RTP Taxonomy
&
Relationships

draft-lennox-raiarea-rtp-grouping-taxonomy-03
IETF 88

@Authors

Changes Since -02

- Major re-write
  - Section 2, Concepts, re-structured to a conceptual media chain with Streams and Transformations
  - Section 3, Relations, re-organized and added descriptions of a few more functional relations
  - Section 4, Communication Entities, aligned taxonomy with Section 2

Way Forward

- Is the draft ready enough for WG adoption?

Media Streams and Transformations

The flow of media signal undergoes a series of transformations from the source to the sink

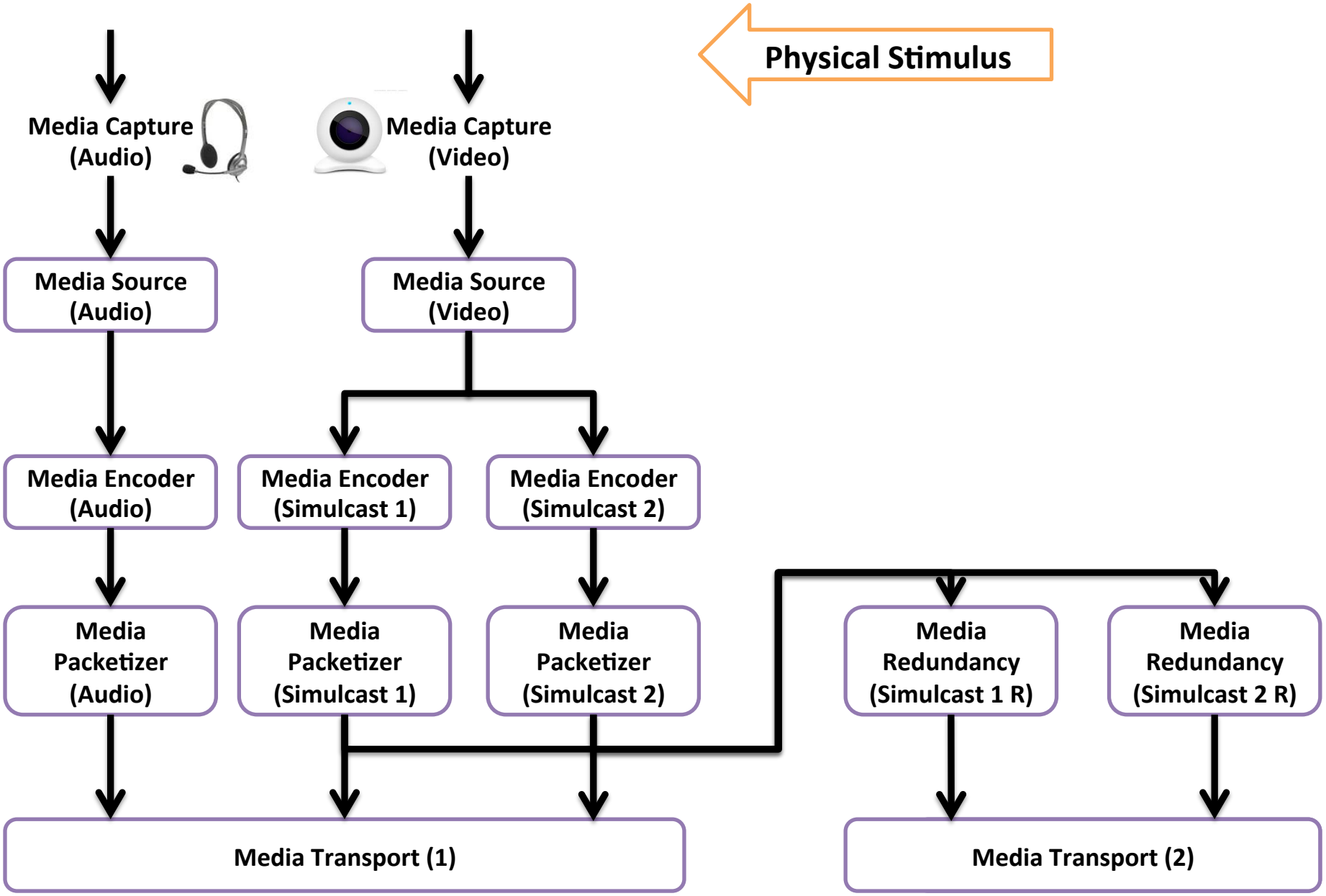
Transformations:
Encoder,
Decoder, …

Media Streams:
Encoded Stream,
Source Stream, …

Media Streams and Transformations

- A transformation may have zero or more input Streams and one or more output Streams.
- A Stream is of some type.
- A Stream has one source transformation and one or more sink transformations.
- Streams can be forwarded from a transformation output to any number of inputs on other transformations that support that type.
- If the output of a transformation is sent to multiple transformations, those streams will be identical; it takes a transformation to make them different.
- There are no formal limitations on how streams are connected to transformations, this may include loops if required by a particular transformation.

Audio, Video with 2 simulcast streams w/repair stream - (Sender Side)



