        Tag Image File Format Fax eXtended (TIFF-FX) - image/tiff-fx
                        MIME Sub-type Registration

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Abstract

   This document describes the registration of the MIME sub-type
   image/tiff-fx. The encodings are defined by File Format for Internet
   Fax and its extensions.

1. Conventions used in this document

   The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
   "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this
   document are to be interpreted as described in RFC-2119 [REQ].

2. Overview

   This document describes the registration of the MIME sub-type
   image/tiff-fx. The encodings are defined by File Format for Internet
   Fax [TIFF-FX] and its extensions.

3. Internet Fax Working Group

   This document is a product of the IETF Internet Fax Working Group.
   All comments on this document should be forwarded to the email
   distribution list at <ietf-fax@imc.org>.

3. TIFF-FX Definition

   TIFF-FX (Tag Image File Format Fax eXtended), is defined in detail by
   RFC 2301 "File Format for Internet Fax" [TIFF-FX].

   While a brief scope and feature description is provided in this
   section as background information, the reader is directed to the
   original TIFF-FX specification (File Format for Internet Fax) to
   obtain complete feature and technical details.

3.1 TIFF-FX Scope

   This document defines a TIFF-based file format specification for
   enabling standardized messaging-based fax over the Internet. It
   specifies the TIFF fields and field values required for compatibility
   with the existing ITU-T Recommendations for Group 3 black-and-white,
   grayscale and color facsimile. TIFF has historically been used for
   handling fax image files in applications such as store-and-forward
   messaging. Implementations that support this file format
   specification for import/export may elect to support it as a native
   format. This document recommends a TIFF file structure that is
   compatible with low-memory and page-level streaming implementations.

   Unless otherwise noted, the current TIFF specification [TIFF] and
   selected TIFF Technical Notes [TTN1, TTN2] are the primary references
   for describing TIFF and defining TIFF fields. This document is the
   primary reference for defining TIFF field values for fax
   applications.

3.2 TIFF-FX Features

   Some of the features of TIFF-FX are:

      - TIFF-FX is capable of describing bilevel, grayscale, palette-
         color, full-color and mixed content image data.

      - TIFF-FX includes a number of compression schemes that allow
         developers to choose the best space or time tradeoff for their
         applications.

      - TIFF-FX is designed to be extensible and to evolve gracefully
         as new needs arise.

4. MIME Definition

   This document defines the image/tiff-fx MIME sub-type to refer to
   TIFF-FX Profiles J, C, L and M encoded image data and any future
   TIFF-FX extensions, or a subset. The image/tiff-fx content type may
   be used when black-and-white image data is encoded using TIFF-FX
   Profiles S or F, or a subset.

5. IANA Registration

   To: ietf-types@iana.org
   Subject: Registration of Standard MIME media type image/tiff-fx

   MIME media type name: image

   MIME subtype name: tiff-fx

   Required parameters: none

   Optional parameters: none

   Encoding Considerations: This media type consists of binary
   data. The base64 encoding should be used on transports that
   cannot accommodate binary data directly.

   Security considerations:

      TIFF-FX utilizes a structure which can store image data and
      attributes of this image data. The fields defined in the
      TIFF-FX specification are of a descriptive nature and provide
      information that is useful to facilitate viewing and
      rendering of images by a recipient. As such, the fields
      currently defined in the TIFF-FX specification do not in
      themselves create additional security risks, since the
      fields are not used to induce any particular behavior by the
      recipient application.

      TIFF-FX has an extensible structure, so that it is
      theoretically possible that fields could be defined in the
      future which could be used to induce particular actions on
      the part of the recipient, thus presenting additional
      security risks, but this type of capability is not supported
      in the referenced TIFF-FX specification. Indeed, the
      definition of fields which would include such processing
      instructions is inconsistent with the goals and spirit of the
      TIFF-FX specification.

Interoperability considerations:

   The ability of implementations to handle all the defined
   applications (or profiles within applications) of TIFF-FX may
   not be ubiquitous. As a result, implementations may decode
   and attempt to display the encoded TIFF-FX image data only to
   determine that the image cannot be rendered.

Published specification:

   TIFF-FX (Tag Image File Format Fax eXtended) is defined in:

   RFC 2301 "File Format for Internet Fax", January 1998
   McIntyre, L., Zilles, S., Buckley, R., Venable, D.,
   Parsons, G., and J. Rafferty.

Applications which use this media type:

   Imaging, fax, messaging and multi-media

Additional information:

   Magic number(s):
        II (little-endian): 49 49 2A 00 hex
        MM (big-endian):   4D 4D 00 2A hex
   File extension(s): .TFX
   Macintosh File Type Code(s): TFX

Person & email address to contact for further information:

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   Glenn W. Parsons
   gparsons@nortelnetworks.com

   James Rafferty
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Intended usage: COMMON

Change controller: Lloyd McIntyre

6. Security Considerations

   Security issues for this media type are discussed in the security
   considerations section of the media type registration that appears in
   section 5.

7. References

   [REQ]   Bradner, S., "Key words for use in RFCs to Indicate
              Requirement Levels", BCP 14, RFC 2119, March 1997.

   [MIME1]   Freed, N. and N. Borenstein, "Multipurpose Internet Mail
              Extensions (MIME) Part One: Format of Internet Message
              Bodies", RFC 2045, November 1996.

   [MIME4]   Freed, N. and N. Borenstein, "Multipurpose Internet Mail
              Extensions (MIME) Part Four: Registration Procedures", BCP
              13, RFC 2048, November 1996.

   [TIFF]   Adobe Developers Association, TIFF (TM) Revision 6.0 -
              Final, June 3, 1992.

   [TPC.INT] C. Malamud, M. Rose, "Principles of Operation for the
              TPC.INT Subdomain: Remote Printing -- Technical
              Procedures", RFC 1528, 10/06/1993

   [TIFF-FX] McIntyre, L., Zilles, S., Buckley, R., Venable, D.,
              Parsons, G. and J. Rafferty, "File Format for Internet
              Fax", RFC 2301, January 1998.

Annex A. List of edits to TIFF-FX Registration

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+----+---------+------------------------------------------------+
| No.| Section |             Edit Nov. 21, 2000                 |
+----+---------+------------------------------------------------+
| 1. | 7.0     | Corrected Magic Number from 49 49 42 00 hex and|
|    |         | 4D 4D 00 42 hex to 49 49 2A 00 hex and         |
|    |         | 4D 4D 00 2A hex respectively.                  |
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Acknowledgement