

# RTP Payload Format for Generic FEC-Encoded Time-Sensitive Media

<draft-luby-avt-rtp-generic-fec-00.txt>

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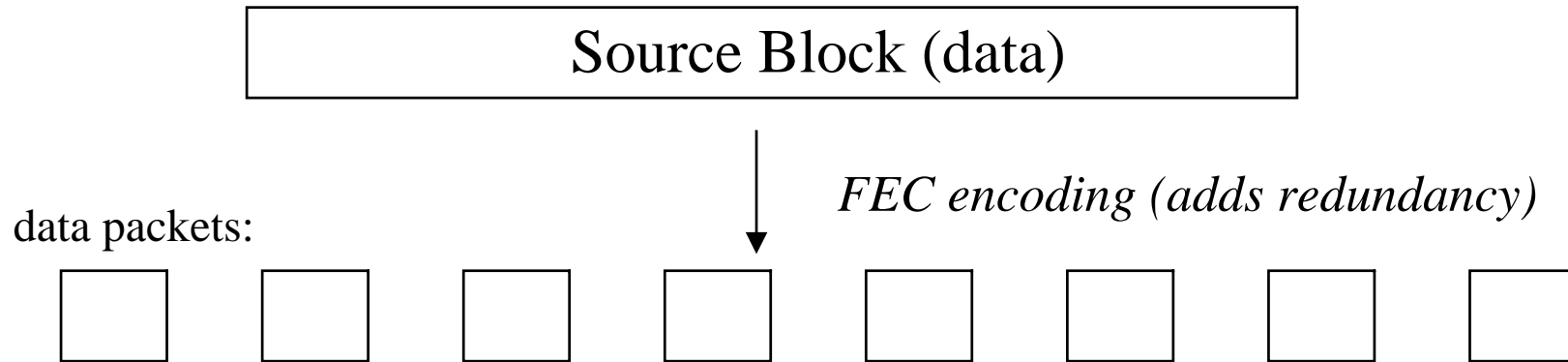
# FEC Building Block (RFC 3452)

- Framework for Forward Error Correction
- Standardized by the RMT WG for reliable transport of bulk data
  - multicast, or unicast
  - can also be applied to streaming media
- *Instantiations* of the Building Block define specific FEC algorithms