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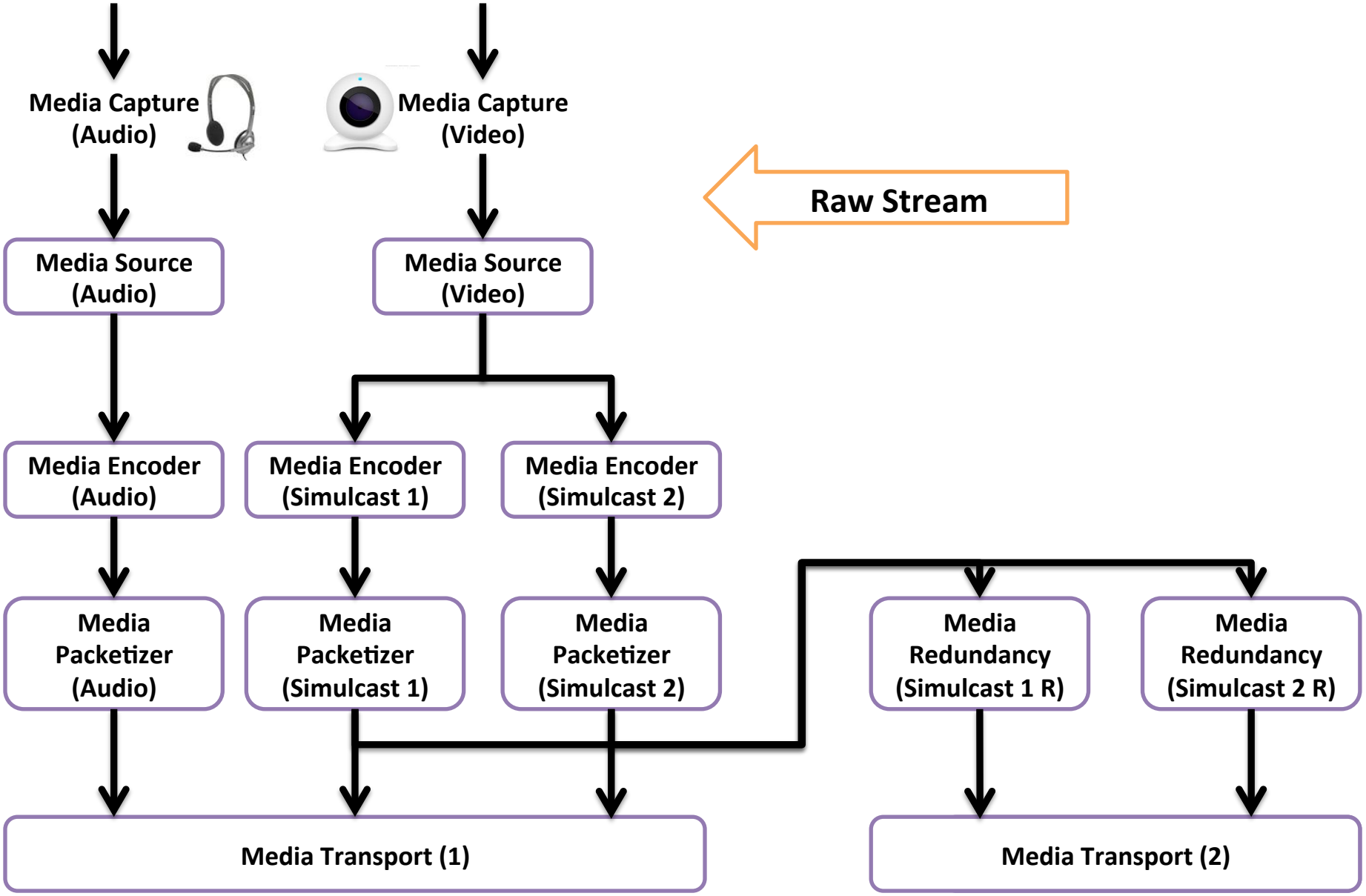

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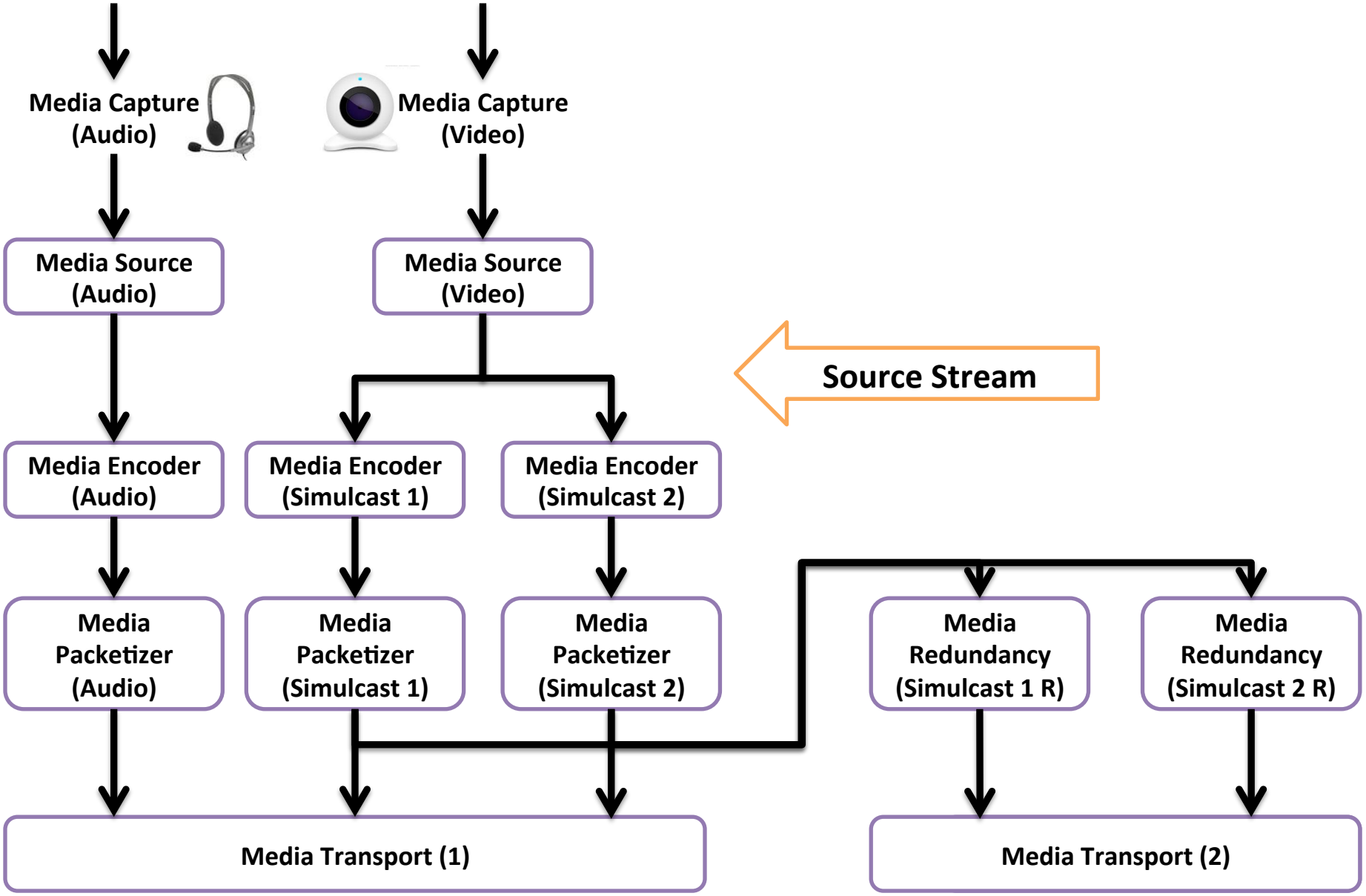

