Department of the Treasury
Internal Revenue Service

Publication 5165 (Early Look)

Guide for Electronically Filing
Affordable Care Act (ACA)
Information Returns

for

Software Developers and Transmitters
(Processing Year 2015)

Version 1

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Contents

DRAFT

1 Introduction

Publication 5165. *Guide for Electronically Filing Affordable Care Act (ACA) Information Returns (AIR) for Software Developers and Transmitters (Processing Year [PY] 2015),* outlines the communication procedures, transmission formats, business rules and validation procedures for returns transmitted electronically through the AIR system. To develop software for use with the AIR system, Software Developers, Transmitters, and Issuers should use the guidelines provided in this publication along with the Extensible Markup Language (XML) Schemas published on IRS.gov. The procedures in this publication should be used when the following information returns are transmitted electronically:

- *Form 1094-B, Transmittal of Health Coverage Information Returns*
- *Form 1095-B, Health Coverage*
- *Form 1094-C, Transmittal of Employer-Provided Health Insurance Offer and Coverage Information Returns*
- *Form 1095-C, Employer-Provided Health Insurance Offer and Coverage*

Note: This publication does not contain information or procedures for filing Forms 1095-A.

The transmittal Forms 1094-B and Forms 1094-C provide information about the Issuer of the ACA information returns and the Forms 1095-B and 1095-C provide information about the covered individuals.

The procedures in this publication should be used in conjunction with the most current version of the following publications:

- **Publication 4557** - *Safeguarding Taxpayer Data: A Guide for Your Business*: The purpose of this Publication is to provide information on legal requirements to safeguard taxpayer data. The target audience is non-government businesses involved in the preparation and filing of income tax returns.
- **Publication 4600** - *Safeguarding Taxpayer Information Quick Reference Guide for Businesses: Target Audience*: Non-government businesses involved in the preparation and filing of tax returns. The purpose of this Publication is to provide information on requirements to safeguard taxpayer information, safeguarding techniques, and data security incidents.
- **Publication 5164** – *Test Package for Electronic Filers of Affordable Care Act (ACA) Information Returns (AIR)*: This publication contains general and program specific testing information for use in completing the ACA Assurance Testing System (ATS) process for business submissions. ACA ATS is a process to test software and electronic transmissions prior to accepting Software Developers, Transmitters, and Issuers into the AIR program.

The following guides/documents provide additional guidance for filing electronically through AIR.

- **AIR Submission Composition and Reference Guide -** This Guide provides:
  - Guidance to IRS external partners (Software Developers, Transmitters, and Issuers with composing submissions and transmission files that are sent to the IRS for processing
  - Description of the interaction between AIR, the Trading Partners through the Information Submission Services (ISS) User Interface (UI) and Application to Application (A2A) channels

- **Automated Enrollment External User Guide**. The purpose of this document is to describe the User Interface (UI) for the Automated Enrollment (AE) Application. The AE application provides authorized delegated users the ability to enroll and update Application System Identifications (ASID) using the Integrated Enterprise Portal (IEP).

AIR publications and guides can be found on IRS.gov at [AIR User Guides & Publications](#).

1.1 Background

In March 2010, Congress passed two pieces of legislation that the President later signed into law: the Health Care and Education Reconciliation Act (HCERA) of 2010 and the Patient Protection and Affordable Care Act (PPACA). The HCERA and the PPACA are collectively referred to as the ACA.

To support new ACA regulations that were effective on January 1, 2015, the Internal Revenue Service (IRS) will receive and process information returns reporting on individual's health insurance coverage from insurance companies, self-insured companies, and large businesses and businesses that provide health insurance to their employees.

The Forms 1094/1095-B and Forms 1094/1095-C are classified as information returns and fall under Section 6011(e)(2)(A) of the Internal Revenue Code which provides that any person, including a corporation, partnership, individual, estate, or trust, who is required to file 250 or more information returns, must file such returns electronically. The 250 or more requirement applies separately for each type of return and separately to each type of corrected return.

Note: *All filers are encouraged to file information returns electronically even if they file less than 250 information returns.*

All filing requirements apply individually to each reporting entity as defined by its separate Tax Identification Number (TIN). For example, if a corporation with several branches or locations uses the same EIN, the corporation must aggregate the total volume of returns to be submitted for that EIN and apply the filing requirements to each type of return accordingly

Issuers should retain a copy of information returns (or have the ability to reconstruct the data) for at least three years from the reporting due date.

1.2 Communications

IRS worked in partnership with many AIR stakeholders to develop the information contained within this publication. Your continued cooperation is requested.

