eFile Transport and Packaging Proposal

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eFile Transport and Packaging Objectives

• Define standard wire format and protocol for business return submission and acknowledgements
  – Support any return type (e.g. 1120, 941)
  – Rely on standards whenever possible
    • lower risk/development costs
    • leverage existing tools
    • reduce training costs
  – Support XML and binary data
  – Usable over multiple communication channels (e.g. dial-up, Internet, FTP, HTTP)
eFile Return Packaging Objectives

• Specify standard mechanism for structuring return components
  – supports any return type
  – consistent with eFile Transport and Packaging
  – simplifies XML schema definition and instance creation
  – facilitate development of standard return processing applications
  – provide flexibility to return storage and access

eFile Transport and Packaging Proposal

• Defines the message enveloping and header document schema used to transfer IRS return submissions and acknowledgements over a communication protocol such as FTP, HTTP, etc.
• Defined as a set of layered extensions to the base SOAP v1.1 and SOAP with Attachments standards.
  – Foundation for current W3C XML Protocol (SOAP 1.2)
  – Does not override any SOAP semantics
• Underlying transport based on MIME/multipart message standard.
  – Allows binary content
Communications Protocol Envelope (FTP, HTTP…)

SOAP with Attachments MIME Envelope

MIME Root

SOAP-ENV:Envelope

SOAP-ENV:Header

SOAP-ENV:Body

MIME Part(s)

IRS:TransmissionHeader

MIME Part(s)

IRS:ReturnData

MIME Part(s)

IRS:ReturnHeader(s)

Binary Attachment

Transmission Package (SOAP with Attachments)

Transmission/Return Header Container (SOAP)

Security data, Control data

Batch type and identification info, BatchManifest including Control data and list of returns

Return type and identification info, XLink reference(s) to ReturnData and Attachments (by ContentID)

Return Body Container(s)

(XML / Compressed)

Return Attachment Container(s)

(binary / Compressed)

eFile Transport and Packaging

SOAP actor = Transmission Processor

SOAP actor = Batch Processor

SOAP actor = Return Processor

Transmission Header - XML Schema

TransmissionHeader

Timestamp

ETIN

Transmitter

Receiver

Authentication

Action

TransmissionManifest

BatchCount

soap must Understand
Batch Header
XML Schema

Return
Header
XML Schema
Acknowledgement Packaging (SOAP)

Communications Protocol Envelope (FTP, HTTP…)

- SOAP-ENV:Envelope
  - Acknowledgement Package
  - Acknowledgement Header
  - Authentication data
  - Control data and list of acknowledgements
  - Acknowledgement details (by Return)

eFile Return Packaging Proposal

- Defines the structure of any return
  - for use in transmission and storage
- Each return and all its components is defined as one complete XML document
- Return is defined as a set of “documents”, each with a standard type (e.g. form, schedule, statement, etc.)
- Return provides a “manifest” for listing included documents along with identifying information
- Individual documents may be prepared separately and then combined into return
eFile Return Packaging - XML Schema

Example Transmission File

2 Batches with 2 Returns each
Each Return has 1 Form and 2 Schedules
MIME header and SOAP envelope

Content-Type: multipart/related; type="text/xml";
boundary="efilePackageBoundary";
start=efilepackage-001@www.irs.gov

--efilePackageBoundary
Content-Type: text/xml
Content-ID: efilepackage-001@www.irs.gov

<?xml version="1.0" encoding="UTF-8"?>
<!-- edited with XML Spy v4.0 U beta 3.1 build Aug 27 2001
(http://www.xmlspy.com) by Thomas Guinan (IBM) -->
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/
xmlns:xlink="http://www.w3.org/1999/xlink"
xmns:xsi="http://www.w3.org/2001/XMLSchema-instance"
Return.xsd http://schemas.xmlsoap.org/soap/envelope/ envelope.xsd">
  <!-- Transmission and Batch Headers (SOAP header) -->
<soap:Header>
  <efile:TransmissionHeader soap:mustUnderstand="1">
    <TransmissionId>ETINxxx-2001-09-
26T10:05:00</TransmissionId>
  </efile:TransmissionHeader>
  <efile:BatchHeader soap:mustUnderstand="1">
    <BatchId>bat001</BatchId>
    <BatchManifest returnCount="2"
eftCount="0">
      <ReturnHeaderReference xlink:href="1001"/>
      <ReturnHeaderReference xlink:href="1002"/>
    </BatchManifest>
  </efile:BatchHeader>
  <efile:BatchHeader soap:mustUnderstand="1">
    <BatchId>bat002</BatchId>
    <BatchManifest returnCount="2"
eftCount="0">
      <ReturnHeaderReference xlink:href="1003"/>
      <ReturnHeaderReference xlink:href="1004"/>
    </BatchManifest>
  </efile:BatchHeader>
</soap:Header>
Return Headers (SOAP body)

```xml
<soap:Body>
<processTransmission xmlns="urn:FileService"/>
<efile:ReturnHeader soap:mustUnderstand="1">
  <ReturnId>1001</ReturnId>
  <ReturnDataReference xlink:href="cid:ret1001"/>
</efile:ReturnHeader>
<efile:ReturnHeader soap:mustUnderstand="1">
  <ReturnId>1002</ReturnId>
  <ReturnDataReference xlink:href="cid:ret1002"/>
</efile:ReturnHeader>
<efile:ReturnHeader soap:mustUnderstand="1">
  <ReturnId>1003</ReturnId>
  <ReturnDataReference xlink:href="cid:ret1003"/>
</efile:ReturnHeader>
<efile:ReturnHeader soap:mustUnderstand="1">
  <ReturnId>1004</ReturnId>
  <ReturnDataReference xlink:href="cid:ret1004"/>
</efile:ReturnHeader>
</soap:Body>
</soap:Envelope>
```

Return Data (MIME parts)

```xml
--efilePackageBoundary
Content-Type: text/xml
Content-ID: ret1001

<?xml version="1.0" encoding="UTF-8"?>
<!-- edited with XML Spy v4.0 U beta 3.1 build Aug 27 2001
(http://www.xmlspy.com) by Tom Guinan (self) -->
<ReturnData xmlns="http://www.irs.gov/efile/protocol">
  <ReturnManifest documentCount="3">
    <DocumentReference xlink:href="doc1">
      <DocType>FORM</DocType>
      <DocCode>IRS1120</DocCode>
    </DocumentReference>
    <DocumentReference xlink:href="doc2">
      <DocType>SCHEDULE</DocType>
      <DocCode>IRS1120SchA</DocCode>
    </DocumentReference>
    <DocumentReference xlink:href="doc3">
      <DocType>SCHEDULE</DocType>
      <DocCode>IRS1120SchC</DocCode>
    </DocumentReference>
  </ReturnManifest>
  <Document documentId="doc1">
    <IRS1120 xmlns="http://www.irs.gov/efile"/>
  </Document>
  <Document documentId="doc2">
  </Document>
  <Document documentId="doc3">
  </Document>
</ReturnData>
```