and the **2nd place** in audience's preference over all OTT platforms in Greece.

Optional free subscribing
(Registered user with profile)
with extra benefits such us:

- Building favorite lists
- Personalized content suggestion
- Return to the last tracking point
  (bookmark) for one or more
  visited videos
- Common management
  interface to all media platforms
  where ERTFLIX is available
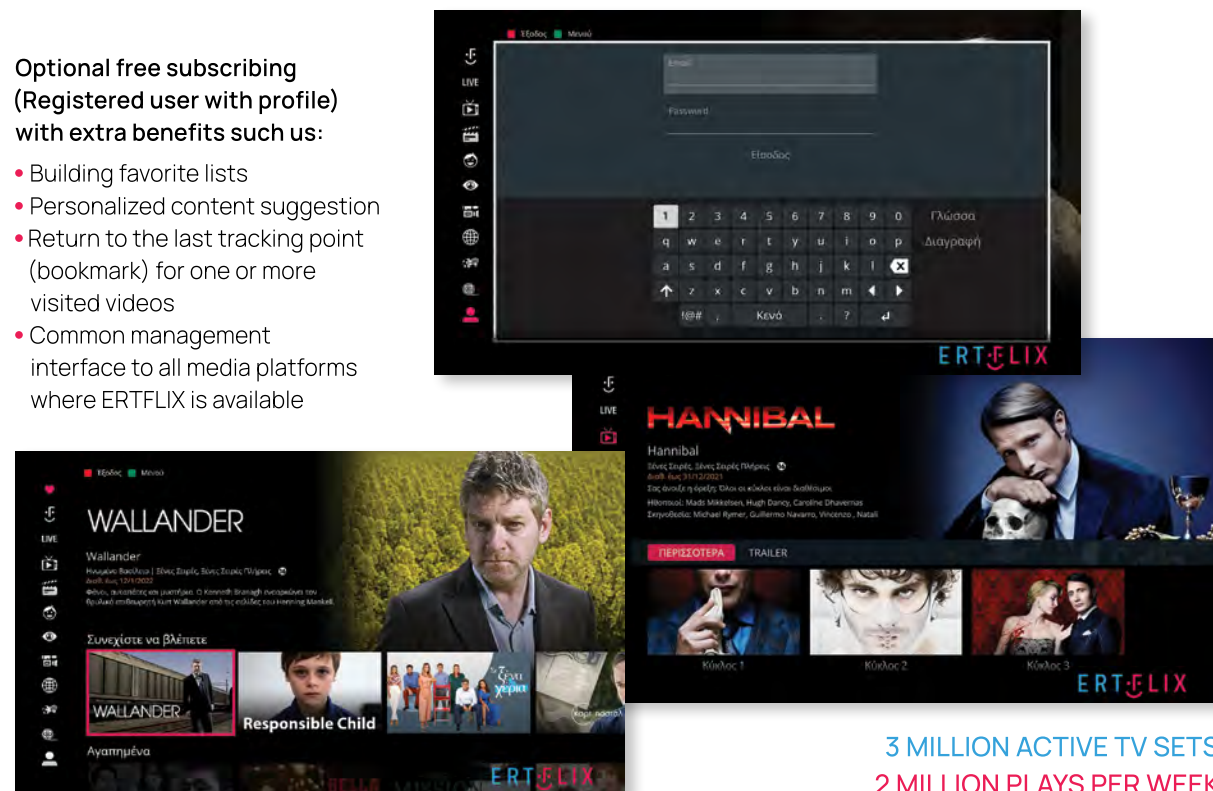
3 MILLION ACTIVE TV SETS
2 MILLION PLAYS PER WEEK

ERTFLIX

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dot screen

With offices in Europe, USA & Latam, DOTSCREEN is a specialised multiscreen User Interface, and app design and development agency. The company delivers bespoke, or licenses customized, front-end solutions to smart TVs, set-top boxes, Roku, game consoles and other connected device. Our expertise and solutions span across any technology (HbbTV, Android TV, RDK, Tizen, WebOS...). Our HbbTV customers include Mediaset, ARTE, Salto, Freenet, Fransat, Freesat, France Télévisions, SVT, ERT.

À propos du Groupe TDF Opérateur d'infrastructures neutre et ouvert, TDF accompagne les acteurs du numérique dans leurs enjeux stratégiques de connectivité en Métropole comme en Outre-Mer. Que ce soit pour la diffusion radio et TNT, la couverture Très Haut Débit mobile ou le déploiement de la fibre, TDF apporte à ses clients une expertise métier, un mix technologique unique et innovant ainsi qu'une proximité territoriale de premier plan. Dans un univers chaque jour plus connecté, TDF permet depuis plus de quatre décennies, aux télécoms et aux médias, grâce à son parc de 19 000 sites, de relier partout, plus vite, les territoires et les Français.

About TDF As a transparent and impartial operator, TDF helps digital firms in mainland France and French overseas territories meet their strategic transmission goals. For radio and DTT broadcasting, mobile ultra high-speed broadband coverage and rolling out optical fiber, TDF brings clients in-depth operational expertise, a mix of unique and ground-breaking technology and an exceptionally widespread local presence. In an ever more connected world, over the last four decades or more TDF has enabled telecoms and media companies to connect the French regions and people, backed by its 19,000 sites, everywhere and faster.

tdf

WIZTIVI

HbbTV
by **WIZTIVI**

HbbTV OpApp:
the standard for a master UX

Wide Compatibility
HbbTV is compatible with most of the latest Smart TVs.

Personalized Onboarding
The user is immersed in your brand universe from the first moment.

Easy Deployment
Installing your applications is quick and easy, and can be done before the sale.

EPG Customisation
Personalize the EPG by integrating it into your brand universe.

Channel List Customisation
Add your own OTT channels to the broadcast channels.

Dedicated Location
Integrate your own VOD catalogue or any streaming portal into the native UI.

Wiztivi,
a strategic ally

Compatible Framework
Our Framework is the best way to easily build apps on any device.

Unrivalled UX
Our HbbTV experience allows us to deliver a fluid and unified UX.

Tested & Proven
Our UIs are tested on the most used devices on the market.

Long-Standing Experience
Wiztivi has been deploying HbbTV applications since 2011.

Strong Track Record
They trust us: Tricolor, Neotion, Fransat, Eurosport, Eutelsat, Gulli...