On occasion, you may need to contact IRS regarding electronic filing issues, including AIR topics. The AIR Help Desk has been designated as the first point of contact for electronic filing issues. Software Developers, Transmitters, and Issuers should contact the Help Desk at 1-XXX-XXX-XXXXX for assistance in the following areas:

- ACA Information Return Application for Transmitter Control Code (TCC)
- ACA Assurance Testing System (AATS) or Communication Testing
- Transmission issues
- Strong authentication for Application to Application (A2A)
- Rejects
- Technical questions on schemas or business rules

For Processing Year (PY) 2015, questions regarding AIR system problems, and the new development of the forms related to the ACA Program may be sent to the AIR Mailbox airmailbox@irs.gov.

1.2.1   IRS Web Site

For information regarding the AIR system and filing Affordable Care Act Information Returns go to [Affordable Care Act Information Returns (AIR) Program](). The following resources are available on this webpage:

- ACA ATS Test Scenarios and Updates
- AIR User Guides and Publications
- AIR Schemas and Business Rules
- AIR User Interface Filing
- Known AIR Electronic Filing Issues and Solutions

If you encounter an issue or limitation that prevents an information return from being submitted electronically through AIR, and the solution is not posted on IRS.gov for the Affordable Care Act Information Return (AIR) webpage, please call 1-XXX-XXX-XXXX. AIR will then work on making the appropriate corrections or assisting with the issue or limitation. Until corrections can be implemented, AIR will develop "workarounds", which are temporary changes to allow the return to be transmitted electronically. Workarounds are posted by Tax Year (TY) under the "**Known AIR Electronic Filing Issues and Solutions**" heading.

AIR uses QuickAlerts, an IRS e-mail service, to disseminate information quickly regarding AIR issues to subscribers. This service keeps tax professionals up to date on AIR issues throughout the year, with particular emphasis on issues during the filing season. After subscribing, customers will receive "round the clock" communications about issues such as Electronic specifications and system information needed for Software Developers, Transmitters, and Issuers to transmit the information returns Forms 1094/1095-B and Forms 1094/1095-C to IRS. New subscribers may sign up through the "subscription page" link located on the QuickAlerts "More" e-File Benefits for Tax Professionals page.

2 General Information About AIR

AIR accepts the following information return transmittals and documents [For TY 2014 (PY 2015), these forms are voluntary]:

- Form 1094-B, *Transmittal of Health Coverage Information Returns*
- Form 1095-B, *Health Coverage*
- Form 1094-C, *Transmittal of Employer-Provided Health Insurance Offer and Coverage Information Returns*
- Form 1095-C, *Employer-Provided Health Insurance Offer and Coverage*

AIR will process each submission and provide a status and detailed acknowledgement for the Transmitter. Generally, the Form 1095-B and 1095-C will be submitted with their associated transmittals, Form 1094-B and Forms 1094-C; however, in certain circumstances, the Form 1094-C can be submitted alone.

Note: Please refer to Publication 1220 for non-ACA Information Return test instructions; all other information returns can be electronically transmitted through [Filing Information Returns Electronically]() (FIRE).

2.1 Uniquely Identifying the Transmission

The XML Schemas for Forms 1094/1095-B and Forms 1094/1095C include elements designed to uniquely identify ACA Information Returns transmissions, submissions within the transmission, and records within the submission. Transmitters must generate unique IDs and maintain them along with their associated transmissions. Unique IDs are used to simplify and increase the precision of communications, replacements and corrections.

A transmission will contain one or more submissions. A transmission must not contain comingled submissions of Forms 1094/1095-B and Forms 1094/1095-C.

The Submission Identifier (SID) construct is applicable to all *transmittal records* (Forms 1094) within a transmission regardless of the type of information return. Each Form 1094 within a transmission will include a SID that will start at one and increment by one for each subsequent Form 1094 within the transmission. Do not include leading zeros. The SID is defined in the xml schema as a non-negative integer which, while having an upper bound, is sufficiently large enough that the 100 MB Form Data File constraint dictates the number of submissions that can be included in a transmission.

A submission will contain one or more Form 1095-B or Form 1095-C. The Record Identifier (RID) construct is applicable to all *recipient* (Form 1095) records within a submission regardless of the type of information return. Each recipient record in a submission will include a RID that will start at one and increment by one for each subsequent record in the submission.

When an error is identified, submissions and records are uniquely identified within a transmission by combining the UTID, SID, and RID, using the pipe symbol "|" as separator, and returning them to the Transmitter as follows:

USID = UTID|SID

URID = UTID|SID|RID

Unique Submission Identifier (USID) and Unique Record Identifier (URID) enable:

- IRS to report errors to Software Developers, Transmitters, Issuer that are precisely related to the specific record(s) within the submission and the transmission
- Transmitters to send corrected records to the IRS precisely identifying the record to be corrected
- Both IRS and Transmitters to track transmissions and submissions

For example, the Form 1094 data located in submission 12 of a transmission would have a USID as follows:

USID=550e8400-e29b-41d4-a716-446655440000:SYS12:BB002::T|12

The Form 1095 data located in record 98 of submission 12 of a transmission would have a URID as follows:

URID=550e8400-e29b-41d4-a716-446655440000:SYS12:BB002::T|12|98

Each transmission will be identified via the **Unique Transmission ID (UTID)**.