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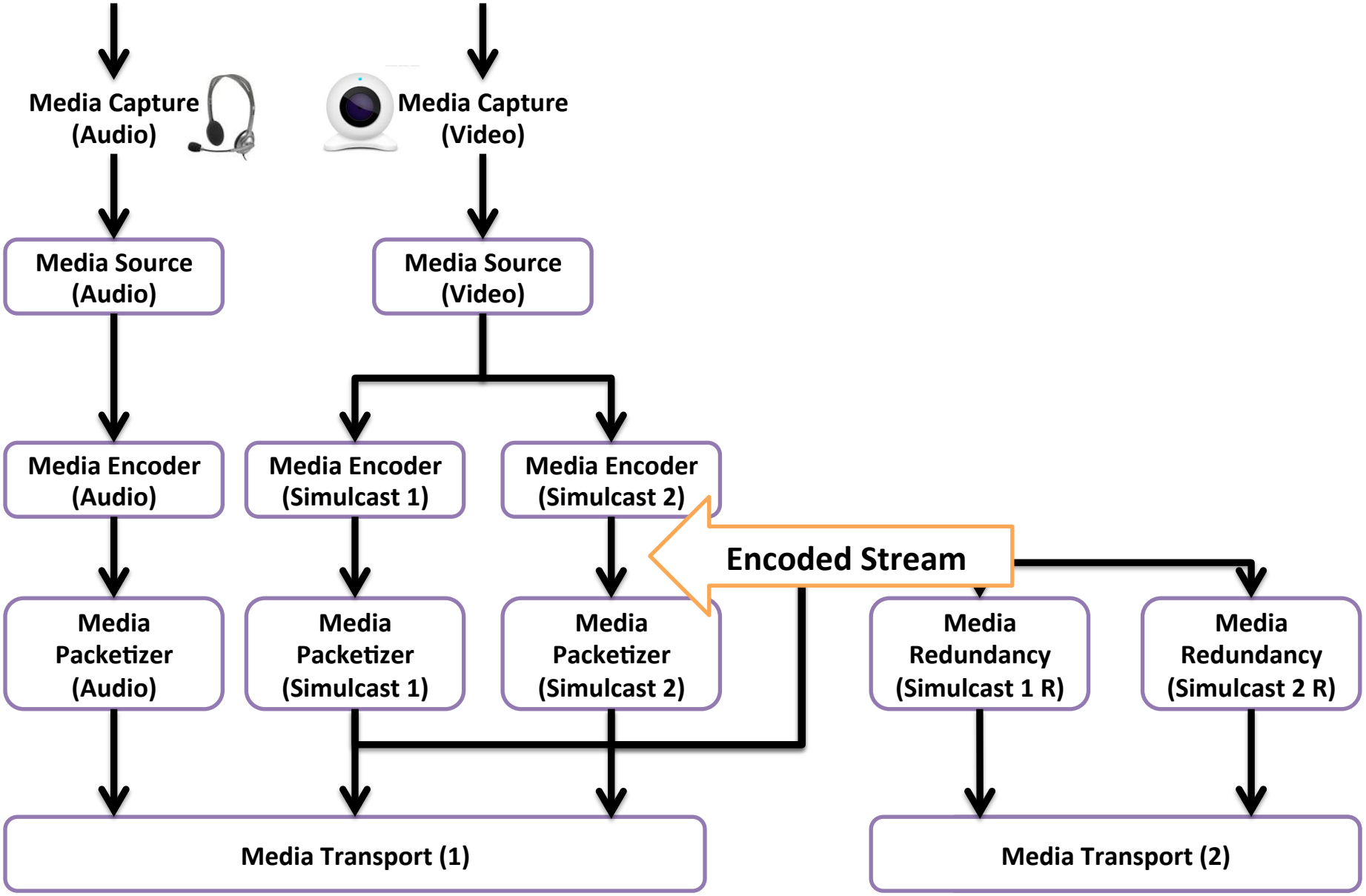

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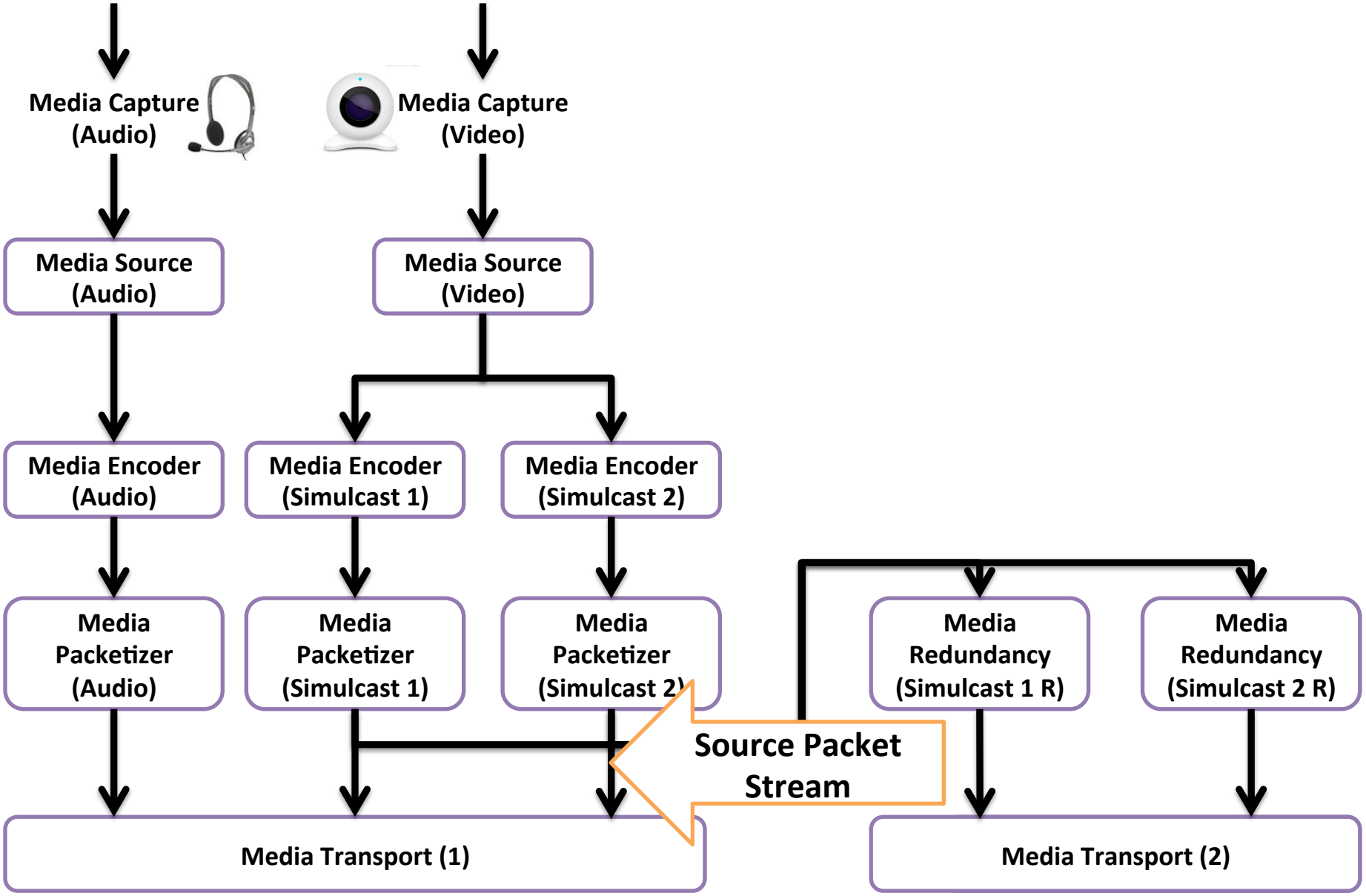