A Sprawling Network of Partnerships
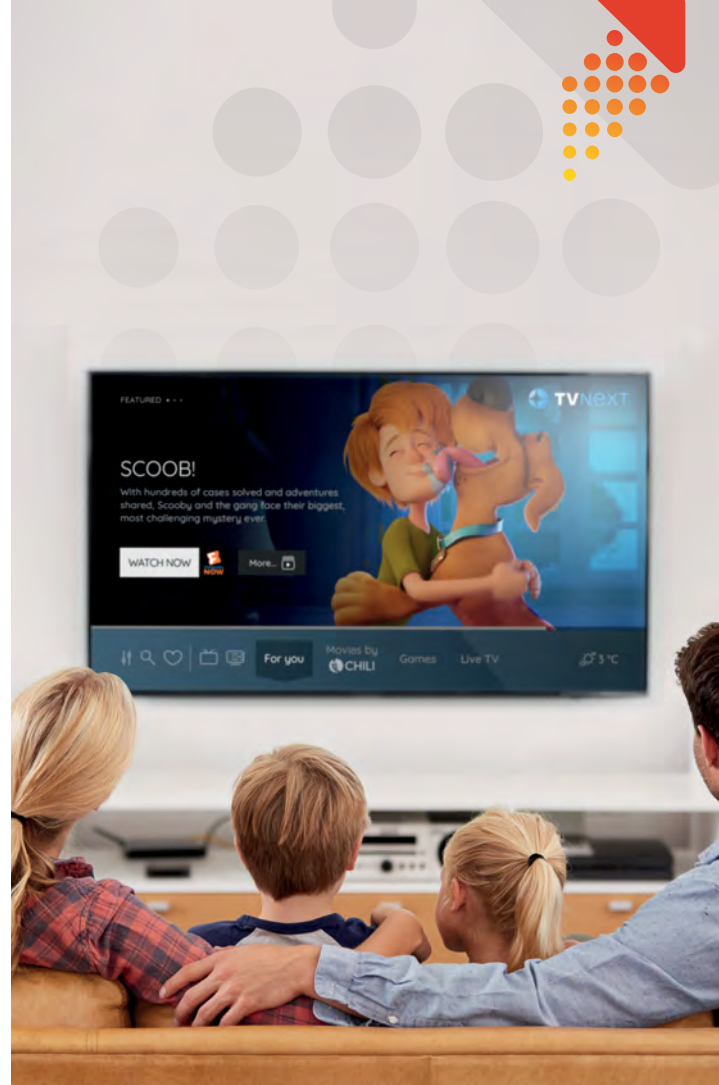We work with the most important manufacturers on the market.

WIZTIVI

Are you ready for Operator TV?

Learn how the Smart TV can be used to expand Pay TV subscriber footprint, aid retention, and lower costs.

✔ **Own the Smart TV**
✔ **Save Capex**
✔ **Say goodbye to the battle for HDMI 1**

Visit **vewd.com**

RTL Deutschland, with its 14 strong channel brands and the streaming service RTL+/ TV Now, is Germany's leading provider of video content. In addition to RTL+/TV Now, the unit's digital brands include the news service NTV.de and generol-interest portal rtlnews.de. With its portfolio of TV channels as well as audio and online offerings, RTL Deutschland addresses a broad spectrum of target groups, striving to provide the best content and innovative technologies for viewers, users and customers. The focus here is on innovation in terms of content production and distribution, by working with own production units like RTL Studios and RTL News and bundling broadcasting and production operations through CBC.

Find out more at rtl.com.

As part of the Ad Alliance, RTL Deutschland provides advertising sales opportunities that are individually tailored to advertisers. With its specially designed data department, RTL Deutschland draws on an in-depth understanding and analysis of data to actively design and promote content and marketing for viewers, users, brands and advertisers. RTL Deutschland is headquartered in Cologne and has 4,000 employees at 24 locations in Germany and worldwide.

Sofia Digital is a Finnish pioneer of TV applications. Since 2000, the company has served customers in 38 countries. Sofia Digital is a member of HbbTV Association since 2012.
The recent deliveries include QR-code activated second screen advertisement solution with MTV, a terrestrial payTV service using Conax cards decrypted using a HbbTV application for Digita, Irdeto CI+ CAM Operator application for pay TV operators and LovesTV player and integration deliveries for Cellnex.

Digital's CEO Ari Pöyhtäri at Sofia Digital's TV laboratory.
Photography by Laura Vanzo.

Amsterdam-based Media Distillery is an acknowledged leader in AI-driven video analysis technology for the worldwide entertainment Industry. The cloud-based Deep Content UnderstandingTM solution provides fully automated real-time content analysis which empowers broadcasters, OTT Video Services and pay-TV service providers to optimise viewer engagement through accelerated and accurate content discovery and enhanced user experience.

From providing appealing and descriptive imagery to boost UIs to topic identification in programs via automatic content chaptering and snack-based playback, Media Distillery helps its customer to utilize their content library to the fullest and engage their audience in the best way possible.
Media Distillery's customer base includes major operators and broadcasters located around the globe including Telenet, NOS, VTR Chile and YouSee, delivering enriched viewing experiences to over 30 million viewers.

For more information, please visit www.mediadistillery.com

SMARDTV

SmarDTV, an agile company specialized in designing and developing secure digital solutions for worldwide pay-tv operators, has supported its customers, over the past 25 years, as a trusted technology partner. Our latest product, TV-Stick, getting smarter and greener, enables Operators to embrace the digital transition to hybrid and deliver an enriched TV viewing experience to their end-users.

SMARDTV

TV-STICK, the next USB CAM, will underpin a new way of watching television.

irdeto

Irdeto is the world leader in digital platform security, offering solutions and services that enable customers to protect their revenue, create new offerings and fight cybercrime effectively. With more than 50 years of experience, Irdeto is the leading solutions and services provider for content, video broadcast and streaming services, partnering with movie studios, sports rights holders, gaming security, and OTT and broadcast operators across the content value chain. With a unique pay-tv operator heritage, Irdeto is committed to working together to build a future where everyone can embrace connectivity with confidence.

VESTEL

Vestel City, which comprises nine plants located in Manisa, is amongst the biggest industrial complexes of the world. Comprised of 28 companies, Vestel Group is a multi-industry manufacturer that operates in consumer electronics, home appliances, professional displays, automotive and battery solutions, and EV Chargers. Testimony to the global importance of Zorlu Holding across multiple technology sectors, Vestel is not only thriving at home in Turkey, but also through a further 10 subsidiaries that have been set up in various other parts of the world. Thanks to its renowned manufacturing and R&D complex, Vestel exports to 157 countries and keeps its position as a global player. The company is recognized for its cutting-edge designs, high product quality, large production capacity, and superior market share growth with an annual manufacturing capacity of 15 million television sets.

