Friend MTS

MHV - Denver, July 2019

Security threats and real-world attacks

Pirates will always choose the **cheapest**,

easiest to capture, and **most scalable**

service to source from

Consider every device a potential source

- Conventional broadcast receivers – cable, DBS/DTH
- OTT and TVE
- Hybrid broadcast receivers
- Home gateways

Assumptions

- Transmitted content is encrypted
- Key handling remains secure (good CA/DRM in place)
- The above is true for all platforms carrying the same content

Subscriber-level / transactional watermarking is the general solution

However……

Watermarking attacks are real!
How robust is your chosen solution?

Three principles of watermark security

- Robustness of the integration
- Robustness of the watermark
- Integrity of the payload

Types of attack

Implementation

Request manipulation

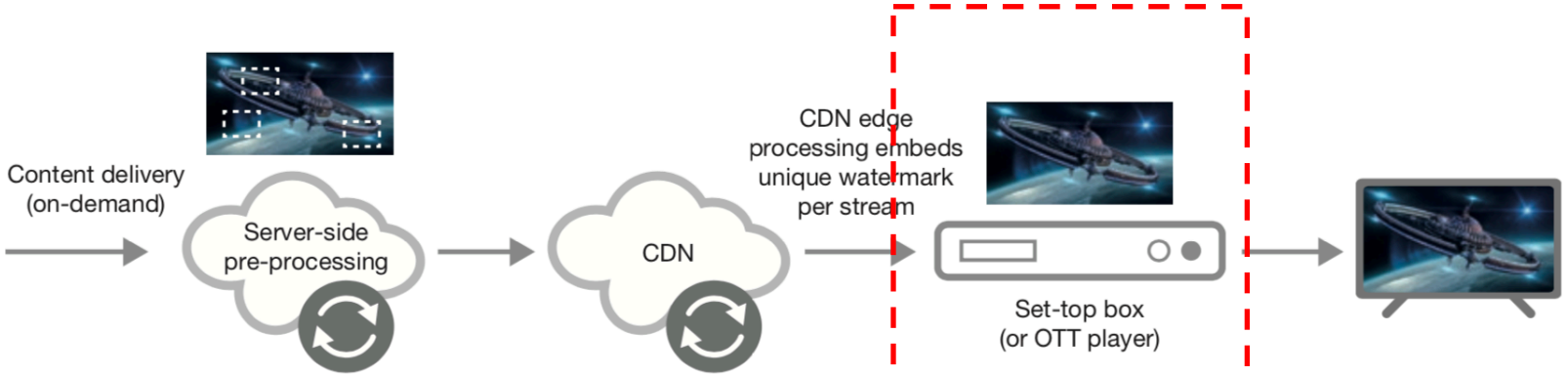
Visual effects

Sequence shuffling

Comparison/mixing (types of collusion)

Sequenced variation

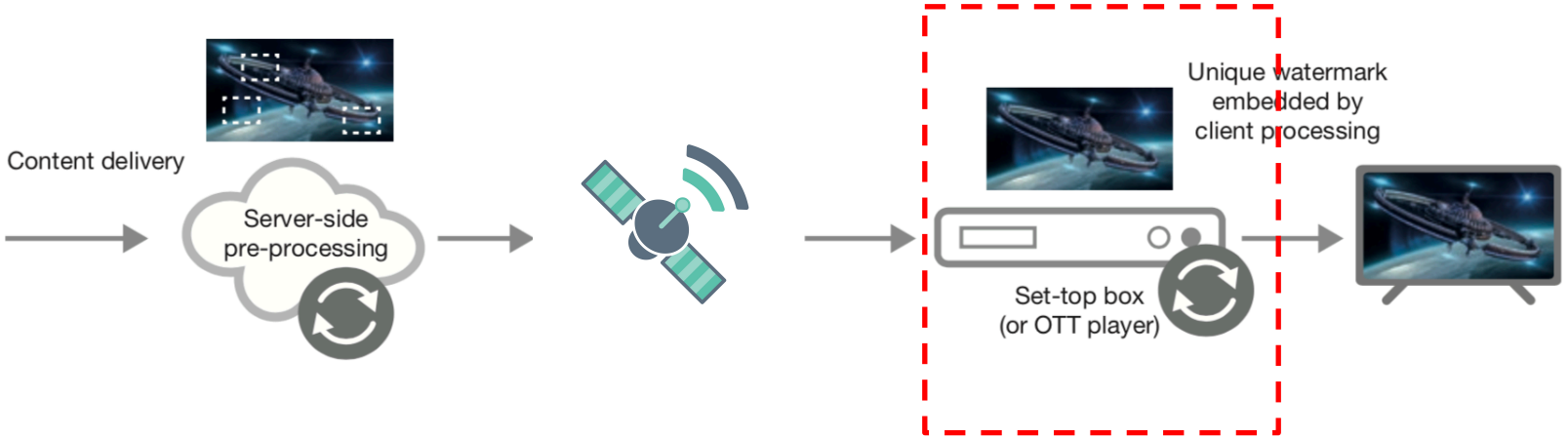
Request manipulation (A/B variant)