The format for the UTID includes various fields separated by colons (:) as follows:

- UUID – a **universally unique identifier** (UUID) is an identifier standard defined by the Internet Engineering Task Force (IETF) in Request For Comments (RFC) 4122. The UUID consists of a 16-octet (128-bit) number. This is a mandatory field: the UUID is represented by 32 hexadecimal digits, displayed in five groups separated by hyphens. For example:

  550e8400-e29b-41d4-a716-446655440000

- Application ID – the Application ID will be SYS12 and is a mandatory field.
- Transmitter Control Code – is an alphanumeric field that will contain the Transmitters TCC and is mandatory.
- Reserved – is an empty field (no space between colons)

- Request Type – the Request Type defines the types of request which must be "T" (Transactional) and is mandatory

The UTID for the transmission will be (See Figure 1-1):

- **550e8400-e29b-41d4-a716-446655440000:SYS12:BB002::T**
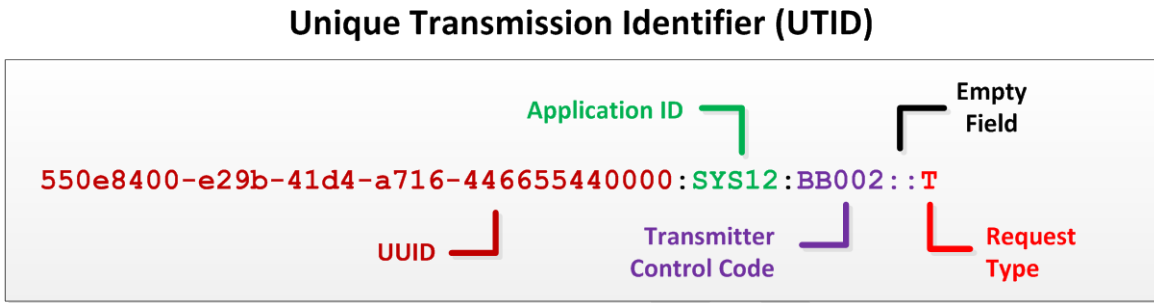
Figure 1-1: Layout of Unique Transmission Identifier (UTID)

Every ACA transmission that AIR receives will be checked to ensure that the UTID is unique (has not been previously submitted to the AIR system). If a UTID is found not to be unique, the transmission is rejected and no further processing occurs on the transmission.

2.1.1   Schema Validation for Unique IDs

IRS validates that this protocol is followed and will reject transmissions when any one or more of the following conditions apply:

- The UTID is not unique or does not conform to the pattern assigned in the XML Schema
- Transmission, submission or record identifiers are missing, duplicated or out of order
- Sequence numbers are not sequential

2.2 Correction Process

The unique identifiers assigned by AIR allow corrections to the specific record(s), both transmittal records (Forms 1094) and information return records (Forms 1095). Corrections may be filed for the following form types:

- Form 1095-B
- Form 1094-C
- Form 1095-C

Note: Although both the Form 1094-B and Form1094-C are transmittal forms, the Form 1094-C requires additional information that may need correction. The Form 1094-B is purely a transmittal document and, therefore, does not require corrections.

 The correction process can be utilized when:

- The IRS notifies the Transmitter, or Issuer, of one or more error on the transmittal (Form 1094-C only) or information returns (Forms 1095-B or Forms 1095-C) filed.

- The Transmitter, or Issuer, identifies one or more errors on the transmittal (Form 1094-C only) or information returns (Forms 1095-B or Forms 1095-C) filed.

If, after submitting a correction, the IRS identifies a subsequent error, or if the Transmitter, including Issuer, identifies a subsequent error, you must utilize the Unique IDs associated with the correction. The original record may only be corrected once.

Do not submit original and corrected documents in the same file. Corrections must be separate from original filings.