HbbTV: Grow your business in Connected TV

Konodrac provides all the high-tech digital tools broadcasters need to segment, address, monetize and monitor audience with maximum accuracy

HbbTV Solutions:

Connected TV is now smarter, Audience becomes Actionable
A set of flexible solutions for the highest performance of digital advertising for CTV and linear TV

Insights: Know your Audience
Visual tools to help you figure out what exactly your audience cares about

Toolkit: Activate your audience
Activate your audience by providing a first-class user experience
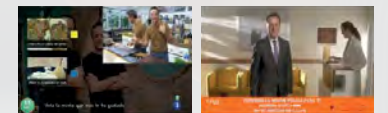
Adserver: Monetize
Earn new revenue from broadcasting

SmartTV Measurement. Measure audiences
Perform trend analysis of your audience in real time

Konograma | Example of Targered advertising

- Interactive Banners Synchronized

- Ad Replacement according to the profile of each viewer (Road Map)

info@konodrac.com | www.konodrac.com

Thank you to our sponsors

SPEAKERS & MODERATORS BIOGRAPHIES

AHONEN Teppo
VP Television - M.Sc. (Telecom)

Teppo Ahonen is responsible for Digita's TV operations, including the Terrestrial TV, pay-TV, and HybridTV services. He has worked in various management and development positions in Digita's Television business for over 20 years. In addition, Teppo represents Digita in various TV industry working groups both in Finland and internationally.

BASSBOUSS LOUAY
Senior Project Manager R&D

Louay Bassbouss is a scientist and senior project manager R&D in the business unit Future Applications and Media (FAME) of the Fraunhofer Institute for Open Communications Systems (FOKUS). He works on Future Web Applications, Multiscreen Technologies & Standards, and 360° Video Technologies. Louay actively participates in various standardization groups in W3C, HbbTV and CTA. He is the co-chair of the W3C Second Screen Working and Community Groups and actively contributes to various testing activities in HbbTV and CTA WAVE.

BIDAULT SERGE
General Manager Fincons Group France

After studying Law and Business Management, Serge Bidault began his professional career as Head of Communications at Limagrain Group (4th largest seed global company). Then he held various general management responsibilities in the Media, Information Technologies (ICT) sector working with several companies including press agency TF1-LCI, Audiovisual Production Companies and furthermore heading up regional TV channels in France.
He was also appointed Deputy-CEO of a broadcast software solutions editor specializing in technologies for major players (M6, France Televisions, TF1, Next Radio, French Senate...). In 2017, he took over operational management of 2 innovative French companies in image technologies (Real Time 3D engine, AR & VR...) for civil industries like VALEO Group and for military applications. In 2020, the owners of the Swiss-Italian group FINCONS GROUP, Michele and Francesco Moretti, entrusted him with the general management in France, which plays a key part in the internationalization strategy successfully pursued.

BOTTI OLIVER
*Strategic Marketing and Innovation Executive Director*

With 25+ years' experience in Operations and Sales&Marketing, in the Media sector Oliver is involved in Omnichannel Video Distribution and Monetization, OTT and NextGen Hybrid TV (ATSC3.0 and HbbTV), Addressable TV Advertising, AI/ML-based Video Augmentation and Accessibility Enhancement, as their application to Monetization, Audience Segmentation, UX Personalization and User Engagement.

BROGGI SILVIA
MARTECH & INTERNATIONAL MARKETING DIRECTOR PUBLITALIA '80 - DIVISIONE ADTECH & BUSINESS DEVELOPMENT

Equipped with a degree in Public Relations from IULM, Milan 1999, Silvia Broggi now works within the media Industry, specialising in TV and advertising. Her career began working with the Mediaset Group in 2000, positioned in the International Sales House Publieurope, in the role of Group Product Manager. Silvia was posted for four years in London from where she managed the operative marketing for branches in London, Paris, Munich, Losanne and Madrid. In 2004 Silvia returned to Milan to enter Publitalia '80 as International Marketing Manager.
The significant international experience in Silvia's professional development during the 8 years as International Marketing Manager, include orchestrating a collaboration with the Sales house of Nessma, a Maghrebian satellite TV channel (Tunis, Morocco, Algeria) for which she was posted in Tunis for 2 years, and a 6 month placement in Paris 2011 as Sales Manager for Publieurope.
In 2012 Silvia returned to Milan for the promotion to Head of International Marketing of Publitalia '80. Five years later she took on a second and simultaneous role as Marketing Director for the newly born AdTech&Business Development Division. This dual role is where she remains today - in charge of international marketing and marketing technology, where she manages the go to market, sale and development of Publitalia'80 addressable advertising offer.
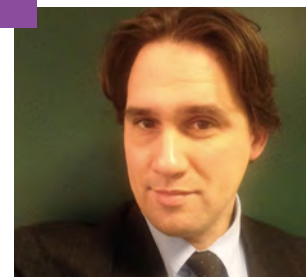
BRUNO ALBERTO
DEPUTY DIRECTOR - CORPORATE STRATEGIC MARKETING AT GRUPPO MEDIASET – MILAN

Responsible for corporate projects in digital transformation, digital strategy, data management strategy, new digital business, Pay TV and pay OTT business.

BUSSE SEBASTIAN
DIRECTOR ADDRESSABLE TV INTERNATIONAL AT SMARTCLIP EUROPE

Sebastian Busse is Director Addressable TV International at Smartclip Europe – the leading video ad-tech platform shaping the future of video advertising — delivering advanced online video and addressable TV advertising solutions.Busse started his career in digital media sales at several digital agencies, including NetRange where he was responsible for the growth of TV and VOD solutions, and IMG Media where he rolled out their online video business. Today, Busse brings over 15 years of extensive experience in the broadcast and online advertising industry, and has gained a thorough understanding of both the buy and supply side. With his passion for online video, connected TV and addressable TV advertising, Busse is often seen on stage sharing his vision about how to pave the way for a future of true, addressable TV.

CARELL LEANDER
Managing Director - Nowtilus

As Co-founder and Managing Director of Nowtilus, Leander Carell oversees Product & Marketing of the company's Server-Side Ad-Insertion Platform SERVERSIDE.AI. With offices in Berlin and Halle/Saale and an international Partner-Network Leander drives the business development and solution integration with Service Operators, Streaming Platforms and Broadcasters. Leander has been an entrepreneur and established player in the media industry for 18 years. With his former movie production company, he was an OSCAR Nominee for the Best Foreign Feature "IN DARKNESS" in 2012. He sold Nowtilus to Rovi Corp. in 2011 and managed a buy-out in 2014, driving the company to the next level of streaming monetization and personalization. Leander holds a degree as media merchant and postgraduate of EAVE for International Film Production and Marketing.

