

INTERNET-DRAFT
draft-kosonen-mobile-xmf-mimetype-00.txt
Expires: April 2006

T. Kosonen
Nokia
T. White
MMA
5 October 2005

Registration of MIME media type audio/mobile-xmf

Status of this Memo

By submitting this Internet-Draft, each author represents that any applicable patent or other IPR claims of which he or she is aware have been or will be disclosed, and any of which he or she becomes aware will be disclosed, in accordance with [Section 6 of BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

The list of current Internet-Drafts can be accessed at
<http://www.ietf.org/1id-abstracts.html>

The list of Internet-Draft Shadow Directories can be accessed at
<http://www.ietf.org/shadow.html>

This document is an individual submission to the IETF. Comments should be directed to the authors.

Abstract

The MIDI Manufacturers Association (MMA) and the Association of Music Electronics industry (AMEI) have produced the Mobile XMF standard [1]. The Mobile XMF standard has been developed particularly for mobile MIDI [7] applications. Mobile XMF is a very compact media type providing high quality synthetic audio content for music downloading and messaging applications that require MIME registration.

1. Introduction

MIDI content is used commonly in the Internet. Commonly, MIDI data is stored in the Standard MIDI File (SMF) format [8]. This MIME type registration uses the Mobile XMF file format for the encapsulation of SP-MIDI [3,4] and Mobile DLS [2] data.

2. Registration of audio/mobile-xmf

MIME media type name: audio

MIME subtype name: mobile-xmf

Required parameters: none

Optional parameters:

Optional parameters are encoded in Base16 encoding defined in [RFC 3548](#) [9].

revision: Mobile XMF file type revision ID

revision is the Mobile XMF file type revision ID number from the XmfFileTypeRevisionID field of the XMF Meta File format 2.00.

prl: Playback resource list

prl is a string (inside double quotation marks "") containing the playback resources included in all Content Description MetaDataItems of the Mobile XMF file. The string contains two digit hexadecimal numbers representing data bytes from the Content Description Meta Data. The same resource is listed only once. A playback resource contains two parts: a prefix and data. If the file includes Playback Resource Lists such as [00h 01h 00h 02h] and [00h 01h 00h 03h], the corresponding prl is 000100020003 containing playback resources 01, 02, and 03 with the prefix 00.

minimum-pr: Minimum playback requirements

minimum-pr is a string containing the Maximum Instantaneous Resource (MIR) values from the first row of all MIR Count Tables corresponding to the playback resources listed in prl. Only the largest value from the values of the same resource is chosen. If the file includes first rows of MIR Count Tables such as [02h 00h] and [01h 01h] corresponding to the above Playback Resource Lists, the corresponding minimum-pr is 020001. (02 is the largest of 2 and 1, 00 is

the largest of 0, and 01 is the largest of 1.) minimum-pr requires the use of prl and the values in minimum-pr must be in the same order as the resources in prl. minimum-pr is the most important of minimum-pr and total-pr, because it defines the minimum playback requirements.

total-pr: Total playback requirements

total-pr is a string containing the MIR values from the last row of all MIR Count Tables corresponding to the playback resources listed in prl. Only the largest value from the values of the same resource is chosen. If the file includes last rows of MIR Count Tables such as [05h 02h] and [06h 01h] corresponding to the above Playback Resource Lists, the corresponding total-pr is 060201. (06 is the largest of 5 and 6, 02 is the largest of 2, and 01 is the largest of 1.) total-pr requires the use of prl and the values in total-pr must be in the same order as the resources in prl.

Encoding considerations:

mobile-xmf data is binary data and must be encoded for non-binary transport; Base64 is suitable for Email.

Security considerations:

Many synthetic audio compositions have associated intellectual property rights. It is conceivable that the rights owners of mobile-xmf content will want to protect their rights by applying security mechanisms that prohibit the rendering of the content without a legally acquired license to do so. These mechanisms would be applied externally to the Content-Type defined here; mobile-xmf content itself is not encrypted internally. mobile-xmf streams do not contain executable content. Mobile XMF players are robust against corrupted mobile-xmf content, because Mobile XMF players ignore unidentified content. prl, minimum-pr, and total-pr parameters can be used to represent Mobile DLS playback memory requirements for protecting against the excessive usage of playback memory.

