EBU HDR WORKSHOP @ SWR
16-20 MAY 2022

The EBU HDR workshop is organized by the [EBU HDR Implementation Task Force](#) and kindly hosted by the SWR at its Baden-Baden (Germany) facilities. This event explores HDR production by looking at common production approaches, including experiences from the BBC, BT Sport, CBC/Radio-Canada and Sky UK.

Please note this is a **technical** event. It is not a product show or marketing activity. The main goals are to learn how to produce HDR and to share experiences. Although this event is for EBU Members only, a limited number of non-Member representatives are welcome to participate on the 'industry day' on Thursday 19 May 2022. This event will likely be oversubscribed. Registration is free and mandatory.

Note the sessions use a two-track approach; most sessions consist of a live and a file-based part. These sessions are run twice, so each participant can benfit from both the live and the file-based parts.

MONDAY 16 MAY 2022

10:00 – 11:00	**Registration & COVID-19 testing**	

INTRODUCTION		
11:00 – 11:20	**Welcome @ SWR** House rules (COVID, etc.) Goals of this workshop, logistics	
11:20 – 11:40	**Break up into two groups**	
11:40 – 12:30	**Group 1 introduction** Group participants introduce themselves *(incl. 1 key question each)* **Explanation of the technical set up**	**Group 2 introduction** Group participants introduce themselves *(incl. 1 key question each)* **Explanation of the technical set up**
12:30 – 13:30	**LUNCH**	

SESSION 1	**Track 1**	**Track 2**
13:30 – 15:30	**HDR in live production (introduction)** A brief overview of terms Test equipment and what to look for trilinear vs. tetrahedral (demo) **Using SDR cameras** SDR/BT.709 to HDR conversion	**HDR in post-production (introduction)** Setting up a post-production HDR workstation Devices, config and set-up validation Troubleshooting, typical issues during set-up **HDR post-production workflows (PQ and HLG)** Colour grade, 3D LUTs vs. transforms Technical considerations, source signal monitoring
	Coffee break	
16:00 – 18:00	**HDR in post-production (introduction)** Setting up a post-production HDR workstation Devices, config and set-up validation Troubleshooting, typical issues during set-up **HDR post-production workflows (PQ and HLG)** Colour grade, 3D LUTs vs. transforms Technical considerations, source signal monitoring	**HDR in live production (introduction)** A brief overview of terms Test equipment and what to look for trilinear vs. tetrahedral (demo) **Using SDR cameras** SDR/BT.709 to HDR conversion

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TUESDAY 17 MAY 2022

08:00 – 09:00	**Registration & COVID-19 testing**

OPENING SESSION

09:00 – 09:20	**HDR Conversion - theory**
09:20 – 09:40	**Break up into two groups**

SESSION 2	Track 1	Track 2
09:40 – 11:00	**Live HDR conversions** HLG to PQ PQ to HLG S-Log3 to HLG **Using pre-recorded content** Using SDR/BT.709 content in HDR productions	**HDR to HDR conversions in post** HLG to PQ PQ to HLG S-Log3 to HLG **SDR vs. HDR** Using SDR/BT.709 content in HDR productions Using HDR content in SDR productions
11:00 – 11:30	**Coffee break**	
11:30 – 12:50	**HDR to HDR conversions in post** HLG to PQ PQ to HLG S-Log3 to HLG **SDR vs. HDR** Using SDR/BT.709 content in HDR productions Using HDR content in SDR productions	**Live HDR conversions** HLG to PQ PQ to HLG S-Log3 to HLG **Using pre-recorded content** Using SDR/BT.709 content in HDR productions

12:50 – 14:00	**LUNCH**

SESSION 3	Track 1	Track 2
14:00 – 15:45	**Effect of live roundtripping** The effect of HDR production on SDR viewers	**Advanced post-production workflows** ACES, RAW, 35mm film, DCI P3 sources Creative differences between Cinema and TV workflows
15:45 – 16:15	**Coffee break**	
16:15 – 18:00	**Advanced post-production workflows** ACES, RAW, 35mm film, DCI P3 sources Creative differences between Cinema and TV workflows	**Effect of live roundtripping** The effect of HDR production on SDR viewers