CLOVER JULIAN

Julian Clover is a Media and Technology journalist based in Cambridge, UK. He is the editor of Broadband TV News, an online business-to-business publication and is a presenter on Cambridge 105 Radio. An accomplished conference moderator, Julian is a regular chairman at Cable Congress, ANGA COM and the Broadband TV News Business Breakfasts. He has also chaired election hustings for the 2017 and 2019 General Elections and the 2019 European Election. On radio, Julian presents Cambridge Breakfast on Cambridge 105 Radio (with Lucy Milazzo) as well as anchoring the station's coverage of local and national elections, the Cambridge Folk Festival, Remembrance Sunday and Midnight Mass.

DARIGOL XAVIER
CEO RETENCY

Xavier Darrigol, co-founded Retency, a French sciences company specialized in private data processing and other applications of deep anonymization research. Retency notably validated, GDPR-compliant data analytics engines that do not require user consent. Before founding Retency, Xavier worked for Thales Aerospace, and later undertook a career in M&A, at Merrill Lynch, Lazard and Deutsche Bank as a Managing Director. Xavier graduated from Ecole Polytechnique in France, and holds an MBA from the Massachusetts Institute of Technology.

DE BARTOLO LUCA
SALES AND MARKETING DIRECTOR OF TIVÙ SRL - A JV BETWEEN MEDIASET RAI, AND TIM

Is an accomplished professional with sharp business acumen and 15+ years success in sales, marketing and business development. He is the Sales and Marketing Director of Tivù S.r.l. (a JV between Mediaset RAI, and TIM), responsible for sales and post-sales activities with device manufacturers, broadcasters and retailers. Luca also heads licensing and certification testing for LaTivù 4K and tivùsat. Prior to joining Tivù, Mr. Luca was a Consultant in Booz & Company (formerly Booz Allen Hamilton LLC) as member of the Communication Media and Technology team he specialized in digital TV,

emerging media, digital convergence, technology and new media business initiatives. Luca holds an Industry Executive Masters degree in Media and Entertainment from Copenhagen Business School SIMI and an MSc in Company Management from LUISS Guido Carli University in Rome.

### DUBS EMILY
HEAD OF TECHNOLOGY, DVB

Emily took up her current position as Head of Technology in January 2020, coming to DVB with 20 years' experience in the digital television industry. She has worked with several DVB Members across a variety of roles, including with Thomson Video Networks (Harmonic), TeamCast (ENENSYS Technologies) and SmarDTV/Neotion. Emily has strong expertise in the traditional broadcast world along with a solid grounding in emerging technologies from the broadband world. As Head of Technology, Emily leads on all technical and standardisation matters within DVB, represents the organisation around the world at conferences and tradeshows and supports DVB's modules and working groups.

ELKINS SUSI

Susi Elkins is director of broadcasting and general manager of WKAR Public Media at Michigan State University. WKAR is home to public radio and television for the Michigan capital region, bringing the best of PBS, PBS Kids, NPR, Classical music and award-winning original content to more than 500,000 mid-Michigan residents each week. Under Elkins' leadership, WKAR has increased its commitment to early childhood education through the launch of the PBS Kids 24/7 channel, WKAR Family original content and the PBS KIDS Playtime Pad research collaborative. Elkins also led the launch of a new WKAR News/Talk FM station for the capital region and strengthened local news coverage with an emphasis on education and public affairs reporting. In collaboration with MSU, Elkins led the effort to launch the first ATSC 3.0 experimental station licensed to a public media organization. Granted the FCC experimental license in June 2018, WKAR then launched the Next Gen Media Innovation Lab to accelerate development of public service applications and NextGen business services for public broadcasters. Elkins currently serves on the PBS Board, the board of America's Public Television Stations (APTS), and the University Licensee Association Executive Council (ULA). Prior to her appointment in March 2017, Elkins served in a variety of roles at the station, including interim director, television station manager, content and community engagement manager, public television producer and instructional television multi-media producer. Elkins holds a bachelor's degree in telecommunication and a master's degree in educational technology, both from MSU.
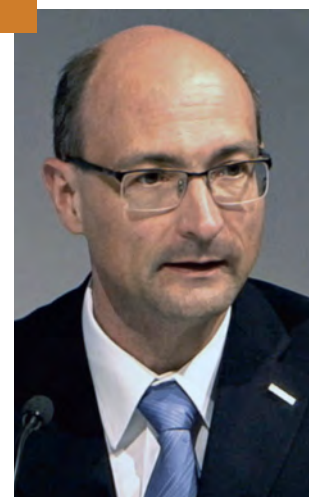
FAEHNRICH MARTIN
Manager, Standardisation, Panasonic Business Support Europe GmbH

Martin Faehnrich graduated in 1985 in telecommunication electronics ('Nachrichtentechnik'). He started his career developing in CCTV business, developing video processing real-time systems for professional large-scale CCTV systems. He joined Panasonic in 1999 and was leader of a team for video signal processing, working very closely with Japan. In 2002 he was appointed to set-up a section for standardisation at the European TV-development centre in Germany (PLDC). Since 2008 he is manager standardisation. He and his team are in charge of Panasonic's AV related standardisation activities in Europe. He is also member of several top-level activities at various industry associations, including HbbTV Steering Group.

FOLLIN THOMAS

Thomas Follin is the Managing Director of SALTO, the new French streaming platform founded bythe 3 major French broadcasters : France Télévisions, M6 and TF1. Salto subscribers can enjoymajor TV brands, all series episodes available, in preview, live or replay mode, but can alsodiscover new and original fictions from all around the world. Thomas was previously Deputy Managing Director and Excom Member at GROUPE M6 where hewas in charge of 6play, the digital app of GROUPE M6, and the distribution of all Channels &Audiovisual Services of the group ; Thomas has notably developed the Group channels & services revenues on all networks and platforms, as well as digital innovation for M6 Group antennas. Thomas started at Groupe M6 in 2002 in the strategy and development team. He joined M6 WEBin 2008 to launch M6 Replay, the first replay service in France. Thomas Follin holds a DESS / MASTER 2 in Telcos and New Media from Université Paris Dauphine.

