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ADB2+TA Implementation for Broadcasters

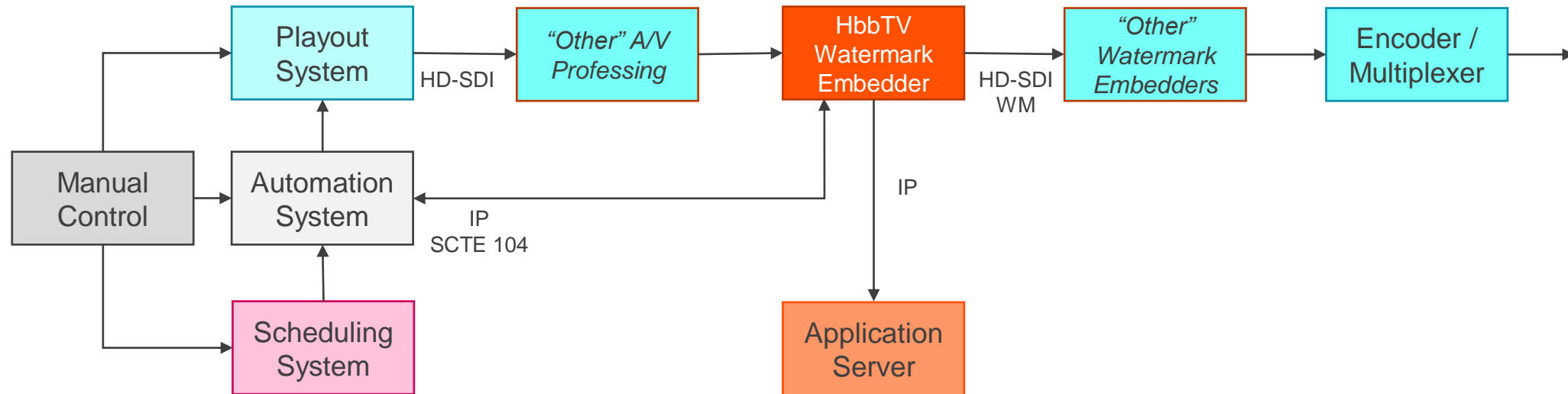
*HbbTV Webinar:
Extending the Reach of HbbTV TA to Set-top Box Markets*

October 19, 2021

Agenda

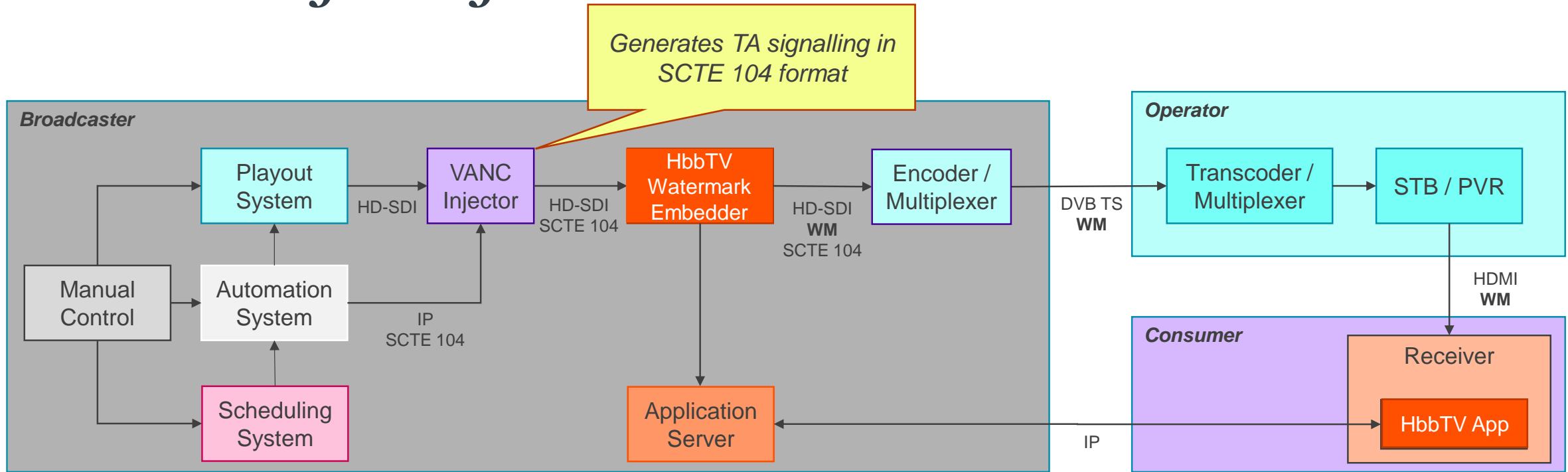
- 1** → *Watermark Embedding*
- 2** → *ADB2+TA Signaling*
- 3** → *ADB2+TA Presentation*

