DVB WORLD 2022
#UNCONFERENCE
18 May 2022 • Maison de la Poste, Brussels
What happened? What happened next?
DVB webinar • 3 November 2022, 14:00 CET

DVB World 2022
DISCUSSION • DEBATE • PROBLEM-SOLVING • BRAINSTORMING • MEANINGFUL CONVERSATIONS • COLLABORATION • TEAMWORK • SHARING • INSPIRATION

DVB WORLD 2023
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MAISON DE LA POSTE
BRUSSELS
THURSDAY 22 JUNE 2023

"…the best possible format to leverage attendee expertise for fruitful discussions. In the end, there was a real sense that the discussions were going to change things."
Andreas Tai, Access to Accessibilty

"The unconference format enabled open discussions around topics and opinions that would never have been shared in a traditional one-to-many presentation style."
Thomas Kramer, MainConcept

"This first new version of the DVB world was very inspiring. This new method of co-construction allowed me to create links with many other participants (broadcasters, manufacturers, ...) and to interactively choose the topics I wanted to follow. ."
Gaëlle Kaminsky, TDF

"The unconference format worked very well. Every session I attended was relevant to my interests and I could have usefully attended many of the others."
William Cooper, Service List Registry

"I was still buzzing when I got back from Brussels. It was an inspirational event where we were given the permission to really engage in debate, discussion and free thinking."
Elfed Howells, Huawei

"I really appreciated the laser-sharp focus of the event – very few people were trying to sell anything."
Juha Joki, Sofia Digital

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Supporter packages for DVB World 2023

DVB Members	**€1,000**
Non-members	**€2,000**

- **3 x event registrations (for your staff or clients)**
- **visibility before, during and after the event**

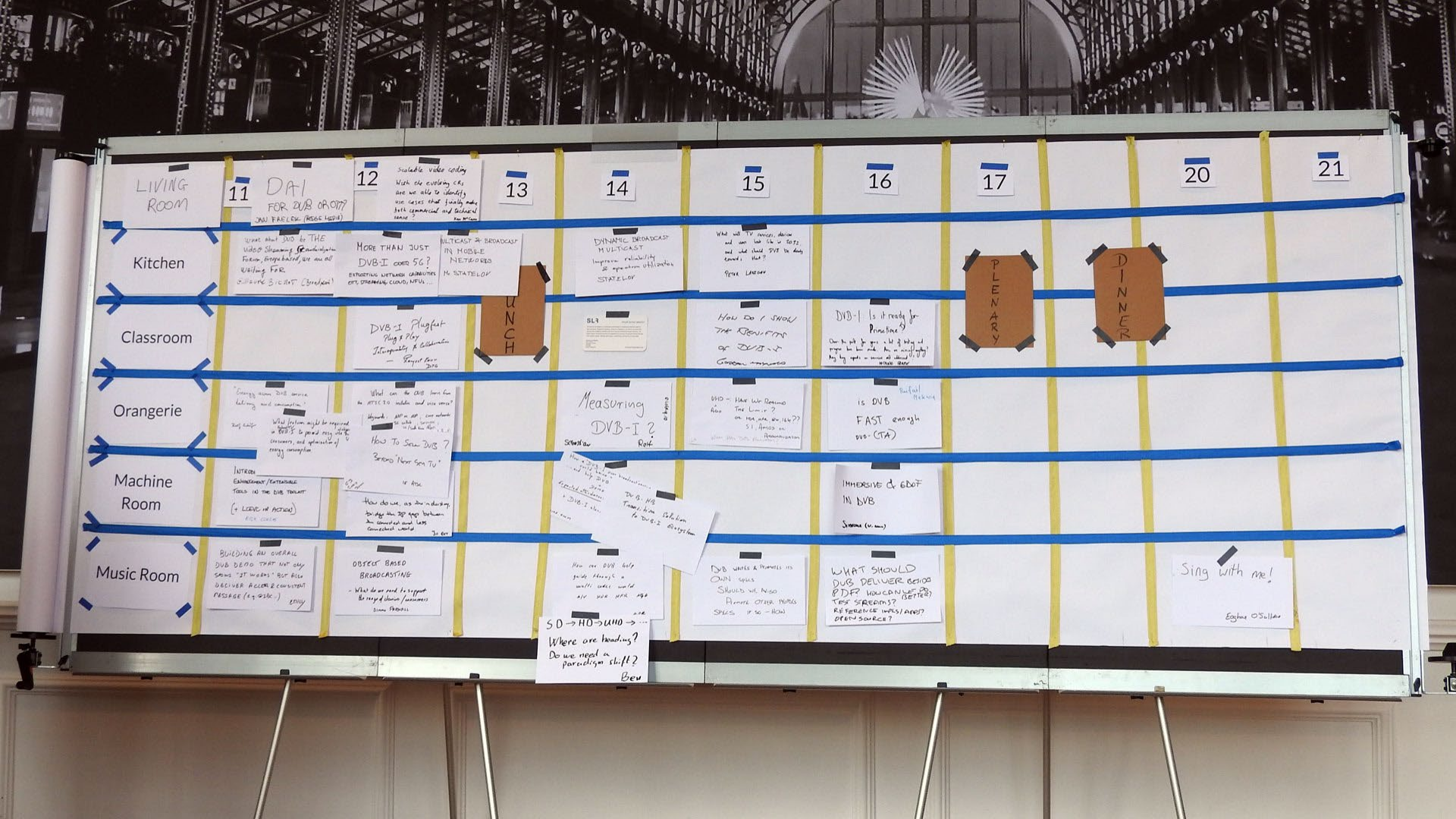
InterDigital Quadrille RedgeMedia SES SLR