GAZZONI ERIK
PRODUCT/PARTNERSHIP DIRECTOR FOR SMARDTV TECHNOLOGY

Erik Gazzoni is currently in charge of Product/Partnership Director for SmarDTV Technology. As such he's looking after the DVB-CIPlus roadmap to define next generation Conditional Access Module Product Line.Before he was Head of Cable and IPTV products where he led the Product definition for two-way networks. Erik has been involved in various Standardization committees and Working groups like Society of Cable Telecommunications Engineers (SCTE) and OpenCable to DVB initiatives. He's now Chairman of CIPlus LLP Board.

GRAY PAUL

Paul Gray leads the home devices research, spanning television sets, smart home, consumer electronics, and domestic appliances. His main research area is TV sets, focusing on the European region, broadcast technology, smart TV, and new TV features. Paul is also heavily engaged in researching the development of the Ultra HD ecosystem. He joined Omdia, formerly IHS Markit, more than 10 years ago. With more than 30 years' experience in the TV set supply chain working for NXP and Philips in semiconductors and displays, Paul continues to research the TV set business. He has also worked on wearable and media devices and has tracked and forecast the smart TV business from its very beginning. Paul has been cited by, among others, the Financial Times, Korea Times, Korea Daily, Nikkei, and Le Monde. He has also offered expert viewpoints in online, radio, and television programming. Paul holds a degree in electrical engineering and a diploma in industrial studies.

GRIVET VINCENT

Vincent Grivet, is a graduate from Ecole Polytechnique (Paris France) and Paris Tech Telecom. He worked for eighteen years for the international activities of the Orange Group, including a time as Chief Executive Officer of Wanadoo, Orange's internet services unit in Belgium. In 2006, he was a co-founder of Maxtel, an entrepreneurial Wireless Broadband start-up which obtained significant spectrum rights in a competitive bid. He currently works for the TDF Group, where he is in charge of Broadcast Development and Innovation.

JACKSON JAMES
TECHNOLOGY DIRECTOR, DIGITAL UK

James Jackson is the Technology Director of Digital UK where he is responsible for the management of the technology, specifications and systems supporting the UK's largest free to air television platform. Building on the success of Freeview, James has led the technical development of Freeview Play platform, which offers free to view access to DTT broadcast and IP delivered content from all of the UK's major broadcasters. Over the last 6 years, Freeview Play has grown to be the largest HbbTV platform worldwide and now reaches more than 10m active devices in UK homes. James has extensive experience of developing and managing distribution services and prior to joining Digital UK, James held a range of senior roles within the BBC's strategy, distribution and technology teams, encompassing commercial and engineering management.

JOKI JUHA
DVB BROADCAST PRODUCTS AND TESTING AND CERTIFICATION ERVICES FOR DVB AND HBBTV AT SOFIA DIGITAL

Juha Joki has many years' experience in DVB and HbbTV technologies. Currently he is in charge of DVB broadcast products and testing and certification services for DVB and HbbTV at Sofia Digital.

KABAKCHI DENIS
TELETARGET CEO

Top manager with more than 20 years experience in media business, digital media, advertising, AdTech, big data, market research and ML. Teletarget is focused on the development and management of technological projects in the following fields: Addressable TV, Interactive video and TV, automated content recognition, audience segmentation using machine learning algorithms. Teletarget is the main HbbTV platform at the Russian market.

KLEEMANN FRANZISKA
PRODUCT OWNER FOR ZATTOO'S ANDROID TV

Franziska works as Product Owner for Zattoo's Android TV for Operator product with prime responsibility for the planning and development of Zattoo's custom launcher application and its integration into each of Zattoo's OEM partner devices. Before coming to Zattoo, Franziska worked for Thalia Bücher, firstly as a project manager and then progressed to Product Owner. Franziska holds a Master of Arts degree from HTWK Leipzig and is also an accredited PSPO Product Owner.

KRIEGER JÖRN
FREELANCE JOURNALIST

Jörn Krieger has been working as a freelance journalist, specialised in digital media, broadcast technology, convergence and new markets, since 1992. His articles are published by German and international industry publications such as Broadband TV News, InfoDigital, Digitalmagazin, Cable!vision Europe and Medien Bulletin. Jörn also takes up University lectureships, conducts workshops and seminars and hosts panel discussions at industry events such as ANGA COM, Medientage München, IFA Berlin, HbbTV Symposium and Awards, BREKO Fiberdays and Deutsche TV-Plattform Symposium.

LIBOLT ANAÏS
HEAD OF HOME ENTERTAINMENT, DOLBY FRANCE

After an early career in audio and working for broadcasters, Anais joined Dolby in 2010 to look after broadcast. Her role has since expanded with the business to cover all audiovisual areas in French home entertainment across broadcast, gaming and music. With a wealth of expertise in image and sound, her goal is to ensure a smooth adoption of the Dolby technologies across the eco-system - delivering an immersive and lifelike entertainment experience to many consumers whether they are watching movies or their favourite TV programmes, playing games or listening to the latest music album released.

LINDSAY-DAVIES RICHARD,
CEO, DIGITAL TV GROUP (DTG)

With 30 years of TV industry experience, Richard drives the DTG's unique collaborative culture placing it firmly at the centre of UK television. A design engineer by profession, Richard spent 15 years in senior design and later, senior marketing and strategy roles at Sony, Toshiba and Pace. Richard has a track record of supporting UK world-firsts in flat-panel, widescreen, digital and interactive TV. He launched the world's first free-to-view digital devices into the UK market at Pace in 2002, joined the DTG in 2004 to lead public affairs in preparation for digital switchover, and later picked up the mantle of Commercial Development Director for Freesat's launch in HD in 2006. He returned to the DTG as CEO in 2008, where he continues to drive innovation in next generation media, distribution and end-user experience. Richard is former chair, and current vice-chair, of the TRIC Awards and a trustee of the UK's first new university for 40 years – one solely dedicated to technology and engineering. Passionate about the alchemy of people, products and technology, and always looking out for the next big thing in television, Richard was named one of the top 50 most influential people in the sector earlier this year and has just been honored by SMPTE as one of their 2021 Fellows.

MACAVOCK PETER
HEAD OF DELIVERY, PLATFORMS AND SERVICES, EBU TECHNOLOGY AND INNOVATIONS

At EBU, he heads the team responsible for innovation projects relating to delivery technologies, spectrum management and software platforms. Amongst other things, he is responsible for spectrum matters and high-level projects related to Hybrid Radio and Television including HbbTV, DVB, RadioDNS and others. In July 2016, he was elected Chairman of the DVB Project, and retains a role as co-chair of the HbbTV Requirements Group. He is an Irish national living and working in Switzerland.

