

Routing “Mono” audio in an Multi-Channel stream Environment

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Why is Audio always the Problem?

- Audio is used in very different ways in different parts of the air chain
 - Playout, Master Control, and Distribution (usually) organize the audio into finished mixes (5.1, 2.0).
 - Production (usually) organizes the audio into groups of related sources – but it varies...
 - Both have exceptions and variations
- IP did not create this headache

The Audio Problem in IP

- In IP systems, audio is organized into streams
 - Streams usually contain multiple channels
 - Multi-channel streams help manage complexity
- IS-04 lists the streams (senders)
- IS-05 switches the streams (receivers)

- But what if you want to manipulate it?
 - Shuffle, substitution, or even wild-mapping? How?

What Problem does IS-08 Solve?

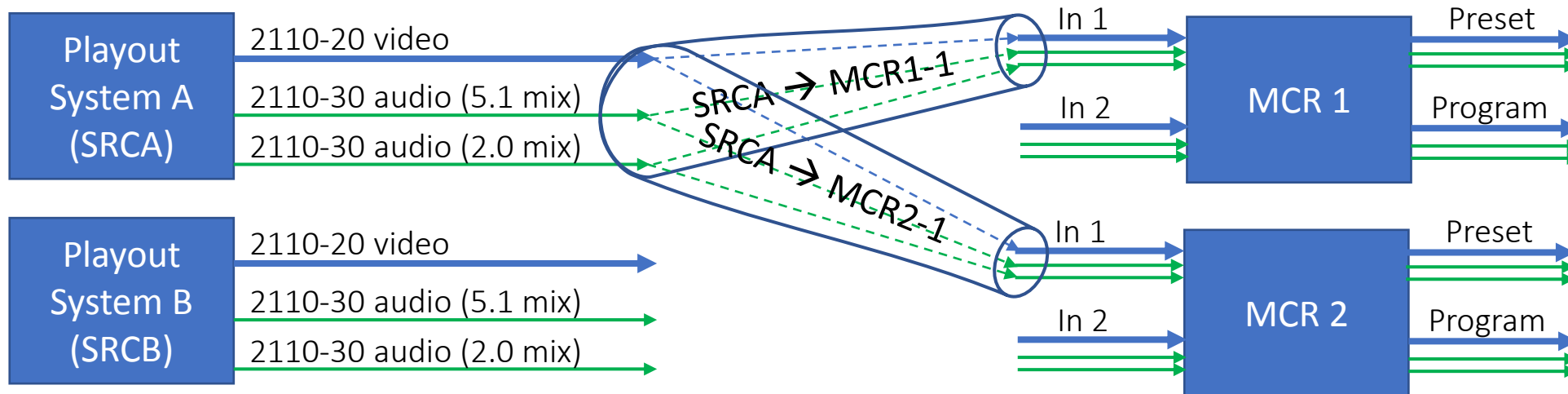
- IS-04 and IS-05 treat audio streams as monolithic essences – mixes or tracks to be kept together in the network, and switched together to the receiver
- Sometimes, operationally, there is a need to route the individual tracks more specifically – at the “mono” level
- IS-08 provides an open/public API for controllers to manipulate the individual tracks on receivers and senders, while retaining the general efficiency of keeping related tracks organized together into streams

Why not just make every mono channel into a separate multicast audio stream?

- Making each track its own stream is possible, except...
 - It creates a more complicated system overall because of the very large number of streams
 - Some receiving devices don't have a lot of separate audio stream receivers, so (you cant use them)
 - Overall signal switching time can suffer because of the number of separate stream "joins" in every operation