Watermark Embedding



1. Audio watermark must be present throughout the service.
2. Video watermark must be present through the replaceable inventory.
3. Watermark embedders must be time synchronized to the automation master clock.
4. Perform HbbTV watermark insertion after A/V enhancement but before proprietary watermark embedding (e.g. Kantar) and encoding/multiplexing.

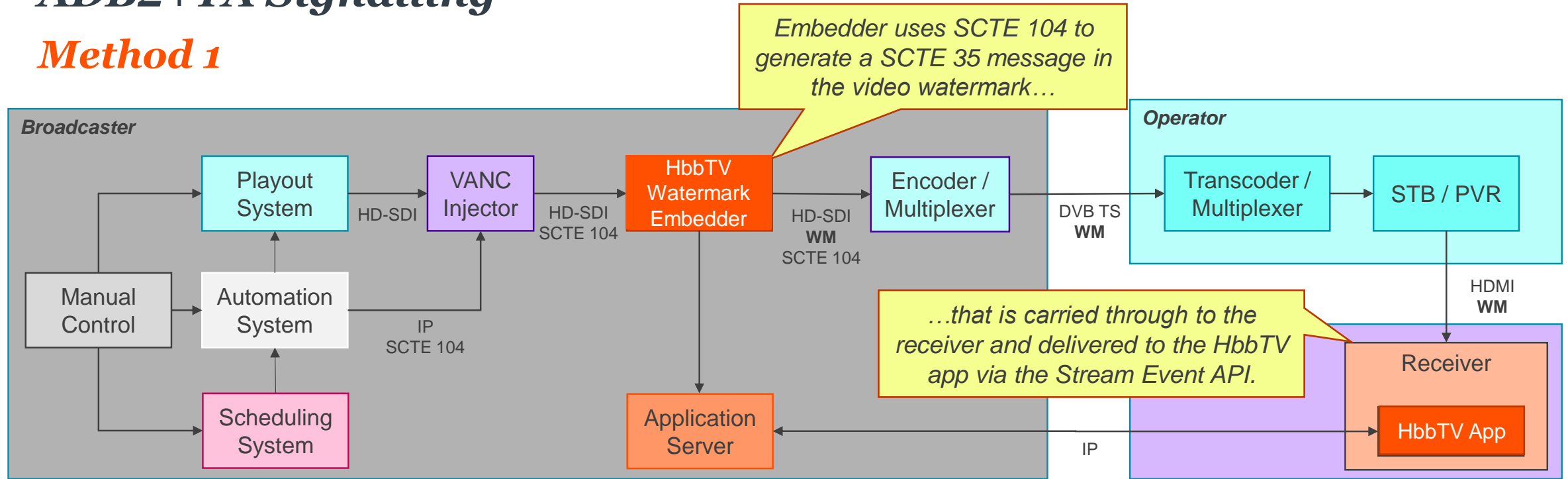
ADB2+TA Signalling



- ▶ Signalling formats and delivery methods are specified in [DVB Blue Book A178-1r1](#).
- ▶ Three methods are supported:
 1. Video Watermark Delivery
 2. Broadband Delivery with Watermark Push Notification
 3. Broadband Delivery with Broadcaster Application Timeline Synchronization