Sofia Digital NOVA

Recap of DVB World 2022

What happened?

What happened next?


LIVING ROOM
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DAI FOR DVB OR OTT?
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17
20
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Kitchen
Classroom
Orangerie
Machine Room
Music Room
MORE THAN JUST DVB-I OVER 5G?
DYNAMIC BROADCAST MULTICAST
STATELOV
UNCH
PLENARY
DINNER
DVB-I Plugfest
How To Save DVB?
Measuring DVB-I?
IS DVB FAST enough
IMMERSIVE & EDOF IN DVB
OBJECT BASED BROADCASTING
WHAT SHOULD DVB DELIVER BEYOND PDF?
Sing with me!
SD → HD → UHD → ...
Where are heading?
Do we need a paradigm shift?

- Object-based broadcasting
- Designing an overarching DVB-I demo for IBC2022
- Introduction of enhancement and scalability tools in DVB
- DVB as THE video streaming standardization body
- Introducing the DVB Service List Registry
- DVB writes and promotes its own specs. Should we also promote other people's specs. If so, how?
- DVB-HB (Home Broadcast) – Transition Solutions to DVB-I Ecosystem
- DVB-I and 5G-MAG, DVB-I over 5G System
- Immersive & 6DoF in DVB
- What can DVB learn from the ATSC 3.0 initiative and vice versa? / How to sell DVB? Beyond "Next Gen TV"?
- DVB-I Plugfest
- Dynamic Ad Insertion – Is it ready for DVB broadcast or purely for OTT?
- Measuring DVB-I
- Native IP: How do we, as the industry, bridge the IP gap between the connected and less connected world?
- DVB-I: Is it ready for Primetime?
- Dynamic Broadcast Multicast – Improve reliability and spectrum utilization
- Energy-aware DVB service delivery and consumption
- How could a DVB-I-over-broadcast profile improve the end-user UX?
- How do I show the benefits of DVB-I?
- Is DVB "FAST" (free ad-supported streaming television) enough?
- Scalable Video Coding
- SD -> UHD, what/when is good enough? / How can DVB help guide through a multi codec world?
- What should DVB deliver besides PDF?
- What will TV services, devices and users look like in 2032, and what should DVB be doing towards that?