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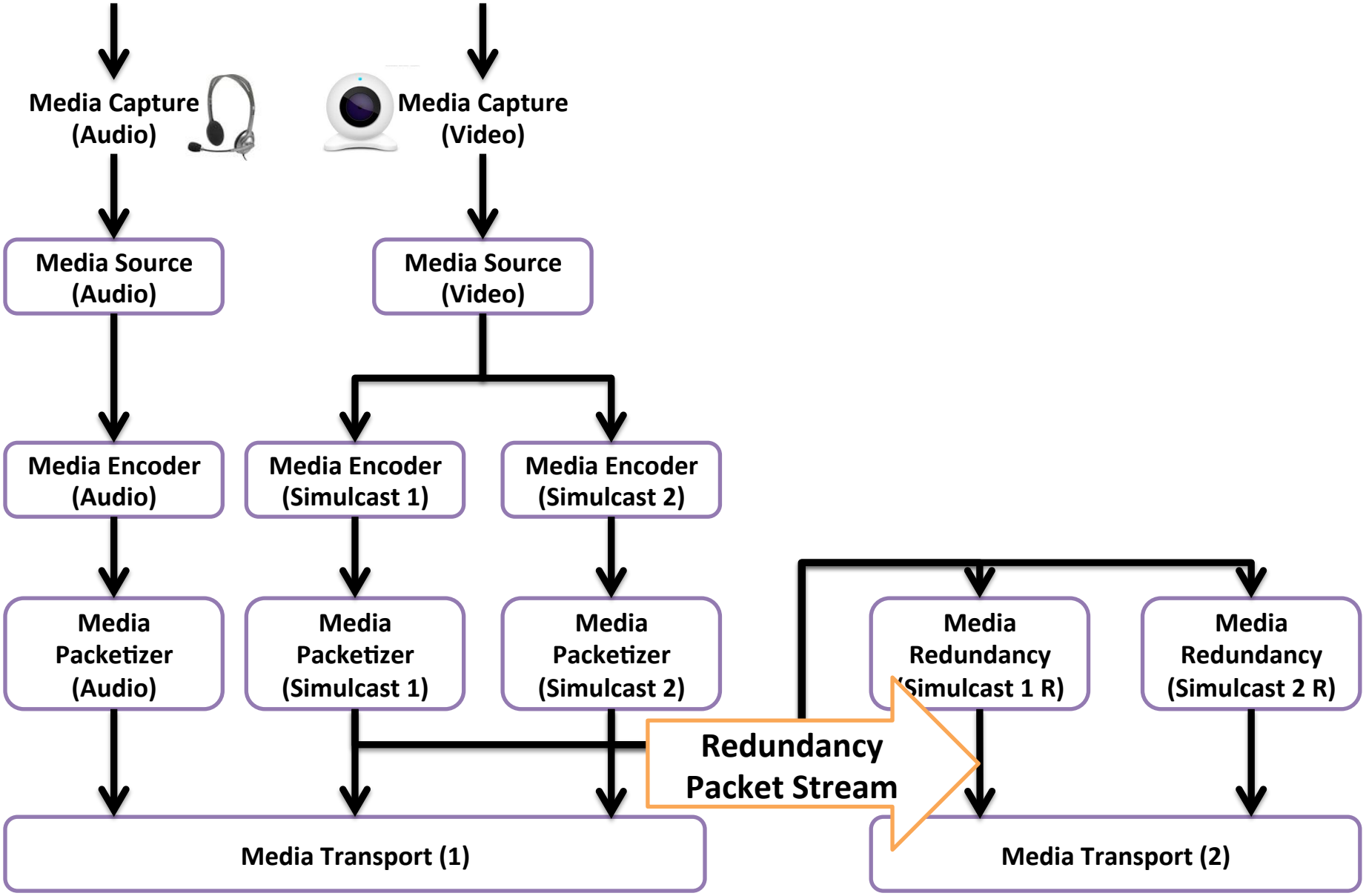
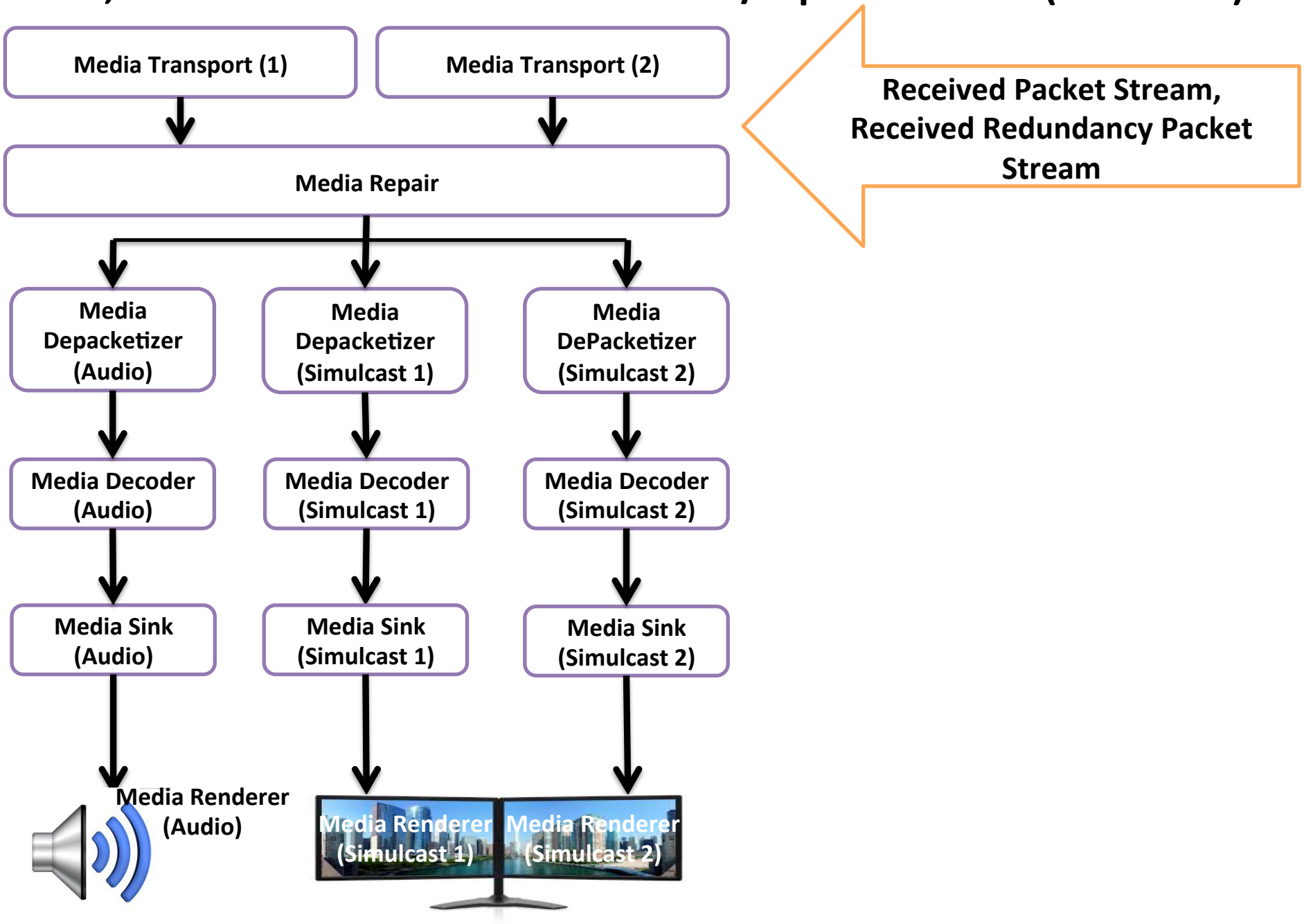