See the figure below illustrating multiple corrections to a single record.
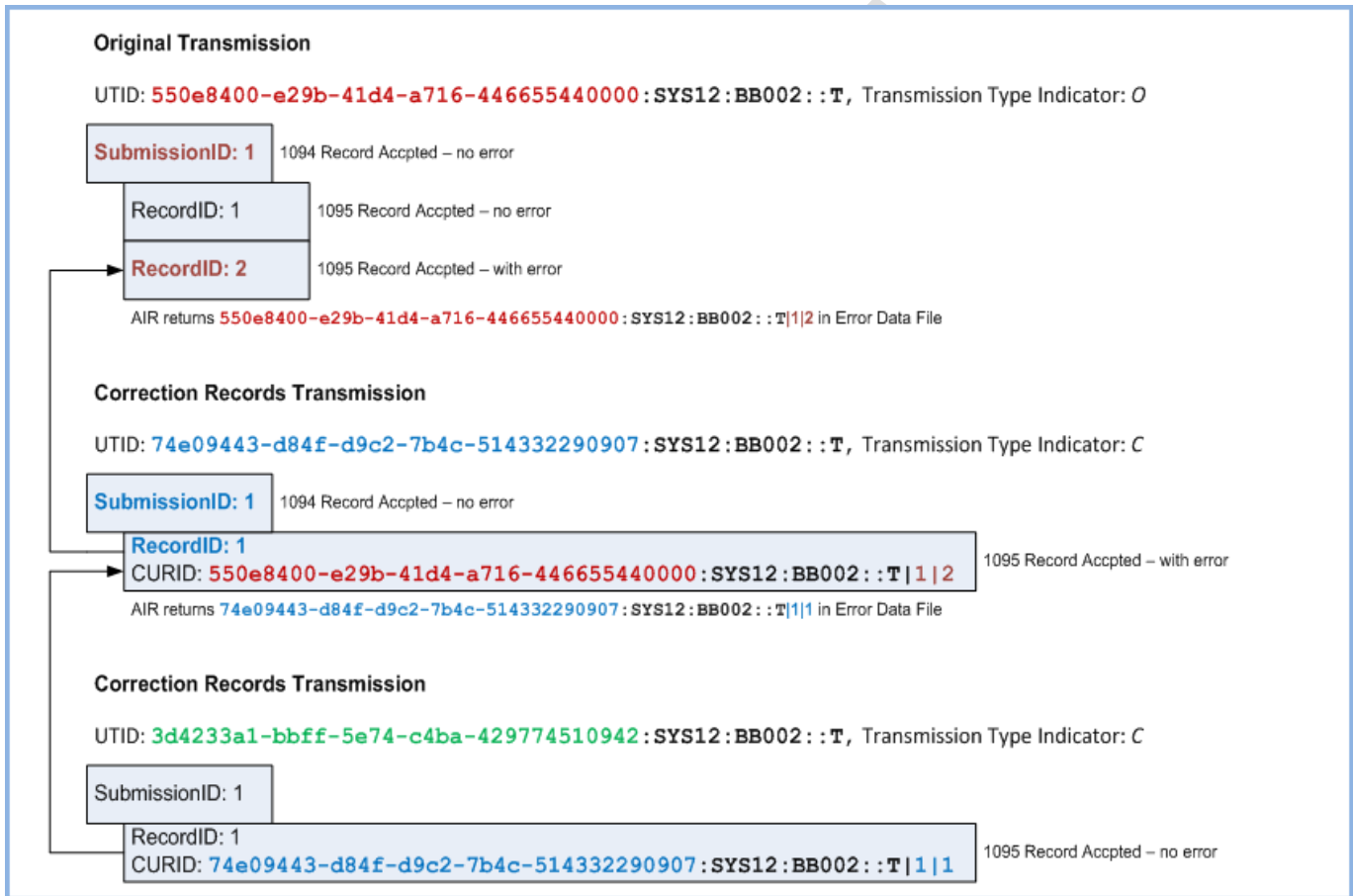
If an original submission requires corrections to both the Form 1094-C and Forms 1095-C:
1. File a correction to the Form 1094-C, with no associated Form 1095(s) attached. Populate the Corrected Unique Submission ID (CUSID) with the USID that the IRS returned in the MTOM encoded attachment in the Acknowledgement.
2. File a separate submission with a Form 1094-C, without the correction indicator and only completed through the GovEntityEmployerInfoGrp (Part I of the form), along with corrections to any erroneous Form 1095-Cs associated with the Applicable Large Employer (ALE) or Designated Government Entity (DGE). Populate the Corrected Unique Record ID (CURID with the URID that the IRS returned in the MTOM encoded attachments in the Acknowledgement.

When correcting Form1094-C entity data that also appears on associated Forms 1095-C (name and EIN), it is not necessary to submit changes to every associated Form 1095 in order to correct that information on the Forms 1095. IRS internal systems will associate appropriate entity information to existing Form 1095-C records.

2.2.1   Transmitting Corrections

Transmissions containing Form 1094-C correction records include the following (see schema and business rules):

- A UTID for the transmission
- Transmission Type indicator ("C" for corrections)
- A Submission Identifier (SID) for the correction Transmittal/Recipient record
- The Corrected Unique Submission ID (CUSID) identifying the record that is being corrected
- Key data fields from the original record to be corrected, e.g., Recipient Name and TIN. Note: these fields are necessary to allow the IRS to associate the correction record to the original record even when the Unique ID's don't match.

Transmissions containing Form 1095 correction records include the following (see schema and business rules):

- A UTID for the transmission
- Transmission Type indicator ("C" for corrections)
- A Submission Identifier (SID) for the Transmittal/Recipient record
- A Record Identifier (RID) of the correction record
- The Corrected Unique Record ID (CURID) identifying the record that is being corrected
- Key data fields from the original record to be corrected, e.g., Recipient Name and TIN. Note: these fields are necessary to allow the IRS to associate the correction record to the original record even when the Unique ID's don't match.

