

ETSI TS 126 143 V18.0.0 (2024-05)



5G; Messaging Media profiles (3GPP TS 26.143 version 18.0.0 Release 18)

Document Preview

[ETSI TS 126 143 V18.0.0 \(2024-05\)](https://standards.iteh.ai/catalog/standards/etsi/6dcd6767-b421-46df-afbc-b90a5e144c4e/etsi-ts-126-143-v18-0-0-2024-05)

<https://standards.iteh.ai/catalog/standards/etsi/6dcd6767-b421-46df-afbc-b90a5e144c4e/etsi-ts-126-143-v18-0-0-2024-05>



Reference

RTS/TSGS-0426143vi00

Keywords

5G

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from:

<https://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

If you find a security vulnerability in the present document, please report it through our

Coordinated Vulnerability Disclosure Program:

<https://www.etsi.org/standards/coordinated-vulnerability-disclosure>

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2024.
All rights reserved.

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

Legal Notice

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities. These shall be interpreted as being references to the corresponding ETSI deliverables. (2024-05)

The cross reference between 3GPP and ETSI identities can be found under <https://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

In the present document **"shall"**, **"shall not"**, **"should"**, **"should not"**, **"may"**, **"need not"**, **"will"**, **"will not"**, **"can"** and **"cannot"** are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"must" and **"must not"** are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	5
1 Scope	7
2 References	7
3 Definitions of terms, symbols and abbreviations	8
3.1 Terms.....	8
3.2 Symbols.....	9
3.3 Abbreviations	9
4 Overview and Context.....	9
4.1 Background and Assumptions	9
4.2 System Description.....	10
4.3 MMBP Player Model	11
4.4 Generic MMBP Data Model	12
4.5 Media Capabilities and Profiles.....	12
5 MMBP Media Capabilities for different Media Types	13
5.1 Introduction	13
5.2 Multipart MMBPs and Container Formats	15
5.2.1 Player and Decoding capabilities.....	15
5.2.2 MMBP Content Generator capabilities.....	16
5.3 Text	16
5.3.1 Player and Decoding capabilities.....	16
5.3.2 MMBP Content Generator capabilities.....	16
5.4 Image.....	17
5.4.1 Player and Decoding capabilities.....	17
5.4.2 MMBP Content Generator capabilities.....	17
5.5 Speech and Audio.....	18
5.5.1 Player and Decoding capabilities.....	18
5.5.2 MMBP Content Generator capabilities.....	19
5.6 Video	20
5.6.1 Player and Decoding capabilities.....	20
5.6.2 MMBP Content Generator capabilities.....	22
5.7 Timed Text and Subtitles	23
5.7.1 Player and Decoding capabilities.....	23
5.7.2 MMBP Content Generator capabilities.....	24
5.8 3D scenes and assets.....	24
5.9 Presentation format.....	24
6 Messaging Media Profiles	25
6.1 Overview	25
6.2 Baseline MMBP Player Profile	25
6.2.1 Overview	25
6.2.2 Container Format	25
6.2.3 Media Types	26
6.3 Baseline MMBP Generator Profile	27
6.3.1 Overview	27
6.3.2 Container Format	27
6.3.3 Media Types	27
6.3.4 Packaging Requirements and Recommendations	28
Annex A (informative): Registration Information	29
A.1 3GPP Registered URIs	29

Annex B (informative):

Examples.....

30

Annex Z (informative):

Change history

31

History

32

iTeh Standards

(<https://standards.iteh.ai>)

Document Preview

[ETSI TS 126 143 V18.0.0 \(2024-05\)](https://standards.iteh.ai/catalog/standards/etsi/6dcd6767-b421-46df-afbe-b90a5e144c4e/etsi-ts-126-143-v18-0-0-2024-05)

<https://standards.iteh.ai/catalog/standards/etsi/6dcd6767-b421-46df-afbe-b90a5e144c4e/etsi-ts-126-143-v18-0-0-2024-05>

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

In the present document, modal verbs have the following meanings:

- shall** indicates a mandatory requirement to do something
- shall not** indicates an interdiction (prohibition) to do something

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

- should** indicates a recommendation to do something
- should not** indicates a recommendation not to do something
- may** indicates permission to do something
- need not** indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

- can** indicates that something is possible
- cannot** indicates that something is impossible

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

- will** indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document
- will not** indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document
- might** indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

might not indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

is (or any other verb in the indicative mood) indicates a statement of fact

is not (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

iTeh Standards (<https://standards.iteh.ai>) Document Preview

[ETSI TS 126 143 V18.0.0 \(2024-05\)](https://standards.iteh.ai/catalog/standards/etsi/6dcd6767-b421-46df-afbe-b90a5e144c4e/etsi-ts-126-143-v18-0-0-2024-05)