DVB World 2022 – Session 1

DVB as THE video streaming standardisation body

Proposed by:

Guillaume Bichot (Broadpeak)

Session snapshot:

- What would DVB have to do to address serious standardization in the video streaming space?
- There is a need for interoperable solutions in the streaming world
  - There's only one group that does specification group inside the Streaming Video Alliance
  - DASH-IF does some work, but its scope isn't wide enough
- Working methods should be closer to IETF – publish drafts, frequently, open the groups as far as possible

What happened next?

- Session host still intends to make a concrete proposal to DVB to move forward with this idea

DVB World 2022 – Session 2

Delivering a clear message with an overarching DVB-I demo at IBC2022

Proposed by:

Emily Dubs (DVB Project)

Session snapshot:

- For IBC2022, what would represent a comprehensive demo that shows what DVB can do, the direction we're taking and the problems we solve?
- For DVB-I, need to capture the full ecosystem and main constituencies
- All delivery methods to be shown, with at least one common service on all devices
- Show how the services adapt to devices and the bridge between DVB-I, OTT and HbbTV

What happened next?

- Very successful DVB-I demo at IBC2022, with 100+ services, several receivers, and clear messaging
- Nine DVB Members as demo partners
- German DVB-I pilot also shown (with 19 partner organizations involved)

DVB World 2022 – Session 3

Introduction of enhancement and scalability tools in DVB

Proposed by:

Rick Clucas (V-Nova)

Session snapshot:

- Introducing enhancement and scalability tools which could be used in DVB and how they can be of benefit
- The session focused around an example of such tools via an LCEVC live 4Kp60 demo
- Can allow more higher definition content to be produced and broadcast thus exploiting new TV sets and enabling users to watch higher quality content
- Preservation of the quality of the base service while providing an enhanced service
- Carriage of enhancement layer and base layer in DVB
- How this approach would work with DVB-I

What happened next?

- Work is on hold awaiting DVB Steering Board approval of the Next-Generation Video Coding Phase 2 Commercial Requirements

DVB World 2022 – Session 4

Energy-aware DVB service delivery and consumption

Proposed by:
Ralf Schaefer (InterDigital)
Simon Parnall (Ofcom)

Session snapshot:

- Brainstorm ideas on what DVB could do to help reduce energy consumption of DVB services
- Many ideas put forward:
  - energy scores, green metadata for video codec and display control, filmgrain to reduce bitrate, increase lifecycle of TVs via SW update, machine learning to automate IRD power consumption, automated detection of a viewer in front of TV, etc
- Two participants agreed to research relevant regulations

What happened next?

- DVB has now launched a study mission on energy-aware delivery and consumption (CM-SM-EADC)

DVB World 2022 – Session 5

Scalable video coding – with the evolving CRs are we able to identify use cases that finally make both commercial and technical sense?

Proposed by:

Ken McCann (Zetacast)

Session snapshot:

- History of scalable codecs and why they didn't work in the past
- New approaches to scalability
- Scalable video coding is there but it seems that the only way to do it properly is LCEVC, from both a technical and commercial perspective
- ATSC adopted SHVC – but not aware of deployment yet
- Scalable approaches also have a positive impact on the environmental aspects (re-use, lower transmission costs, etc.)

What happened next?

- Work is on hold awaiting DVB Steering Board approval of the Next-Generation Video Coding Phase 2 Commercial Requirements

DVB World 2022 – Session 6

DVB-I and 5G-MAG, DVB-I over 5G system

Proposed by:

Jordi Giménez (5G-MAG)

Dusan Statelov (MAINDATA)

Session snapshot:

- Brainstorm session on DVB-I over 5G, 5G-MAG,and broadcast/multicast
- Support of mobile devices, chips
- Understanding the technology and terms (e.g. broadcast, linear, live, on-demand)
- Better understanding of use cases and demand
- Hot topics: AR, AI, energy saving/CO_2, …

What happened next?