- Variant validation
- Differential keying (proprietary CDM)
- **Secure client-side code**

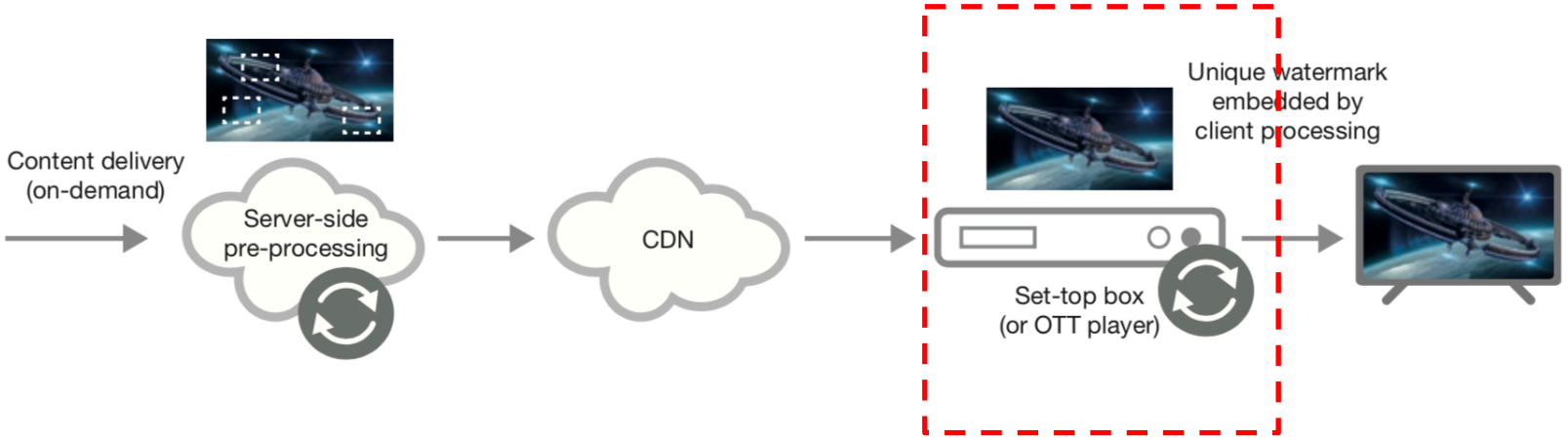
Request manipulation (A/B variant)

Bitstream substitution (broadcast head-end watermark)



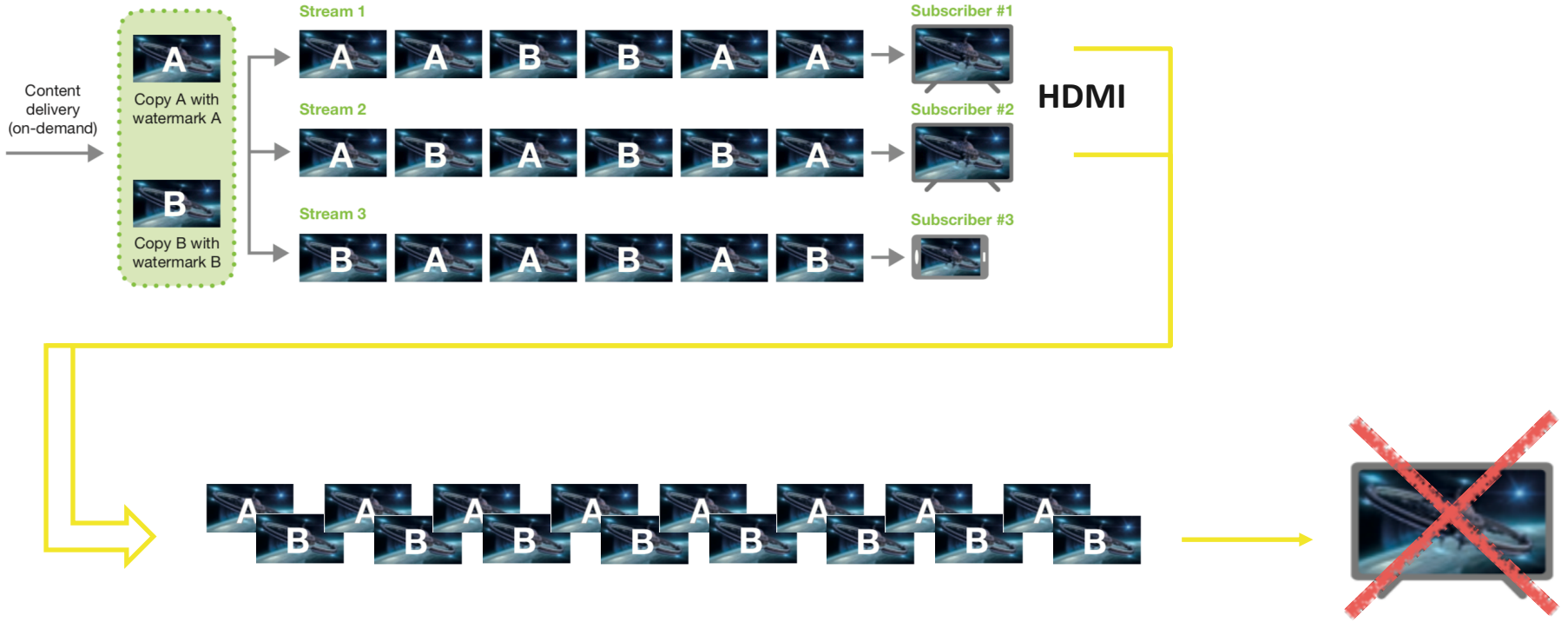
- Specific chipset support (secure access to bitstream in decode pipeline)
- Hardened client device