<https://standards.iteh.ai/catalog/standards/etsi/6dcd6767-b421-46df-afbe-b90a5e144c4e/etsi-ts-126-143-v18-0-0-2024-05>

1 Scope

The present document specifies the media types, formats, codecs capabilities and profiles for the messaging applications used over the 5G System. The scope of the present document extends to codecs for speech, audio, video, still images, bitmap graphics, 3D scenes and assets, and other media in general, as well as scene description.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] Khronos glTF 2.0, [glTF™ 2.0 Specification \(khronos.org\)](https://glTF.org/specification/)
- [3] ISO/IEC 23090-14 AMD 2, Information technology — Coded representation of immersive media — Part 14: Scene description — Amendment 2: Support for haptics, augmented reality, avatars, Interactivity, MPEG-I audio, and lighting
- [4] 3GPP TS 26.511: "5G Media Streaming (5GMS); Profiles, Codecs and Formats".
- [5] 3GPP TS 26.117: "5G Media Streaming (5GMS); Speech and audio profiles".
- [6] IETF Draft draft-ietf-mimi-content-01: "More Instant Messaging Interoperability (MIMI) message content", Rohan Mahy
- [7] 3GPP TS 22.140: "Multimedia Messaging Service (MMS); Stage 1".
- [8] Open Mobile alliance, "MMS Architecture" OMA-AD-MMS-V1_3-20110913-A.
- [9] Open Mobile alliance, "Multimedia Messaging Service Encapsulation Protocol" OMA-TS-MMS_ENC-V1_3-20110913-A.
- [10] GSMA "RCS Universal Profile Service Definition Document", Version 2.6, 19 December 2022
- [11] GSMA PRD RCC.07 version 13.0 - "Rich Communication Suite - Advanced Communications Services and Client Specification" 19 December 2022 [12] IETF RFC 2046: "Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types"
- [12] IETF RFC 2046, "Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types"
- [13] ISO/IEC 14496-12: "Information technology - Coding of audio-visual objects -Part 12: ISO base media file format".
- [14] ISO/IEC 23000-24:2023 Preliminary Draft of: Information technology — Multimedia application format (MPEG-A) — Part 24: Messaging Media Application Format (MeMAF) ".

NOTE: A preliminary draft of this standard is available as MDS23345_W03_N1082 here:
https://www.mpeg.org/wp-content/uploads/mpeg_meetings/144_Hannover/w23345.zip

- [15] 3GPP 23.140: "Multimedia Messaging Service (MMS); Functional Description; Stage 2".
- [16] ITU-T Recommendation T.81: "Information technology; Digital compression and coding of continuous-tone still images: Requirements and guidelines".

- [17] "JPEG File Interchange Format", Version 1.02, September 1, 1992.
- [18] "Exchangeable image file format for digital still cameras: EXIF 2.2", Specification by the Japan Electronics and Information Technology Industries Association (JEITA), April 2002, URL: <http://www.exif.org/>
- [19] CompuServe Incorporated: "GIF Graphics Interchange Format: A Standard defining a mechanism for the storage and transmission of raster-based graphics information", Columbus, OH, USA, 1987.
- [20] Compuserve Incorporated, Columbus, Ohio (1990): "Graphics Interchange Format (Version 89a)".
- [21] IETF RFC 2083: "PNG (Portable Networks Graphics) Specification version 1.0 ", T. Boutell, et. al., March 1997.
- [22] ISO/IEC 23000-22:2019 Information technology — Multimedia application format (MPEG-A) — Part 22: Multi-image application format (MIAF)
- [23] IETF RFC 2045, "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies", November 1996
- [24] ISO/IEC 23008-12:2019 Information technology — High efficiency coding and media delivery in heterogeneous environments — Part 12: Image File Format
- [25] ITU-T Recommendation H.265 (02/2018): "High efficiency video coding".
- [26] 3GPP TS 26.244: "Transparent end-to-end packet switched streaming service (PSS); 3GPP file format (3GP)"
- [27] 3GPP TS 26.245: "Transparent end-to-end packet switched streaming service (PSS); Timed text format"
- [28] ISO/IEC 14496-30: "Information technology - Coding of audio-visual objects - Part 30: Timed text and other visual overlays in ISO base media file format".
- [29] IETF RFC 2387, "The MIME Multipart/Related Content-type"
- [30] IETF RFC 6381, "The 'Codecs' and 'Profiles' Parameters for 'Bucket' Media Types"
- [31] 3GPP TS 26.307, "Presentation Layer for 3GPP Services"
- [32] 3GPP TS 26.140, "Multimedia Messaging Service (MMS); Media formats and codecs"
- [33] IETF RFC 2077, "The Model Primary Content Type for Multipurpose Internet Mail Extensions"
- [34] 3GPP TS 26.119, "Media Capabilities for Augmented Reality"

3 Definitions of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

Messaging Media Profile: a set of UE capability requirements associated to a media-centric messaging service scenario.