- These issues are being addressed within the 5G-MAG Reference Tools project with its Target 2023 initiative
- The joint task force between DVB and 5G-MAG continues its work

DVB World 2022 – Session 7

DVB Service List Registry

Proposed by:

William Cooper (SLR)

Session snapshot:

- Introduction to the Service List Registry, providing a federated online directory to support DVB-I, hybrid services and online transition
- Importance of enabling entire ecosystem, operational management, decentralized control, regulatory support, usability, availability, security, privacy
- Practical deployment – available to support trial services

What happened next?

- Positive response from stakeholders
- SLR pilot scheme launched at IBC2022
- Continuing discussions about pilot services

DVB World 2022 – Session 8

Measuring DVB-I

Proposed by:

Sebastian Siepe (einbliq.io)

Session snapshot:

- To find out if there are demand and solutions for measuring the use, quality and success of DVB-I
- When broadcasters publish their service via DVB-I, don't they want to see how their services are delivered (being quite dependent on the client implementation)?
  - Measurement data is relevant for optimizing content distribution
  - Existing tracking solutions can address some aspects but no solution for also analysing client behaviour
- Group was not sure about all relevant technical details

What happened next?

- Session hosts still plan to discuss ideas with TM-I chair

DVB World 2022 – Session 9

DVB-I plugfest

Proposed by:

Ranjeet Kaur (DTG Testing)

Session snapshot:

- Dedicated DVB-I Plugfest was hosted, exploring a seamless transition to IP
- Controlled platform for DVB-I clients/receivers (CE manufacturers and app developers), service list providers, content providers, broadcasters and platform operators to work collaboratively to ensure interoperability and compliance to the technical specification
- Plug and play to test the end-to-end chain.

What happened next?

- Several stakeholders participated in the plugfest
- DTG Testing held a further plugfest with DVB-I elements in June 2022
- IBC2022 demos also moved things forward on interop, with several companies involved

DVB World 2022 – Session 10

What should DVB deliver besides PDFs?

Proposed by:

Jon Piesing (TP Vision)

Session snapshot:

- Test streams, reference apps, etc., can help accelerate market deployment of a spec
- Early development of open source components can help circumvent the ‘black box’ effect seen in some V&V activities
  - There’s a difference between libraries and apps, with the former usable as part of a commercial implementation
- DVB should consider supporting plugfests; also 24/7 streams of technologies in TS 101 154

What happened next?

- DVB Technical Module is actively considering open source projects that DVB could support
- Live V&V streams also under discussion
- PCM considering ways to incentivize involvement of the open source community

DVB World 2022 – Session 11

Immersive and 6DoF in DVB

Proposed by:

Simone Ferrara (V-Nova)

Session snapshot:

- Various solutions were discussed and presented, including use cases (PresenZ format, V-PCC and MIV)
- Questions were raised about what DVB should do for this: is immersive more a production point or something for consumers?
- The audience is changing – in 5/10 years they will want to interact with content like they do with games, etc.
- It is expected to be available in the next 4 years

What happened next?

- Draft Study Mission prepared by proponents
- Gather supporting companies interested in Study Mission
- If sufficient support is gathered, submit it to DVB Commercial Module for consideration

DVB World 2022 – Session 12

DVB-I – is it ready for primetime?

Proposed by:
Nicholas Frame (TP Vision)

Session snapshot:

- Discussion to determine whether DVB-I is ready for commercial deployment, based on testing and experimentation from the past three years
  - If not, what is missing?
- It enables a rich UI, helps users get easier access to their preferred content, can improve robustness of delivery (with its fallback mechanism), and can reduce friction for users with SSO and search integration

What happened next?

- The answer was “yes”!
- No critical points raised, but feature requests and bug fixes continue to be submitted to CM-I and TM-I
- IBC2022 demo integration was a help in this regard
- New DVB-I Forum for implementers

DVB World 2022 – Session 13

What can the DVB learn from the ATSC 3.0 initiative and vice versa? / How to sell DVB? Beyond “Next Gen TV”?

