

ROME
2 DAYS
17-18 OCTOBER
6 TH HbbTV
SYMPOSIUM



UHD Book 1.0

*HDTV & Ultra HDTV receivers
for the Italian market*



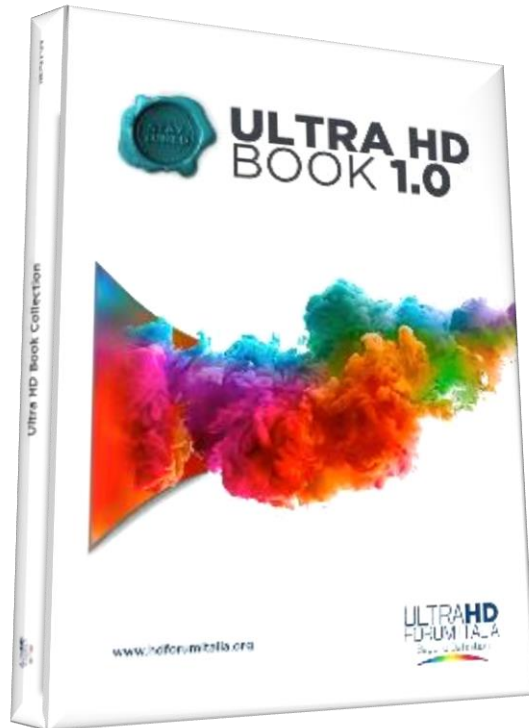
Joint Technical Group

Marco Pellegrinato

Vice-Director HD Forum Italia

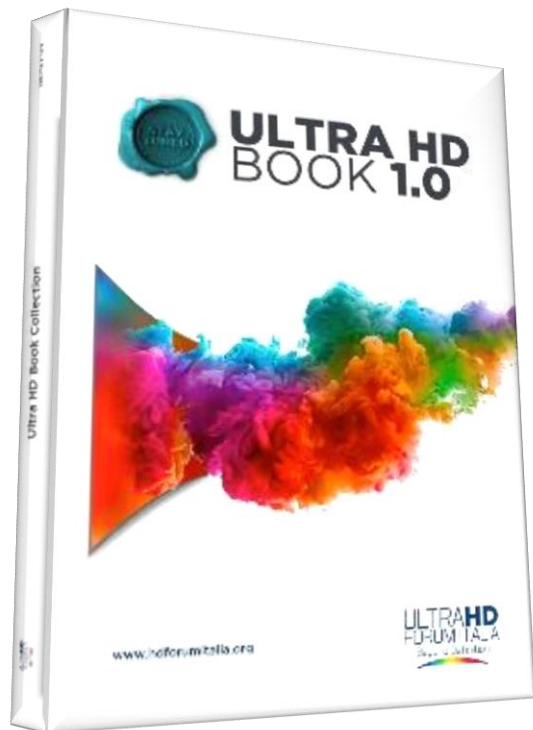
Auditorium Antonianum

Rome- Oct. 17th. 2017



Rationale & Numbers

- +25 international experts joined JTG
- kickoff on february 3rd 2017.
- 4 Task Groups:
(1) Audio/Video; (2) HbbTV 2.0 & CI+; (3) Miscellanea + (0) Editorials
- 3 Plenary meeting plus many AdHoc Group meeting
- First fully integrated multiplatform specs: DTT; SAT; OTT
- Fully compliant with Italian Law 44/12: DVB-T2/S2 + H265
- Fully oriented to HD and UHD progressive scan format including HDR, WCG, HFR with support to the latest audio codec with NGA multichannel specs.
- Endorse latest HbbTV 2 specification (v1.4.1)
- Require CI+ 1.4.1vwith specific support to Enhanced Content Protection (ECP) on HD and UHD resolutions



the latest Specs.

- Full support of UHD-1 ph. / ph.2 DVB specifications
 - TS 101 154 v. 2.3.1⁽¹⁾ included HDR, WCG, HFR, NGA
 - Ultra HD⁽²⁾ *sub-resolutions and conformance point in UHD.*
- HbbTV 2⁽³⁾
 - with CI-Plus⁽⁴⁾ LLP requirements for UHD services (updates)
 - DVB-DASH ext. for UHD-1 ph.2: (liaison HbbTV - DVB)
- HbbTV DASH extending DVB profile on A/V format (HD/UHD HDR).

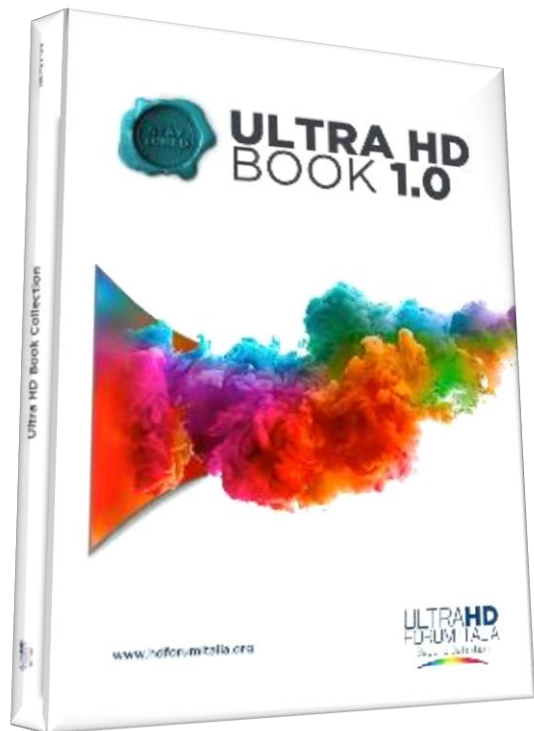
(1) ref. ETSI TS 101 154 v. 2.3.1 (02-17): DVB Specification for the use of Video and Audio Coding in Broadcasting Applications based on the MPEG-2 Transport Stream