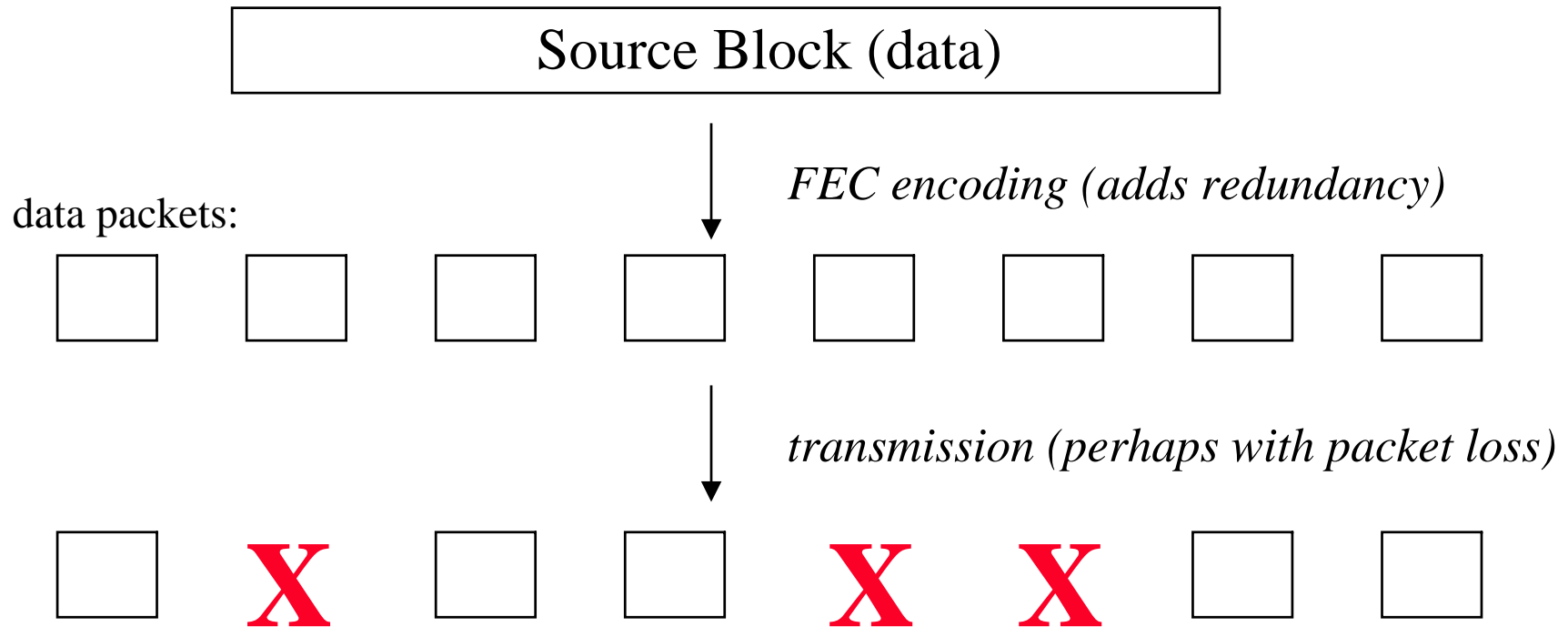
# Review: Forward Error Correction

Source Block (data)

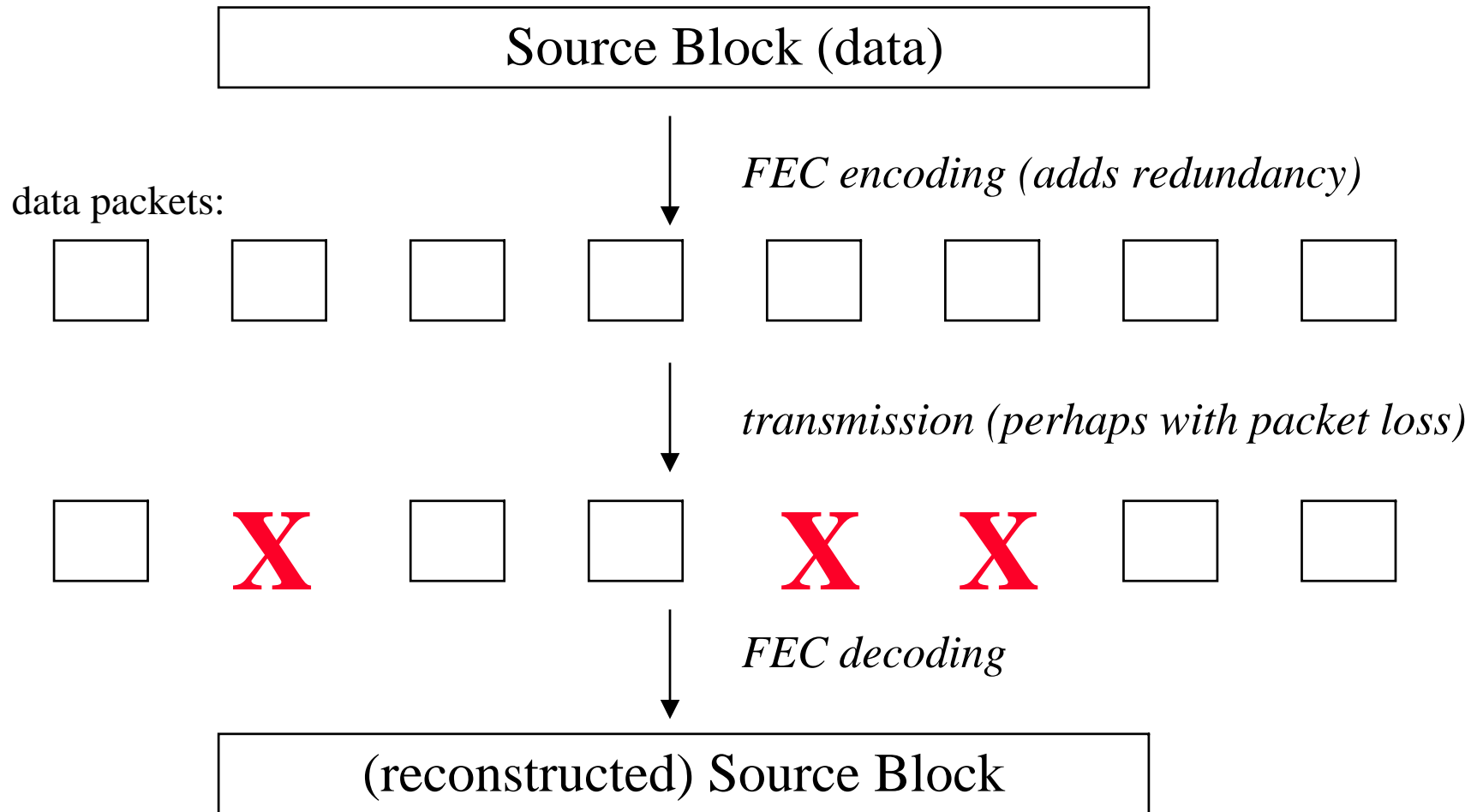