Audio, Video with 2 simulcast streams w/repair stream - (Recv Side)



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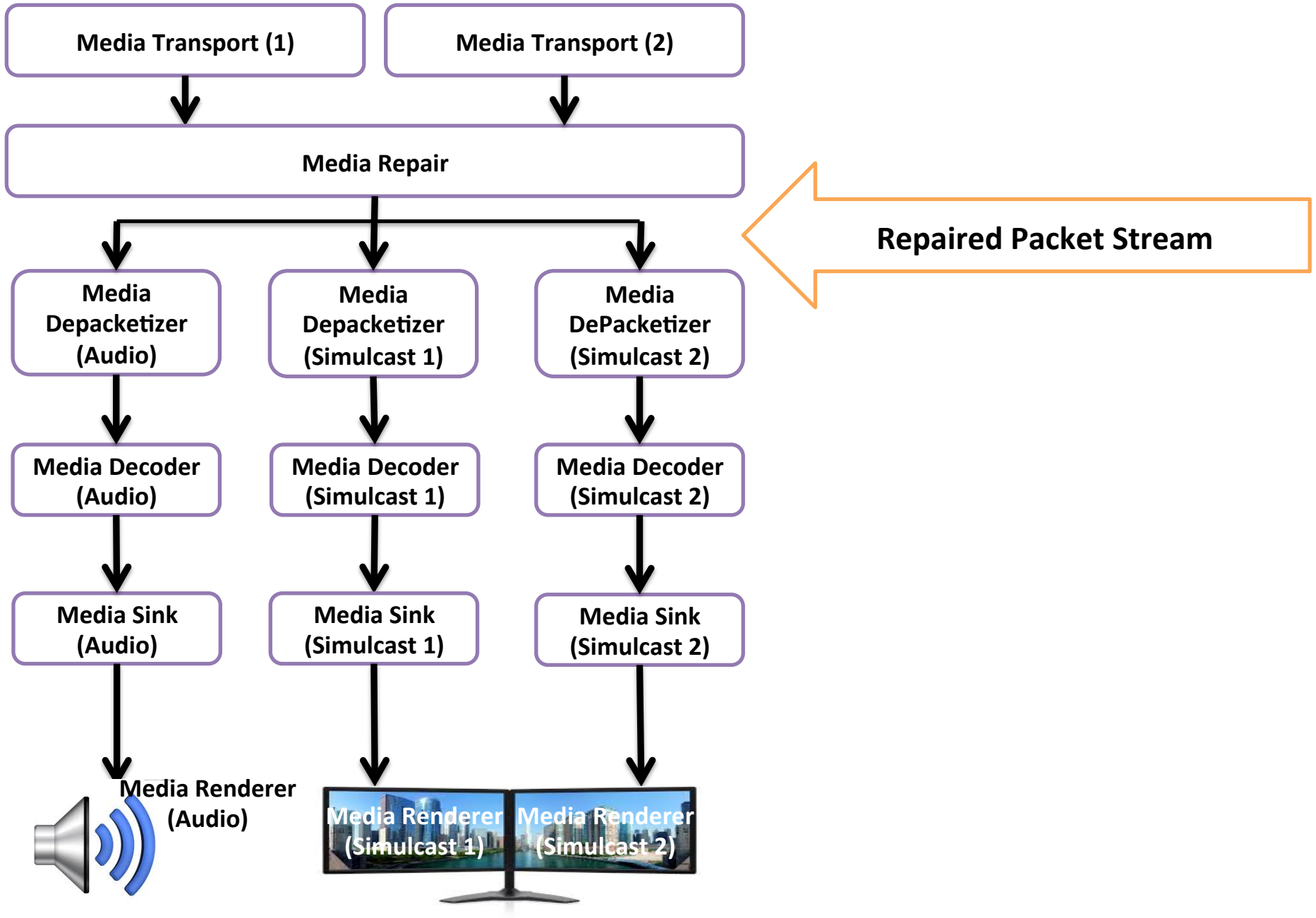

