TV 3.0
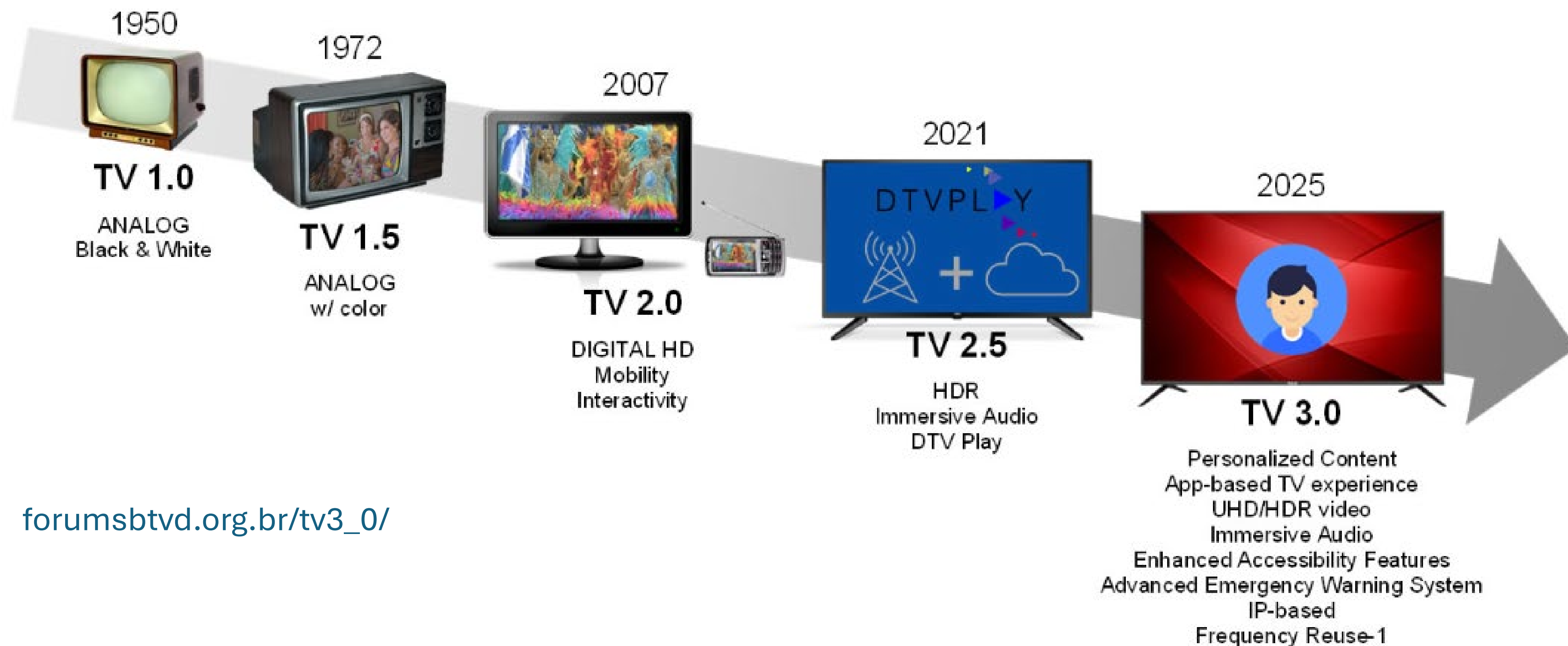# Shaping the Future of Television

the Forthcoming TV 3.0 Broadcast Launch in Brazil

Terrestrial TV Evolution in Brazil

1950

TV 1.0

ANALOG
Black & White

1972

TV 1.5

ANALOG
w/ color

2007

TV 2.0

DIGITAL HD
Mobility
Interactivity

2021

DTVPL▶Y

TV 2.5

HDR
Immersive Audio
DTV Play

2025

TV 3.0

Personalized Content
App-based TV experience
UHD/HDR video
Immersive Audio
Enhanced Accessibility Features
Advanced Emergency Warning System
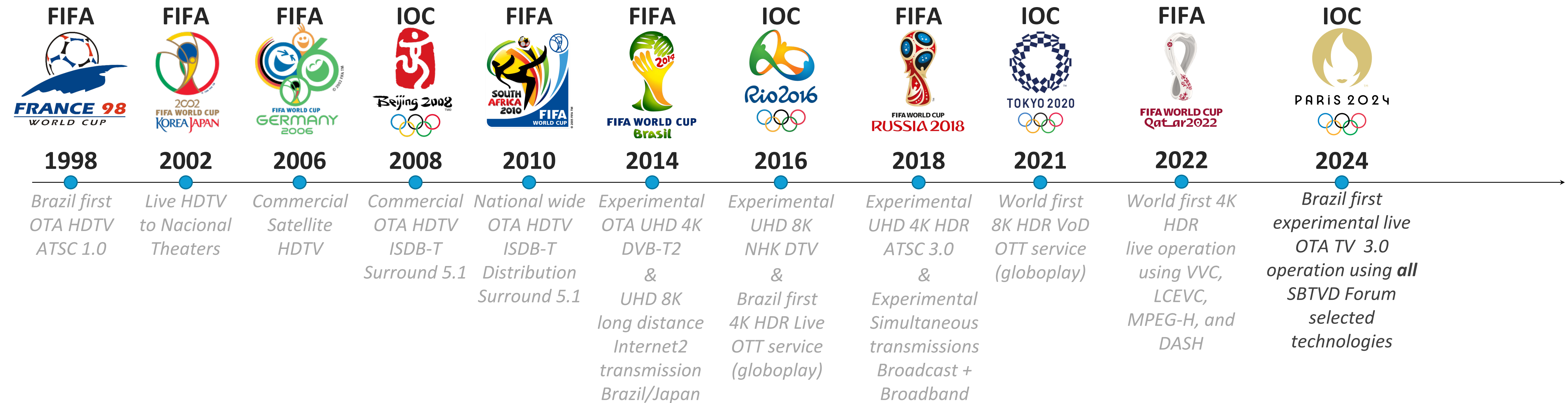IP-based
Frequency Reuse-1

forumsbtvd.org.br/tv3_0/

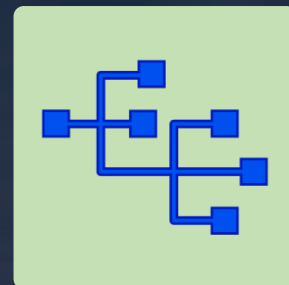# The most advanced broadcast television system in the world