Bitstream substitution (streamed)

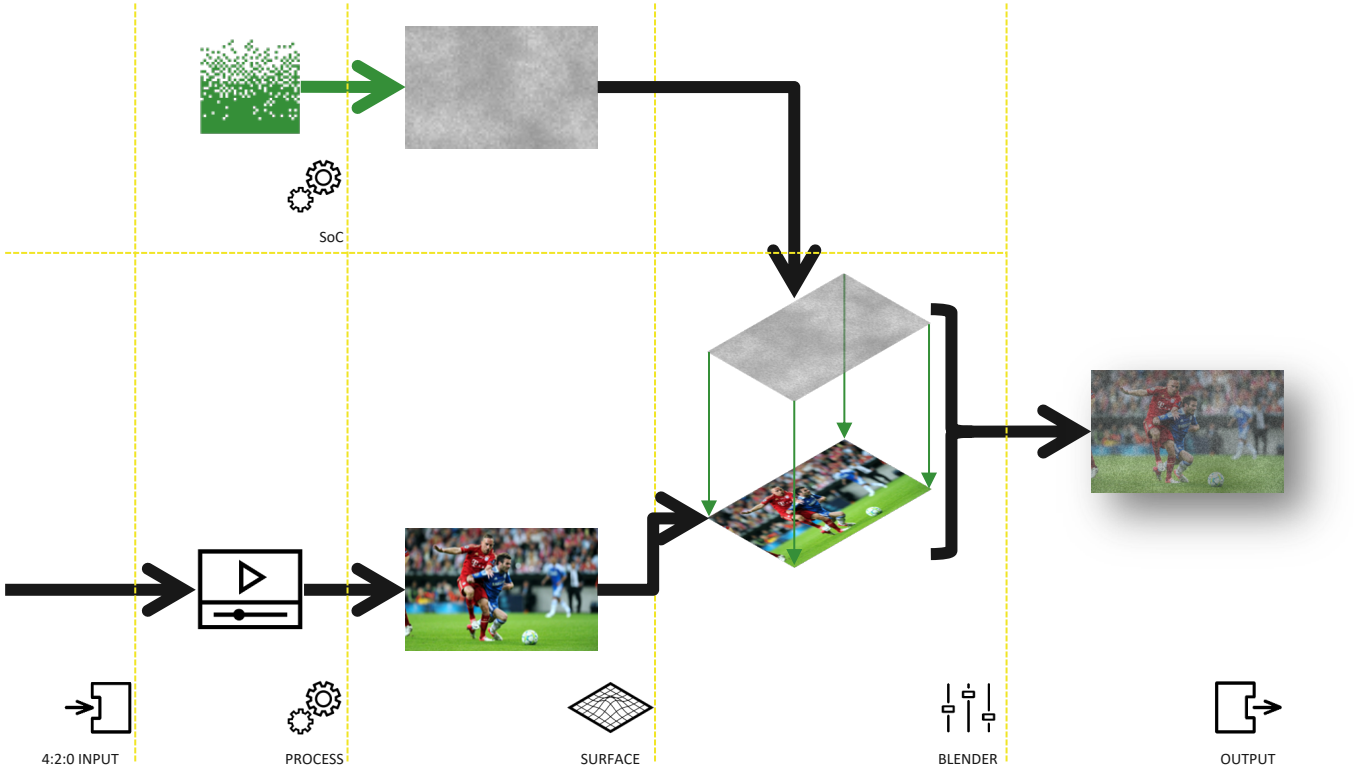


- Secure client-side code
- Possibly specific chipset support

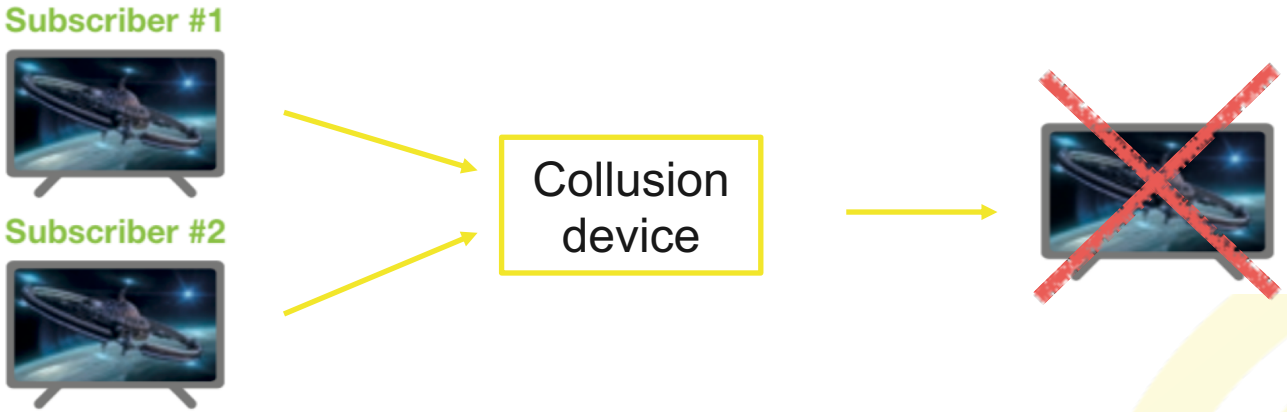
Sequence shuffling



Composited overlay



Comparison / mixing



- **Rack-mounted video encoder**
- 1U Rack-mounted Encoder
- 3U Rack-mounted Encoder
- **Video Decoder**
- H.264 Video Decoder
- H.265 4K Video Decoder
- **DVB Solutions**
- QAM Modulator Scrambler
- Multiplexer & Scrambler
- IP Gateway
- **Video Converter**
- HDMI Video Converter
- SDI Video Converter
- DVI-D TO VGA Converter
- VGA Video Converter
- CVBS Video Converter
- AHD Video Converter
- **Fiber Optic Extender**
- Fiber Optic HDMI Extender
- Fiber Optic SDI Extender
- Fiber Optic DVI Extender
- Fiber Optic VGA Extender
- **USB Video Capture Card**
- HDMI TO USB Video Capture
- AV TO USB Video Capture
- **PCI-E Video Capture Card**
- HDMI Video Capture Card
- SDI Video Capture Card

Detailed description

OPR-TS8100(upgraded version from OPR-TS8000) HDMI to IP Streamer & ASI output with HashCode Remove functions - This 1U Rack-mounted video encoder is designed for HDMI Video hashcode / watermark / fingerprint / logo & Audio hashcode remove, hide or blurring on the fly. It with 8 channels HDMI input, by real-time H.264 encoding, output RTMP/HTTP/UDP/RTP TS and ASI for DVB.
With highly integrated hardware and software, the equipment is convenience for you send streaming to IPTV Media Streaming Server, such as wowza, Xtream Codes, or DVB modulators.

This Encoder by compare with 2 STBs' HDMI input signals, automatically detect & hide the different video contents, such as the hashcodes / video logo / watermark, etc.. （2 HDMI input, 1 stream output) *1
Note: *1 a. Two STBs' output HDMI must be same channels (programs), and STB need to be same brand, same settings.
b. The encoder can only output 4 hashcode remove streams when do compare for hide watermark.

Need more information, click here, How it works? (It works same as TS7000 but with 1 more ASI output).

Features
1. 8 Channels normal TS streaming or 4 Channels compared Streaming, support audio & video hashcode hidden, blurry, logo add & erase for specify are.
2. Output streaming video quality adjustable.
3. Can add logo for your stream.
4. Supports RTMP/UDP/RTP/HTTP protocols & ASI output for DVB modulators.
5. Software to be upgraded.

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Questions to ask:

- Has the system / technology been deployed at scale in a comparable market, and has it actually been activated / is it in use?
- How has it fared against known in-the-wild attacks?
- Does the supplier actively research and test against attacks, and what is their action plan to maintain robustness?

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Any questions?