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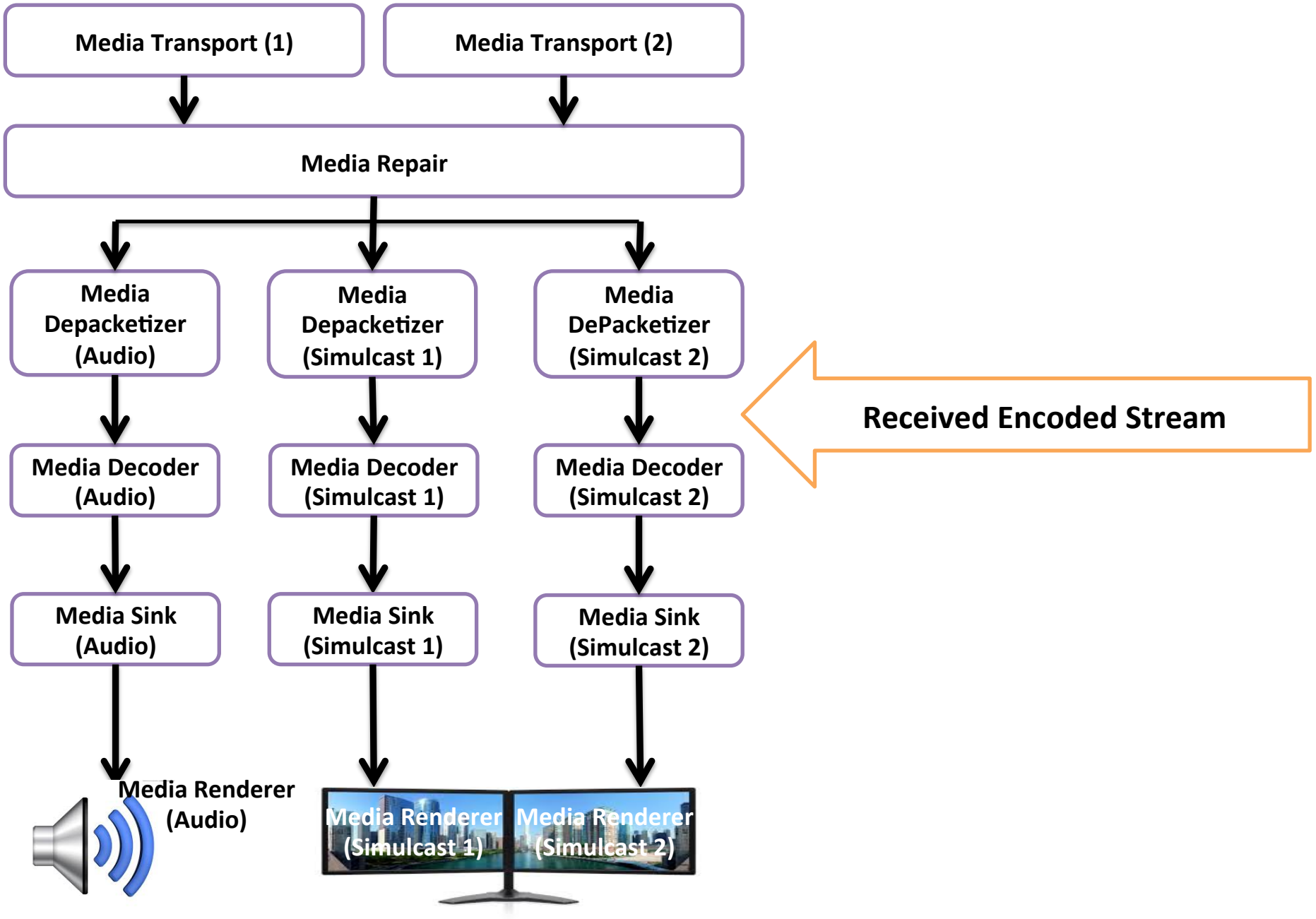

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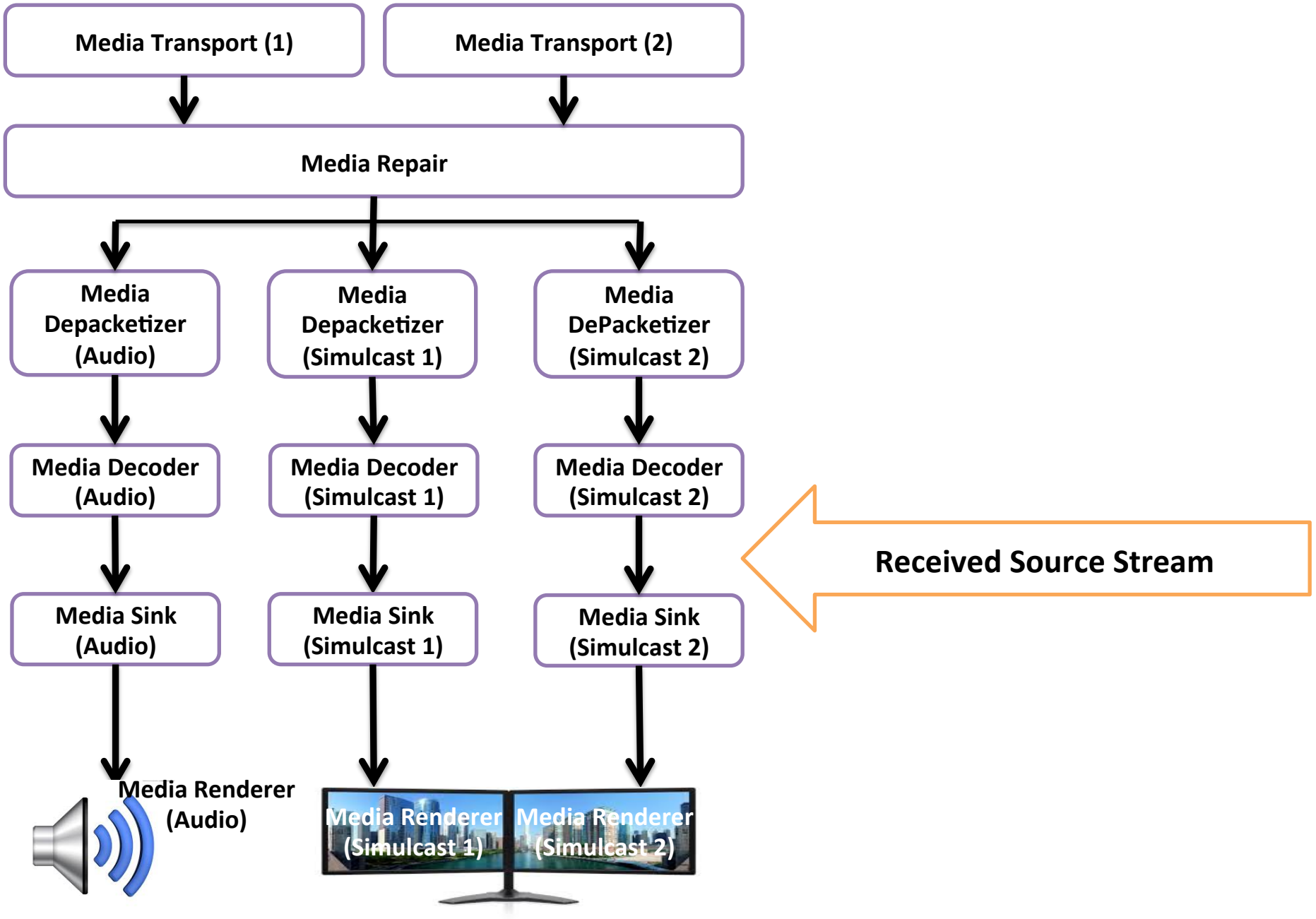