- ✓ Channels as Apps

- ✓ Personalisation and Targeted Advertising

- ✓ Starting from 4Kp60

- ✓ MPEG-H immersive audio

- ✓ VVC – LCEVC – HDR10 Video

… as Standard

an EPIC journey...

globo

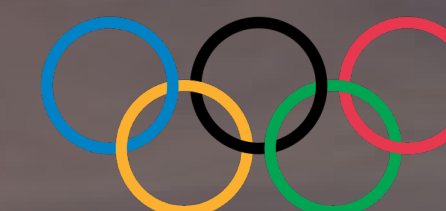| FIFA	FIFA	FIFA	IOC	FIFA	FIFA	IOC	FIFA	IOC	FIFA	IOC
1998	**2002**	**2006**	**2008**	**2010**	**2014**	**2016**	**2018**	**2021**	**2022**	**2024**
Brazil first OTA HDTV ATSC 1.0	*Live HDTV to Nacional Theaters*	*Commercial Satellite HDTV*	*Commercial OTA HDTV ISDB-T Surround 5.1*	*National wide OTA HDTV ISDB-T Distribution Surround 5.1*	*Experimental OTA UHD 4K DVB-T2 & UHD 8K long distance Internet2 transmission Brazil/Japan*	*Experimental UHD 8K NHK DTV & Brazil first 4K HDR Live OTT service (globoplay)*	*Experimental UHD 4K HDR ATSC 3.0 & Experimental Simultaneous transmissions Broadcast + Broadband*	*World first 8K HDR VoD OTT service (globoplay)*	*World first 4K HDR live operation using VVC, LCEVC, MPEG-H, and DASH*	*Brazil first experimental live OTA TV 3.0 operation using all SBTVD Forum selected technologies*

