

CLUE Overview and Architecture

IETF 82

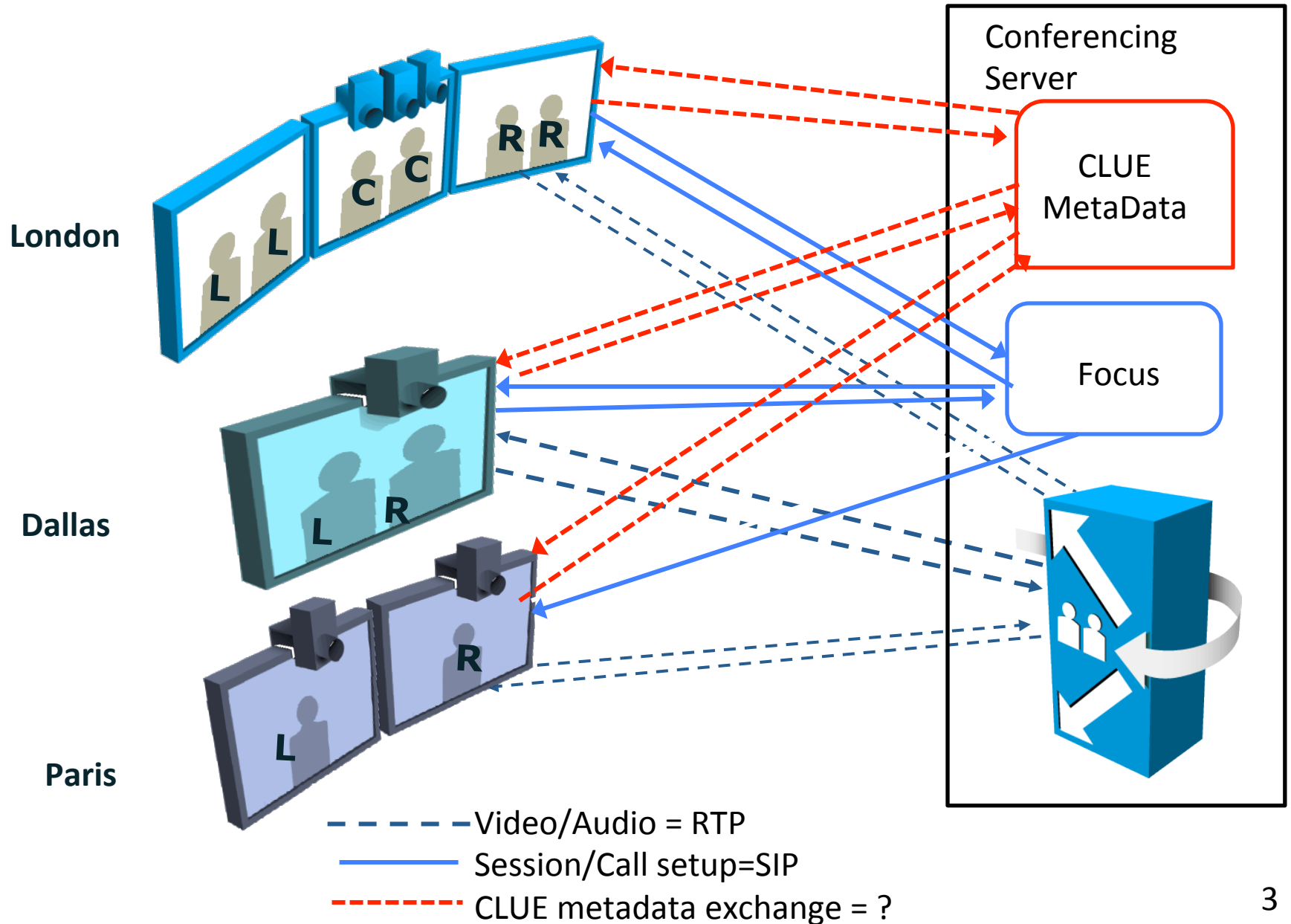
CLUE ad hoc meeting

Allyn Romanow allyn@cisco.com

What's important about CLUE

- *Relationships* between multiple streams
- For SIP based systems
- Extensible

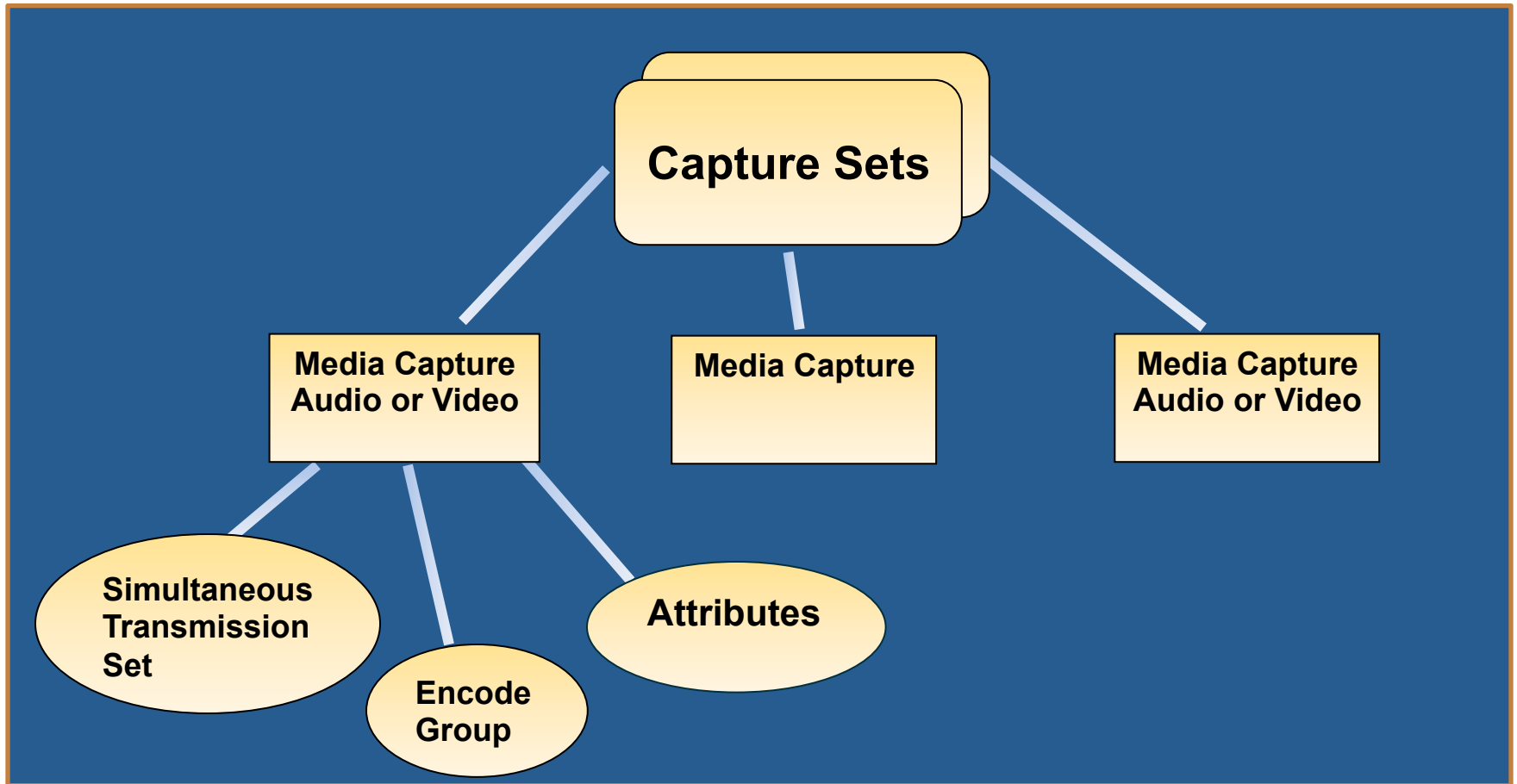
CLUE functional model



How it works

- Description of stream relationships
 - Capture attributes
 - Physical simultaneity
 - Encoding groups
- Messaging model
- Mechanism for receiver to choose streams
- Extensible

Information Structure



Attributes

Audio attributes

- Purpose (role)
 - Main
 - Presentation
- Mixed– true/false
- Channel Format
 - Linear array
 - Stereo
 - Mono
- Linear position
 - 0 to 100

Provides Extensibility

Attributes

- Purpose: main, presentation
- Composed: true, false
- Audio Format: mono, stereo, tbd
- Area of capture
- Point of capture

Encoding Groups

Media Stream
Provider



Encoding
Group

Attribute Name	Description
maxBandwidth	Maximum number of bits per second relating to all encodes combined
maxVideoMbps	Maximum number of macroblocks per second relating to all video encodes combined: $((\text{width} + 15) / 16) * ((\text{height} + 15) / 16) * \text{framesPerSecond}$
videoEncodes[]	Set of potential video encodes can be generated
audioEncodes[]	Set of potential audio encodes that can be generated