MARTIN PAUL

Paul has spent his entire 30 year career in the television industry in a variety of engineering, marketing, strategy and business leadership roles. Whilst at Philips, Paul initially worked in analogue TV before driving the transition to digital. Paul has spent the last 8 years as CEO leading the transformation of Ocean Blue Software (OBS) from a traditional software licencing business to the pioneer in the application of open/shared source broadcast software. Paul was instrumental in the founding of both DTVKit and The Open Red Button Project (ORB) and is a governing board member of DTVKit.

MATHENY SAM
EXECUTIVE VICE PRESIDENT & CHIEF TECHNOLOGY OFFICER NATIONAL ASSOCIATION OF BROADCASTERS

Sam Matheny is Executive Vice President and Chief Technology Officer at the National Association of Broadcasters. With over 25 years of experience in the broadcast and data networking industries, including earning a patent for inventing mobile and interactive DTV technologies, Matheny leads NAB's technology team in its efforts to promote innovation and propel broadcast technology into the future. He also provides overall leadership for PILOT as well as NAB's TV, Radio, and Digital Technology Committees. Matheny is a member of the Academy of Digital Television Pioneers.

He serves on the board of the Ultra HD Forum, the board of governors for the National Wireless Safety Alliance, the board of visitors for East Carolina University, and as a non-resident fellow of the German Marshall Fund. He has served as an advisor to numerous startup and technology companies and is currently engaged with Reveal Mobile, a location-based advertising technology company, and Haystack TV, a personalized OTT headline news channel. He has previously served on the FCC Communications Security, Reliability and Interoperability Council (CSRIC), the Federal Emergency Management Agency's (FEMA) Integrated Public Alert Warning System Network Advisory Council (IPAWS NAC), and on the board of directors for the Advanced Television Systems Committee (ATSC), where he was Chairman of the specialist group on the next generation of digital television. Before joining NAB, Matheny served as Vice President of Policy and Innovation for Capitol Broadcasting Company where he focused on strategic media applications, mobile wireless content delivery, smart TV, and helped secure multiple patents for broadcast Internet distribution. He has also held management positions with mobile development, satellite, digital television, web development, and interactive video companies. Matheny holds a B.S. in Communications from East Carolina University, a M.S. in Technology Management from North Carolina State University, and a certificate for artificial intelligence and business strategy from the Massachusetts Institute of Technology. In 2007, he was named an American Marshall Memorial Fellow.

MAY OLIVIA
PRODUCT DEVELOPMENT AT FREEVIEW PLAY (DIGITAL UK)

Olivia May currently leads Product Development at Freeview Play (Digital UK) – the innovative hybrid DTT television joint venture owned by BBC, ITV and Channel 4, which is the fastest-growing TV platform in Britain. Olivia joined Freeview Play, after another stint in New York, from Youview; where she was in Product Management with a primary focus on future platform strategy. Before Youview she worked as a consultant at PA Consulting, OC&C and Curzon Consulting for Sky, on strategy and organizational change projects across the UK and North America specialising in Media and Finance. Olivia is passionate about creating products and intuitive experiences, which everyone can enjoy – not just those with the means or abilities to access them.

MEDLAND IAN
### BUSINESS DEVELOPMENT MANAGER FOR EUROFINS DIGITAL TESTING, DEVICE PROFESSIONAL SERVICES

Ian is Business Development Manager for Eurofins Digital Testing, Device Professional Services, where his focus is on providing conformance tools and services for broadcasters and content providers. He has been involved in Digital TV since 1998, as a software developer and part of the management team at Digital TV Group in the UK. Ian has previously been Chair of the HbbTV Testing Working Group and a member of the HbbTV Steering Group.

MICHELOZZI ANDREA

Work in the Media Industry, TV and production since 1989 as Journalist, News anchorman, Director of Channels and National Manager of European Companies, Business Development and Production Manager 4K/UHD - 5G - AI/VVR new platforms and programs, international relations, business plan and organization of events. I am in contact with the main European media/Tv groups, Latin America, Russia and CIS, creating a network of relations and direct contacts with more than 31,400 professionals, key people and companies that allow you to have rapid developments on the business front and joint ventures. Director of Seven 24 Europe directly from the Vox Box seat of the European Parliament in Brussels, Interviews with MEP's of the European Parliament and realization of programming of seven hours per day for Italy.

Next project online, with European contents available on tablets, smartphones, and second screen. Winner of the European Parliament call for communication and audiovisual production for Italy. Communications Officer in 5GCITY project - Horizon 2020 and 5GZorro. Skills: Production cross-platform programs, development of New Media, International Relations and Business Development, organization of events (more than 19 events around the world in 2018). Great experience in personal relationships, motivating individuals and groups, creating effective communication, always with the goal to achieve strong results. Page 1 of 5 Co-founder of Luxe Barcelona, an association of companies and individuals dedicated to excellence, quality and luxury in Catalunya
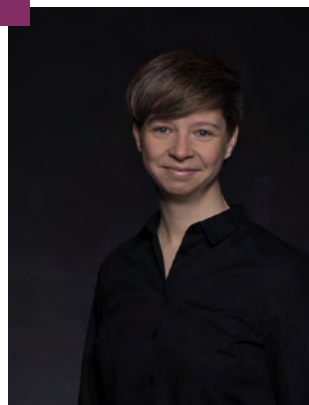
MISCHKE RACHEL

After starting her career in TV production in Berlin, followed by 10 years of shaping operator platforms and TV-Apps at TeraVolt in Hamburg, Rachel Mischke moved to the role of PO for Smart TV at Zattoo. There, she and the Smart TV team were responsible for all web-based Smart TV white label apps. During that time the team overhauled the way their apps are built across all major TV brands and expanded the Zattoo app to Panasonic TVs which then evolved into the operator app. She recently took on the role of product consultant at Zattoo TV Platform to shape the future of the service with and for Zattoo's platform customers.

MYSLIWIEC KAI
HEAD OF ADDRESSABLE TV PLAYER DEVELOPMENT

Born in Munich 1967
Addressable TV advertising stands for the ability to show different ads to different households while they are watching the same linear TV program. My team of engineers is connecting TV technologies like broadcast automation with internet technologies like HbbTV in a profitable way. We are using a broad selection of technologies for specific use cases like: JavaScript/node.js for frontend and backend development, C#/.net to interface with broadcast automation and Python for data engineering and error analysis.

