3GPP TSG-WG SA4 Meeting #127-bis-e *S4-240773*

Online, Apr 8 – 12, 2024 (revision of S4-240598)

**Source: Huawei, HiSilicon**

**Title: [FS\_5G\_RTP\_Ph2] On documenting key issue #3 FEC enhancement for AL-FEC**

**Document for: Discussion and approval**

**Agenda Item: 10.8**

**Work Item / Release: FS\_5G\_RTP\_Ph2 / Rel-19**

# 1. Introduction

The new SA4 Rel-19 study item on “5G Real-time Transport Protocol Configurations, Phase 2” (5G\_RTP\_PH2) has been approved in [SP-240065](https://www.3gpp.org/ftp/TSG_SA/TSG_SA/TSGS_103_Maastricht_2024-03/Docs/SP-240065.zip). The work item lists twelve distinct key issues to improve 5G RTP as defined in TS 26.522, of which key issue number 3 relates to Application layer Forward Error Correction (FEC):

***3. Enhancements for application-layer FEC support.*** *According to clause 5.7.4 of TR 26.926 [6], commercial XR split rendering and cloud gaming services use Application Layer Forward Error Correction (FEC). This clause also introduces several RTP based FEC schemes defined by IETF primarily to be used in WebRTC. It is worthwhile to study if any of these FEC schemes can be added to 3GPP specifications, for example to support split rendering.*

In this paper we propose to elaborate the goals and objectives of this key issue in order to document it concisely in the technical report.

# 2. Proposal

The following change is proposed to TR 26.822.

\* \* \* \* First change \* \* \* \*

## 5.x Key Issue #3: 5G RTP enhancements for AL-FEC

### 5.X.1 Description

Commercial adoptions may use application layer FEC (AL-FEC) as documented in clause 5.7.4 of TR 26.926. In RTC AL-FEC may optionally be used, but the usage is currently not documented. The objective of this key issue is to:

- study and summarize the AL-FEC schemes that may be used as available in IETF standards and also the status of identified commercial deployments. A summary and categorization based on different aspects of the implementation such as complexity, arbitrary loss resilience, keeping the source stream unaltered will be studied. In addition, other potential gaps may be identified.

- recommend adoption of one or more FEC schemes in 3GPP specifications for specific use cases such as split rendering, in case a clear benefit and a path forward is identified by the group for these use cases.

NOTE: The outcome of this key issue should be shared in communication with SA2 to inform them about potential usage of AL-FEC in the RTC solutions developed by SA4 (and referenced by SA2).

NOTE: The outcome of this key issue should be the basis for developing solutions for FEC awareness for PDU Set handling in Key Issue #4.