The Transmitter must furnish corrected statements (physical paper forms) to recipients as soon as possible.

3   Submitting the ACA Information Return Application for Transmitter Control Code (TCC)

The ACA Information Return Application for Transmitter Control Code (TCC) contains three separate roles: Software Developer, Transmitter, and **Issuer**.

Complete the ACA Information Return Application for TCC Credentials if your firm or organization is performing one or more of the following roles:

- **Software Developer**: An organization writing either origination or transmission software according to IRS specifications.
- **Transmitter**: A third-party sending the electronic information return data directly to the IRS on behalf of any business required to file.
- **Issuer**: A business filing their own ACA Information Returns regardless of whether they are required to file electronically (transmit 250 or more of the same type of information return) or volunteer to file electronically. The term issuer includes any person required to report coverage on Form 1095-B and any applicable large employer required to report offers of coverage on Form 1095-C and file associated transmittals on Form 1094-B or 1094-C.

These roles are not mutually exclusive, for example, a firm or organization may be both a Transmitter and a Software Developer. In addition to the roles the firm or organization will perform, the application will require the transmission method for Transmitters and Issuers or the transmission method(s) the software packages will support.

Each Responsible Official will need to sign the Terms of Agreement using the PIN that was selected during the e-Services Registration process. After all listed Responsible Officials have entered their PIN on the Terms of Agreement page, submit the application for processing. Note: All Responsible Officials and Contacts on the application must be registered with e-Services before the application can be submitted.

> **Responsible Official -** individuals with responsibility for the authority over the electronic filing of ACA Information Returns operation at the firm or organization location. Responsible Official is also the first point of contact with the IRS has authority to sign original/revised ACA Information Return Application for TCC Credentials, and is responsible for ensuring that all requirements are adhered to. At least one Responsible Official will need to be listed on the application. All Responsible Officials will be required to sign the application. A Responsible Official can also be a Contact on the application. More than one Responsible Official is encouraged.

> **Contact -** individuals who may be responsible for transmitting and/or are available for inquiries from the IRS on a daily basis. There is a minimum of 2 required Contacts and a maximum of 10 contacts allowed per application.

The application does not have to be completed in a single session. A tracking number is provided when the application is submitted or when the application is in "Saved Pending" status.

Note: *In certain situations the information submitted requires further review by the IRS before a TCC can be issued. In these cases, the IRS will contact the Responsible Official of record regarding any additional information that may be needed.*

Once an ACA Information Return Application for TCC is processed and completed, TCCs are sent via postal mail and are available on the summary screen of the applicant's online application. Applicants will receive a TCC for each role selected on their application.

3.1 Transmitter Control Code (TCC)

Depending on the roles selected on the application, one or more TCCs will be assigned. Each TCC will have an indicator of Test "T" or Production "P" and status of Active, Inactive, or Deleted. See the example below:

TCC Information:

Role	T/P Indicator	TCC	Status
Transmitter	P	BBQZ8	Active
Software Developer	T	BBQZB	Active

Software Developers are issued a test TCC in permanent Test status, or "T", to allow for year round testing. The transmission's status must match the AIR System's Test/Production Status Indicator or the transmission will be rejected.

Transmitters, including Issuers, are issued a TCC in Test status, or "T". The TCC remains in Test status until the Transmitter passes the required communication testing and then the TCC is moved to Production ("P") status. Once the TCC status is set to Production, the Transmitter or Issuer can use the TCC only to submit live data via the AIR Production environment.

3.1.1   TCC Limitation

IRS assigns a shipment ID to each accepted transmission in AIR. The shipment ID is associated with the TCC. Each TCC is limited to approximately 1,100 transmissions. AIR will include the number of transmissions remaining in the sequence number pool as part of the status every time a Transmitter requests an Acknowledgement for a transmission. Also, a warning message will be issued to the Transmitter when the available pool of shipment IDs is nearing exhaustion. Below is an example of the messages a Transmitter will receive:

- TCC xxxxx - Only 200 transmissions remain for this TCC
- TCC xxxxx - Only 100 transmission remain for this TCC
- TCC xxxxx - Only 50 transmission remain for this TCC

Once the entire pool of shipment IDs is used, AIR will reject the subsequent transmissions with the appropriate error code. Note: Rejected transmissions and transmissions sent to the Test environment are not assigned a shipment ID and do not count against the available pool of shipment IDs.

The Transmitter must contact the AIR Help Desk at 1-XXX-XXX-XXXX to receive an additional TCC. IRS will assign an additional TCC to the Transmitter.