Provider Capture Advertisement

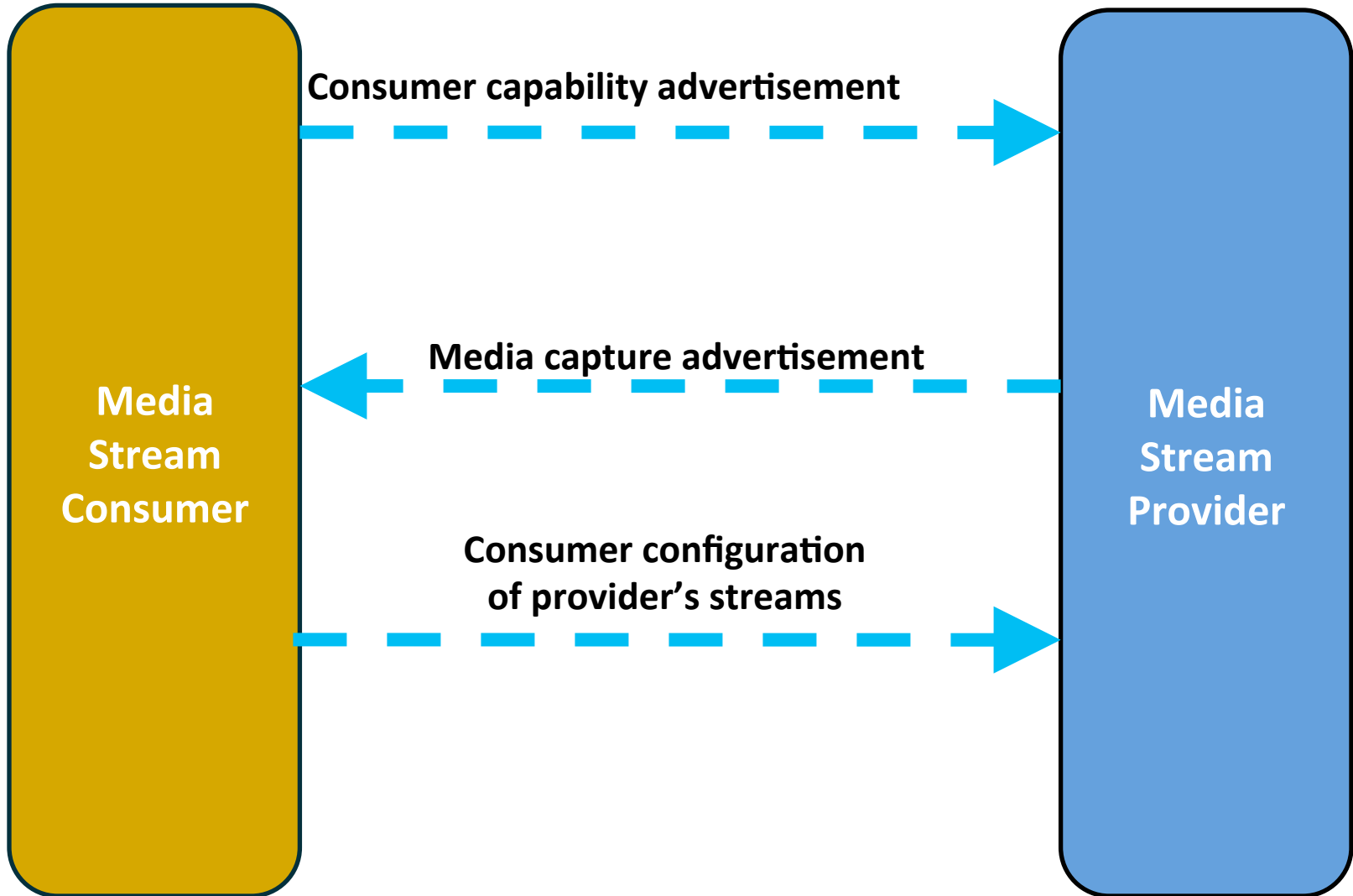
Captures with attributes

Simultaneous transmission sets

Capture sets

Encoding groups

Basic message flow



SDP Offer Answer Model

- Purpose to agree on “view” of the conference
- A and B agree what they will send & receive
- An initiator and an answerer

A → offer → B

A ← answer ← B

CLUE Messaging Model

- Purpose is not to agree on single set of shared variables and parameters
- Publish/ subscribe
- Purpose
 - A learns, then chooses what it wants from B
 - B learns, then chooses what it wants from A

Message Flow

- $B \rightarrow \text{consumer capabilities}(\text{description}) \rightarrow A$
- $B \leftarrow \text{provider advertisement} \leftarrow A$
- $B \rightarrow \text{consumer configures}(\text{chooses}) \rightarrow A$
- **AND**
- $A \rightarrow \text{consumer capabilities}(\text{description}) \rightarrow B$
- $A \leftarrow \text{provider advertisement} \leftarrow B$
- $A \rightarrow \text{consumer configures} \rightarrow B$