

IANA Registration of LL-FEC GSE extension headers defined by DVB-RCS

IPDVB meeting
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Link Layer-FEC

- The DVB-RCS WG has defined a new link-layer technique for mobile applications called **Link Layer Forward Error Correction (LL-FEC)**.
 - DVB-RCS was initially defined for fixed terminals.
 - LL-FEC is introduced on the forward link to support the reception in situations of high Packet Loss Ratio: It is intended to cope with channel impairments such as short interruptions and shadowing which are encountered in mobile applications (i.e. when the speed is too high and/or the signal-to-noise ratio is too low, when the line of sight is interrupted).
- LL-FEC is based on the inclusion and processing of additional coding:
 - It has been derived from the MPE-FEC mechanism [ETSI EN 301192] defined for DVB-T (MPE-FEC was defined to improve the robustness of DVB-T for mobile users).
 - It supports unicast/multicast/broadcast data.
 - The available codes are Reed-Salomon and Raptor.
- This technique has been defined for GSE (and MPE).
- DVB-RCS terminals being generally routers or bridges, the use of alternative Application layer FEC is not relevant.

IANA request

DVB-RCS has defined 3 new extension headers for LL-FEC and is requesting their registration be made in the IANA Unidirectional Lightweight Encapsulation (ULE) Next-Header Registry:

- LL_RCS_FEC_FTD :
 - mandatory ext. header, used to carry LL-FEC frame parity data.
 - to be registered in the 'Mandatory Extension Headers (or link-dependent type fields) for ULE' sub-registry.
- LL_RCS_FEC_ADT :
 - optional ext. header, used to carry LL-FEC frame application data.
 - H-LEN = 4
 - to be registered in the 'Optional Extension Headers for ULE' sub-registry.
- LL_CRC32 :
 - optional ext. header used to improve the LL-FEC performances.
 - H-LEN = 3
 - to be registered in the 'Optional Extension Headers for ULE' sub-registry.

Reference document : ETSI DVB EN 301 790 V1.5.1 : Digital Video Broadcasting (DVB); Interaction channel for satellite distribution systems