**3GPP TSG SA WG4 127 Meeting S4-240286**

**Sophia Antipolis, France, 29 January – 2 February 2024 revision of S4-240121**

**Source: Qualcomm Incorporated, Dolby France SAS, AT&T, Xiaomi, Telecom Italia, Samsung Electronics Co. Ltd., Fraunhofer IIS**

**Title: New Feasibility Study on Media Messaging Phase 2**

**Document for: Agreement**

**Agenda Item: 6.2**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: New Feasibility Study on Media Messaging Phase 2 (MeMe2)

Acronym: FS\_MeMe2

Unique identifier: 11xxxxxx

Potential target Release: Rel-19

1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | **UICC apps** | **ME** | **AN** | **CN** | **Others (specify)** |
| **Yes** |  | X |  | X |  |
| **No** | X |  | X |  | X |
| **Don't know** |  |  |  |  |  |

2 Classification of the Work Item and linked work items

2.1 Primary classification

This work item is a …

|  |  |
| --- | --- |
|  | **Feature** |
|  | **Building Block** |
|  | *Work Task* |
| X | **Study Item** |

2.2 Parent Work Item

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| **Parent Work / Study Items**  |
| **Acronym** | **Working Group** | **Unique ID** | **Title (as in 3GPP Work Plan)** |
|  |  |  |  |

2.3 Other related Work Items and dependencies

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| --- |
| **Other related Work Items (if any)** |
| **Unique ID** | **Title** | **Nature of relationship** |
| 1000015 | 5G-Advanced media profiles for messaging services (PROMISE) | The work item defined the baseline for modern messaging services in Rel-18. |

3 Justification

TS 26.143 defines capabilities and profiles for messaging services. The profiles in TS 26.143 are aligned with TS 26.140. The container format is based on IETF RFC 2045 as the format for the MMBPs. In addition, the profiles permits to encapsulate encapsulation of real-time video into the 3GP file format using the baseline profile. The container does not support external bodies, i.e. the MMBP is expected to be delivered as a single message. The media types for the player address basic text, audio/speech, images, video, text/subtitle, 3D scenes including AR as well as simple HTML-5 presentations. For the content generator, the supported media types in this profile are basic text, audio/speech, images, video, and text.

GSMA is currently working RCS and IETF MIMI will continue the work to develop More Instant Messaging Interoperability (MIMI) with the charter here: <https://datatracker.ietf.org/wg/mimi/about/>. MPEG Systems has initiated a project referred to as "Messaging Media Application Format (MeMAF)." The considered scope of this project is the definition of a Media Application Format that primarily can be used for Messaging Services. To support basic interoperability, a baseline profile with minimum options would be defined. Beyond the baseline profile, additional profiles are expected to be defined that enable richer experiences. MeMAF is expected to be a profile of ISOBMFF and it would not directly define any new functions or boxes. MeMAF would support different entry points that enable composition and rendering of different messaging experiences. MPEG is interested initiating collaboration with 3GPP to define multimedia message formats to support different enhanced experiences including advanced image formats, A/V content, as well as 3D and immersive content and to support the industry towards a common interoperable messaging formats by providing a container format in the Rel-19 timeline until mid of 2025.

Note that none of the efforts in GSMA or IETF MIMI address messaging multimedia formats for messaging services, but content interoperability is considered an important aspect. A collaboration between MPEG and 3GPP for this purpose, similar as it was done for DASH, may be beneficial.

Based on the content in TS 26.143 elaborated above, it is obvious that several aspects are not addressed in the Rel-18 version of TS 26.143, among others:

A) **Integration of TS 26.143 Capabilities and Profiles into IETF MIMI:** TS 26.143 only provides containers based on Multi-part MIME. MIMI defines a similar framework, but a mapping of the MMBP data model from TS 26.143 needs to be completed. For this the progress of IETF MIMI needs to be monitored, and integration of TS 26.143 profiles and capabilities need to be studied.

Explicit Supporters: Qualcomm, Dolby, Samsung Electronics Co. Ltd.

B) **Support of advanced file format**: TS 26.143 only provides 3GP Rel-9 baseline profile encapsulation. This format lacks support for advanced features, such as multi-track formats, proper definition metadata for different media types and so on. MeMAF as defined in MPEG is expected to provide latest file format functionalities to address all needs of a modern message service, in particular also to restrict the ISO Base Media File Format (ISO BMFF) for improved interoperability. A collaboration between MPEG and 3GPP for defining this advanced messaging format, similar as it was done for DASH, is expected to be beneficial.