draft programme – subject to change

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WEDNESDAY 18 MAY 2022

08:00 – 09:00	**Registration & COVID-19 testing**

SESSION 4	**Track 1**	**Track 2**
09:00 – 10:30	**Shading / racking HDR cameras** SDR/BT.709/BT.2020 output Down-mapped HDR output Backwards-compatible output on BT.2020 monitors What is best? What is most used? Reference monitors: 600 or 1000 cd/m^2? **Shading / racking SDR cameras** 100 vs. 200 cd/m^2 SDR Direct SDR shading SDR shading via HDR Which is best? Which is most in use?	**Specific post issues – user sessions** Open slots for workshop participants to suggest a consultation session with their own content / specific issues. Three slots are available: 09:00 - 09:30 09:30 - 10:00 10:00 - 10:30 *Note: participants are encouraged to bring with them video content they would like to use in these session. Copying of converted material is possible (exFAT formatted media preferred).*
10:30 – 11:00	**Coffee break**	
11:00 – 12:30	**Specific post issues – user sessions** Open slots for workshop participants to suggest a consultation session with their own content / specific issues. Three slots are available: 11:00 - 11:30 11:30 - 12:00 12:00 - 12:30 *Note: participants are encouraged to bring with them video content they would like to use in these session. Copying of converted material is possible (exFAT formatted media preferred).*	**Shading / racking HDR cameras** SDR/BT.709/BT.2020 output Down-mapped HDR output Backwards-compatible output on BT.2020 monitors What is best? What is most used? Reference monitors: 600 or 1000 cd/m^2? **Shading / racking SDR cameras** 100 vs. 200 cd/m^2 SDR Direct SDR shading SDR shading via HDR Which is best? Which is most in use?

12:30 – 13:30	**LUNCH**

CE DEVICES

13:30 – 13:50	**Distribution and CE displays - introduction**
13:50 – 14:10	**Break up into two groups**

SESSION 5	**Track 1**	**Track 2**
14:10 – 15:45	**Full live workflow** Hands-on example of a basic workflow Effect of different brightness TVs on HLG viewing Effect of different brightness TVs on PQ viewing Effect of the use (or not) of metadata **External HDR sources** How do I match 'my workflow to their workflow'?	**Post-production vs. consumer displays** Effect of different TV display technologies on HLG viewing (OLED vs. QLED) Effect of different TV display technologies on PQ viewing (OLED vs. QLED) Side-by-side native HDR vs. SDR to HDR convered material on consumer displays Effect of the use (or not) of metadata
15:45 – 16:15	**Coffee break**	
16:15 – 17:50	**Post-production vs. consumer displays** Effect of different TV display technologies on HLG viewing (OLED vs. QLED) Effect of different TV display technologies on PQ viewing (OLED vs. QLED) Side-by-side native HDR vs. SDR to HDR convered material on consumer displays Effect of the use (or not) of metadata	**Full live workflow** Hands-on example of a basic workflow Effect of different brightness TVs on HLG viewing Effect of different brightness TVs on PQ viewing Effect of the use (or not) of metadata **External HDR sources** How do I match 'my workflow to their workflow'?

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THURSDAY 19 MAY 2022

INDUSTRY DAY, OPEN TO NON-MEMBERS

09:00 – 10:00	**Registration & COVID-19 testing**	

Current HDR production challenges

10:00 – 10:20	**HDR – Challenges**	
	Presentation of feedback from the workshop:	
	- What is challenging? - What issues need to be resolved?	

10:20 – 10:40	**Break up into two groups**	

10:40 – 11:40	**Group 1**	**Group 2**
	Discussion of how to address the challenges	Discussion of how to address the challenges

11:40 – 12:10	**Coffee break & gather back in main room**	

12:10 – 12:30	**Conclusions**	

12:30 – 13:30	**LUNCH**	

Upcoming HDR developments

13:30 – 13:50	**Upcoming HDR developments**	
	Technical improvements, etc.	

13:50 - 14:10	**Break up into two groups**	

14:10 – 15:10	**Group 1 – Broadcasters' outlook**	**Group 2 - Broadcasters' outlook**
	Quick round of presentations (~5 minute each) of the broadcasters' HDR outlook/vision	Quick round of presentations (~5 minute each) of the broadcasters' HDR outlook/vision

15:10 – 15:40	**Coffee break**	

15:40 – 16:40	**Group 1 – Next HDR activity**	**Group 2 - Next HDR activity – brainstorm**
	Brainstorm on what next activities should be organized	Brainstorm on what next activities should be organized

16:40 – 17:10	**Coffee break & gather back in main room**	

17:10 – 17:30	**Conclusions & closing words**	
	Broadcasters' outlook and brainstorm conclusions	

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FRIDAY 20 MAY 2022

08:00 – 09:00	**Registration & COVID-19 testing**

Conclusions

09:00 – 10:30	**Round table**
	Last chance to ask questions and discuss among EBU Members
10:30 – 11:00	**Coffee break**
11:00 – 12:10	**Write up**
	Drafting of the main conclusions & recommendations (outline) to be shared more widely (e.g. EBU publication).
12:10 – 12:30	**Closing words**

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