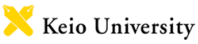
Simple Reed-Solomon FEC Schemes for FECFRAME

draft-roca-fecframe-rs-03

IETF 78 – Maastricht, July 2010

V. Roca – M. Cunche (INRIA)
J. Lacan – A. Bouabdallah (ISAE)
K. Matsuzono (Keio Univ.)



General

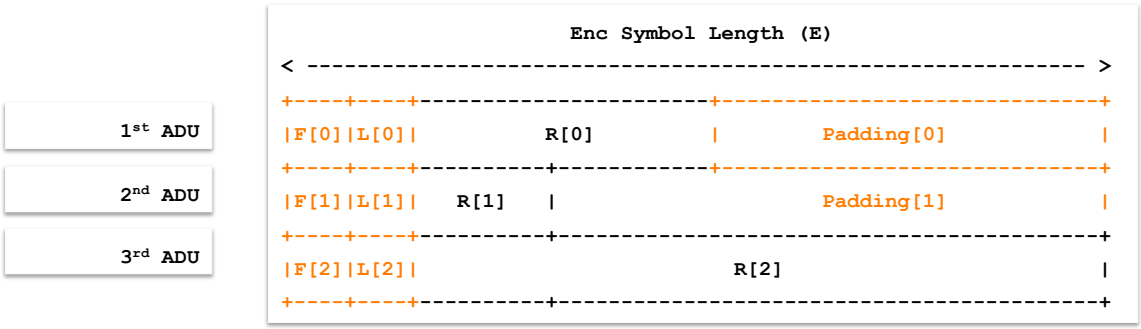
- goals (reminder)
  - ❍**specifies the use of Reed-Solomon codes in FECFRAME**
    - complements our RFC 5510 (RMT WG)
  - ❍**DOES NOT consider RTP framing of FEC repair packets**
    - see draft-galanos-fecframe-rtp-reedsolomon-01.txt
- changes w.r.t. -02 are once again motivated by

  Qualcomm IPR disclosure 1183
  - ❍**we had a constructive discussion with Mike**
    - resulted into two recommendations to solve problems
  - ❍**this -03 version is currently being reviewed by QC**
    - …to check if the problem is cleared

Changes W.R.T. -02 version

1. yet another way of building source symbols…

- ❍**before (-01): potentially different # of symbols per ADU**
- ❍**now: all ADUs of a given block contribute to *exactly one source symbol*** (can require padding)



- ❍**we have: E = max_ADU_size +3**
  - this is a **key** parameter…

Changes W.R.T. -02 version… (cont')

2. new FSSI format

- E: (see below)
- m: finite field parameter GF(2^m), as before

added →

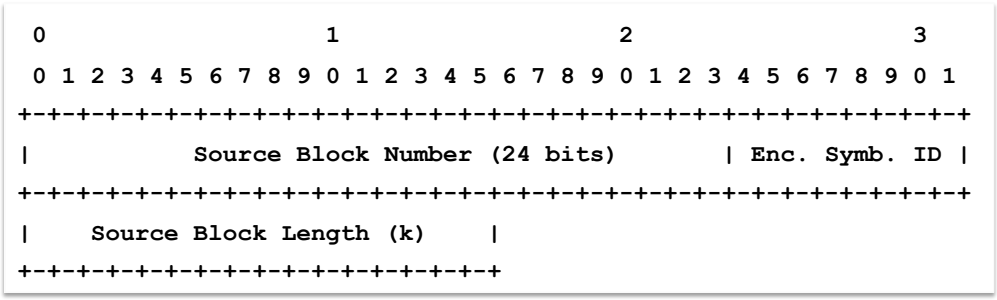
- ***S (strict) flag***

- ❍**E carried in FSSI is either an informative max value, the actual E being determined per block (S = 0 in FSSI)…**
  - E_{block} (≤ E) is determined during ADU block construction
  - its value is determined upon receiving the first repair symbol of the block
  - it's the same in draft-galanos-fecframe-rtp-reedsolomon-01.txt
- ❍**… or gives the E size for whole session (S = 1 in FSSI)**
  - it may be known in advance…

Changes W.R.T. -02 version… (cont')

3. updated source/repair FEC Payload ID

- they are now the same



Next steps

- finish scheme 2
  - **particular case of a single sequence ADU flow**
- accept it as a WG Item?