MACRO DIAGRAM

DATACENTER 1

MASTER ROOM 3.0

TV 3.0 LOUNGE TV 3.0

PARIS 2024

SUMMARY

2024.08 @ Rio de Janeiro

MACRO DIAGRAM

PARIS | IBC

INTERNET

RIO | ION

MASTER ROOM 3.0

DATACENTER 1

IP

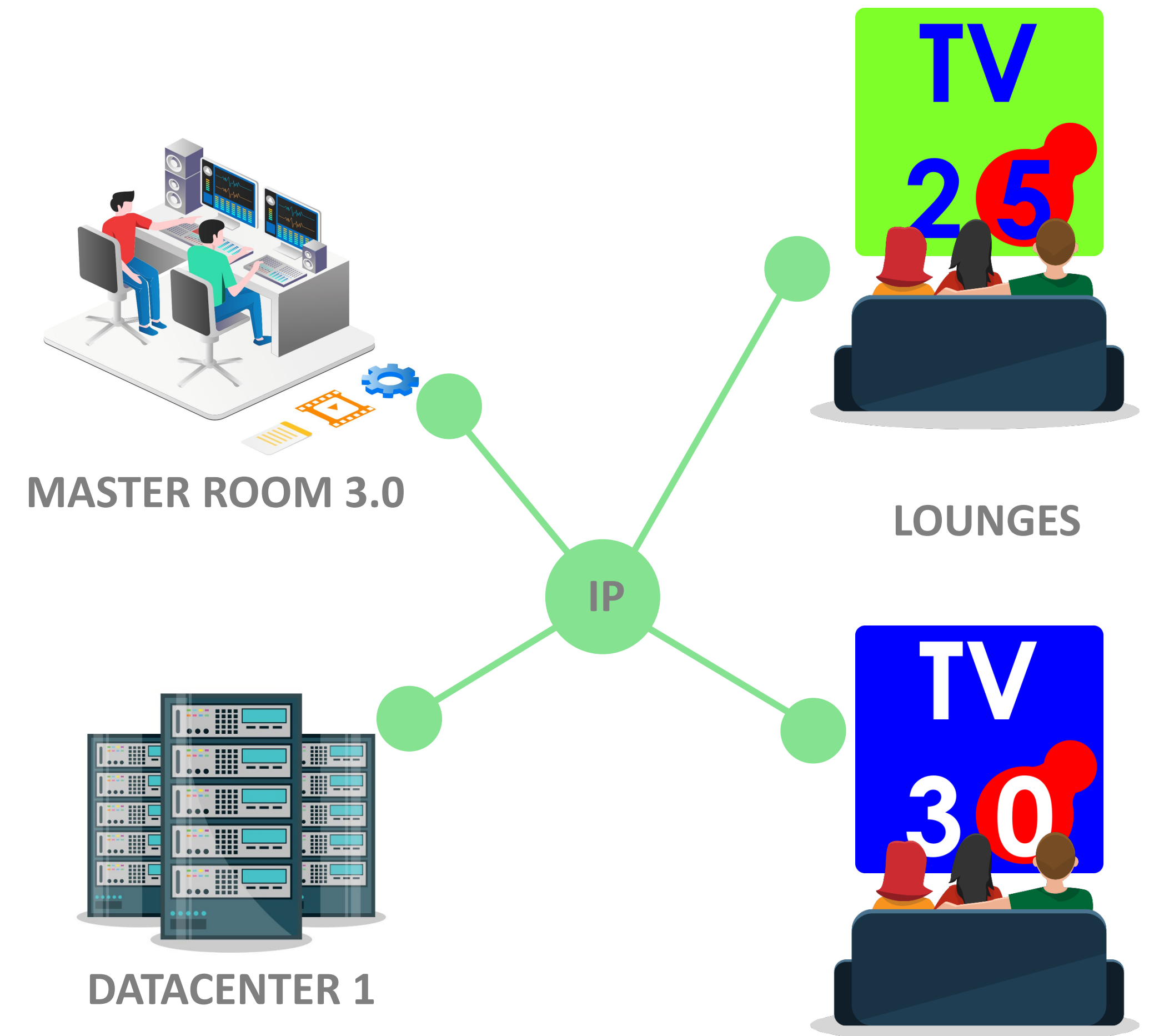TV 2 5

TV 3 0

LOUNGES
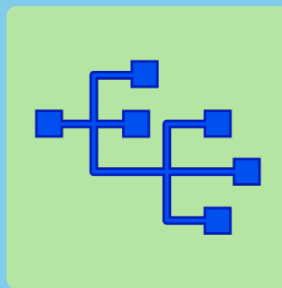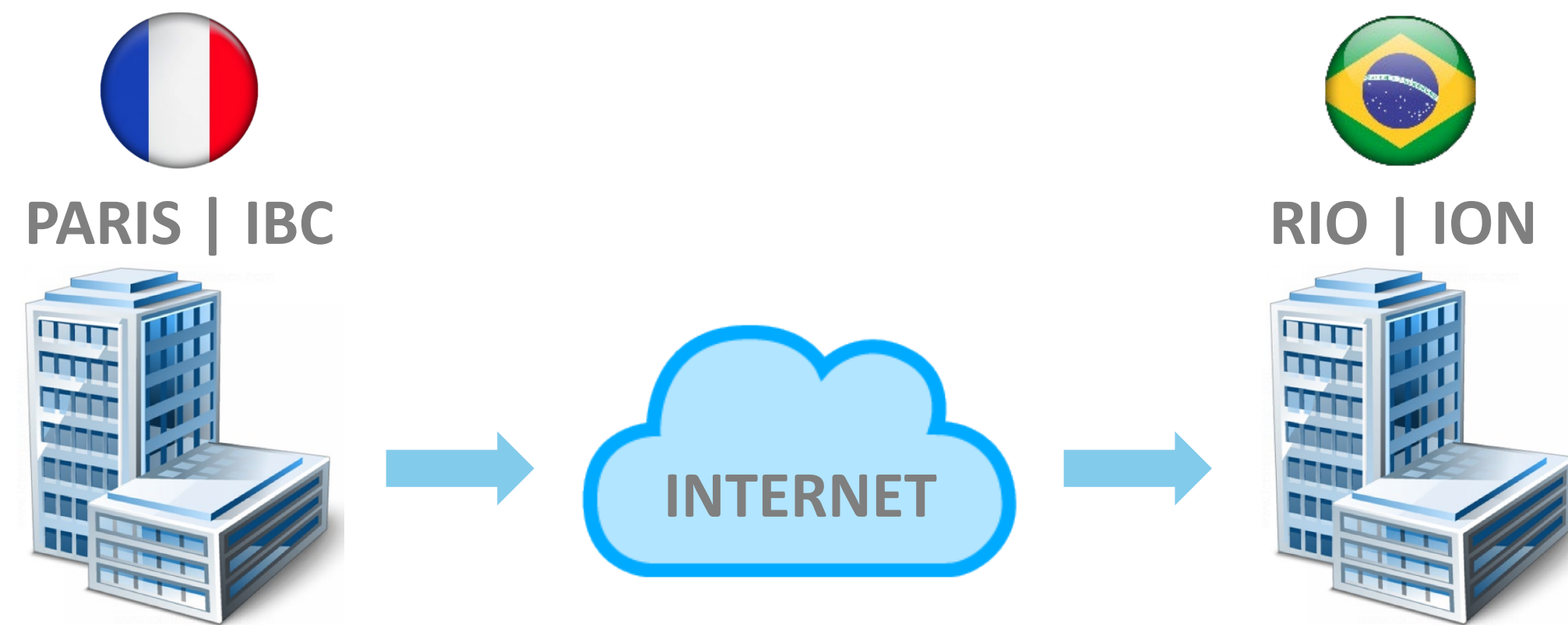
DATACENTER 1

- **RACK 32 >> brings together the entire processing system before coding.**

- **RACK 33 >> brings together the entire coding, packaging and distribution system.**
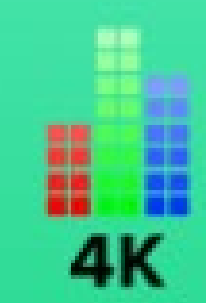
MASTER ROOM 3.0

PARTNERS

TV 3.0 Olimpíadas 2024

Venha assistir as demonstrações com as tecnologias da TV 3.0, escolhidas pelo Fórum SBTVD para o novo padrão de TV Digital brasileiro, numa produção ao vivo com vídeo 4K HDR e áudio imersivo personalizável.

VVC · MPEG-5 LCEVC · MPEG-H AUDIO · 4K · DASH · IMSC1 · ROUTE · HDR

Powered by

globo · ATEME Captivate your audience · MAINCONCEPT · Fraunhofer IIS · V-NOVA · LG

ENENSYS Technologies · harmonic · JIUZHOU · Hisense · MEDIATEK · mirakulo

salsa SOUND · sapec · REALTEK · intel · spin digital · SAMSUNG

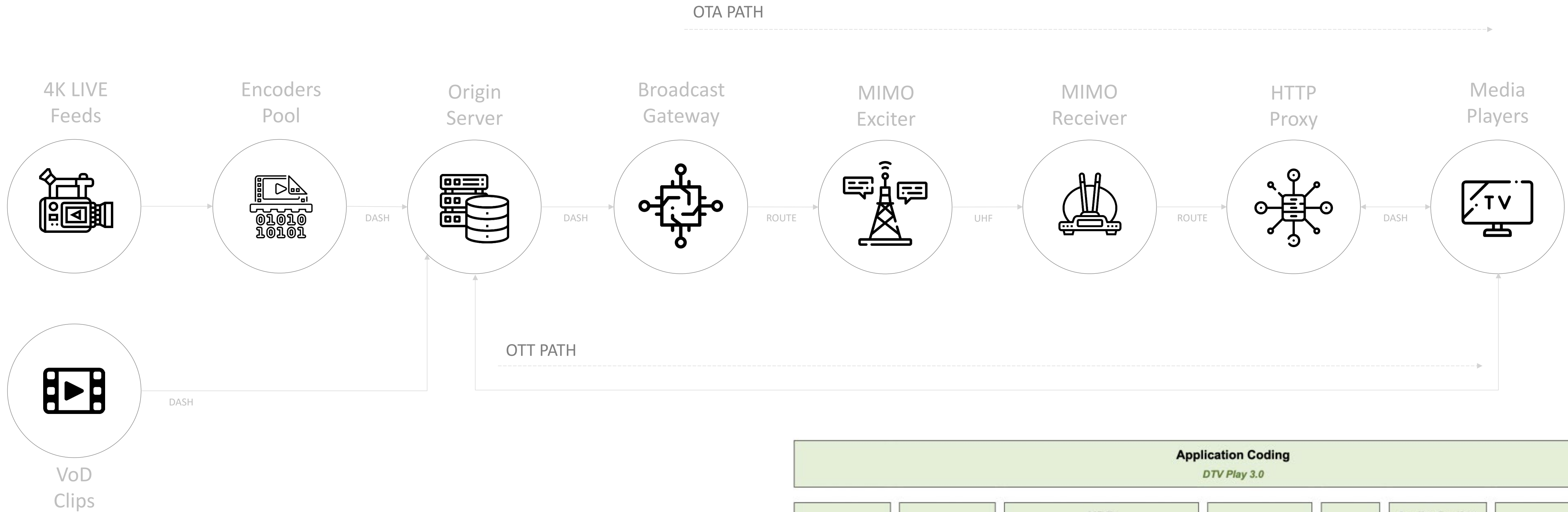mediathand · tolka · Amlogic · pebble · VIDEODATA