3.2 Software Developers

After selecting the Software Developer role on the application, additional information about the transmission method and the software packages being developed is required. The TCC is permanently assigned to Test Status. The tax year(s) for the information returns supported, transmission method(s), form type, and software package type (COTS, Online, In-house) are also required:

- Software package will reflect a status of Test, Production, or Withdrawn; each package will have a SWID with an associated status of Test or Production
- Software ID is assigned by "SW Package" and Form and will have an associated status of Test or Production.

Software IDs:

Year	SW Package	Status	Forms	Software ID	Status	Transmission Method
2014	Online	Test	1094/1095C	14A0000629	Test	AFA for ACA Internet Transmitter,A2A System Enroller
			1094/1095B	14A0000630	Test	A2A System Enroller,AFA for ACA Internet Transmitter
2014	COTS	Test	1094/1095B	14A0000633	Test	A2A System Enroller,AFA for ACA Internet Transmitter
			1094/1095C	14A0000634	Test	AFA for ACA Internet Transmitter,A2A System Enroller
2015	In-house	Test	1094/1095B	14A0000631	Test	A2A System Enroller,AFA for ACA Internet Transmitter
			1094/1095C	14A0000632	Test	AFA for ACA Internet Transmitter,A2A System Enroller

Note: The Transmission Methods in the ACA Information Return Application for TCC will be updated in a future release. In the application, to indicate Transmission Method "ISS-UI" select "AFA for ACA Internet Transmitter" and/or to indicate Transmission Method "ISS-A2A" select "A2A System Enroller".

4 Transmissions and Data Structures

This section provides an overview of transmission methodology, transmission composition, as well as data structure needed to successfully transmit ACA Information Returns to the IRS. AIR data must be in properly structured Extensible Markup Language (XML) format and transmitted using services made available by the IRS via one of two possible channels.

The data exchanged between the Transmitters, including Issuers, and the ACA Information Return (AIR) Application via XML messages or files conforms to the Simple Object Access Protocol (SOAP). As illustrated in Figure 3-1, there are two data communication channels between external clients and the AIR system.

- The ISS-UI channel –The data are exchanged in files with XML data structures using the HTTPS protocol (HyperText Transfer Protocol (HTTP) over a Transport Layer Security (TLS) connection).
- The ISS-A2A (A2A) channel –The data are exchanged in SOAP messages using the Web Services request-response model transport mechanism over an HTTPS connection.

4.1 Web Services

Transmitters can transmit ACA Information Return submissions using Web Services. The IRS uses SOAP with HTTP binding for the transmission file, which are SOAP messages transported over a HTTPS connection. A comprehensive understanding of Web Service SOAP messaging is necessary in order to create software capable of transmitting data to the IRS.

4.2 Transmission File and Soap Message

The transmission file for transmitting information Returns to the IRS is a MIME (Multipurpose Internet Mail Extensions) multipart document that contains two parts that conforms to "SOAP 1.1 with attachments" standard as given below:

- The first part of the multi-part document is the **SOAP envelope** (as described below) that contains transmission level information.
- The second part of the document is a **SOAP attachment** that contains the ACA Information Return Submissions.

SOAP is an XML based protocol used to encode the information in Web service request and response messages before transmitting them over a network. A SOAP message is a simple XML document that consists of a SOAP Envelope with the following elements:

- A SOAP Header element that contains header information (ACA header and security elements)
- A SOAP Body element that contains request and response information—(contains transmission manifest)
- A SOAP Fault element containing errors and status information

The second part of the message, MIME (Multipurpose Internet Mail Extension) is the SOAP attachment which contains the ACA Information Return Submission(s) as an MTOM (Message Transmission Optimization Mechanism) encoded attachment. The data in the MTOM attachment must remain in uncompressed, native XML format.

```
SOAP Header (HTTP Binding)

    HTTP Headers

    SOAP (1.1): Envelope

        SOAP (1.1): Header

            WS-Security (1.0) Header

                    WS Security Elements

            ACA Busines Header
            (IRS-ACABusinessHeaderMessage.xsd)

                    Business Service Header Elements

            ACA Manifest Detail
            (IRS-Form1094-1095BCTransmitterReqMessage.xsd)

                    Transmission Metadata

        SOAP (1.1): Body

                Business Service Message Elements

                Bulk File Attachment
```
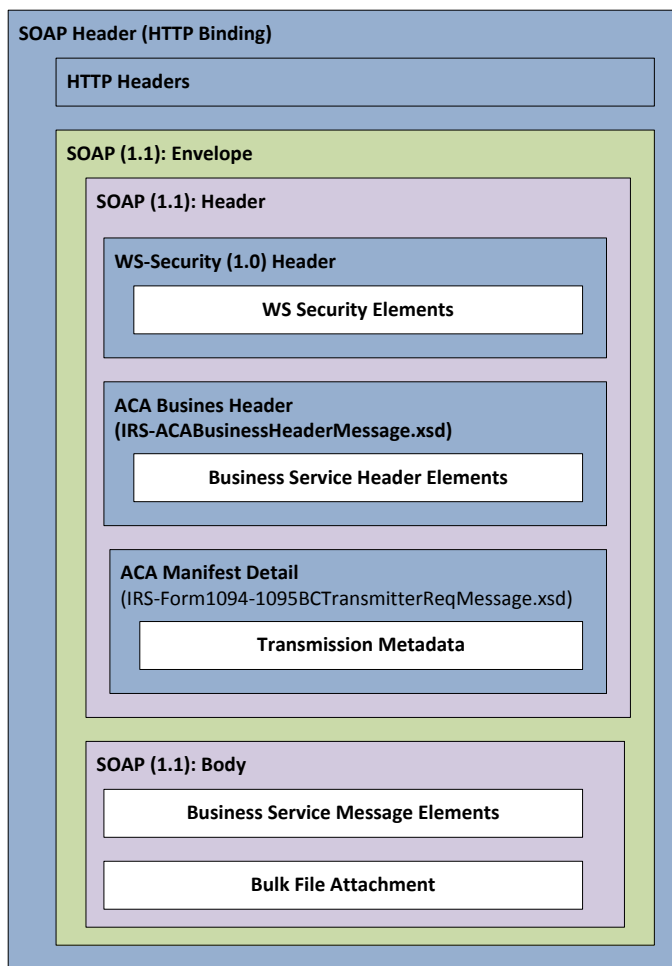
4.3 Transmission/Submission Definitions and Limitations