I am working for more than 15 years now for the SevenOne Entertainment Group. Starting as a developer I worked on projects like Teletext (Perl), web-based CMSs (PHP and Java), database frontends (Ruby on Rails) and Webservices (node.js). Before my engagement with SevenOne I founded an internet agency together with 3 partners and grew it to a size of 20 employees. I studied physics in Munich, but I somehow got stuck with IT and software development. In my spare time I like mountaineering and paragliding if my job and my family allows it.

NOLAND MADELEINE
PRESIDENT OF THE ADVANCED TELEVISION SYSTEMS COMMITTEE INC.

Widely respected for her consensus-building leadership style, she chaired the ATSC technology group that oversees the ATSC 3.0 next-generation broadcast standard before being named ATSC President in May 2019. Previously, she chaired various ATSC 3.0-related specialist groups, ad hoc groups and implementation teams since 2012.
A 15-year industry veteran, Noland held key technology management and standards roles at Backchannelmedia Inc., Telvue Corp. and LG Electronics. She received TV NewsCheck's "2019 Futurist" Women in Technology Award and was named one of 2018's "Powerful Women in Consumer Technology" by Dealerscope magazine. In 2016, she received the ATSC's highest technical honor, the Bernard J. Lechner Outstanding Contributor Award. She graduated cum laude from the University of Massachusetts.
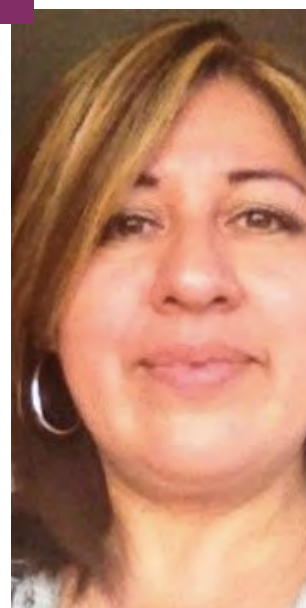
NORIEGA LETICIA

Leticia is a Senior telecommunication engineer with strong background in Telecom, embedded Software development, broadcast and hybrid Digital TV. In 2011 she joined Philips TV, formally TP Vision. Since then, she works in the certification group, involved in TV EU Product Conformance and European TV Certifications, she leads hybrid TV Test projects and certifications, like TDT Spain, UK, FVP, La TiVu, FV Australia, NZ , etc beside others. Her expertise makes her worked in multiple international projects delivering bespoke HbbTV market solutions, like TA, CS, Replay, LovesTV etc. participating in multiple HbbTV workshops organized by broadcasters, facing technical challenges due to new HbbTV standards, new technologies or new SW platform. Her company role has been key to bring Philips TV's to a high-quality products tailored to meet HbbTV growing segmentation and new market needs. She is active member of Testing group and Improving Interop task force of HbbTV.org working groups.

OSLUND KERRY

is vice president of strategy and business development for The E.W. Scripps Company, where he is responsible for advancing the company's ATSC 3.0 strategy and other business development efforts. Prior to his post at Scripps, Oslund was vice president of strategy and business development at Tribune, where he helped the company align business strategies with emerging ATSC 3.0 television standards. He also spearheaded major next-generation television advertising initiatives including dynamic ad insertion and real-time TV analytics and helped Tribune launch a successful podcast network. From 2009-2016,

Oslund worked for Schurz Communications as senior vice president of publishing and digital, where he oversaw daily operations of TV, radio, print and cable businesses and led M&A strategy. Oslund has held industry leadership roles at Gannett Broadcasting (now TEGNA), Lee Enterprises, Walt Disney Company, KCAL-TV and USA Today.
A six-time regional Emmy winner, he also is a director for Pearl TV and a founder of the TV Interface Practices (TIP) Initiative.

PATTON JASON

Jason Patton joined Verance headquartered in San Diego, California as Senior Vice President, Sales & Marketing in 2017. Verance is bringing to life a watermarking solution to solve Europe's set-top box problem for two-way interactive experiences in regions including France, Germany, the Netherlands and the Nordics. Prior to Verance, Jason led advanced viewing experiences at LeEco, Immersion and In Demand. Jason is a graduate of AT&T's Financial Leadership Program, Boston University and the Harvard Business School.

PIESING JON
VICE-CHAIR OF HBBTV AND CHAIR OF THE HBBTV SPECIFICATION GROUP

He played a major role facilitating the convergence of the original French and German initiatives which together become HbbTV. He is a member of the Steering Board of the DVB project and the Steering Committee of the CTA Web Application Video Ecosystem (WAVE) project. Jon has been a leading figure in the development of specifications for integration of TV and interactivity for more than ten years. This has included being the chairman of groups in DVB, the Open IPTV Forum and the UK DTG. Jon is now Director, Standardisation for TP Vision (who manufacture Philips TVs for Europe and a number of other territories). He has previously held senior positions related to standardisation in several different units of Philips.

PRINS MARTIN
HEAD OF PRODUCT AT MEDIA DISTILLERY

Martin Prins is Head of Product at Media Distillery, an Amsterdam based startup specialized in using AI to understand what's inside video. With an R&D-background in streaming and broadcast media, Martin is responsible for Media Distillery's Deep Understanding Platform, which helps video service providers make sure viewers find content they are interested in, in the least amount of time. Prior to joining Media Distillery, Martin worked as Senior Media Consultant at TNO. In this role he helped broadcasters and operators with innovations such as OTT content delivery, UltraHD and Addressable TV, and participated in HbbTV and DVB standardization.

REDON XAVI
PRODUCT MANAGER IN THE PRODUCT STRATEGY AND INNOVATION DEPARTMENT IN CELLNEX TELECOM, SG MEMBER AND TREASURER OF THE HBBTV ASSOCIATION, ASSOCIATE PROFESSOR IN THE UNIVERSITAT AUTÒNOMA DE BARCELONA AND VICECHAIR OF THE UHD SPAIN ASSOCIATION.

