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## Annex C (informative): IANA registration

This annex provides the required IANA registration.

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### C.1 Registration of SDP Protocol Identifiers for Source packet

This specification defines two new SDP protocol identifiers for source packets. As the registration rules requires these to be registered by an RFC, there will be an RFC referencing the definitions here.

Protocol identifier "UDP/MBMS-FEC/RTP/AVP" identifies a protocol combination of UDP [7], FEC source packets (see sub-clause 8.2.2.3), RTP [6] using the AVP profile [78]. This protocol identifier shall use the FMT space rules that are used for RTP/AVP.

Protocol identifier "UDP/MBMS-FEC/RTP/SAVP" identifies a protocol combination of UDP [7], FEC source packets (see sub-clause 8.2.2.3), and RTP [6] using the SAVP profile [77]. This protocol identifier shall use the FMT space rules that are used for RTP/AVP.

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### C.2 Registration of SDP Protocol identifier for repair packets

This specification defines one new SDP protocol identifier for FEC repair packets. As the registration rules requires these to be registered by an RFC, there will be an RFC referencing the definitions within this specification.

Protocol identifier "UDP/MBMS-REPAIR" identifies a protocol combination of UDP [7], FEC repair packets (see sub-clause 8.2.2.4). The FMT string is not used and shall be set to "\*".

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### C.3 Registration of MIME type "application/simpleSymbolContainer"

The MIME Type "application/simpleSymbolContainer" denotes that the message body is a simple container of encoding symbols for the file repair procedure (clause 9.3.5.2 - File Repair Response Message Format for HTTP Carriage of Repair Data).

Type name: application

Subtype name: simpleSymbolContainer

Required parameters:

None

Optional parameters:

None

Encoding considerations:

The content is binary and if transported in a protocol not capable of handling binary content then the object must be encoded, for example using base64 [82].

## Security considerations:

The content of this media type are either source or repair symbols part of a binary file object. Thus its security considerations depends on the security requirements on the file object. As modification of the response message may corrupt the complete file object due to the FEC repair operations, integrity protection is recommended. Source authentication is also recommended to prevent man in the middle or spoofing attacks resulting in erroneous repair symbols.

## Interoperability considerations:

None

## Published specification:

3GPP TS 26.346

## Applications which use this media type:

3GPP MBMS based applications

## Additional information:

Magic number(s): None

File extension(s):

Macintosh file type code(s):

Person & email address to contact for further information:

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3GPP TSG SA WG4

Intended usage: COMMON

Restrictions on usage:

None

Author:

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Change controller:

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## C.4 Registration of MIME type "application/mbms-user-service-description+xml"

The MIME Type "application/mbms-user-service-description+xml" denotes that the message body is a user service description instance in accordance with the XML schema "urn:3GPP:metadata:2005:MBMS:userServiceDescription" (see sub-clause 11.2.1).

Type name: application

Subtype name: mbms-user-service-description+xml

Required parameters:

None

Optional parameters:

charset: As specified in RFC 3023 [83] for media type application/xml.

## Encoding considerations:

This is an XML document and the encoding considerations are the same as for media type "application/xml" defined in RFC 3023 [83].

## Security considerations:

This media format is used to configure the receiver on how to participate in a service. This format is highly susceptible to manipulation or spoofing for attacks desiring to mislead a receiver about a session. Both integrity protection and source authentication is recommended to prevent misleading of the receiver.

## Interoperability considerations:

None

## Published specification:

3GPP TS 26.346

## Applications which use this media type:

3GPP MBMS based applications

## Additional information:

Magic number(s): None

File extension(s):

Macintosh file type code(s):

Person & email address to contact for further information:

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Intended usage: COMMON

Restrictions on usage: None

Author:

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Change controller:

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## C.5 Registration of MIME type "application/mbms-envelope+xml "

The MIME Type "application/mbms-envelope+xml" denotes that the message body is a metadata envelope according to the XML schema "urn:3gpp:metadata:2005:MBMS:envelope" (see sub-clause 11.1.3).

Type name: application

Subtype name: mbms-envelope+xml

Required parameters:

None

Optional parameters:

embedded: Declares if all objects described in this envelope instance are embedded within the this envelope instance. The value is either 0 (false) or 1 (true) and when this parameter is omitted the value defaults to 0 (false).

referenced: Declares if all objects described in this envelope instance are referenced, none is embedded within the envelope. The value is either 0 (false) or 1 (true) and when this parameter is omitted the value defaults to 0 (false).

charset: As specified in RFC 3023 [83] for media type application/xml.

Encoding considerations:

This is an XML document and the encoding considerations are the same as for media type "application/xml" defined in RFC 3023 [83].

Security considerations:

This media format contains information about versioning and validity of files, telling the receiver if it should invalidate already received files or replace previously received files with new version contained or referenced within this format. Thus modifying or spoofing an envelope is a simple way of making denial of service attack. Thus source authentication and integrity protection of the files are recommended.

