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MIME Encapsulation of EDI Objects

Status of This Memo

This is a preliminary draft document, intended for eventual submission to the IETF working group process. At this stage, the document should be viewed strictly as a think-piece, with comments, corrections, etc. eagerly sought.

Summary

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1. Introduction

Electronic Data Interchange (EDI) provides a means of conducting structured transactions between trading partners. The delivery mechanism for these types of transactions in a paper world has been the postal system, so it is to be expected that electronic mail would serve as a natural delivery mechanism for electronic transactions. This specification permits formatted electronic business interchanges to be encapsulated within MIME messages [BORE92]. The basic building block from EDI is a functional group of transaction sets, as defined below. In most cases, these transaction sets are transmitted in formally packaged EDI enveloping structures, called interchanges.

This specification pertains only to the encapsulation of EDI objects within the MIME environment. It intends no changes in those objects from the primary specifications that define the syntax and semantics of them. EDI transactions take place through a variety of carriage and exchange mechanisms. This specification adds to that repertoire, by permitting convenient carriage through Internet email.

Since there are many different EDI specifications, the current document defines three distinct categories as three different MIME content-types. One is `Application/EDI-X12`, indicating that the contents conform to the range of specifications developed through the X12 standards organization. Another is `Application/EDIFACT`, indicating that the contents conform to the range of specifications developed by the United Nations **<<edifact>>** organization. The last category covers all other specifications; it is `Application/EDI-consent`.

2. APPLICATION/EDI-X12 Content-Subtype Usage in MIME

`EDI-X12` information is specified by:

MIME type name:	`APPLICATION`
MIME subtype name:	`EDI-X12`
Required parameters:	none
Optional parameters:	`CHARSET`, as defined for MIME
Encoding considerations:	May need `BINARY` transfer encoding
Security considerations:	See separate section in the document .
Published specification:	Contained in the following section.

Rationale: The ASC X12 EDI specifications are accepted standards for a class of inter-organization transactions; this permits their transmission over the Internet, via email

Contact-info: See Contact section, below.

Detail specific to MIME-based usage:

This is a generic mechanism for sending any ASC X12 transaction set. The interchange parameter at the beginning of the EDI object is used to specify the particular EDI transaction set that is included.

3. APPLICATION/EDIFACT Specification

The `APPLICATION/EDIFACT MIME` body-part contains data as specified for electronic data interchange by ASC [EDIX12].

`EDIFACT` information is specified by:

MIME type name: `APPLICATION`

MIME subtype name: `EDIFACT`

Required parameters: none

Optional parameters: `CHARSET,` as defined for MIME

Encoding considerations: May need `BINARY` transfer encoding

Security considerations: See separate section in the document .

Published specification: Contained in the following section.

Rationale: The EDIFACT specifications are accepted standards for a class of inter-organization transactions; this permits their transmission over the Internet, via email

Contact-info: See Contact section, below.

Detail specific to MIME-based usage:

This is a generic mechanism for sending any EDIFACT transaction set. The interchange parameter at the beginning of the EDI object used to specify the particular EDI transaction set that is included.

4. APPLICATION/EDI-Consent Specification

The `APPLICATION/EDI-other` MIME body-part contains data as specified for electronic data interchange with the consent of explicit, bilateral trading partner agreement exchanging the `EDI-consent` traffic. As such, use of `EDI-other` only provides a standard mechanism for "wrapping" the EDI objects but does not specify any of the details about those objects.

`EDI-other` information is specified by:

MIME type name:	`APPLICATION`
MIME subtype name:	`EDI-consent`
Required parameters:	none
Optional parameters:	`CHARSET,` as defined for MIME
Encoding considerations:	May need `BINARY` transfer encoding
Security considerations:	See separate section in the document .
Published specification:	Contained in the following section.
Rationale:	Existing practice for exchanging EDI includes a very wide range of specifications which are not part of the usual, accredited standards world. Nevertheless, this traffic is substantial and well-established. This content type provides a means of delimiting such content in a standard fashion.
Contact-info:	See Contact section, below.

Detail specific to MIME-based usage:

> This is a generic mechanism for sending any EDI object explicitly agreed to by the trading partners. `X12` and `EDIFACT` object must be sent using their assigned MIME content type. `EDI-consent` is for all other EDI objects, but only according to trading partner agreements between the originator and the recipient.

5. EDI Usage in MIME

To send a single bundle of one, or more, X12-EDI transaction units:

```
To:  <<recipient organization EDI email address>>
Subject:
From: <<sending organization EDI email address>>
Date:
Mime-Version: 1.0
Content-Type: APPLICATION/EDI-X12
Content-Transfer-Encoding:  BINARY

<<standard ASC X12 EDI Transaction set goes here>>
```

6. References

[Bore92] Borenstein, N. & Freed, N., "Mime (Multipurpose Internet Mail Extensions): Mechanisms for Specifying and Describing The Format of Internet Message Bodies. March, 1992, Network Information Center, RFC 1341.

[EDIX12] ASC X12.5 Interchange Control Structure, and other specifications.

[EDIFACT] "UN/EDIFACT Syntax Rules," ISO 9735, 1991.

7. Security Considerations

EDI transactions typically include sensitive data, so that transmission often needs to account for authentication, data integrity, privacy, access control and non-repudiation concerns. This specification permits transmission of such sensitive data via Internet mail. It does NOT provide any security-related mechanisms. As needed and appropriate, such mechanisms MUST be added to the Internet MIME-based service for this capability to provide sufficient protection of EDI records.

8. Acknowledgments

Tom Jones offered introductory text and descriptions of candidate header options.

9. Contact

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