A transmission is defined as a separate package of electronic AIR documents including manifest, header and information return documents sent to the IRS.

Transmissions:

- Consists of one or more submission
- Must not contain mixed submissions (must not have both Forms 1094/1095-B and Forms 1094/1095-C in the same transmission)
- The MTOM attachment may not exceed 100 MB of uncompressed native XML

For the purposes of this document a submission is defined as the combination of a single transmittal form and its associated information returns.

Submissions:

- The reported number of information returns on the transmittal form must match the actual number of information returns.
- If a submission is larger than 100 MB, it must be split into two or more transmissions in the following way:
  - The first submission will consist of the Forms 1094 and as many Forms 1095 as will fit within the 100MB limit

o The subsequent submission(s) will include Forms 1094, and as many associated Forms 1095 as can be contained without exceeding the 100MB size limit.

The conceptual structure of AIR SOAP MTOM attachments are depicted in Figure 4-2
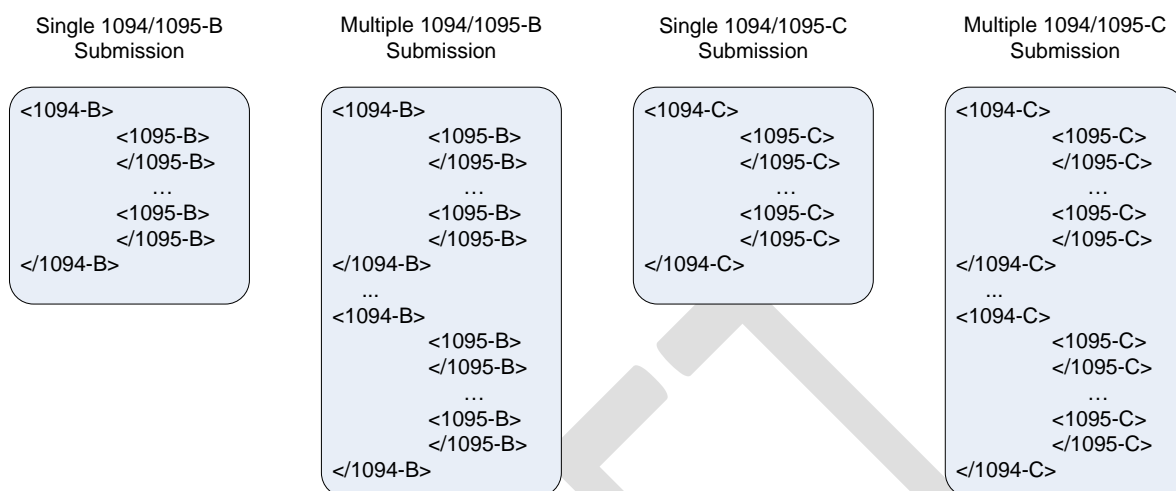
Single 1094/1095-B Submission	Multiple 1094/1095-B Submission	Single 1094/1095-C Submission	Multiple 1094/1095-C Submission

```
<1094-B>
        <1095-B>
        </1095-B>
        …
        <1095-B>
        </1095-B>
</1094-B>
```

```
<1094-B>
        <1095-B>
        </1095-B>
        …
        <1095-B>
        </1095-B>
</1094-B>
...
<1094-B>
        <1095-B>
        </1095-B>
        …
        <1095-B>
        </1095-B>
</1094-B>
```

```
<1094-C>
        <1095-C>
        </1095-C>
        …
        <1095-C>
        </1095-C>
</1094-C>
```

```
<1094-C>
        <1095-C>
        </1095-C>
        …
        <1095-C>
        </1095-C>
</1094-C>
...
<1094-C>
        <1095-C>
        </1095-C>
        …
        <1095-C>
        </1095-C>
</1094-C>
```