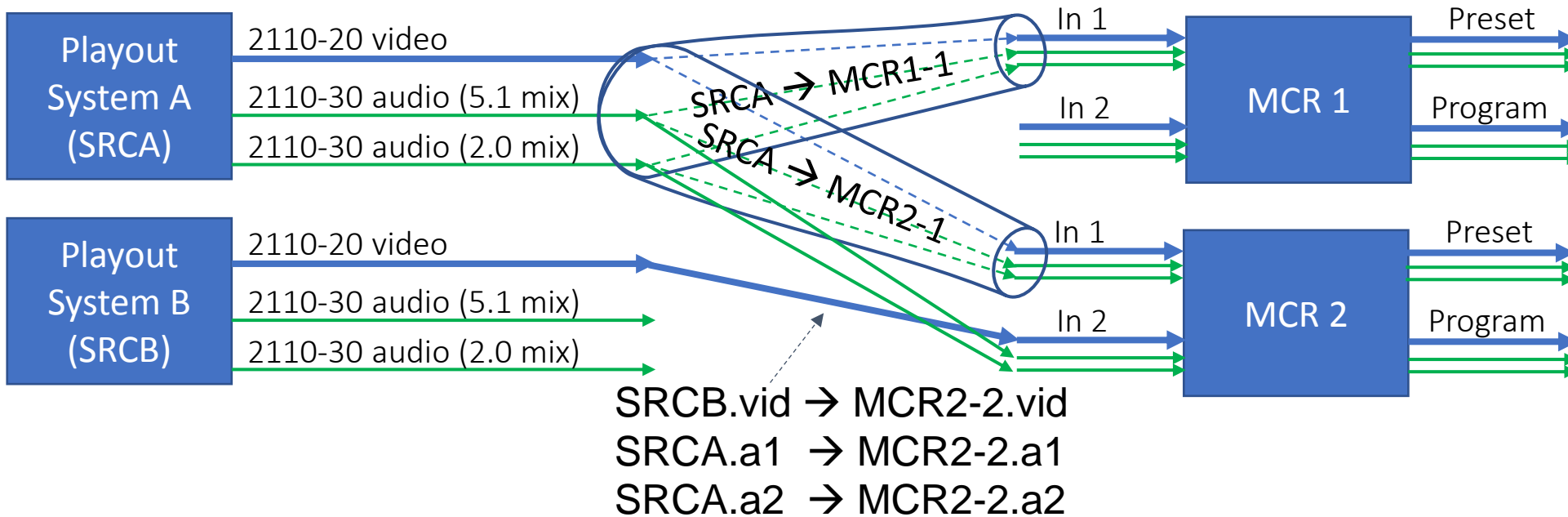
Audio Stream Routing

- What is Stream Routing? Its what 2110-30 + IS-05 does by default
 - Routes logical groupings of content easily



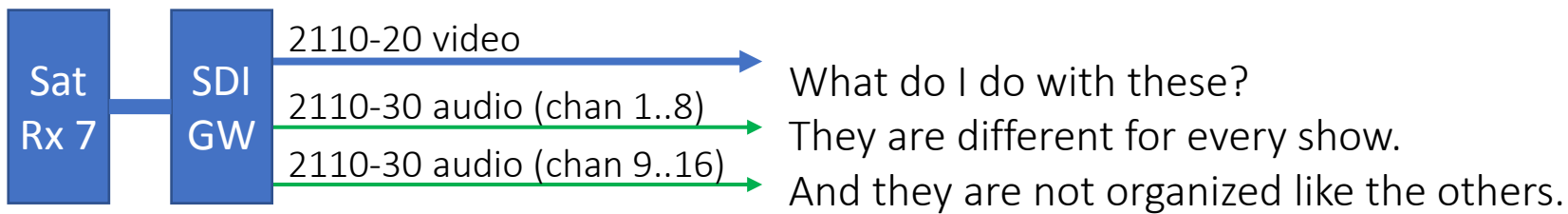
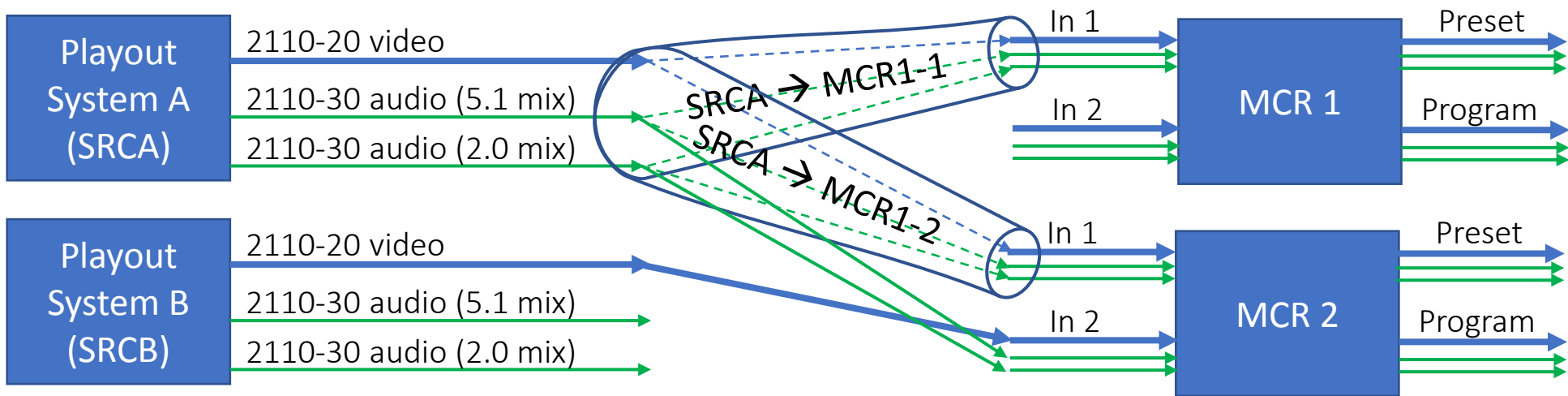
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 - Break-away routing at the stream level