TV 3.0 Olimpíadas 2024:

Ecossistema com diferentes TVs e set-top boxes
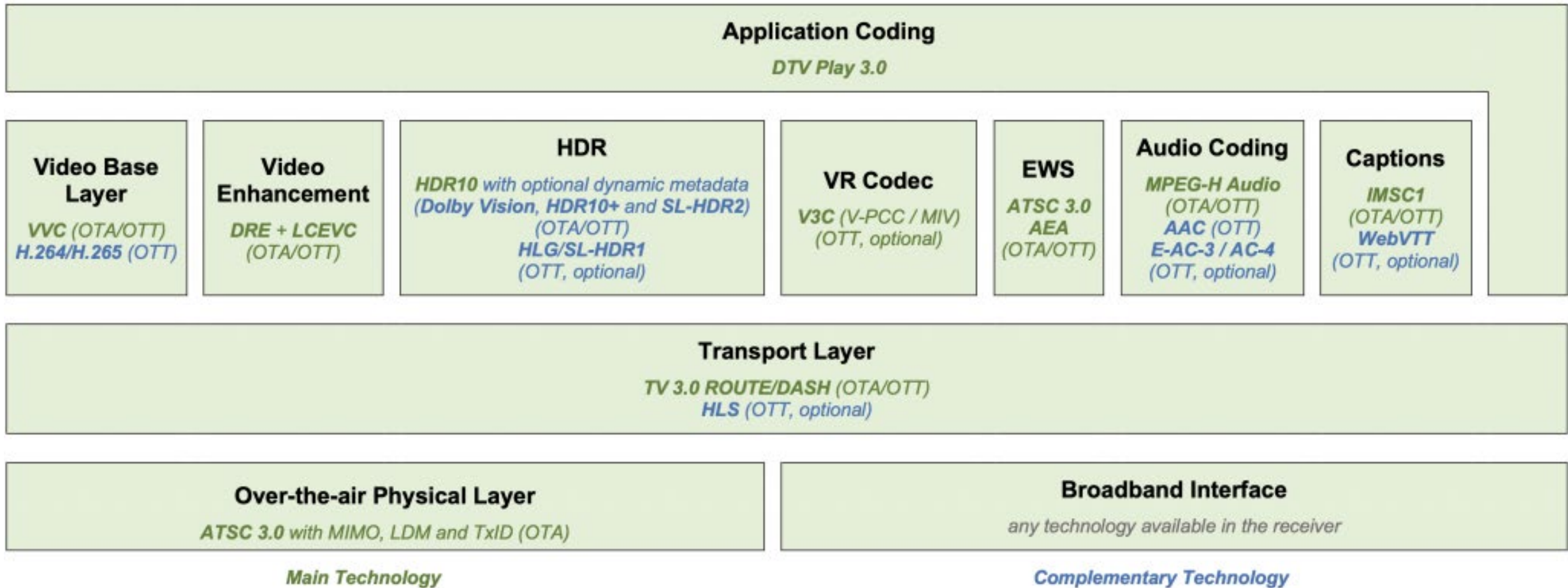exibindo conteúdos ao vivo em **4K HDR** com **áudio imersivo e personalizado.**

OVERVIEW

OTA PATH

4K LIVE Feeds	Encoders Pool	Origin Server	Broadcast Gateway	MIMO Exciter	MIMO Receiver	HTTP Proxy	Media Players

DASH   DASH   ROUTE   UHF   ROUTE   DASH

OTT PATH

VoD Clips

DASH

Brazil's first experimental live end-to-end OTA TV 3.0 operation using **all** SBTVD Forum selected technologies.

Application Coding
DTV Play 3.0

Video Base Layer	**Video Enhancement**	**HDR**	**VR Codec**	**EWS**	**Audio Coding**	**Captions**
VVC (OTA/OTT) *H.264/H.265 (OTT)*	*DRE + LCEVC* *(OTA/OTT)*	*HDR10 with optional dynamic metadata (Dolby Vision, HDR10+ and SL-HDR2) (OTA/OTT)* *HLG/SL-HDR1 (OTT, optional)*	*V3C (V-PCC / MIV) (OTT, optional)*	*ATSC 3.0 AEA (OTA/OTT)*	*MPEG-H Audio (OTA/OTT)* *AAC (OTT)* *E-AC-3 / AC-4 (OTT, optional)*	*IMSC1 (OTA/OTT)* *WebVTT (OTT, optional)*

Transport Layer
TV 3.0 ROUTE/DASH (OTA/OTT)
HLS (OTT, optional)

Over-the-air Physical Layer	**Broadband Interface**
ATSC 3.0 with MIMO, LDM and TxID (OTA)	*any technology available in the receiver*

