1- Simple Reed-Solomon
2- Simple LDPC-Staircase
3- Reed-Solomon with RTP framing

IETF 80 – Prague, March 2011

V. Roca (INRIA)
Simple Reed-Solomon FEC Scheme for FECFRAME

draft-ietf-fecframe-simple-rs-00
Goals (reminder)

- specifies how to use Reed-Solomon codes in FECFRAME
  - KISS (keep it simple and stupid) approach
  - RS codes over GF(2^m), m in {2.. 16},
    - in practice, focus on m = 4, 8 (default) and 16
  - complements our RFC 5510 (RMT WG)

- DOES NOT consider RTP framing of FEC repair packets
  - see next presentation and draft-galanos-fecframe-rtp-reedsolomon-03.txt
**Status**

- now WG Item document
  - see Greg’s email, sent January 5th

- changes WRT previous I-D
  - “security considerations” section completely rewritten
    - …since I’m now happy with the new framework’s security section 😊
    - complements the framework’s section with Reed-Solomon specific considerations instead of repeating things

  - added an “operations and management considerations” section
    - focuses on Finite Field Size (m) Recommendations

- as promised, document is ready for WGLC
Simple LDPC-Staircase FEC Scheme for FECFRAME

draft-ietf-fecframe-ldpc-00
Goals (reminder)

- specifies how to use LDPC-staircase codes in FECFRAME
  - KISS (keep it simple and stupid) approach
  - complements our RFC 5170 (RMT WG)
  - provides a single scheme: LDPC-Staircase for arbitrary packet flows

- DOES NOT consider RTP framing of FEC repair packets
  - left to future works if the need arises…
**Status**

- **still needs formal validation as WG Item document**
  - several motivated supports as requested
    - Pr. Jerôme Lacan (co-author)
    - Valentin Savin, PhD
  - accepted as WG Item (see Greg’s email, sent Jan. 5th)

- **changes WRT previous I-D**
  - “security considerations” section completely rewritten
    - complements the framework’s section with Reed-Solomon specific considerations instead of repeating things
  - added an “operations and management considerations” section
    - gives insights on erasure recovery and speed performances
    - gives insights on when and how to use this FEC scheme
as promised, document is ready for WGLC
RTP Payload Format for Reed Solomon FEC

draft-galanos-fecframe-rtp-reedsoolomon-03

S. Galanos (Radvision)
O. Peck (Kaminario)
V. Roca (INRIA)        I’m the new editor
Goals (reminder)

- complements draft-ietf-fecframe-simple-rs-00
  - shares with the simple-rs I-D:
    - RS codes over GF(2^m), m in {2.. 16},
    - in practice, focus on m = 4, 8 (default) and 16
    - RFC 5510 (RMT WG) for code specifications

- differences:
  - limited to a single, RTP-based, source flow
  - defines an RTP framing of FEC repair packets within one or several FEC repair flows
**Status**

- submitted as individual I-D
  - but accepted as WG Item document
    - see Greg’s email, sent January 5th

- changes WRT previous I-D
  - a lot has been done…
  - re-design of the **repair FEC Payload ID** encoding
    - motivated by the FEC Framework discussion on
      "managing losses between the sending application and the FECFRAME instance"
    - previous solution based on an RTP SN table
    - new solution only requires all RTP source packets of a block to be available at the FECFRAME instance
  - text aligned with other Reed-Solomon document
Status... (cont’)

● what’s next?
  ● some work still remains to be done
    ● approx. 2 full days of work
  ● next time will be submitted as WG Item