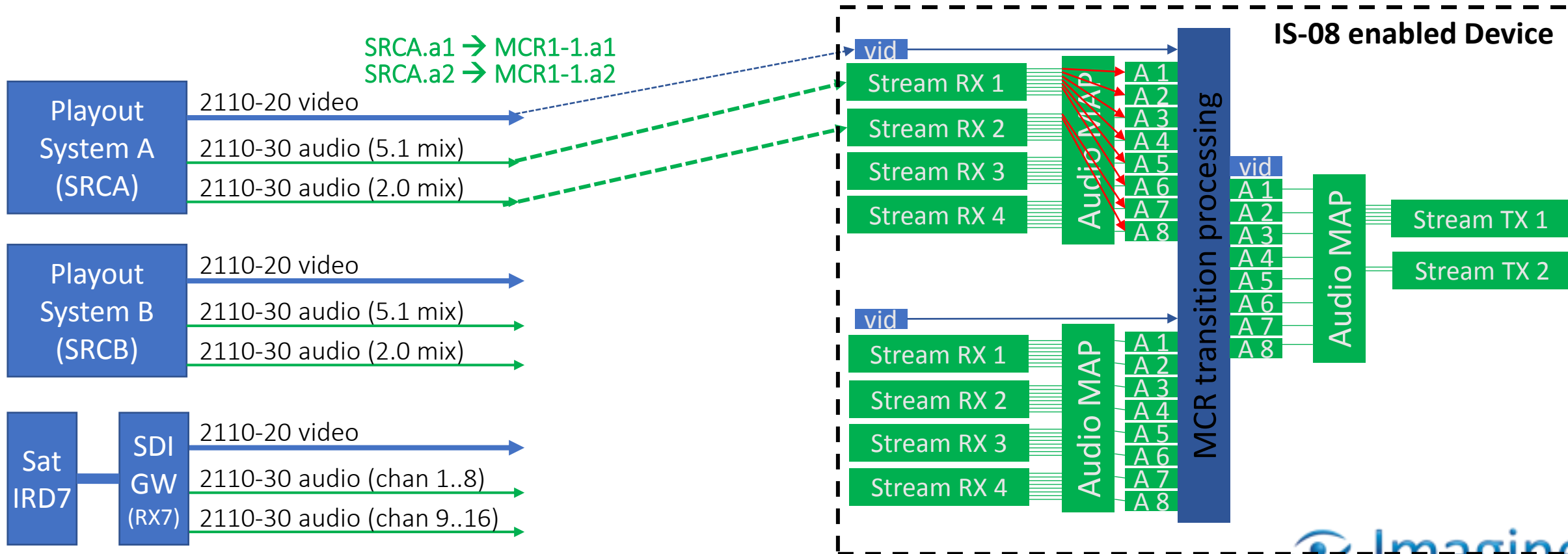
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 - Break-away routing at the stream level
 - But how do you integrate signals that are not consistent?