Main Technology   *Complementary Technology*

TV 3.0
App-based
showtime
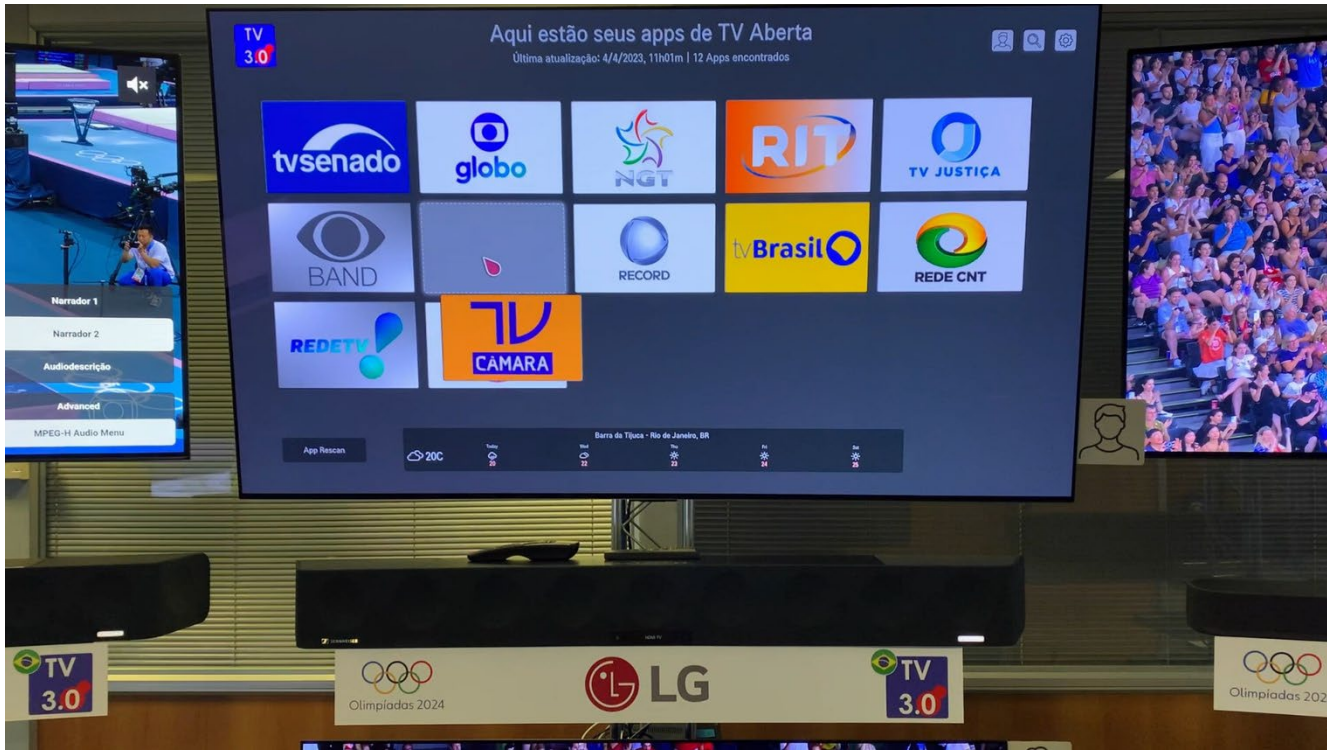
APP TV 3.0

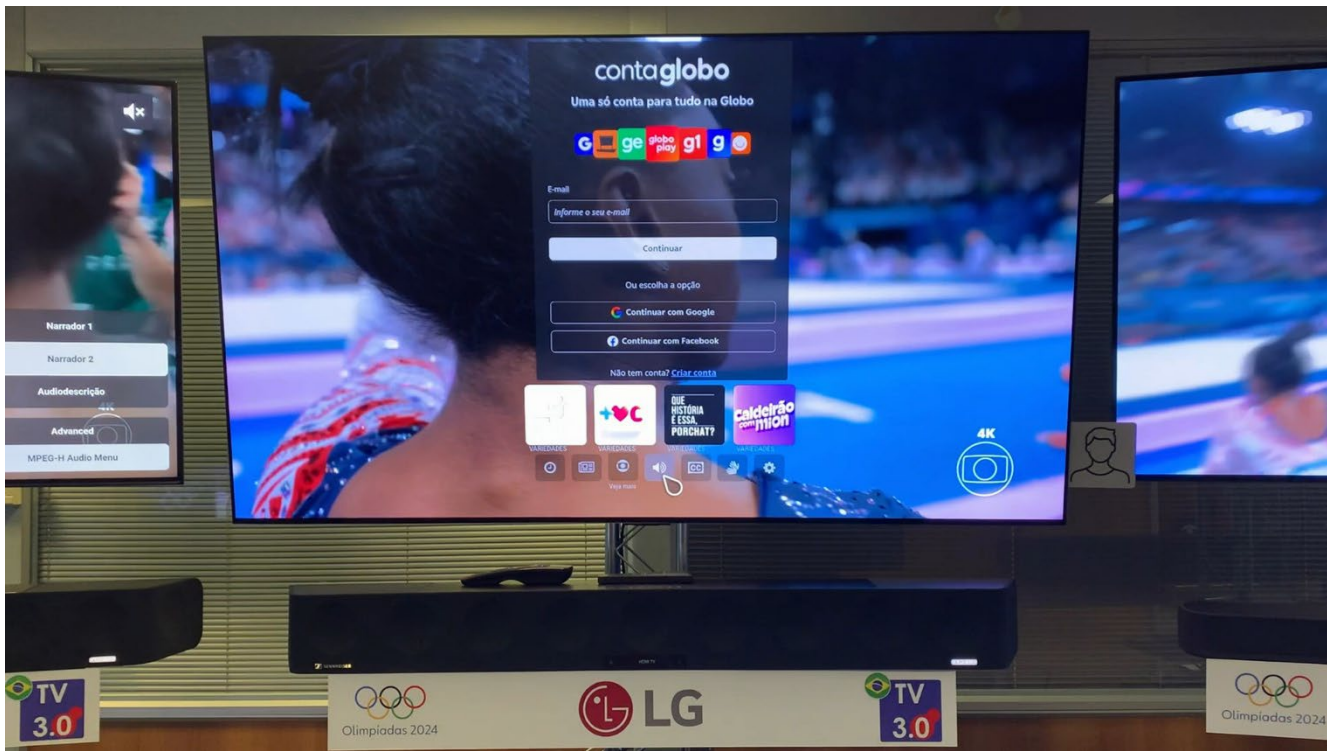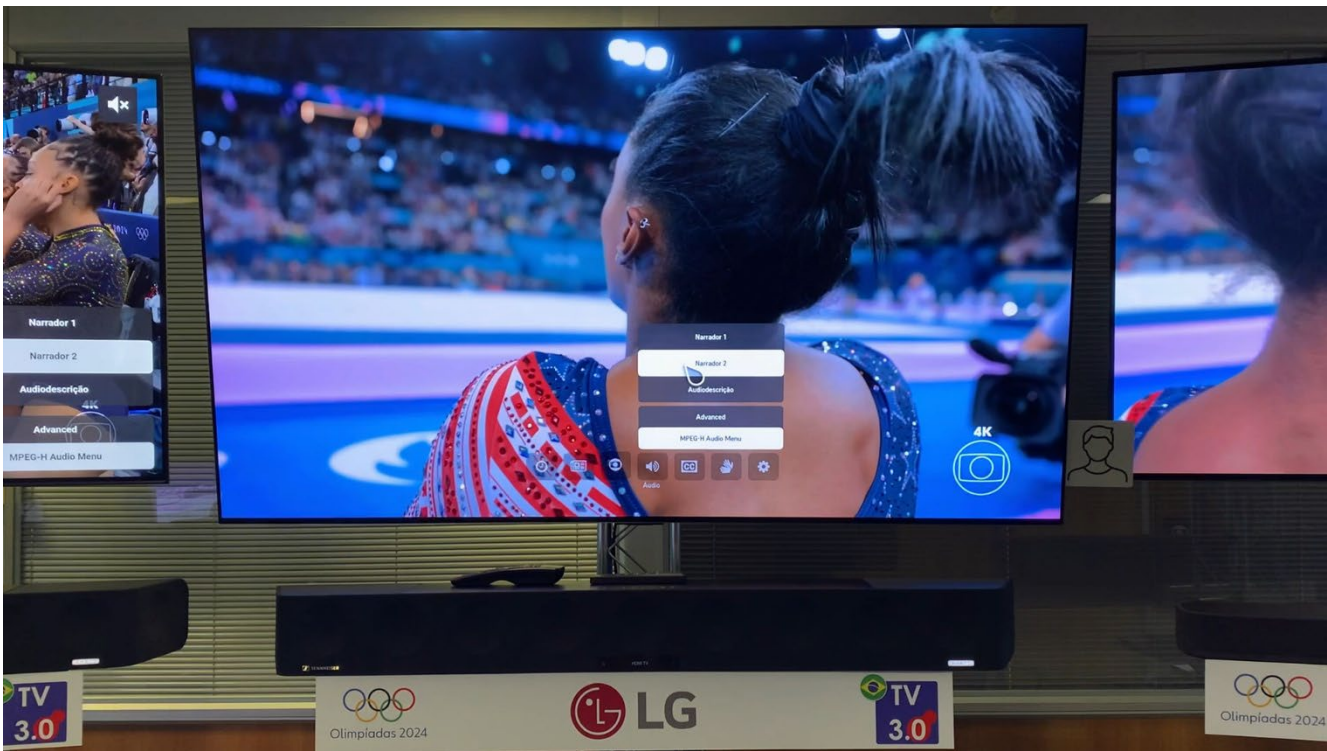Smart TV home screen: TV 3.0 entry point

