Simple Reed-Solomon FEC Schemes for FECFRAME
draft-roca-fecframe-rs-03

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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: \( E = \text{max}_\text{ADU}_\text{size} + 3 \)
   - this is a key parameter…

Changes W.R.T. -02 version… (cont’)

2. new FSSI format
   - \( E \): (see below)
   - \( m \): finite field parameter \( \text{GF}(2^m) \), as before
   - added \( S \) (strict) flag

\( E \) carried in FSSI is either an informative max value, the actual \( E \) being determined per block \( (S = 0 \text{ in FSSI}) \)…
   - \( E_{\text{block}} \leq E \) 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 \( (S = 1 \text{ in FSSI}) \)
   - 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

<table>
<thead>
<tr>
<th>0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Block Number (24 bits)</td>
</tr>
<tr>
<td>Source Block Length (k)</td>
</tr>
</tbody>
</table>

Next steps

- finish scheme 2
  - particular case of a single sequence ADU flow

- accept it as a WG Item?