Explicit Supporters: Qualcomm, Dolby, Xiaomi, Telecom Italia, Samsung Electronics Co. Ltd., Fraunhofer IIS

C) **Support of external body content and late binding**: MIMI as an example requires clients to support the external body content that can be accessed with http and https URLs. The functionality is clearly of relevance. However, in context of 3GPP and MPEG, additional options exist, for example using media/external media type, using external data references in file formats, usage of HTML-5 presentations, glTF scenes or streaming manifests with inline references. A study of suitable support of different options is relevant.

Explicit Supporters: Qualcomm, Xiaomi

D) **DRM and encrypted content**: While typical messaging services including IETF MIMI support end-to-end encryption of the messages, in some cases the content itself needs to be content protected, for example if high-value content is shared in messaging services, if copying of the content needs to be prevented and so on. In this case, the content may be encrypted, and the service needs to be integrated in a key management environment. Providing proper functionality for this purpose needs to be studied.

Explicit Supporters: Qualcomm, Dolby, Xiaomi, Samsung Electronics Co. Ltd.

E) **Additional media experiences**: In 3GPP, advanced media experiences are added to different services, in particular immersive media, new image formats, interactive content, etc. The proper integration of new media experiences should be studied.

Explicit Supporters: Qualcomm, AT&T, Xiaomi, Telecom Italia, Samsung Electronics Co. Ltd.

F) **Additional industry requirements:** Messaging services are gaining more and more popularity and interoperability requirements are for example developed by GSMA. These industry requirements may result in additional functionalities that need further study. Communication with the industry should continuously happen such that 3GPP can address those.

Explicit Supporters: Qualcomm, AT&T, Dolby, Xiaomi, Telecom Italia, Samsung Electronics Co. Ltd.

G) **Media Service Enabler**: In TR 26.857, Media Service Enablers had been introduced. Clearly, the MMBP Generator and MMBP Player in TS 26.143 are aligned with the Media Service Enabler concept, for example APIs to access player and generator may be further specified to support third party applications.

Explicit Supporters: Qualcomm, Samsung Electronics Co. Ltd.

Additional study areas may be added with lower priority if time permits.

4 Objective

The objective of this study is in the context of the above potential improvements and extensions, referred to as key topics. Specifically, for each of the above key topics, the following objectives are identified:

1. Document the above key topics A-E

A) Integration of TS 26.143 Capabilities and Profiles into IETF MIMI

B) Support of advanced file format

C) Support of external body content and late binding

D) DRM and encrypted content

E) Additional media experiences

in more detail, in particular how they relate to the system and data models in TS 26.143 and collect additional industry requirements according to *F) Additional industry requirements* as above.

2. Study the integration of TS 26.143 capabilities and profiles into IETF MIMI content formats based on the issue A above

3. Collaborate with MPEG to study the needs and functionalities for an advanced file format to be added to TS 26.143 based on bullet B above taking into account the key topics identified in objective 1.

4. Study the suitability to enhance the specification of the MMBP Generator and MMBP Player in TS 26.143 by using the Media Service Enabler principles according to bullet point *G) Media Service Enabler*.

5. Coordinate work with external organizations such as ISO/IEC JTC29 WG3 (MPEG Systems), 5G-MAG, GSMA and IETF, as needed.

6. Identify gaps and recommend potential normative work to enhance interoperability in Messaging Services.

5 Expected Output and Time scale

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| --- |
| **New specifications** *{One line per specification. Create/delete lines as needed}* |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Remarks |
| TR | 26.8xx | Media Messaging Enhancements | SA#105(Sep 24) | SA#106(Dec 24) |  |

|  |
| --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
|  |  |  |  |
|  |  |  |  |

6 Work item Rapporteur(s)

[Thomas Stockhammer, Qualcomm Incorporated, tsto@qti.qualcomm.com, General & for topics ….]

[<someone else???> for topics ]

7 Work item leadership

SA4

8 Aspects that involve other WGs

SA2 for architectural discussions

SA3 for security related discussions

9 Supporting Individual Members

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| --- |
| **Supporting IM name** |
| Qualcomm Incorporated |
| Dolby France SAS |
| AT&T |
| Xiaomi |
| Telecom Italia |
| Samsung Electronics Co. Ltd. |
| Fraunhofer IIS |
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