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**An update to the mailto URI scheme for Email Address
Internationalization
draft-ietf-eai-mailto-01**

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Abstract

This document updates the definition of the mailto: URI Scheme for use with internationalized email addresses.

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1. Introduction

[RFCXXXX] defines the mailto URI scheme. It allows for the encoding of non-ASCII characters in arbitrary header fields and in the right-hand side of email addresses, but not in the left-hand side of email addresses. This document experimentally extends the syntax of mailto: URIs to allow the encoding of non-ASCII characters on the left-hand side of email addresses, and the designation of fallback addresses. It also defines the mapping of mailto: URIs to email messages using EAI features.

In order to keep this memo short and to reduce accidental differences, where possible this memo does not repeat the provisions in [RFCXXXX]. Whenever this memo does not specify something different, the provisions in [RFCXXXX] MUST be followed.

In this document, the key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" are to be interpreted as described in [RFC2119].

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2. Syntax of a mailto URI

The syntax of the mailto URI given in [RFCXXXX] is changed to use the "mailbox" production in [RFC5335] instead of [RFC5322]. Following the syntax conventions of [STD66], and using the ABNF syntax defined in [RFC5234], a "mailto" URI has the form:

```
mailtoURI  = "mailto:" [ to ] [ headers ]
to         = [ mailbox *("%2C" mailbox ) ]
headers    = "?" header *("&" header )
header     = hname "=" hvalue
hname      = *urlc
hvalue     = *urlc
```

"mailbox" is as specified in [RFC5335], i.e. it is a mail address, possibly including "phrase" and "comment" components. It also possibly includes the alt-address component of angle-addr as specified in [RFC5335]. However, the following changes apply:

1. All characters that can appear in "mailbox" but are reserved or not allowed in URIs have to be percent-encoded. Examples are parentheses, commas, the less-than and greater-than signs ("<" and ">") and the percent sign ("%"), which commonly occur in the "mailbox" syntax.

2. Percent-encoding can be used to denote non-ASCII characters, in order to denote an internationalized email address. Before applying percent-encoding, it has to be made sure that the email address is encoded in UTF-8 [[STD63](#)]. This makes the mailto URI directly usable with EAI [[RFC4952](#)] and makes it compatible with IRIs [[RFC3987](#)].

"hname" is an encoding of an [[RFC5322](#)] header name. "hvalue" is an encoding of a [[RFC5335](#)] header value. As with "to", all URI reserved characters must be encoded.

Non-ASCII characters can be encoded in "hvalue" as follows:

1. Non-ASCII characters SHOULD be encoded by first encoding the characters according to UTF-8 [[STD63](#)], and then encoding each octet of the corresponding UTF-8 octet sequence using percent-encoding, to result in URI characters. This makes the mailto URI directly usable with EAI [[RFC4952](#)] and makes it compatible with IRIs [[RFC3987](#)].
2. MIME encoded words (as defined in [[RFC2047](#)]) MAY be used in header values, but MUST NOT be used in an hvalue of a "body" hname.

3. Deployment

For the foreseeable future, URIs conforming to this memo should only be used in contexts where it can be expected that the recipient can create email messages conforming to the EAI framework [[RFC4952](#)].

4. Examples

4.1. Examples Using UTF-8-Based Percent-Encoding

Sending a mail to the user "coffee" (in French, i.e. "café" where the final e is an e-acute) at the mailhost "natto".example.org ("natto" is Japanese, written with the two Unicode characters U+7D0D and U+8C46).

```
mailto:%3Ccaf%C3%A9%E7%B4%8D%E8%B1%86.example.org%3E
```

Please note that if the left-hand side of the mail address contains non-ASCII characters, the less-than and greater-than sign (angle brackets, escaped as %3C and %3E) are mandatory.

The above example, with an "alt-address" (see [[RFC5335](#)]) added:

mailto:%3Ccaf%C3%A9@%E7%B4%8D%E8%B1%86.example.org%20%3Ccafe@
natto.example.org%3E%3E

Please note that at least a space is needed before the "alt-address", and that such a space also has to be percent-encoded. Also, please note that the URI above is separated into two lines to conform to formatting conventions, but that there is no line break in actual use.

5. Security Considerations

The security considerations of [\[RFCXXXX\]](#), [\[RFC5335\]](#), and [\[RFC4952\]](#) apply, please read them carefully. There are no known security threats specific to this memo alone.

6. IANA Considerations

This document updates the definition of the mailto: URI scheme; in the registry of URI schemes, a reference to this memo should be added to the current reference.

7. Change Log

Note to RFC Editor: Please completely remove this section before publication.

7.1. Changes between draft 00 and draft 01

- o Updated references ([\[RFC5322\]](#), [\[RFC5335\]](#), ...).
- o Changed IPR text to pre5378Trust200902.

8. Acknowledgments

This document is the product of the EAI WG of the IETF. We thank all the members of this WG.

9. Normative References

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[STD66] Berners-Lee, T., Fielding, R., and L. Masinter, "Uniform Resource Identifier (URI): Generic Syntax", STD 66, [RFC 3986](#), April 2004.

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