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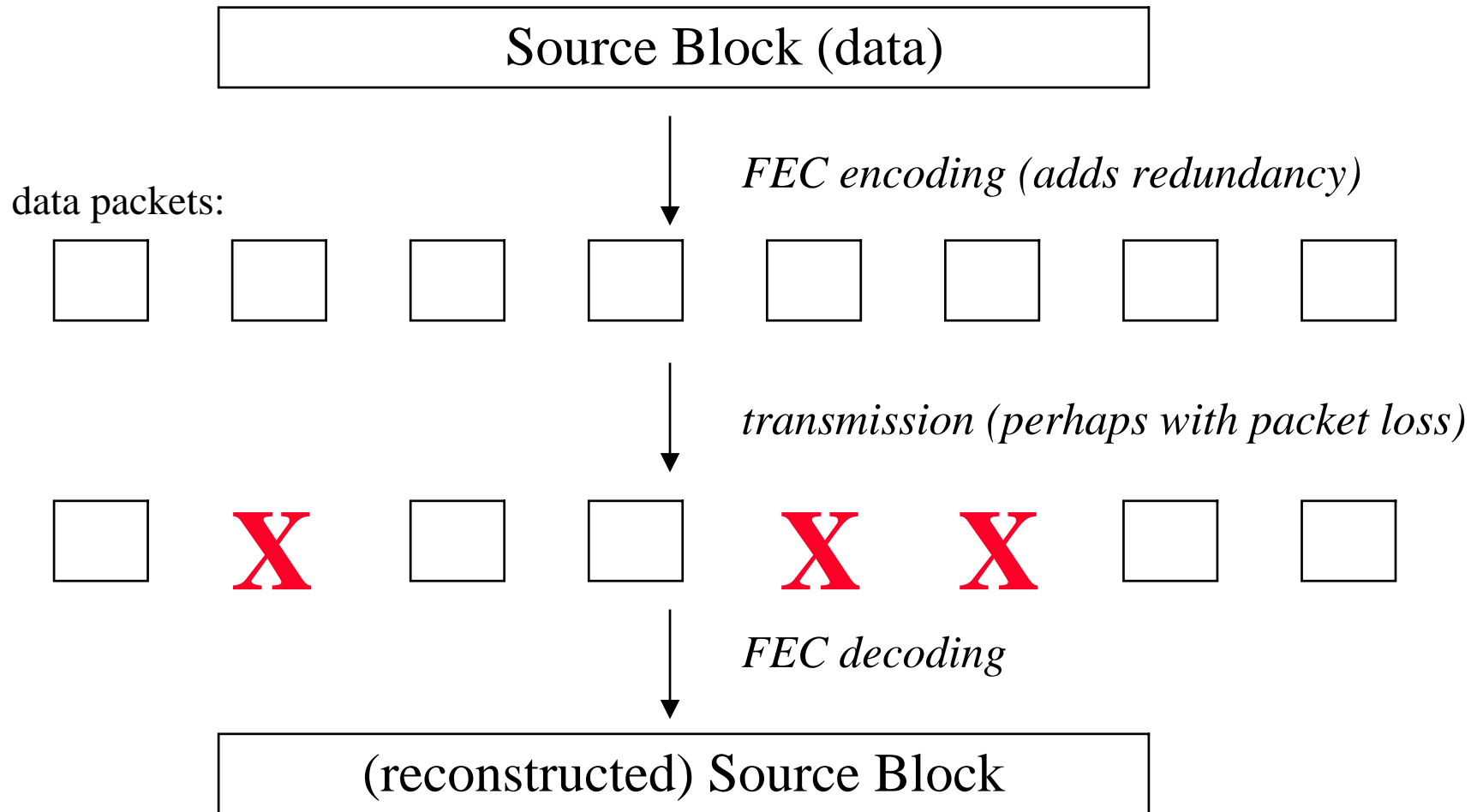
# Review: Forward Error Correction