TV 3.0 App home screen

TV 3.0 Globo experimental App: EPG menu

TV 3.0 Globo experimental App: "Central de Notícias" menu

TV 3.0 Globo experimental App: "Veja mais" menu
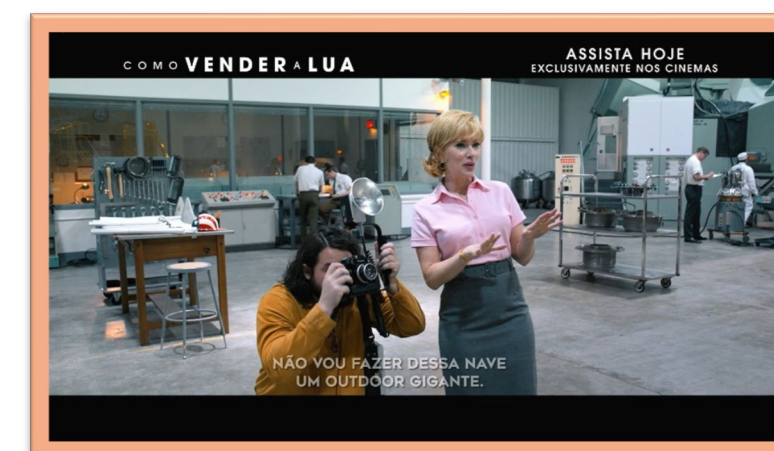
TV 3.0 Globo experimental App: Audio menu

SEG GEO

- ❖ TV set doesn't need to be connected to the Internet
- ❖ Ads matches a cluster profile (area, region)
- ❖ TV set doesn't need to storage the Ads (live broadcasted)
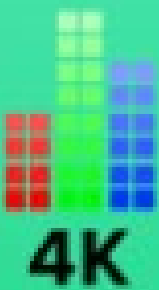
VIEWER A

VIEWER B

Together we can do so much.

TV 3.0 Olimpíadas 2024

Venha assistir as demonstrações com as tecnologias da TV 3.0, escolhidas pelo Fórum SBTVD para o novo padrão de TV Digital brasileiro, numa produção ao vivo com vídeo 4K HDR e áudio imersivo personalizável.

VVC

MPEG-5 LCEVC

MPEG-H AUDIO

4K · DASH · IMSC1 · ROUTE · HDR

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ENENSYS Technologies · harmonic · JIUZHOU · Hisense · MEDIATEK · mirakulo

salsa SOUND · sapec · REALTEK · intel · spin digital · SAMSUNG

mediathand · tolka · Amlogic · pebble · VIDEODATA

TV 3.0 EXPERIMENTAL MASTER ROOM

TV 3.0 SHOWCASE LOUNGE

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TOLKA PARTNERS WITH GLOBO IN SUMMER 2024 OLYMPICS DEMONSTRATION OF BRAZIL'S NEW TV 3.0 TRANSMISSION STANDARD

Posted by Editor | Aug 5, 2024 | Video Production News | 0 ⚫ | ⭐⭐⭐⭐⭐

Fraunhofer **AUDIO BLOG**

PRODUCTS & TECHNOLOGIES

Hisense, Globo, and Fraunhofer IIS Bring MPEG-H Audio Enhanced Sound Experiences to Brazilian Homes

📅 August 6, 2024

BROADCAST BEAT
CONTINUOUS TECHNICAL CONTENT FROM BROADCAST TO POST

THE BEAT   AJA Unveils KONA IP25 I/O Card with Uncompressed Bi-Directional SMPTE 2110 Sup

ANIMATION   BROADCAST   POST PRODUCTION   FEATURED   ADVERTISE   ABOUT ⌄

Tolka Partners with Globo in Summer 2024 Olympics Demonstration of Brazil's New TV 3.0 Transmission Standard

