

# HD+ Germany: ExpressPlay XCA direct-to-TV broadcasting



## Industry

Media & Entertainment

## Location

Germany

## Website

<https://www.hd-plus.de>

## Solution

ExpressPlay XCA™  
(based Marlin DRM)

## Customer profile

HD PLUS GmbH ("HD+") is a wholly-owned German subsidiary of SES, a leading global satellite operator based in Luxembourg with a fleet of more than 70 satellites. HD+ was founded in May 2009 and operates a B2C/DTH (direct-to-home) platform for broadcasters in Germany to deliver HD and Ultra HD (UHD) content to over 2 million paying subscribers. The programs can be received via the Astra satellite system (19.2° East).

With HD+, TV fans can watch 40 free-to-air HD channels as well as 24 major private channels in HD quality. HD+ viewers with the appropriate equipment can also watch two UHD channels, RTL UHD and UHD1 by Astra/HD+. Viewers can watch games from the UEFA European Leagues and other sports events, and the latest and most popular series, movies and shows in brilliant UHD quality.

Until 2019, HD+ was operating solely a traditional conditional access system (CAS), which required either a set top box (STB) or a conditional access module (CAM) with smart card. HD+ was additionally looking for a solution that would allow it to broadcast premium content directly to smart TVs (D2TV) without requiring the use of STBs or other external hardware such as CAM modules, while maintaining or improving on the traditional CAS protection provided by external receivers.



## German smart TV market

The D2TV requirement should be seen in light of the growth of the German market for smart TVs with built-in support for the HbbTV standard. According to GfK Retail & Technology<sup>1</sup> 2019-2020 market comparisons:

- A total of 6.6 million smart TVs were sold in Germany in 2020
- Despite, or because of, COVID-19, this volume was up 20% from 5.5 million in 2019
- Of the TV sets sold in 2020, 3.2 million or more than 48% had a screen size of 55" or larger, up by more than 30% compared to 2.4 million in 2019
- A staggering 89% were delivered HbbTV ready, up from 83% in 2019



## HD+ Sender-Paket: Fernsehen in brillanter HD- und UHD-Qualität

Wir haben, was du brauchst: Unser HD+ Sender-Paket bietet alles für dein perfektes TV-Erlebnis.

**24** Private HD-Sender

**2** Ultra HD-Sender

**| 40** Freie HD-Sender

HD+ product

Source: <https://www.hd-plus.de/produkte>



It should also be noted that of the approximately 47 million smart TVs sold in Germany since 2012, over 90% support the HbbTV standard.<sup>2</sup> Therefore, it is safe to say that the German broadcast market is quite homogeneous since it is dominated by the DVB (digital video broadcasting) and HbbTV (hybrid broadcast-broadband) industry standards. This creates an opportunity for TV OEMs to produce smart TVs ready for D2TV broadcast services if only the content protection requirements from studios could be satisfied by smart TVs without the need for external STBs/ CAMs with CAS protection. This case study will explain how.

## The challenge

The key challenge today for any broadcaster, whether offering services over satellite, cable or terrestrial networks, is to maintain and preferably enhance the competitive position versus rapidly proliferating and growing over-the-top (OTT) operators. This is also true for operators like HD+ in Germany.

Addressing and overcoming the challenge requires that operators improve their performance in several areas, such as premium services content protection, operational efficiency, streamlining of CPE (consumer premises equipment) choices, ease of consumer service sign-up, and finding compelling content. The challenge also forces broadcasters to consider expanding their services by incorporating OTT services within the operator's offer and home screen, or even with dedicated buttons on the remote control for services such as Netflix. In short, it is essential to prepare for a future characterized by cost-effective D2TV broadcasting while enabling converged broadcast-OTT services directly to smart TVs.

### Challenge highlights

- Find an alternative solution for secure direct-to-TV broadcasting without requiring STBs/CAMs
- Provide a consistent and intuitive user journey, from sign-up to content discovery
- Meet strict content protection and security guidelines defined by premium content providers and MovieLabs, or risk loss of programming and revenue.

Broadcasters are continuously challenged by declining subscriber and advertising rates for their traditional services, and increasingly evaluating options for adding internet-based streaming services to their platform amid immense competitive pressure from big OTT players. Providing a combo of broadcast and OTT streaming services has typically required an operator to manage two content protection solutions—a CAS, which is used in legacy satellite and terrestrial broadcasting, and a DRM, which serves OTT streaming.

## The solution

After a thorough evaluation, HD+ selected Intertrust ExpressPlay XCA™ as an alternative solution to protect and manage its D2TV broadcast services.



**ExpressPlay XCA™**

ExpressPlay XCA is a cloud-based broadcast security solution, based on Marlin DRM, which enables direct-to-TV broadcasting to smart TVs without the need for STBs/ CAMs or external security hardware as otherwise required in traditional CAS deployments.

Built on the Marlin DRM engine, ExpressPlay XCA lets broadcasters deliver content directly to smart TVs via DVB channels. The Marlin DRM specification was created by a consortium led by Intertrust, Panasonic, Philips, Samsung, and Sony.