3.2 Symbols

For the purposes of the present document, the following symbols apply:

<symbol>	<Explanation>
----------	---------------

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

AAC	Advanced Audio Coding
AMR	Adaptive MultiRate
API	Application Programming Interface
AVC	Advanced Video Coding
DCT	Discrete Cosine Transform
gITF	Graphics Library Transmission Format
IANA	Internet Assigned Numbers Authority
MIME	Multipurpose Internet Mail Extensions
MIMI	More Instant Messaging Interoperability
MMBP	multimedia messaging body part
MMS	Multimedia Messaging Service
OMA	Open Mobile Alliance
PDU	Protocol Data Unit
RCS	Rich Communication Services

4 Overview and Context

4.1 Background and Assumptions

Messaging services typically define a message container. Such a container typically carries one or more body parts with the actual message content (for example, an emoji used in a reaction, a plain text or rich text message or reply, a link, or an inline image, or richer media types).

An important feature of messages are body parts that include media content. Different media content exists, such as simple and rich text, still images, graphics, speech, audio, video, 3D scenes and many other media types.

This specification is not defining a container format, but it addresses the usability of 3GPP defined media types and formats into messages as part of a message body within message containers. Examples for message containers are OMA MMS PDUs [7][8][9][15], IETF MIMI message containers [6] or GSMA RCS [10][11].

The focus of this specification is the definition of parts of *message body* that carry multimedia content, referred to as *multimedia messaging body part* (MMBP). This specification does not generally define how the body part is encoded: existing functionalities, for example the ones defined in OMA MMS PDUs [7][8][9][15] or MIMI message containers [6] may be used for this purpose. However, this specification provides the definition of an MMBP using the ISO Base Media File format [13] to provide features for mixing multiple sub-parts into a single body part. The specification relies on ISO/IEC 23000-24 [14].

NOTE: This specification does not define advanced MMBP features using the ISO Base Media File format [13] such that multiple sub-parts may be mixed into a single body part. This feature is for further study, possibly in alignment with ISO/IEC 23000-24 [14].

However, this specification is not restricted to be used with a fully specified Messaging Service, it may as well be used as part of third-party messaging services as message body, or more specifically as MMBP. It may also serve to support content interoperability across different messaging services.

The term *media type* is used as short to refer to the IANA media type, subtype, and parameters as defined in IETF RFC 2046 [12] and provides defined properties of a *content*. For example, it may tell if the content is video or audio, it

provides the encapsulation format, and it may provide parameters such as the codec in use. This specification defines, or at least assigns to each defined MMBP a media type, in order to uniquely identify the media type.

In order to use MMBPs as defined in this specification as part of a message container format, it is expected that the message container format supports the following functionalities:

- 1) It can carry an octet string representing the *content* of the MMBP
- 2) It can signal the *media type* of the content.
- 3) The content and media type of the content is not restricted but allows to include formats that are not defined in the core container format.

In addition, a container format may support one or more of the following functionalities in alignment of definitions in IETF MIMI [6] and IETF RFC 2046 [12]:

- the body can be *multi-part*, i.e, it can have multiple, possibly nested parts, referred to as *sub-parts*, with one of the following properties and structures
 - *mixed*: there are multiple media types associated with the same message which need to be rendered together, for example a rich-text message with an inline image. The receiver is expected to process as many of the nested parts at this level as possible.
 - *alternative*: there are multiple media types associated with the same message and the receiver can choose an appropriate one based on its own policies using the media type or possibly other parameters (e.g. a language) of each part.
 - *related*: there are multiple media types associated with the same message and all the nested body parts at this level are part of a single entity that are processed jointly, possibly by providing a root object for initial processing. If the receiver does not understand even one of the nested parts at this level, the receiver is not expected to process any of them.
 - *nested*: there are multiple media types associated with the same message, and one or several of the media types are representing a single, mixed, alternative or related structure.
- it may have body parts that reference external content via URI that will be processed automatically. It includes a media type and may optionally include the size of the data, an expiration timestamp other parameters. The content may be rendered with the other parts of the message, or a be downloaded or rendered separately.
- it may have body parts for which the content is encrypted.

Note that based on the above, the MMBP may be the entire part of a message body, or it may be a sub-part.

4.2 System Description

Based on the background and assumptions in clause 4.1, Figure 4.2-1 provides an example system for a messaging services and highlights scope of this specification, namely the definition of a *multimedia messaging body part* (MMBP) and the associated metadata.