---

teletime   **Deutsche Teleko**
Global Business

ANÁLISES I ARTIGOS   EVENTOS   NOTÍCIAS   PODCAST   ANUNCIE   C

Início › Newsletter › Globo demonstra TV 3.0 e mira novos modelos de negócio

Radiodifusão

Globo demonstra TV 3.0 e mira modelos de negócio

Por **Samuel Possebon** - 06/08/24, 21:50 Atualizado em 06/08/24, 22:22

Weekly Analysis   Forecasts & Data   Operators Database   Podcasts   Webinars   Consulting   Testimonials

1 August 2024

TV 3.0 Olympics demos go live with LCEVC-enabled Amlogic SoCs

By Tommy Flanagan

Forecasts & Data
from Rethink TV

SET NEWS / 01/08/2024 / 👤 by SET Comunicação / ♡ 0 /

Paris 2024 em 8K no Brasil

Em parceria com Intel, Globo fará demonstrações dos Jogos Olímpicos de Paris 2024 em 8K no Brasil. Experiência em super alta resolução tra... para transmissão do evento.

O GLOBO 100 | Tecnologia   ASSINE

Economia / **Tecnologia**

Globo apresenta TV 3.0 com experiência interativa e gratuita

Demonstração revela inovações da nova tecnologia, que promete transmissões em 8K, personalização do consumo e expectativa de operação já em 2026

Home › Content Delivery

CONTENT DELIVERY

V-Nova and Amlogic Partner to Support MPEG-5

By Phil Sandberg   02/08/2024

ão ⌄   Conhecimento ⌄   Painéis ⌄   Inovações e Tendências ⌄   Utilidades ⌄

TV do futuro

A aceleração do desenvolvimento tecnológico está transformando nossos hábitos de consumo de conteúdo. Com **novos formatos** de vídeo e áudio imersivo, **telas de alta resolução**, a convergência entre **radiodifusão e internet**, o aumento da **velocidade e disponibilidade da internet**, é o momento de pensar no futuro.

É o momento de pensar no futuro, é o momento da TV3.0.

---

businesswire

Fraunhofer IIS, Hisense, and Globo Bring MPEG-H Audio Enhanced Sound Experiences to Brazilian Homes

Fraunhofer
IIS

Business Wire
August 7, 2024 • 5 min read

LCEVC + VVC in the US ATSC standard

ATSC The Broadcast Standards Association

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A/345, "VVC VIDEO"
APPROVED: 10 FEBRUARY 2025

This Standard describes the video coding constraints on ITU-T Rec. H.266 | International Standard ISO/IEC 23090-3 ("VVC") when it is used for video compression in the ATSC 3.0 Digital Television System. Any other video coding technologies in the ATSC 3.0 system are documented in their own ATSC Standard(s). ATSC A/300 provides references to the various video coding technology document(s) in the ATSC 3.0 system. Signaling of the video compression technology in use is defined in ATSC A/331.

Download current version:
 A/345:2025-02, "VVC Video", 10 Feb. 2025.