The ExpressPlay XCA back-end runs as a multitenant SaaS on the AWS cloud. The system is deployed using a microservice architecture that takes advantage of the availability and scalability offered by Amazon Elastic Kubernetes Service (EKS) in conjunction with Dynamo DB. ExpressPlay XCA, like other ExpressPlay services, relies on AWS elements such as WAF for the web application firewall, CloudFront for the CDN, and last but not least, on CloudWatch for logging and monitoring.

Secure D2TV delivery is made possible in view of that smart TVs increasingly come equipped with advanced security features similar to high-end STBs, such as hardware root of trust, trusted execution environment (TEE), and secure video path (SVP).

ExpressPlay XCA enables service providers to reduce total cost of ownership (TCO) for D2TV broadcasting by adopting a DRM-based converged security strategy. D2TV delivery dramatically reduces CAPEX and OPEX by eliminating the cost and logistics of STBs and CAMs.

The transition of the content protection functionality from external devices to the smart TV SoC has plugged the HDMI security vulnerability. So-called HDMI strippers are now useless since the content remains encrypted until it reaches the smart TV SoC, and it is then safely decrypted in a controlled environment. This protects the revenue for both rights holders and HD+ as a service provider, while also lowering the TCO for operators since they are no longer required to provide STBs, smart cards or CAMs.



## VESTEL

More than half of all UHD TV sets sold in Germany have HD+ on board.<sup>3</sup>

The Turkish OEM Vestel, Europe's largest TV manufacturer, produces more than 100 of the world's TV brands.

Vestel has integrated direct reception of HD+ into HD and Ultra HD TV sets of its brands Toshiba, Telefunken, JVC, Hitachi, Techwood, ok., Kendo, Hanseatic, and Dual, via the HD+ HbbTV OpApp.<sup>4</sup>

No additional hardware such as STB, CI+ module or smart card is required for reception. The TV sets are available in retail stores across Germany with HD+ as a factory default.

HD+ has already deployed D2TV broadcast service using ExpressPlay XCA on Vestel smart TV sets. Additional TV manufacturers are in the process of integrating the XCA client for release in new smart TV models this year including Sony, which is adding HD+ support into all its Google TV models from 2021.<sup>5</sup>

ExpressPlay XCA is a cost-effective content security solution that protects current services while offering the flexibility to quickly address the challenges of the converged broadcast-OTT future.

ExpressPlay XCA is also supported via Media CAS Plug-in for Android TV, which expands the market further for D2TV broadcasting with XCA content protection.



Toshiba smart TV with HD+



## The result

The HD+ direct-to-TV broadcast service based on ExpressPlay XCA was launched in Q2 2020, utilizing Vestel with pre-integrated XCA client security. An HbbTV operator app (Op App) was developed by HD+. German homes enabled for Astra satellite DTH reception, and with a TV set connected to the internet, can activate HD+ easily.

The results: more convenience for viewers, and new opportunities for TV brands/OEMs and video service providers:

- For viewers, the “plug and play” support means that HD+ is now much easier to use.
- For TV brands/OEMs, the HD+ cooperation with Vestel proves that “HD+ integrated in TV sets” is a new and attractive marketing argument.
- For HD+ as platform for broadcasters to deliver HD and Ultra HD the argument is unbeatable compared to traditional pay-TV: Just purchase a new smart TV, take it home, plug it in, and start enjoying the HD+ service right away.

The cloud-based ExpressPlay XCA is also lowering the TCO for HD+ since there is no longer a need for an on-premise, server-based configuration.

The HD+ personalized TV viewing experience and user journey is further enhanced by the convenient user functions, in German called HD+ Komfort-Funktion, such as:



- **Instant Restart** allows the viewer to restart selected programs from the beginning at any time



- **7-day-catch-up TV** provides convenient access to a large number of programs



- **TV-Guide** allows the user to search both live programming and media libraries.

Everything is available at no initial cost and without obligation for six months after activation.

The ExpressPlay security team worked closely with the customer staff and TV manufacturers to realize the HD+ vision of secure D2TV broadcasting without the need for STBs/CAMs. The transition of the content protection functionality from external devices to the smart TV SoC has also plugged the HDMI security vulnerability. This protects the revenue for both rights holders and HD+ as a service provider. ExpressPlay XCA also lowers the total cost of ownership for operators since they no longer have to provide receivers or CAMs. It is truly a win-win situation for all parties ranging from the content and rights holders to video service providers and TV makers, and last but not least, the consumers.

## Sources

- 1 <https://www.broadbandtvnews.com/2021/01/25/smart-tv-sales-continue-to-rise-in-germany-in-2020>
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- 3 <https://www.broadbandtvnews.com/2021/04/21/sony-integrates-hd-directly-into-tv-sets/>
- 4 <https://www.broadbandtvnews.com/2020/07/23/vestel-integrates-hd-into-tv-sets-via-hbbtv-opapp>
- 5 [ibid., Broadband TV News 2021/04/21](#)

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