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## MIME Types for Use with the ISO ILL Protocol

### Status of this Memo

This memo provides information for the Internet community. It does not specify an Internet standard of any kind. Distribution of this memo is unlimited.

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### Abstract

This memorandum describes a set of MIME types for use with the ISO Interlibrary Loan Protocol (ISO 10160/10161). Two MIME types are specified below.

The first is a media type to carry objects which are BER [BER] encoded ISO ILL Protocol Data Units (PDU's). BER are the basic Encoding Rules used to encode PDU's which have been described using ASN.1 (Abstract Syntax Notation 1) [ASN.1] .

The second is for use with the associated document delivery instructions. Document Delivery Instructions (DDI) is an emerging protocol which enables automatic electronic delivery of items. It allows a request management system (which might have received a request for an item via the ISO Interlibrary Loan Protocol (ISO 10160/10161)) to pass details of the request, item, and delivery, to a delivery module, and to receive back reports on the delivery process or arrival of an item. It is currently being submitted to the ISO TC46/SC4/WG4 committee for approval as an ISO standard.

### Registration Information

Media type name: application

Media subtype name: iso-10161-ill-1 - for BER encoded ISO ILL APDU's

Media type name: application

Media subtype name: ill-ddi - For associated Document Delivery Instructions

Required Parameter: transfer-encoding

For BER-encoded PDU's or DDI's, the only current legal value of this parameter is:

iso-8825-ber

The transfer-encoding parameter describes the way the PDU has been encoded before being submitted to the transport service (in this case MIME/RFC822). The two protocols described in this RFC specify their APDU's using ASN.1 (ISO 8824:1990) and the most common way of encoding ASN.1 packets is to use the Basic Encoding Rules (BER ISO 8825)

The parameter is included to allow future use of these MIME types with other encoding schemes. As an example, the ISO 10161 standard also describes an encoding method using EDIFACT. In the future, other schemes might also be employed. (Since the EDIFACT encoding is not currently in use amongst the ISO 10161 and DDI communities, a value for the transfer-encoding parameter to describe it is not being registered in this RFC.)

Optional parameter: iso-10161-apdu-type

Valid values are:

ILL-Request  
Forward-Notification  
Shipped  
ILL-Answer  
Conditional-Reply  
Cancel  
Cancel-Reply  
Received  
Recall  
Returned  
Checked-In  
Overdue  
Renew  
Renew-Answer  
Lost  
Damaged  
Message  
Status-Query  
Status-Or-Error-Report  
Expired

This parameter is optional and can be provided for informational or diagnostic purposes. The value of the PDU or DDI type can be determined from the actual data sent. The use and format of the PDU's and DDI's is defined in the relevant protocol documents which describe them.

#### Examples

```
Content-Type: application/iso-10161-ill-1; transfer-encoding=iso-8825-ber; iso-10161-apdu-type=Recall;
```

```
Content-Type: application/ill-ddi; transfer-encoding=iso-8825-ber;
```

#### Encoding

Since BER encoded material is binary in nature, some form of encoding is needed when 7bit or 8bit transport mechanisms are employed.

The recommended encoding for BER encoded PDU's is Base64

#### PDU's per Message

When used to send BER encoded PDU's or DDI's. Each MIME body part will carry at most one BER encoded PDU or DDI. However, a single MIME message containing multiple body parts can be used to transport more than one BER PDU and or DDI.

#### Security Considerations

There are no known security risks associated with transmitting BER encoded PDU's in general. However, a particular BER encoded PDU or DDI may have security considerations that make it inappropriate for transmittal through public data networks unless appropriate protection mechanisms, like encryption, are used. Such a situation might occur, for example, when organizations are exchanging documents that contain secure or classified information and it is necessary to keep information about both the material being exchanged and the exchanging partners confidential.

#### Interoperability Considerations

BER is an international standard for encoding data meant to be transferred between two systems that may store data in different local formats internally [BER].

## References

- [BER] ISO/IEC 8825:1990 Information Technology - Open Systems Interconnection - Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1)
- [ASN.1] ISO/IEC 8824:1990 Information Technology - Open Systems Interconnection - Specification of Abstract Syntax Notation One (ASN.1)
- ISO 10160:1997 Information and Documentation - Open Systems Interconnection - Interlibrary Loan Application Service Definition
- ISO 10161-1:1997 Information and Documentation - Open Systems Interconnection - Interlibrary Loan Application Protocol Specification - Part 1: Protocol Specification

## Additional Information:

The National Library of Canada has been designated the maintenance agency for the ISO ILL protocol. For more information on this MIME type contact:

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