5.4.1 **LCEVC Media Profiles**
This section defines various LCEVC CMAF Media Profile based on ISO/IEC 23000-19 [2], Annex O, which are summarized in Table 5.1.
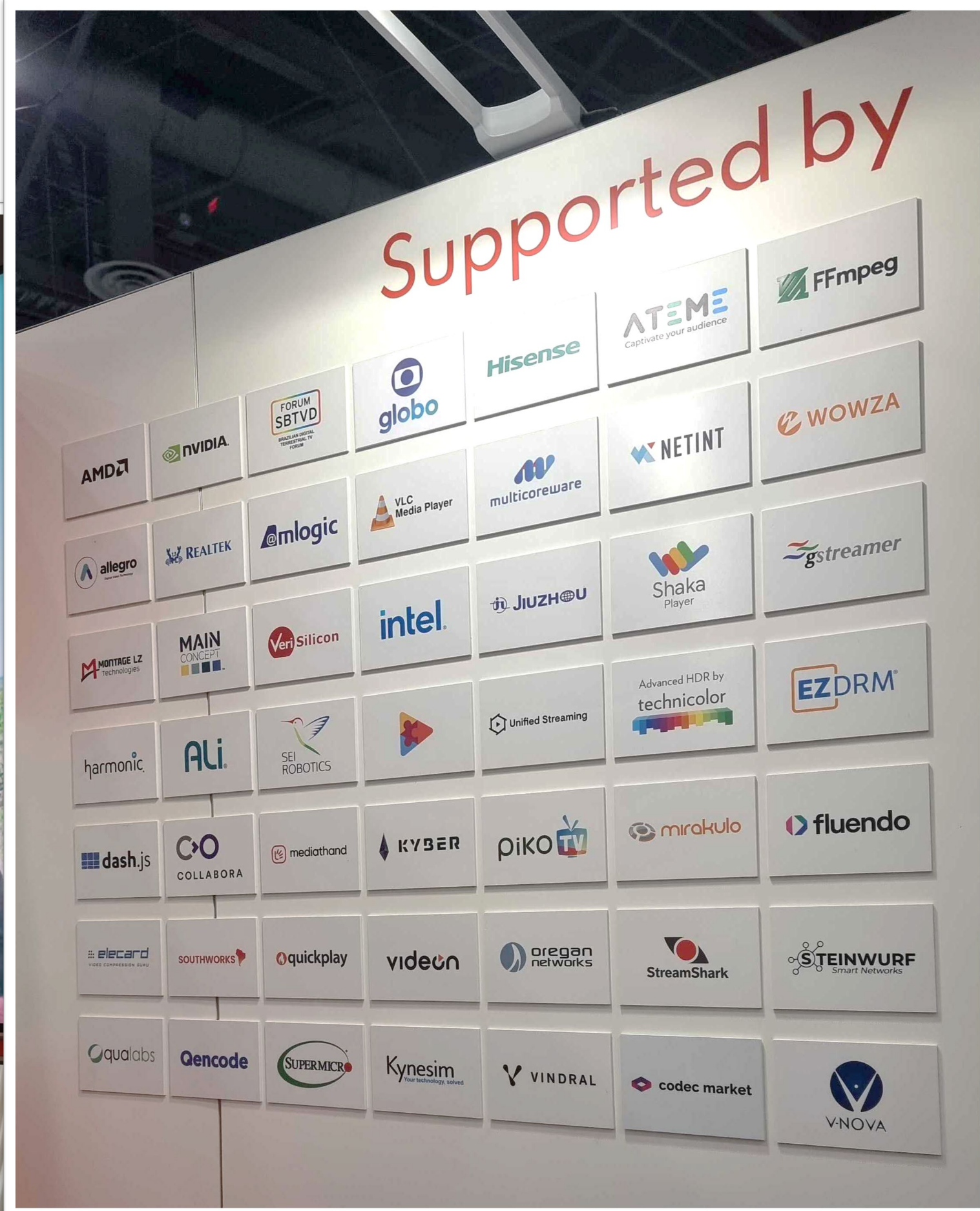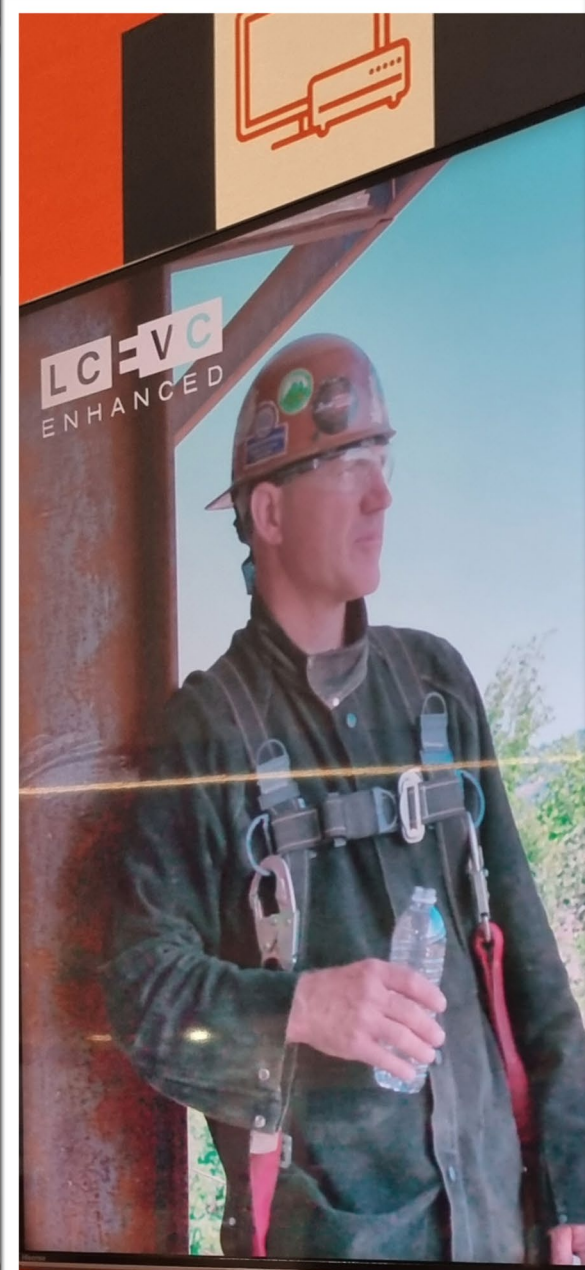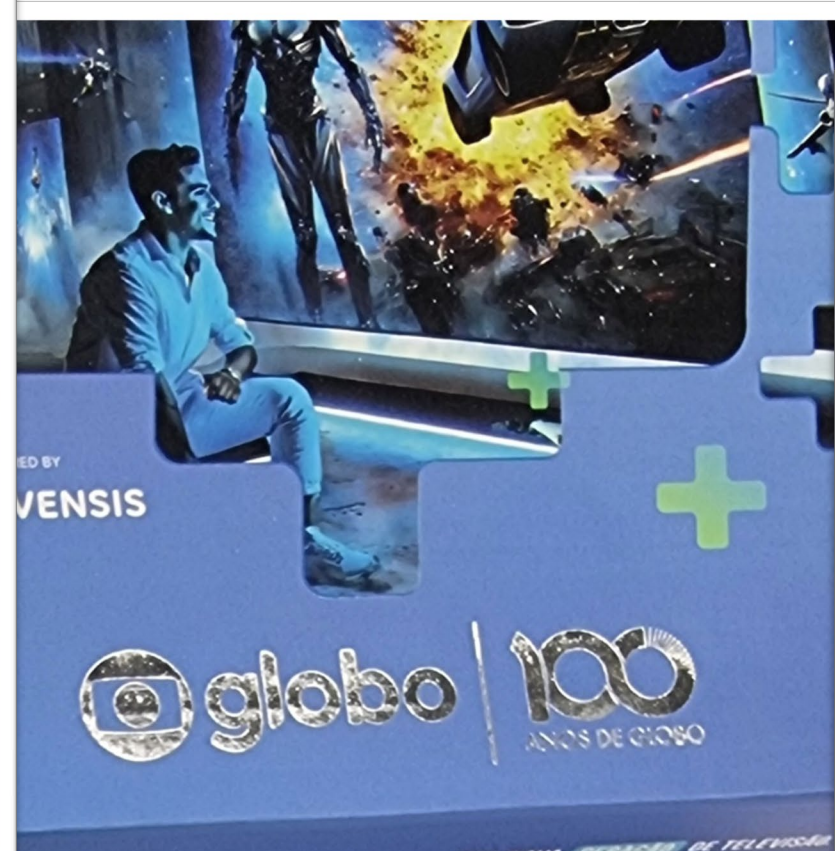Table 5.4 LCEVC CMAF Media Profiles
Media Profile Name Profile Brand Section
LVC Main 'clv1' 5.4.2
5.4.2 **VVC + LCEVC Specific Constraints**
In addition, these constraints shall apply:
• The VVC base stream shall conform to VVC Main profile and Main tier.
• The LCEVC enhancement stream shall conform to the LCEVC Main CMAF Media Profile as defined in [11]

W.1253

Brazil TV 3.0 roadmap

globo

April 2025
Experimental operation
Rio de Janeiro
Two HPHT stations

GOVERNO FEDERAL
BRASIL

August 2025
Experimental operation
São Paulo
Two HPHT stations

GOVERNO FEDERAL
BRASIL

December 2025
Experimental operation
Brasília
One HPHT station

FIFA
FIFA 2026

globo

June 2026
Comercial operation
Rio de Janeiro **and** São Paulo

Thank you