IETF#74 – 16-22 November 2008

FECFRAME

draft-ietf-fecframe-framework-03
draft-ietf-fecframe-raptor-00
draft-watson-fecframe-rtp-raptor-00

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draft-ietf-fecframe-framework-03

- Changes from -02
  - Add possibility for FEC Schemes to specify RTP transport for repair flows
    - (revised architecture on next page)
  - Short discussion of feedback
    - Recommend use of RTP/RTCP for new applications that need feedback

```
                +----------------------------------------------+
                |                 Application                  |
                +----------------------------------------------+
                                      |
                                      |
                                      |
        + - - - - - - - - - - - - - - - - - - - - - - - - -+
        | +------------------------------------------------+ |
        |               Application Layer                    |
        | +------------------------------------------------+ |
                                   |                    |
        | + -- -- -- -- -- -- -- -- -- -- --+        |       |
        |   | Source Application/Transport  |        |
        | |     Protocol  (e.g. RTP)        |        |-Configuration/Coordination
        +- -- -- -- -- -- -- -- -- -- -- -+        |
        |                    |                  |       |
                             | Transport flows     |
        |                    |                  v       |
        +-----------------------------------------------+    +----------------+
        | |        FEC Framework (this document)        |<--->|   FEC Scheme   |
        +-----------------------------------------------+    +----------------+
        |            |                  |             |
               Source |        Repair  |
        |            |                  |             |
        +-- -- -- -- -- --|-- --+ -- -- -- -- -- + -- --+
        | |  RTP           |  | RTP processing |     |<--- Optional
        |                  |  +-- -- -- |- -- -+      |      - dependent on
        | |        +-- -- -- -- -- -- -- |--+        | |       FEC Scheme
        |         | RTP (de)multiplexing |        |
        | +-- -- -- --- -- -- -- -- -- -- -- -- -- -+ |
                             |
        | +------------------------------------------------+ |
        |            Transport Layer (e.g. UDP)              |
        | +------------------------------------------------+ |
                             |
        | +------------------------------------------------+ |
        |                      IP                            |
        | +------------------------------------------------+ |
        Content Delivery Protocol
        + - - - - - - - - - - - - - - - - - - - - - - - - -+
```

draft-ietf-fecframe-raptor-00

- Defines 3 FEC Schemes for the Raptor code
  - Raptor FEC Scheme for arbitrary packet flows
    - As defined in 3GPP
    - Protects multiple source flows, using source packet tagging to identify source packets
  - Optimised Raptor FEC Scheme for arbitrary flows
    - As standardised in DVB
    - Restricted set of block sizes and code shortening used to optimise for high-bit-rate applications
  - Raptor FEC Scheme for a single sequenced flow
    - As standardised in DVB
    - Restricted to a single flow with source packet identification based on a pre-existing sequence number (e.g. RTP Sequence Number)

draft-watson-fecframe-rtp-raptor-00

- RTP Payload Format for the Raptor FEC Schemes defined in draft-ietf-fecframe-raptor

- Align with recent changes in DVB

- Define handling for RTP Header fields as per DVB
  - Marker bit: set on last packet of each FEC block
  - Timestamp: based on packet transmission time