Interoperability considerations:

None

Published specification:

3GPP TS 26.346

Applications which use this media type:

3GPP MBMS based applications

Additional information:

Magic number(s): None

File extension(s):

Macintosh file type code(s):

Person & email address to contact for further information:

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Intended usage: COMMON

Restrictions on usage:

Author:

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Change controller:

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## C.6 Registration of MIME type "application/mbms-protection-description+xml "

The MIME-Type "application/mbms-protection-description+xml" denotes that the message body is an MBMS protection description XML document according to the scheme identified as "urn:3GPP:metadata:2005:MBMS:securityDescription" (see sub-clause 11.3.1).

Type name: application

Subtype name: mbms-protection-description+xml

Required parameters:

None

Optional parameters:

charset: As specified in RFC 3023 [83] for media type application/xml.

Encoding considerations:

This is an XML document and the encoding considerations are the same as for media type "application/xml" defined in RFC 3023 [83].

Security considerations:

The media format is used to configure the security functions of the MBMS delivery. Thus a target for any attacker that would like modify a receivers understanding of the security functions, either for a denial of service attack or a session replacement attack. However the format contains no secret information that may not be shared openly. All security keys are handled using other mechanisms. Source authentication and integrity protection is recommended.

Interoperability considerations:

None

Published specification:

3GPP TS 26.346

Applications which use this media type:

3GPP MBMS based applications

Additional information:

Magic number(s): None

File extension(s):

Macintosh file type code(s):

Person & email address to contact for further information:

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Intended usage: COMMON

Restrictions on usage:

Author:

3GPP TSG SA WG4

Change controller:

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## C.7 Registration of MIME type "application/mbms-associated-procedure- description+xml"

The MIME-Type "application/mbms-associated-procedure-description+xml" denotes that the message body contains the associated procedure description in XML following the schema "urn:3gpp:metadata:2005:MBMS:associatedProcedure" (see sub-clause 9.5.1).

Type name: application

Subtype name: mbms-associated-procedure-description+xml

Required parameters:

None

Optional parameters:

charset: As specified in RFC 3023 [83] for media type application/xml.

Encoding considerations:

This is an XML document and the encoding considerations are the same as for media type "application/xml" defined in RFC 3023 [83].

Security considerations:

The information present in this media format is used to configure the receiving application. Thus the usage of the format is vulnerable to attacks modifying or spoofing the content of this format. It is recommended to use source authentication and integrity protection.

Interoperability considerations:

None

Published specification:

3GPP TS 26.346

Applications which use this media type:

3GPP MBMS based applications

Additional information:

Magic number(s): None

File extension(s):

Macintosh file type code(s):

Person & email address to contact for further information:

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Intended usage: COMMON

Restrictions on usage:

Author:

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Change controller:

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## C.8 Registration of MIME type "application/mbms-msk+xml"

The MIME-Type "application/mbms-msk+xml" denotes that the message body contains the MSK request parameters in accordance with the XML scheme "urn:3GPP:metadata:2005:MBMS:mskRequest" (see sub-clause 11.6 and 3GPP TS 33.246 [20]).

Type name: application

Subtype name: application/mbms-msk+xml

Required parameters:

None

Optional parameters:

charset: As specified in RFC 3023 [83] for media type application/xml.

Encoding considerations:

This is an XML document and the encoding considerations are the same as for media type "application/xml" defined in RFC 3023 [83].

Security considerations:

The usage of the format is to identify one or more MSK that the requesting entity desires to receive. Modification or changes to this format thus only result in a denial of service attack. Integrity protection would protect against such modifications.

Interoperability considerations:

None

Published specification:

3GPP TS 26.346

Applications which use this media type:

3GPP MBMS based applications

Additional information:

Magic number(s): None

File extension(s):

Macintosh file type code(s):

Person & email address to contact for further information:

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Intended usage: COMMON

Restrictions on usage:

None

Author:

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Change controller:

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## C.9 Registration of MIME type "application/mbms-register+xml"

The MIME-Type "application/mbms-register+xml" denotes that the message body contains the MBMS User Service Registration parameters in accordance with the XML schema "urn:3GPP:metadata:2005:MBMS:securityRegistration" (see sub-clause 11.4 and 3GPP TS 33.246 [20]).

Type name: application

Subtype name: mbms-register+xml

Required parameters:

None

Optional parameters:

charset: As specified in RFC 3023 [83] for media type application/xml.

Encoding considerations:

This is an XML document and the encoding considerations are the same as for media type "application/xml" defined in RFC 3023 [83].

Security considerations:

The content of this format identifies a user service that the document creator desires to register to. Any modifications of this document would allow an attacker to change to what services the creator registers to. To prevent this integrity protection is necessary. There is also necessary to authenticate the entity performing the registration to know who is the one performing the registration request. In MBMS this is accomplished using procedures described in 3GPP TS 33.246.