Proposed by:

Allan Hammershøj (mediathand)

Chris Johns (Sky)

Session snapshot:

- ATSC been very active in promoting its latest ATSC 3.0 “Next Gen TV” solution around the world
- What can DVB learn from ATSC in marketing, strategy and technology?
- It’s not “us and them” – DVB is working with ATSC on possible harmonization opportunities
- DVB’s approach has appeared more fragmented
- DVB-NIP is a step in the right direction
- Should DVB be present again at BroadcastAsia?

What happened next?

- DVB and ATSC are in active discussion on collaboration at the service level.
- DVB continues to enhance its IP-centric solutions
- Messaging continues to evolve towards a more holistic approach

DVB World 2022 – Session 14

DVB-HB (Home Broadcast) – transition solutions to the DVB-I ecosystem

Proposed by:

Ralph Edeine (Eutelsat)

Session snapshot:

- Demonstration and presentation of a DVB-HB solution in action
- Exchanges on the integration of DVB-HB within the DVB-I ecosystem

What happened next?

- DVB-HB was successfully integrated with the DVB-I demos at IBC2022
- Verification & Validation of the specification being finalized
- ETSI Technical Spec on track for publication in Feb/Jun 2023

DVB World 2022 – Session 15

Is DVB “FAST” enough?

Proposed by:

Rufael Mekuria (Unified Streaming)

Session snapshot:

- Discussion on DVB’s standardized solutions that apply to Free Ad-supported Streaming TV (FAST)
- Overview of progress in DVB-DASH on signalling of Targeted Advertising (DVB-TA) breaks in SCTE
- A proposal on reporting is required and exploration of using the IAB (Interactive Advertising Bureau) Video Ad Serving Template in DVB-I & DVB-DASH

What happened next?

- DVB-TA part 3 has been published as a DVB BlueBook (DASH signalling)
- DVB is exploring potential collaboration with IAB (Interactive Advertising Bureau)
- DVB TM-STREAM continues its work in this area

DVB World 2022 – Session 16

Native IP: How do we, as the industry, bridge the IP gap between the connected and less connected world?

Proposed by:
Jill Mulder (EKT)

Session snapshot:

- Make the software open source to make it more accessible?
- The standard and market solutions need to be given more visibility
- Need a roadmap for operators to go from MPEG-2 to NIP with the satellite providers, including clear business modelling
- Make NIP also deployable on terrestrial (DVB-T2) networks

What happened next?

- IBC2022 demos of DVB-NIP were successful
  - On DVB booth and elsewhere
- Implementers are ramping up promotion of solutions
- No real interest yet from terrestrial implementers yet

Dynamic Broadcast Multicast – improve reliability and spectrum utilization

Proposed by:
Dusan Statelov (MAINDATA)

Session snapshot:

- Aim was to brainstorm and get feedback
- Dynamic broadcast can, compared to current constant broadcast, increase availability in bad weather and increase capacity in good weather
- Satellite versus DTT SFN scenarios were discussed.
  - For DTT, only the entire network can be modified (not individual SFN cells)

What happened next?

- No special features need to be added to the standards, but application guidelines may be helpful
- Session host is in dialogue with TM-MCAST co-chairs

DVB World 2022 – Session 18

DAI (Dynamic Ad Insertion): is it now for DVB (broadcast) or still purely for OTT ?

Proposed by:

Jan Frelek (Redge Technologies)

Session snapshot:

- To discuss the adoption of DAI on different European markets and if or how DVB could help
- Strategies vary in different European markets depending on market size, pay TV market share, dominance of broadcasters
- The current target technology for DAI could be HbbTV / DVB-TA+ADB2, improving the UX and dealing with pay TV fragmentation
  - However, it takes cooperation with TV makers and standardization-regulation of TA/ADB2 presence within TV-sets
- The industry should foster a unified vocabulary of DAI-TA related terms for more efficient dialogue

What happened next?

