

Network Working Group  
Request for Comments: 3250  
Category: Standards Track

L. McIntyre  
Xerox Corporation  
G. Parsons  
Nortel Networks  
J. Rafferty  
Brooktrout Technology  
September 2002

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

Status of this Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

Copyright Notice

Copyright (C) The Internet Society (2002). All Rights Reserved.

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:

Lloyd McIntyre  
lmcintyre@xerox.com

Glenn W. Parsons  
gparsons@nortelnetworks.com

James Rafferty  
jraff@brooktrout.com

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

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.

## Authors' Addresses

Lloyd McIntyre  
Xerox Corporation  
3400 Hillview Avenue  
Palo Alto, CA 94304  
USA

Phone: +1-650 813 6762  
Fax: +1-650 813 5850  
EMail: [lmcintyre@pahv.xerox.com](mailto:lmcintyre@pahv.xerox.com)

Glenn W. Parsons  
Nortel Networks  
P.O. Box 3511, Station C  
Ottawa, ON K1Y 4H7  
Canada

Phone: +1-613-763-7582  
Fax: +1-613-763-2697  
EMail: [gparsons@nortelnetworks.com](mailto:gparsons@nortelnetworks.com)

James Rafferty  
Brooktrout Technology  
410 First Avenue  
Needham, MA 02494  
USA

Phone: +1-781-433-9462  
Fax: +1-781-433-9268  
EMail: [jraff@brooktrout.com](mailto:jraff@brooktrout.com)

## Full Copyright Statement

Copyright (C) The Internet Society (2002). All Rights Reserved.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this paragraph are included on all such copies and derivative works. However, this document itself may not be modified in any way, such as by removing the copyright notice or references to the Internet Society or other Internet organizations, except as needed for the purpose of developing Internet standards in which case the procedures for copyrights defined in the Internet Standards process must be followed, or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by the Internet Society or its successors or assigns.

This document and the information contained herein is provided on an "AS IS" basis and THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIMS 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.

## Acknowledgement

Funding for the RFC Editor function is currently provided by the Internet Society.