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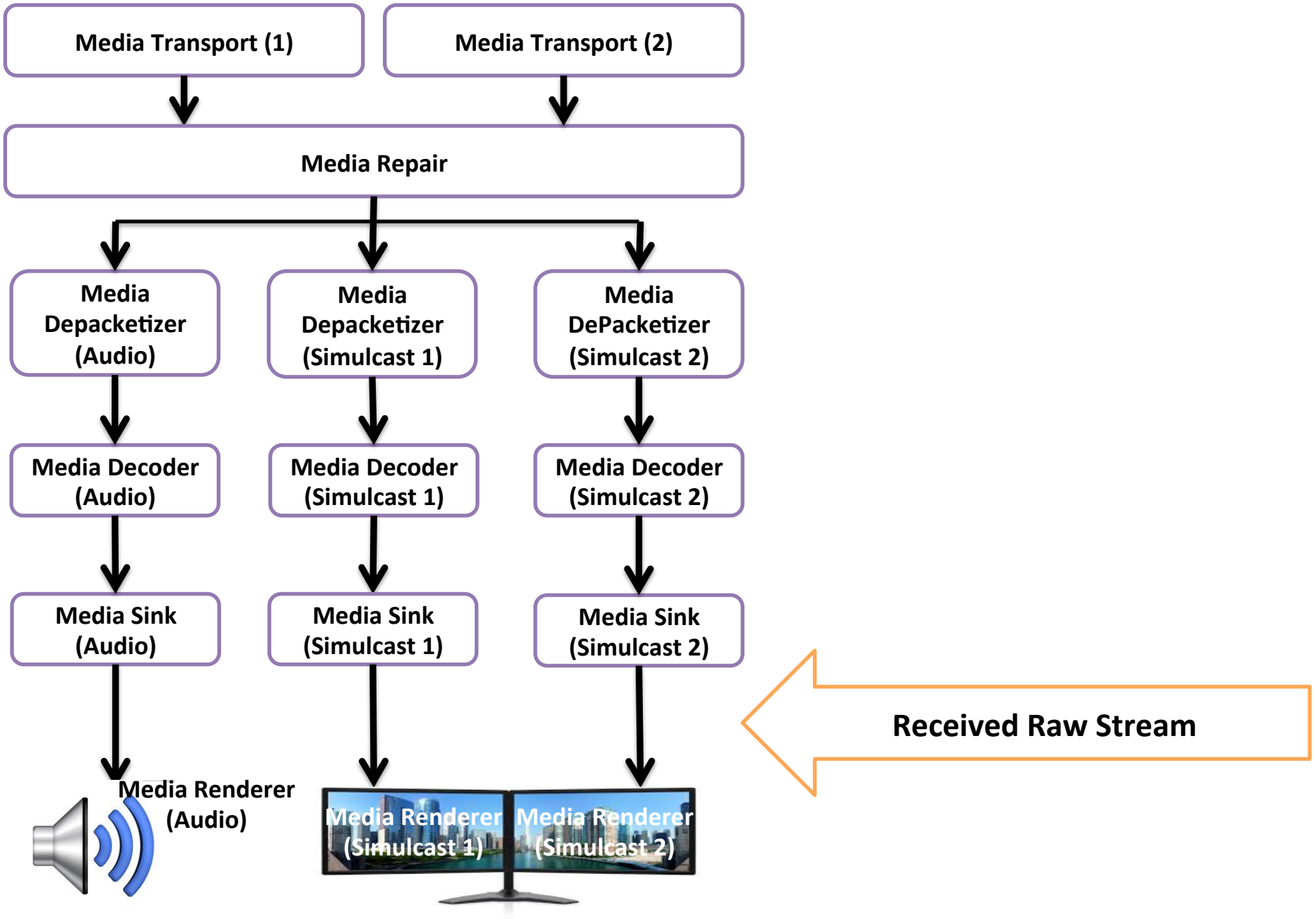
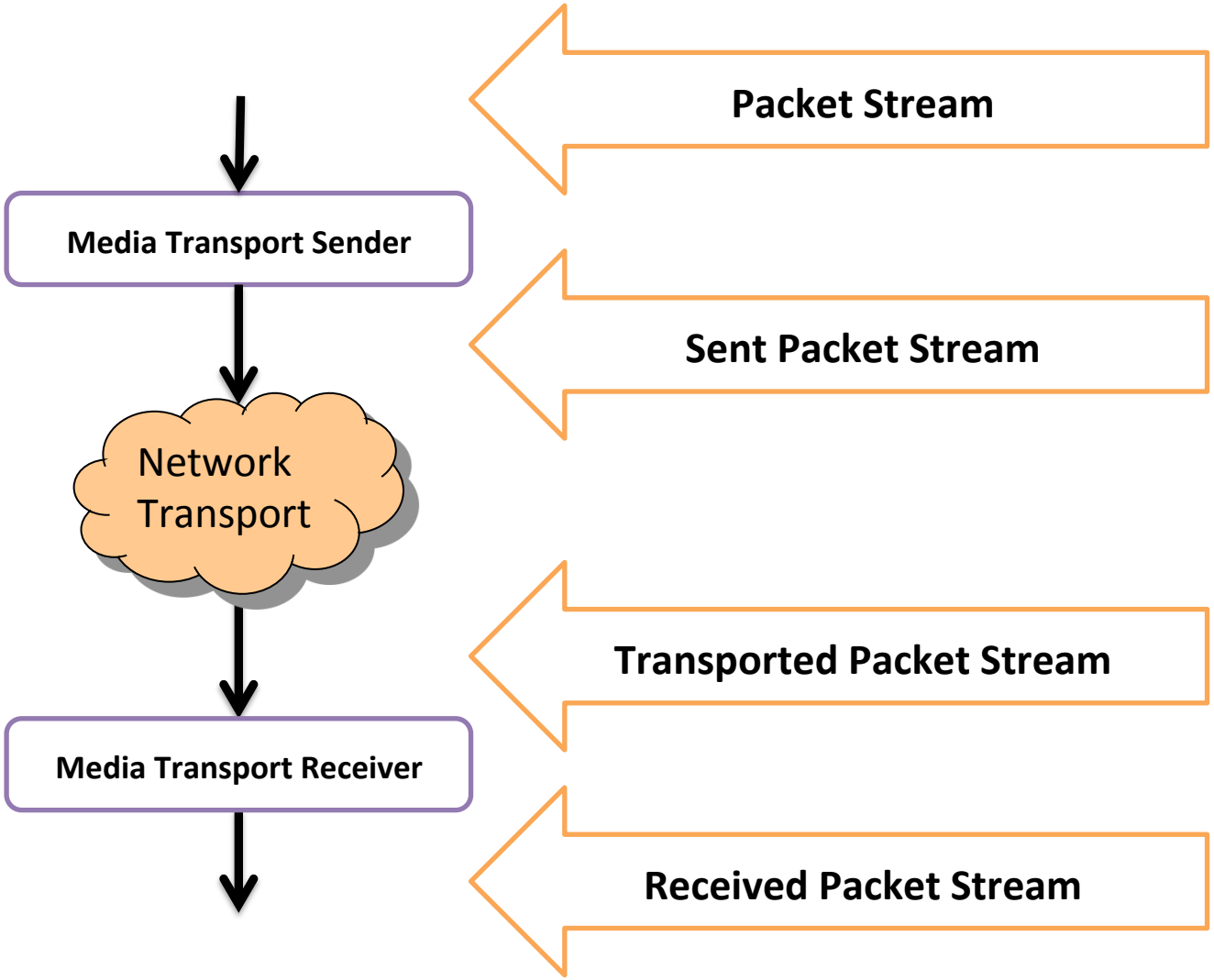