(2) Ultra HD sub-resolution introduced: 3200x1800 e 2560x1440.

(3) ref. HbbTV 2.0.1 - TS 102 796 v 1.4.1 – (08-17) features for deployment in UK and Italian market

(4) CI+ 1.4.1: Common Interface Plus specs with Extended Content Protection (ECP)

(3) (4) JTG: Joint Technical Group



External dependencies

- DVB-DASH ext. for UHD-1 ph.2:
 - DVB-TM june 2017
 - forward looking statement align to HbbTV
- DVB Subtitles for UHD
 - DVB-TM june 2017
 - in liaison with HbbTV
- HbbTV 2.0.x
 - eventual updates (OpApp, ...)

.. totally designed for a single integrated certification sticker (Bollino)

format	video Codec	st. audio codec	m.c. audio code	Color	HDR	DASH HDR	MPEG CENC	CI+	HDMI/HDCP	midware
UHD/HD HDR ph.2	HEVC p50	HE-AAC	AC-4	BT-2020 (10 bit)	M	M	M	1.4.1 ECP	2.0b/2.2	HbbTV 2.0.1 DASH-HDR

October 2017
UHD Book 1.0



format	video Codec	st. audio codec	m.c. audio code	Color	HDR	DASH HDR	MPEG CENC	CI+	HDMI/HD CP	midware
UHD/HD ph.1	HEVC p50	HE-AAC	AC-3+	BT-2020 (10 bit)	n.a.	n.a.	M	1.4.1	2.0/2.2	HbbTV 2.0.1

format	video Codec	st. audio codec	m.c. audio code	Color	MPEG CENC	CI+	HDMI/HDCP	midware
HD/SD	H264 i50	AAC	AC-3+	BT-709 (8 bit)	M	1.3	1.4a/1.3	HbbTV 2.0.1

May 2016
HD Book 4.0



format	video Codec	st. audio codec	m.c. audio code	midware
SD	MPEG2 i50	MPEG1 L2	AC-3	HbbTV 2.0.1

5/2009
D-Book 1.3



11/2012
HD Book 2.1.1



Cert	DRM	CAS
X509	Marlin ??	??

3/2018
CPAS 3.0



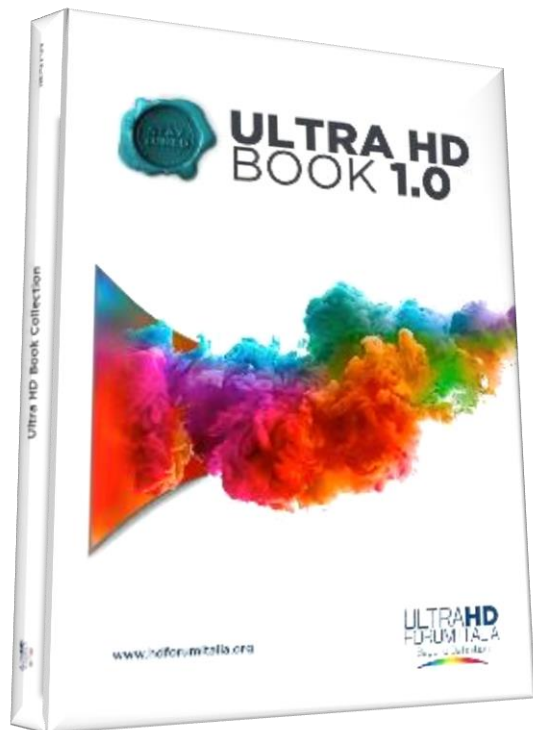
Cert.	DRM
X509	Marlin

Sept. 2016
CPAS 2.0



...that's would be the right chance !





Conclusion

- UHD Book 1.0 is a **brand new Hybrid** and **Multiplatform** technical specification in Italy: DTT, SAT, OTT.
- It has been designed to fully endorse the future **conformance test procedure**, supporting the next **certification** with the **new unique Bollino** sticker.
- designed for the **2018 certification program** (*lineup 2018/19*)
- perfectly suited to support the evolution of TV receivers in view of spectrum re-farming on 2022
- Relevant topics for the UltraHD Book generation (v 2.0):
 - **Enhanced Hybrid TV** experience (*seamless linear streaming channels on TV navigator*)
 - HbbTV 2.0.2 (*ie: OpApp*)
 - **Merge with CPAS** specification (*a total unique integrated secure & protected ecosystem*)

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