# FEC Algorithm (encoding/decoding)

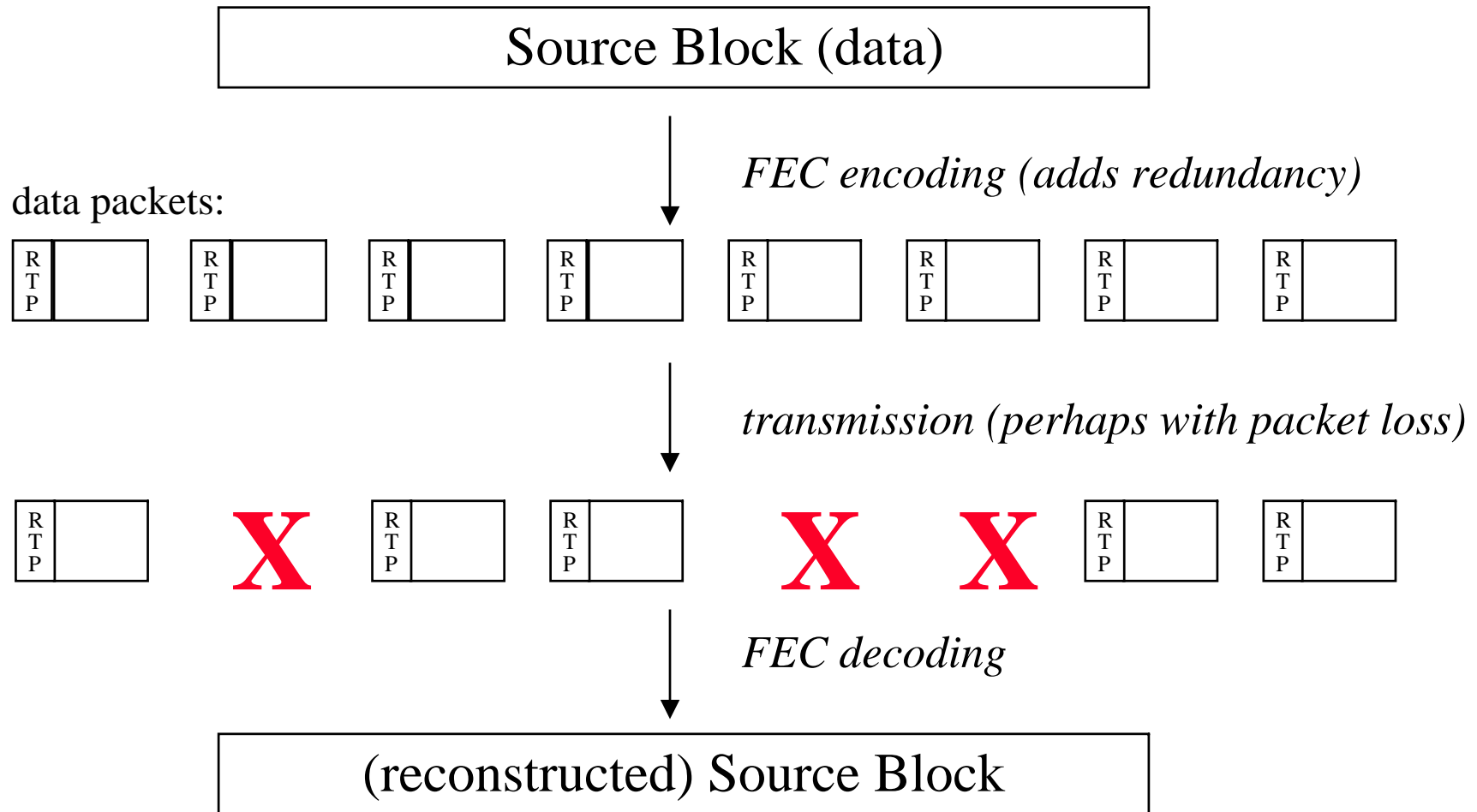
- An instantiation of the “FEC Building Block”
- Completely defined by:
  - FEC Payload ID
    - carried in data packets
  - FEC Encoding ID, FEC Instance ID
    - carried ‘out of band’
  - Other algorithm-specific parameters
    - e.g., “source-block-length”, “max-encoding-symbols”
    - carried ‘out of band’

# Review: Forward Error Correction





# This I-D: Adding RTP headers



# RTP Header Fields

- Payload Type: Dynamic
- ‘M’ bit: No use
  - or use to mark last packet of each Source Block?
- RTP Timestamp Frequency
  - match presentation time granularity of orig data
    - or 90000
- RTP Timestamps: Monotonically increasing

# Issue 1: Relationship with existing AVT FEC work

- “ULP” (parity FEC) - updates RFC 2733
  - an independent payload format
    - FEC and original data are carried separately
- “UXP” (Reed-Solomon FEC)
  - subsumed by this payload format, if a FEC Building Block instantiation for Reed-Solomon is defined (in the RMT WG)
  - except for “unequal erasure protection” - but how important is this?

# Issue 2: Original source data is an RTP stream

Source Block (data)



- How to frame the original RTP packets within the source block?
- How to describe the original RTP stream within the FEC stream's SDP description?

# Possible solution (from UXP)

- Indicate the original RTP stream on the “m=” line, e.g. (for MPEG-4 audio)

m=audio 0 RTP/AVP 97 96

a=rtpmap:97 generic-fec/32000

a=fmtp:97 encoding-id=142; instance-id=3;  
source-block-length=16384

a=rtpmap:96 MPEG4-GENERIC/32000

a=fmtp:96 <etc.>