Interoperability considerations:

Mobile XMF is a Musical Instrument Digital Interface (MIDI) specification developed by MMA and AMEI. mobile-xmf is based on the XMF 2.00 specification [5,6], which standardizes a meta file format for the electronic distribution of music. mobile-xmf data is stored in XMF file format [5,6].

Published specification:

There are no previous RFC documents on audio/mobile-xmf.

Normative references:

- 1 Mobile XMF Content Format Specification, MMA specification v1.0., RP-42, Los Angeles, CA, USA. 2004.
- 2 Mobile DLS, MMA specification v1.0., RP-41, Los Angeles, CA, USA. 2004.
- 3 Scalable Polyphony MIDI Specification. December 2001, RP-034, The MIDI Manufacturers Association, Los Angeles, CA, USA.
- 4 Scalable Polyphony MIDI Device 5-24 Note Profile for 3GPP, December 2001, RP-035, The MIDI Manufacturers Association, Los Angeles, CA, USA.
- 5 Specification for XMF Meta File Format, Version 1.00b. The MIDI Manufacturers Association, Los Angeles, CA, USA, 2001.
- 6 XMF Meta File Format 2.00, RP-043, MIDI Manufacturers Association, Los Angeles, CA, USA, 2004
- 7 MIDI 1.0 Detailed Specification, Document Version 4.2. February 1996, In 'The Complete MIDI 1.0 Detailed Specification, Document Version 96.1.' The MIDI Manufacturers Association., Los Angeles, CA, USA.
- 8 Standard MIDI Files 1.0, In 'The Complete MIDI 1.0 Detailed Specification, Document Version 96.1.' The MIDI Manufacturers Association., Los Angeles, CA, USA.
- 9 Josefsson, S., Ed., "The Base16, Base32, and Base64 Data Encodings", [RFC 3548](#), July 2003.

Applications which use this media type:

mobile-xmf is a synthetic audio format for the flexible presentation of SP-MIDI and Mobile DLS instrument data on a wide range of playback devices, particularly portable appliances such as mobile phones, PDAs, and palmtop computers.

Additional information:

Magic number(s):

First twelve bytes:

\130\115\106\137\062\056\060\060\000\000\000\002

File extension(s): mxmf

Macintosh File Type Code(s): mxmf

Intended usage: COMMON

3. IANA Considerations

[Section 2](#) of this document registers one MIME subtype.

4. Security Considerations

Security considerations are specified in the MIME subtype registration contained in [Section 2](#).

5. Authors' Addresses

Timo Kosonen
Nokia
P.O. Box 100
33721 Tampere
Finland
Tel: +358 5048 35206
Fax: +358 7180 35899

Email: timo.kosonen@nokia.com

Tom White
MIDI Manufacturers Association
P.O. Box 3173
La Habra CA
90632-3173
Tel (714) 736-9774
Fax (714) 736-9775

Email: mma@midi.org

6. Change controller:

Tom White
MIDI Manufacturers Association
P.O. Box 3173
La Habra CA
90632-3173
Tel (714) 736-9774
Fax (714) 736-9775

Email: mma@midi.org

7. IPR Disclosure Acknowledgement

The IETF takes no position regarding the validity or scope of any Intellectual Property Rights or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; nor does it represent that it has made any independent effort to identify any such rights. Information on the procedures with respect to rights in RFC documents can be found in [BCP 78](#) and [BCP 79](#).

Copies of IPR disclosures made to the IETF Secretariat and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this specification can be obtained from the IETF on-line IPR repository at <http://www.ietf.org/ipr>.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights that may cover technology that may be required to implement this standard. Please address the information to the IETF at ietf-ipr@ietf.org.

8. Copyright notice

Copyright (C) The Internet Society (2005). This document is subject to the rights, licenses and restrictions contained in [BCP 78](#), and except as set forth therein, the authors retain all their rights.

This document and the information contained herein are provided on an "AS IS" basis and THE CONTRIBUTOR, THE ORGANIZATION HE/SHE REPRESENTS OR IS SPONSORED BY (IF ANY), THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