Xavi Redon is leading the Spanish broadcasters HbbTV platform LOVEStv (HbbTV Jury Award in 2018) and also the TDT Híbrida certification process in Spain. Since Digital TV appeared, has been working for the TV evolution in Spain, developing and promoting technologies such as hybrid TV, Ultra High Definition, HD, MHP and DTT. He has a bachelor's degree in Telecommunications Engineering at Universitat Politècnica de Catalunya, a Postgraduate degree in Telecommunications Management at Institut Català de la Tecnologia and a Master in Marketing and Sales in EAE Business School

SAULINO ANIELLO
HEAD OF DEVELOPMENT OF MEDIA APPLICATIONS, KINETON

Passionate about technology, Nello joined Kineton since its foundation. He started his journey creating the Kineton's HbbTV development framework. He has become Head of Development of Media Applications. The passion for technology and innovation in development processes has lead Kineton to become a leader in the development of media applications.
Nello follows the entire development process, from the collection of requirements through to maintenance, he is in charge of various media projects, being always in close contact with the customer in the pursuit of continuous improvement.

SAVAGE STUART

I have worked in the TV industry for over 30 years, firstly in broadcasting (terrestrial, cable and satellite), then network operator and currently as a CE manufacturer. I have both business and engineering degrees and use all this experience to work on both the commercial and technical aspects of our industry. I am currently Director of Innovation and R&D for LG Electronics, responsible for TV platforms across all of Europe. I participate in many standardisation activities and am currently a Steering Board member of HbbTV.

THEVENOT SYLVAIN

Sylvain brings a successful track record of 25+ years' experience of designing new products with customer experience at the heart, and rolling them out internationally, as he did for market leading Communications and Content applications across 30 countries in Vodafone, as well as managing large fixed and mobile telecoms P&Ls (TalkTalk, Vodafone, EE).
Sylvain joined the Executive Committee of Netgem in 2015, creating the London office of Netgem Group, a well-established leader of Connected TV products since 1996.

He has played a key role in transforming the Netgem Business model from a 'STB vendor' to a 'Service provider' now achieving 90% recurring revenue and high growth, focusing on innovations for Telecom and Media service providers with a fully managed 'Content-as-a-service' approach.
Sylvain launched 'EE TV' in 2014 establishing as the most innovative Multi-screen TV experience with multiple Industry awards, and subsequently launched 'Netgem TV' in the UK, the 'super aggregator TV service' with Freeview Play at the heart completed by the most popular OTT services such as Amazon Prime, Youtube, Britbox, BT Sport etc... now adopted by 15 Fibre ISPs and launching with TalkTalk for their next generation 4K service.

THI THANH VAN NGUYEN
HEAD OF TV INTERACTIVE MIDDLEWARE DEVELOPMENT AT SAMSUNG.

Van leads a team that provides solutions for HbbTV and ATSC 3.0 Interactive Content. Prior to her current role, Van had been responsible for cooperation with regulators and standard bodies on Digital TV standardization in CEE and Africa from 2008 to 2013. She has actively contributed to the development of technical specifications for DVB-T in Poland. From 2012 to 2015, Van was the Vice-Chair of the Digital Broadcasting section at the Polish Chamber of Commerce for Electronics and Telecommunications. Van joined HbbTV Testing Group in 2011. She was elected group Vice-Chair in 2013 and group Chair in 2018. Van received the award for the Outstanding Contribution to the Process of Digital Transformation in Poland in 2014 and the award for the Best Individual Contribution to the HbbTV Association in 2017.

VALIENTE PEDRO
INTERNATIONAL BUSINESS DEVELOPMENT MANAGER AT KINETON

Pedro Valiente is an International Business Development Manager at Kineton, responsible for driving the growth of Kineton's business in the EMEA region. Prior to this has managed device testing and certification for the Italian conformance regimes and has supported the TV and STB manufacturer in their product development process in order to comply to Italian specification, including HbbTV. Personally involved in the migration from MHP to HbbTV in Italy. Education includes an M.A. in engineering and executive course in project management. Pedro is currently member of the "UHD FORUM Italia" board, HbbTV and DVB groups and has been member of the HbbTV Steering Board for four years."

VAN BOVEN CHRISTIAN
SENIOR VICE PRESIDENT, CLIENT SOLUTIONS & INTEGRATION AT NAGRA

As Senior Vice President, Client Solutions & Integration at Nagra, Christian Van Boven helps operators and D2C brands to evolve their multiscreen presence in video and fan engagement. With his global perspective, he is a recognized expert in video technology since 20+ years. His career has focused on IPTV and multiscreen engineering with a keen understanding of how the business challenges can be translated into a stream of ongoing innovation. As VP at Alcatel-Lucent, he created the industry-leading IPTV solution in the early days. At Nagra, he spearheaded the transition to cloud technology and agile development methodologies. His current focus is on client technologies and user experience in a world increasingly dominated by technology giants. He holds a degree in Electrotechnical Engineering from University Ghent (Belgium) and a M. Sc. in Telecom Network Engineering from Télécom Paris.

VETU FRANK

Working for almost 15 years in the TV/Radio environment, through the production, the infrastructure, the launching of different TV Channels and a lot of really challenging broadcast projects, i choosed now to work in a digital environment with this really challenging and ambitious project of Salto. The goal is to build and to follow the evolution of the consumption to bring to the end user to the best and the sweet experience as possible.

VAN LAEKE RUTH
CERTIFICATION MANAGER, TP VISION

Ruth Van Laeke works as certification manager for TP Vision. Having joined Philips R&D in 2002, she has expertise in several domains. From validation in the earlier years to software project leading and project management later on. As certification manager she is responsible for the compliance of the newly developed TV platforms to the broadcast standards and operators requirements, within Europe and Russia. Title of the speech : "HD+ OpApp development : From takeoff to successful landing" Hence I will talk about how we approached the integration of the HD+ OpApp in our products: explain on the project organization, cooperation with external partners, the challenges and share some learnings.

WILLEMSEN MICHIEL

Michiel Willemsen is a sales director responsible for selected,strategic, accounts in Europe. Michiel joined Irdeto in 1996 as liaison officer for various joint ventures and co-operations aimed at developing products based on the DVB standard. Prior to that Michiel spent 17 years at Digital Equipment Corporation in a range of roles. Michiel is passionate about achieving a box-less TV solution that appeals equally to Pay-media operators and their customers as well as to free-to-air viewers.

WINOGRAD JOE
CO-FOUNDER AND CHIEF TECHNOLOGY OFFICER OF VERANCE CORPORATION

Joe Winograd is the Co-founder and Chief Technology Officer of Verance Corporation and has directed the company's development of watermark technologies and solutions since 1995. He led Verance's efforts to establish the company's technology as the industry standard for movies, television, and music and has guided its deployment in hundreds of millions of consumer electronics and entertainment products. Joe represents the company in multiple standards bodies and industry consortia and has been a featured presenter at numerous industry events.

HbbTV

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