Media Transport Detailed



Communication Entities

End Point

A single addressable entity sending or receiving RTP packets. It may be decomposed into several functional blocks, but as long as it behaves as a single RTP stack entity it is classified as a single "End Point".

RTP Session

An association among a group of participants communicating with RTP. It is a group communications channel which can potentially carry a number of Packet Streams. Within an RTP Session, every participant can find meta-data and control information (over RTCP) about all the Packet Streams in the RTP session.

Participant

An entity reachable by a single signaling address,
and is thus related more to the signaling context than to the media context. A Participant can have multiple Multimedia Sessions.

Multimedia Session

An association among a group of participants engaged in the communication via one or more RTP Sessions. It defines logical relationships among Media Sources that appear in multiple RTP Sessions.

A Multimedia Session can be composed of several parallel RTP Sessions with potentially multiple Packet Streams per RTP Session.

Communication Session

An association among group of Participants communicating with each other via a set of Multimedia Sessions.

Each Participant in a Communication Session is identified via an application specific signaling address.

A Communication Session is composed of at least one Multimedia Session per Participant, involving one or more parallel RTP Sessions with potentially multiple Packet Streams per RTP Session.

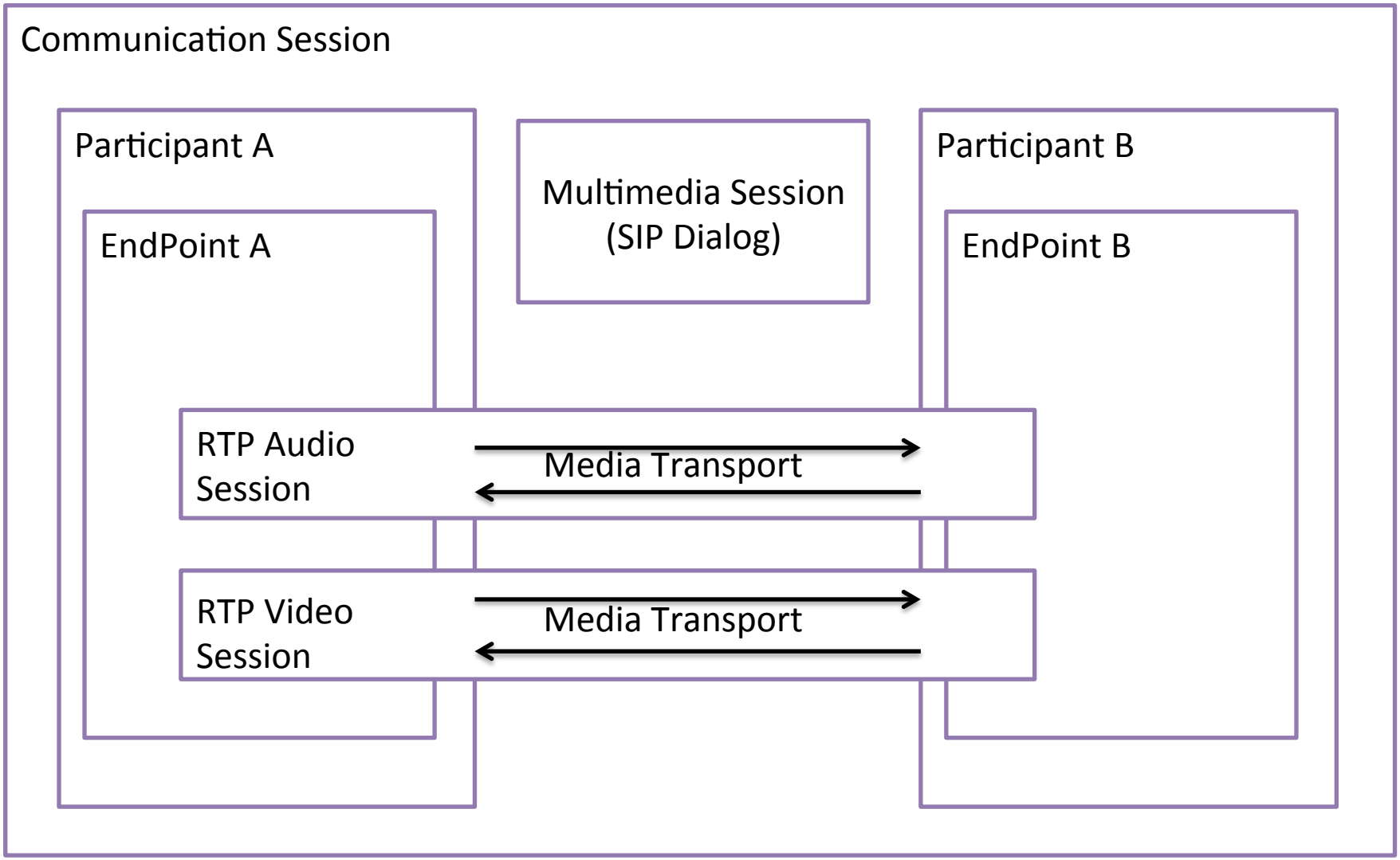
Concept Relations

Relations at Different Levels

- The reason why a relation is needed on one level may be functionality on a different level
  - E.g. Simulcast relate Packet Streams to identify a common Media Source
- Briefly describes a set of existing functional relations in taxonomy terms
  - Synchronization
  - Simulcast
  - Layered encoding
  - Robustness and repair

Topologies and Communication Entities

Point-to-Point Communication



Remaining Issues

- To what extent should terminology used in existing RTP-related RFCs be clarified and mapped onto the proposed taxonomy by the draft?
- Are there more functionalities involving Stream relations that should be described?
- To what extent should Stream relation and identification needs from different RTP Topologies be elaborated?
- More?

Thank
You