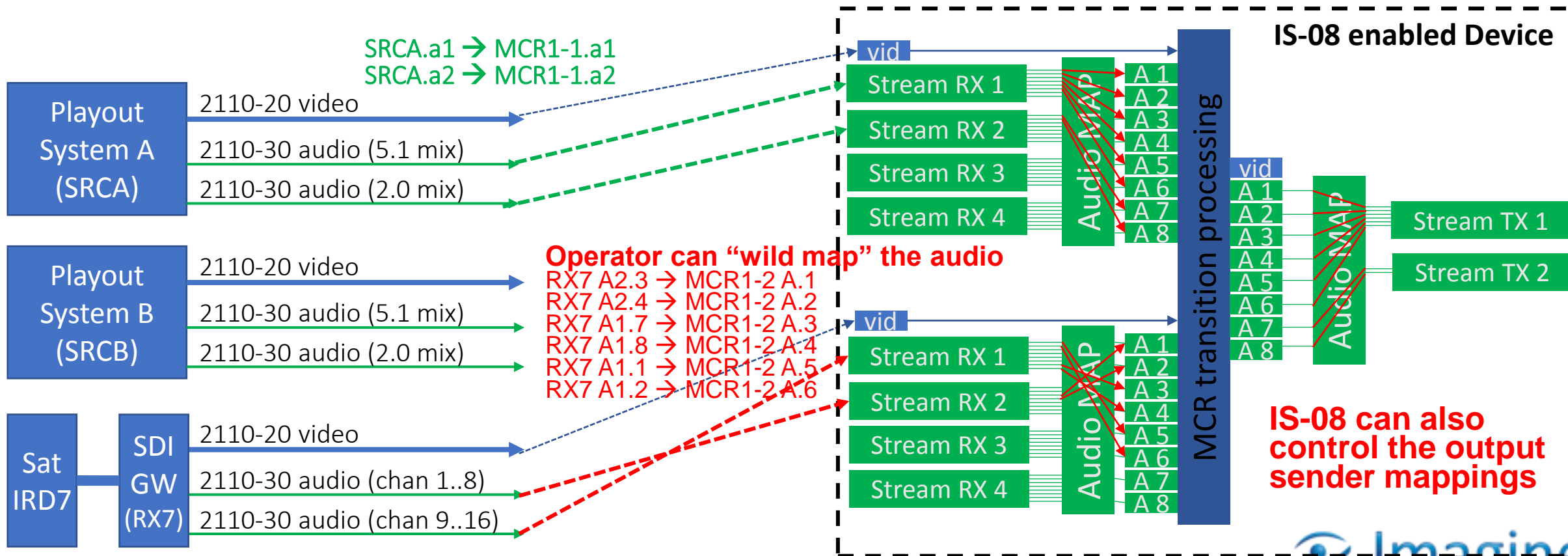
Audio Stream Routing + Track Routing

- System can treat the internal audio channels as the routing destinations
 - Controller manages the device's stream receivers using **AMWA IS-05**
 - Controller manages the device's audio mappings using **AMWA IS-08**
 - User can have total control in a logical way through control system using both



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Did we really need IS-08?

- Audio Track Routing requires the controller to manipulate downstream of the receivers (and upstream of the senders).
 - Today, this is different on every device, and some devices don't support an API even though they internally have the capability to route
 - So, the controller needs to create a driver for every different device
- Nobody likes writing drivers for every new device
- IS-08 provides a common API that devices can implement, to enable this very necessary behaviour

What is the Status of AMWA IS-08?

- IS-08 has been tested at a workshop, and a last-call for comments was issued
- The comments in the last-call were addressed
- The Specification has been approved by the AMWA Board and is a published AMWA Interface Specification, IS-08



Questions?

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