ADB2+TA Signalling

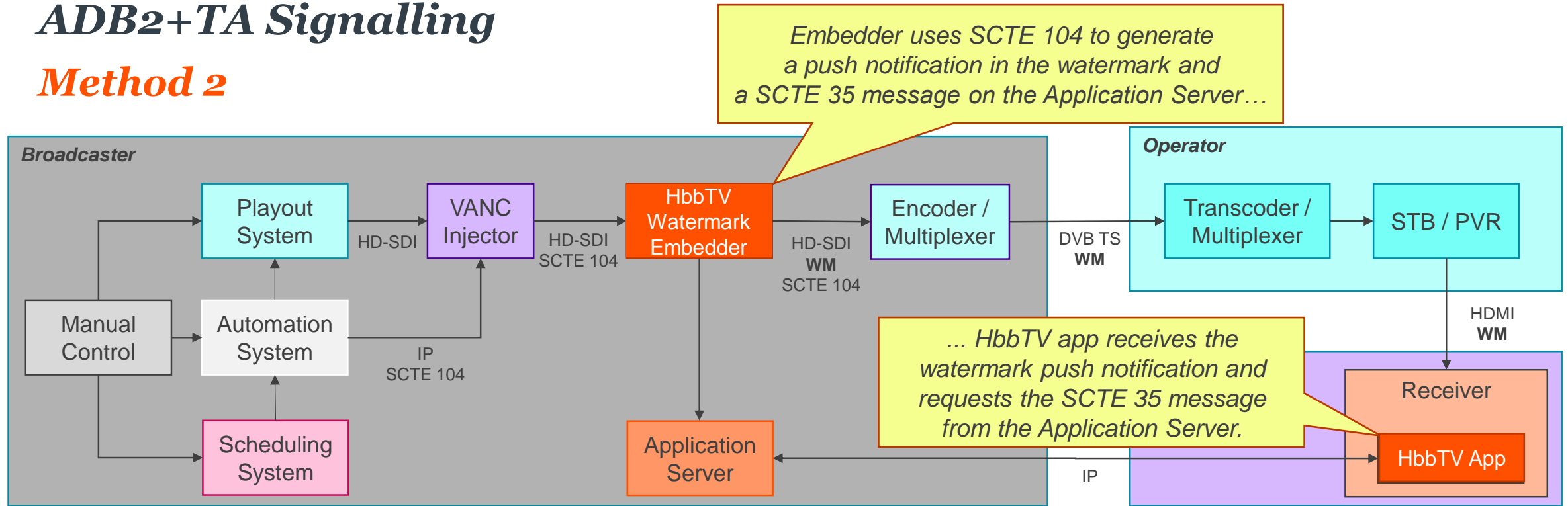
Method 1



- ▶ Signalling formats and delivery methods are specified in [DVB Blue Book A178-1r1](#).
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ADB2+TA Signalling