- Mediaset and Fincons demonstrated DVB-TA with HbbTV at IBC2022
- More work required on evangelization and development of common vocabulary
- TVN (Poland) launched DAI in DVB-T via HbbTV, based on custom solution from Nowtilus

DVB World 2022 – Session 19

Object-based broadcasting

Proposed by:

Simon Parnall (Ofcom)

Session snapshot:

- How could taking a component-based approach to media enable us to personalize the viewing experience for different viewers and devices?
- No universal framework for carrying different kinds of component
- Three kinds of component: layers, chunks and transmedia elements
- How much work could take place within DVB and how much would be better handled elsewhere?

What happened next?

- DVB has now launched a study mission on object-based media (CM-SM-OBM)

DVB World 2022 – Session 20

SD to UHD, what/when is good enough? / How can DVB help guide through a multi-codec world?

Proposed by:
Ben Schwarz (Ultra HD Forum)
Chris Johns (Sky)
Nicolai Otto (MainConcept)

Session snapshot:

- Define where we are in the journey towards always better formats and ask if there is a “good enough”
- Value-add of UHD will only be truly visible when content is produced end-to-end for UHD
- Relevant factors include need for user education, environmental concerns, the content and platform, richness of experience, etc.

What happened next?

- Live survey of session participants showed that today's DVB specs are probably "good enough" for the next few years
- Current and new work will be needed for 10-year timeline

DVB World 2022 – Session 21

DVB writes and promotes its own specs. Should it also promote other people's specs. If so, how?

Proposed by:
Elfed Howells (Huawei)

Session snapshot:

- Wide-ranging discussion around how the TV industry has changed and how DVB has and is changing as a result
- DVB's role in a internet-centric world where apps dominate and TVs become more like computers
- Would DVB still attract members if it shifted to primarily promoting the standards of other bodies, e.g. 3GPP?
- DVB should not be only a promotion house

What happened next?

- Working with 5G-MAG on distribution topics
- Continued steps towards closer collaboration with ATSC
- New initiatives to bring more external voices in

DVB World 2022 – Session 22

What will TV services, devices and users look like in 2032, and what should DVB be doing towards that?

Proposed by:

Peter Lanigan (TP Vision)

Session snapshot:

- Aiming to understand market needs in order to better serve them
- Synchronization between portable devices and main screens
- Key drivers are big data and super-aggregation
- More diversity of content but still opportunities for big events, so broadcasting will still make sense
- Trend towards more immersivity, but also towards energy-saving
- DVB will have less influence than it had in the past

What happened next?

- DVB needs to continue to monitor and be agile
- Relevant new work areas kicking off (e.g. Object-Based Media, Energy-Aware Delivery & Consumption, etc.)

DVB World 2022 – Session 23

How could a DVB-I-over-broadcast profile improve the end-user UX?

Proposed by:

Régis Moulin (Eutelsat)

Session snapshot:

- Proposing to DVB, possibly CM-I, to add Commercial Requirements to extend DVB-I content access to broadcast for unconnected receivers

What happened next?

- Following demonstrations at IBC2022, Eutelsat is currently investigating whether a market need exists for such a profile and how it could be introduced into DVB

DVB World 2022 – Session 24

How do I show the benefits of DVB-I?

Proposed by:

Gordon Maynard (OnScreen Publishing)

Session snapshot:

- You have to show DVB-I working to sell it – if people see it, they get it
- But remember that it's often about convincing people about the benefits of hybrid TV first – DVB-I is just a way to implement it.
- We need…
  - Country-specific metadata
  - Multi-vendor trials
  - Simple messages

What happened next?

- Pilots in Germany and Italy
- Successful demonstrations at IBC2022
- Continuous review of messaging around DVB-I
- New DVB-I Forum for implementers

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