

The need for extended FEC schemes: problem position

<draft-roca-rmt-extended-fec-problem-00>

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Status (reminder of previous IETFs)

- two proposals with similar goals
 - **UOD for RaptorQ** (Qualcomm)
 - **GOE Reed-Solomon** and **GOE LDPC-Staircase** (Inria/ALU Bell Labs)
- future still uncertain
 - within RMT?
 - elsewhere?
 - start a BOF to trigger new interest/participation?
- clear interest of QC and Inria/ALU-BL to continue work
- agreed to write a problem position I-D
 - it's the goal of <draft-roca-rmt-extended-fec-problem-00>
 - our intent is to co-author it with QC

Quick overview of the I-D

- goal is to introduce the problem in a **neutral way**
 - independently of UOD and GOE
 - visible in the vocabulary: **“extended”** FEC schemes rather than “universal” or “generalized”
 - inherits many ideas from the GOE/UOD I-Ds
 - tries to clarify what we expect from an Extended FEC scheme

- warning: for the moment it reflects our view only!

In short...

- **MUST NOT** require a conflicting modification of **CDP specifications**
 - extending the FLUTE FDT Instance XML attributes for new FEC OTI parameters is fine
 - changing FLUTE/ALC core specifications is not
 - of course additional logic is needed to **implement** it
- **MUST** support at least two functionalities
 1. **Unequal Erasure Protection (UEP) capabilities**
 - a subset of an object may be of higher importance
 2. **file bundle protection capabilities**
 - e.g. for an efficient protection of a large set of small files

corresponds to the use-cases put forward by both proposals, there's nothing new here!

In short... (cont')

- **MUST** be possible to use both Extended and traditional FEC schemes in the same CDP session
 - it may happen that different objects in the same session have different requirements
- define additional **good properties**
 - performance, predictability, algorithm agility, support of different codes, backward compatibility, etc.
 - useful to compare Extended FEC schemes if need be
 - whether it's important or not depends on the target use-case

Next steps

- that's all for the moment...
 - need to illustrate the I-D with examples
 - need to consolidate the list of requirements / properties
 - ... and need to figure out how to continue ☺