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## Extensions to Delivery Status Notifications for Fax

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## **1. Abstract**

The Internet fax specification [[RFC2305](#)] describes a simple mode of operation for fax over SMTP. [[EIFAX](#)] requires that offramp gateways implemented using SMTP implement DSN [[RFC1891](#)], and this document provides extensions to message format of delivery status notifications [[RFC1894](#)] and error codes [[RFC1893](#)] to provide better support for fax offramps implemented as SMTP servers.

## **2. Introduction**

This document describes the following enhancements to DSN [[RFC1891-1894](#)] for fax:

- \* fields for call length, dialed number, and number of pages transmitted ([section 3](#))
- \* enhanced status codes for fax-specific errors ([section 4](#))

[FAX-REQ] should be consulted for detailed background information.

This draft is being discussed on the "ietf-fax" mailing list. To subscribe, send a message to:  
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## **2.1. Definitions**

offramp: A device which receives an SMTP message, calls a fax machine on the GSTN, translates the incoming SMTP message to a fax image, and transmits the fax image to the remote fax machine over the GSTN.

GSTN: Global Switched Telephone Network.

## **3. Delivery Status Notification Message Fields**

A message that is gatewayed by a fax offramp will cause a telephone call to be made. This section describes mechanisms for the fax offramp to provide information about the telephone call: the length of the call, number of pages transmitted, and the dialed telephone number.

### **3.1. New Message Fields**

Two new per-recipient extension fields, as described in [RFC1894 [section 2.3](#)], are defined using the ABNF format described in [RFC2234]:

extension-field = call-duration / transmitted-pages

call-duration = "Fax-Call-Duration" ":" elapsed-time

transmitted-pages = "Fax-Transmitted-Pages" ":" xmit-pages

elapsed-time = hour ":" minute ":" second [ ":" hundred ]

hour = 2DIGIT

minute = 2DIGIT

second = 2DIGIT

hundred = 2DIGIT

xmit-pages = 1\*DIGIT

Examples:

Fax-Call-Duration: 06:30:23.32

Fax-Call-Duration: 00:00:45

Fax-Transmitted-Pages: 104

Fax-Transmitted-Pages: 0

### **3.2. Use of Existing Message Fields**

The Final-Recipient field can indicate the actual number dialed. Reference [RFC1894, [section 2.3.2](#)], for the format of the Final-Recipient field.

Delivery Status Notifications compliant with this document should have an "address-type" is "e164". The "generic-address" is a telephone number in the format of "global-phone", which is defined in [[RFC2303](#)].

Examples:

Final-Recipient: e164; +1-408-457-5208

Final-Recipient: e164; +599-78760

## **4. Enhanced Mail System Status Codes**

While Enhanced Mail System Status Codes [[RFC1893](#)] is quite complete in its description of events specific to email, it does not provide error codes which map directly to all the error codes necessary for other services such as gatewaying to GSTN-based fax.

This document describes how existing codes from [ENH-CODES] can be used with a fax offramp, and documents new codes that are necessary to support fax offramps. [ENH-CODES] allows new codes to be defined. The following table maps fax-specific codes to [ENH-CODES] codes where possible, and defines new fax-specific codes if [ENH-CODES] doesn't already have a suitable mapping.

### **4.1. New Enhanced Mail System Status Codes for Fax**

The new fax-specific per-recipient codes are:

"X.2.50 no carrier"

The number was successfully dialed, but no fax carrier was ever heard by the sending fax modem. This is useful as a persistent transient (4.X.X) or permanent error (5.X.X).

"X.2.51 unable to train"

The number was successfully dialed, and a fax carrier was heard, but the fax modem was unable to communicate with the remote fax machine successfully. This is useful as a persistent transient error (4.X.X).

"X.2.52 no confirmation received"

After transmission of a page to the remote fax machine the remote fax machine did not acknowledge receiving the page. This is useful as a persistent transient error (4.X.X).

#### **4.2. Use of Existing Enhanced Mail System Status Codes**

Many of the codes described in [ENH-CODES] map well to fax offramp failure and success codes, and should be used to promote interoperability between fax and email. The text shown in parentheses is from [RFC1893].

"X.1.1 No such telephone number"  
("Bad destination mailbox address" in [RFC1893])

The telephone number does not exist or is not a dialable telephone number. This code is only useful for permanent failures (5.X.X).

"X.1.3 Unable to parse telephone number"  
("Bad destination mailbox address syntax" in [RFC1893])

The destination address was syntactically invalid. This can apply to any field in the address. This code is only useful for permanent failures (5.X.X).

"X.4.1 No answer"  
("No answer from host" in [RFC1893])

The outbound connection attempt was not answered. This is useful for both permanent (5.X.X) and persistent transient error (4.X.X).

"X.3.2 Persistently Busy"  
("System not accepting network messages" in [RFC1893])

The dialed telephone number was busy. This is useful for both permanent (5.X.X) and persistent transient errors (4.X.X).

#### **5. Security Considerations**

The Final-Recipient could disclose long-distance access codes that would be otherwise unknown to the sender.

#### **6. Acknowledgments**

#### **7. References**

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[RFC1894] K. Moore, G. Vaudreuil, "An Extensible Message Format for Delivery Status Notifications", [RFC 1894](#), January 1996.

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