Interoperability considerations:

None

Published specification:

3GPP TS 26.346

Applications which use this media type:

3GPP MBMS based applications

Additional information:

Magic number(s): None

File extension(s):

Macintosh file type code(s):

Person & email address to contact for further information:



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Intended usage: COMMON

Restrictions on usage:

None

Author:

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Change controller:

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## C.10 Registration of MIME type "application/mbms-deregister+xml"

The MIME-Type "application/mbms-deregister+xml" denotes that the message body contains the MBMS User Service Deregistration parameters in accordance with the XML schema "urn:3GPP:metadata:2005:MBMS:securityDeregistration" (see sub-clause 11.5 of 3GPP TS 26.346 and 3GPP TS 33.246 [20]).

Type name: application

Subtype name: mbms-deregister+xml

Required parameters:

None

Optional parameters:

charset: As specified in RFC 3023 [83] for media type application/xml.

Encoding considerations:

This is an XML document and the encoding considerations are the same as for media type "application/xml" defined in RFC 3023 [83].

Security considerations:

The content of this format identifies a user service that the document creator desires to register to. Any modifications of this document would allow an attacker to change to what services the creator registers to. To prevent this integrity protection is necessary. There is also necessary to authenticate the entity performing the registration to know who is the one performing the registration request. In MBMS this is accomplished using procedures described in 3GPP TS 33.246.

Interoperability considerations:

None

Published specification:

3GPP TS 26.346

Applications which use this media type:

3GPP MBMS based applications

Additional information:

Magic number(s): None

File extension(s):

Macintosh file type code(s):

Person & email address to contact for further information:

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Intended usage: COMMON

Restrictions on usage:

None

Author:

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Change controller:

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## C.11 Registration of MIME type "application/mbms-reception-report+xml"

The MIME-type registration for "application/mbms-reception-report+xml" that identifies XML documents that follows the schema "urn:3gpp:metadata:2005:MBMS:receptionreport" defined in clause 9.5.3.

Type name: application

Subtype name: mbms-reception-report+xml

Required parameters:

None

Optional parameters:

charset: As specified in RFC 3023 [83] for media type application/xml.

Encoding considerations:

This is an XML document and the encoding considerations are the same as for media type "application/xml" defined in RFC 3023 [83].

Security considerations:

The reception report XML document instances contain information about what services and files that a particular receiver has received. Thus to prevent manipulation of that information it would need to be integrity protected. The information also has privacy relevance as it reveals what a specific receiver, which usually can be connected to a specific user, has received.

Interoperability considerations:

None

Published specification:

3GPP TS 26.346

Applications which use this media type:

3GPP MBMS based applications

Additional information:

None

Person & email address to contact for further information:

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Intended usage: COMMON

Restrictions on usage:

None

Author:

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Change controller:

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## C.12 Registration of MIME type "application/mbms-msk-response+xml"

The MIME Media Type "application/mbms-msk-response+xml" denotes that the message body contains the response codes to MSK request procedure in accordance with the XML scheme "urn:3GPP:metadata:2005:MBMS:mskResponse" (see sub-clause 11.8 and 3GPP TS 33.246 [20]).

Type name: application

Subtype name: mbms-msk-response+xml

Required parameters:

None

Optional parameters:

charset: As specified in RFC 3023 [83] for media type application/xml.

Encoding considerations:

This is an XML document and the encoding considerations are the same as for media type "application/xml" defined in RFC 3023 [83].

Security considerations:

The usage of the format is to identify one or more response codes of MSK requests procedures. Modification or changes to this format thus only result in a denial of service attack. Integrity protection would protect against such modifications. In MBMS this is accomplished using procedures described in 3GPP TS 33.246.

Interoperability considerations:

None

Published specification:

3GPP TS 26.346

Applications which use this media type:

3GPP MBMS based applications

Additional information:

Magic number(s): None

File extension(s):

Macintosh file type code(s):

Person & email address to contact for further information:

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Intended usage: COMMON

Restrictions on usage:

None

Author:

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Change controller:

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## C.13 Registration of MIME type "application/mbms-register-response+xml"

The MIME Media Type "application/mbms-register-response+xml" denotes that the message body contains the response codes to an MBMS User Service Registration or MBMS User Service De-Register procedure in accordance with the XML schema "urn:3GPP:metadata:2005:MBMS:securityRegistrationResponse" (see sub-clause 11.7 and 3GPP TS 33.246 [20]).

Type name: application

Subtype name: mbms-register-response+xml

Required parameters:

None

Optional parameters:

charset: As specified in RFC 3023 [83] for media type application/xml.

Encoding considerations:

This is an XML document and the encoding considerations are the same as for media type "application/xml" defined in RFC 3023 [83].

Security considerations:

The usage of the format is to identify one or more response codes of registration or deregistration procedures. Modification or changes to this format thus only result in a denial of service attack. Integrity protection would protect against such modifications. In MBMS this is accomplished using procedures described in 3GPP TS 33.246

Interoperability considerations:

None

Published specification:

3GPP TS 26.346

Applications which use this media type:

3GPP MBMS based applications

Additional information:

Magic number(s): None

File extension(s):

Macintosh file type code(s):

Person & email address to contact for further information:

Magnus Westerlund (magnus.westerlund@ericsson.com)  
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Intended usage: COMMON

Restrictions on usage:

None

Author:

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Change controller:

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