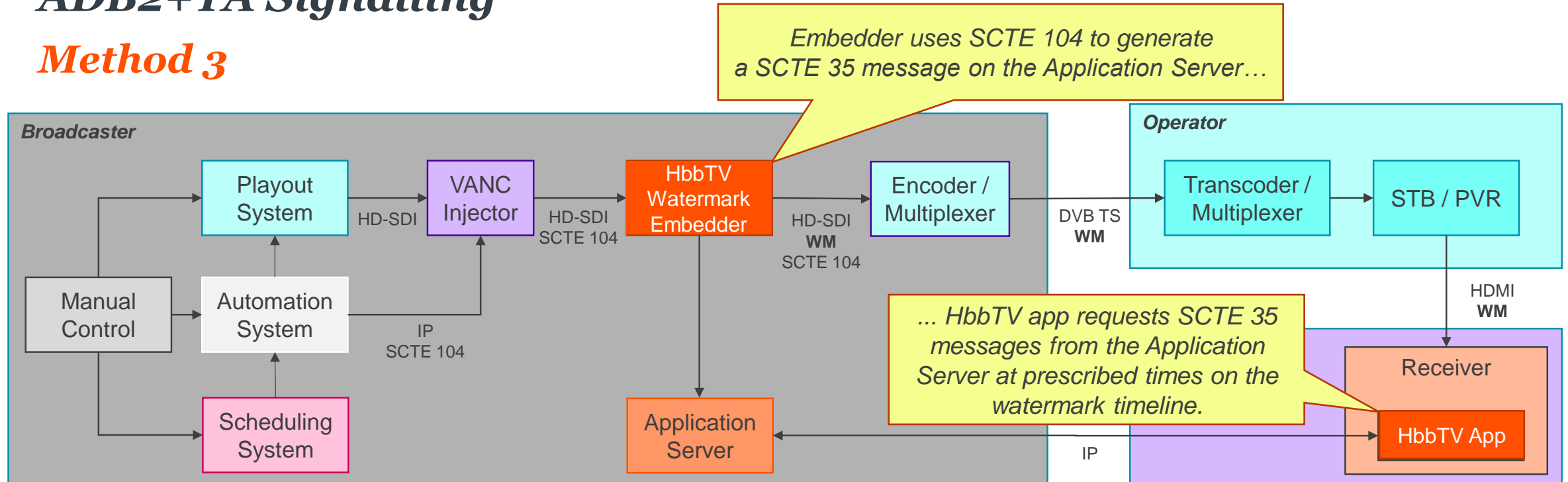
Method 2



- ▶ Signalling formats and delivery methods are specified in [DVB Blue Book A178-1r1](#).
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ADB2+TA Signalling

Method 3

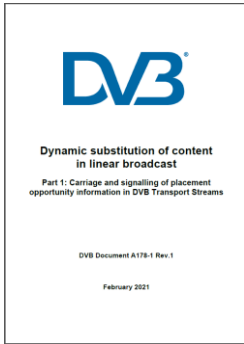


- ▶ Signalling formats and delivery methods are specified in [DVB Blue Book A178-1r1](#).
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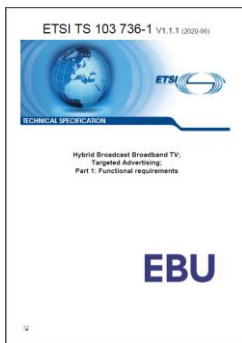
ADB2+TA Presentation

- ▶ Conditions for HbbTV App to confirm prior to ADB2+TA presentation
 - Terminal capabilities
 - Audio routing
 - Replacement ad caching
 - Watermark presence
- ▶ Conditions for HbbTV App to monitor during ADB2+TA presentation
 - Watermark presence
 - Timeline continuity
 - Playback rate
 - User input

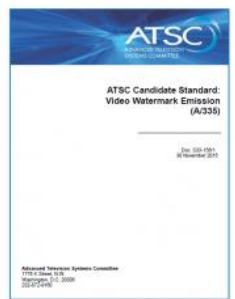
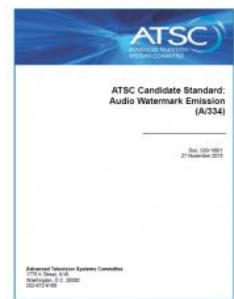
Resources



- ▶ [DVB Blue Book A/178-1 Rev. 1 “Dynamic substitution of content in linear broadcast” \(2/2021\)](#)



- ▶ [“HbbTV Application Discovery over Broadband Specification v1.3.1” \(aka “ADB2+TA”, 7/2021, slated to become ETSI TS 103 464 v1.3.1\)](#)
- ▶ [ETSI TS 103 736-1 v1.1.1 \(2020-06\) “Hybrid Broadcast Broadband TV: Targeted Advertising; Part 1: Functional requirements”](#)



- ▶ [ATSC A/334 “Audio Watermark Emission Specification”](#)
- ▶ [ATSC A/335 “Video Watermark Emission Specification”](#)
- ▶ [ATSC A/336 “Content Recovery in Redistribution Scenarios”](#)



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Thank You