Figure: Conceptual Structure of IRS AIR SOAP MTOM Attachments

4.4 Transmitting Information Returns

Transmitters, including Issuers, transmit information returns to the IRS and receive a Receipt ID and other information relevant to the transmission as part of a synchronous session. The Receipt ID does not provide proof that the ACA Information Returns in the transmission were either accepted or rejected. The Receipt ID does provide proof that the IRS received the file. The Transmitter must retrieve their Acknowledgement to obtain proof of acceptance or rejection.

The IRS has built two data communication channels that can be used to transmit AIR documents between Transmitters and Issuers and the AIR system. Both channels require the submissions to be self-contained in a single uncompressed XML formatted file. For detailed information regarding the IRS Submission File structure, including the XML Schema containing the required Tag Names/Element Names and Namespaces, refer to the *AIR Submission Composition and Reference Guide* located at [Location Pending].

4.4.1   Transmitting via the User Interface (UI) Channel

Transmitters or Issuers must have an active IRS account and have been approved to transmit ACA Information Returns. See Section 3 for information about obtaining an account and applying for an ACA Information Return TCC. The Transmitter or Issuer will be required to log in to the IRS Registered User Portal (RUP) and invoke the appropriate link for AIR. AIR will allow the Transmitter or Issuer to either transmit submissions to the IRS or retrieve acknowledgements for those transmissions from the IRS. The Transmitter shall select the option to transmit submissions to the IRS.

The web browser will allow for the client to upload an uncompressed native XML manifest file which includes all of the Transmitter information. The Forms1094/1095-B or Forms 1094/1095-C data are included in an uncompressed native XML file. Once the required information is interactively entered, the client uses their Web

Browser to browse for the respective uncompressed native XML file that contains Forms 1094/1095-B or Forms 1094/1095-C and uploads the file to the IRS.

The IRS consumes the transmission information and XML file and performs security scanning on the inbound transmission. If threats such as SQL Injection, XML Bombs, viruses, etc. are detected, the IRS will reject the transmission and inform the Transmitter or Issuer of the rejection. If no security threats are detected, the IRS performs receipt processing on the transmission and returns a Receipt ID, the transmission file name, the UTID, and a Timestamp to the Transmitter's or Issuer's Web Browser as part of the synchronous session. The Receipt ID is the key information required for a Transmitter or Issuer to retrieve the acknowledgement for the respective transmission. As such, the Receipt ID returned to the Transmitter or Issuer should be kept with the transmission and protected from loss or deletion.

If the Transmitter or Issuer does not receive the Receipt ID for some reason (e.g., the session times out or is terminated) or it is accidentally lost or deleted, call the AIR Help Desk toll-free at 1-XXX-XXX-XXXX and request the Receipt ID for the transmission. The Help Desk assistor will require the user to identify themselves, their TCC and other relevant information and will provide the respective Receipt ID to the Transmitter or Issuer.

Data are uploaded in uncompressed native XML files using the HTTPS protocol. For more specific information on creating transmission files for UI channel, refer to the AIR Submission Composition and Reference Guide posted to the AIR Program User Guides & Publications page [Location Pending].

4.4.2   Transmitting via the Application to Application (A2A) Channel

Transmitters or Issuers must have an active IRS account, have been approved to transmit ACA information returns, and have completed the Automated Enrollment application required to invoke the A2A channel. See Section 3 for information about obtaining and account, applying for an ACA Transmitter Control Code (TCC), and completing the Automated Enrollment application. The Transmitter or Issuer will be required to include their digital certificate and a digitally signed hash of the message in the WS-Security Header of the SOAP Message and invoke the appropriate URL for the Web Service endpoint that exposes the IRS-ACASubmitService within the ACAGetTransmitterBulkRequestService.wsdl.

The Transmitter, including Issuer, will be required to include their digital certificate and a digitally signed hash of the message in the WS-Security Header of the SOAP Message and invoke the appropriate URL for the Web Service endpoint that exposes the *ACAGetTransmitterBulkRequestService* service.

Required information pertaining to the Transmitter or Issuer and the transmission are included as part of the SOAP message (in the SOAP Header) that is transmitted to the IRS in a SOAP Request message. The Forms 1094/1095-B or Forms 1094/1095-C data are included in an uncompressed native XML file that is attached to the SOAP Message as an MTOM encoded attachment.

The IRS consumes the SOAP message and performs security checks and XML Schema validation on the inbound transmission. If threats are detected or XML Schema validation fails, the IRS will reject the transmission and inform the Transmitter or Issuer of the rejection. If no security threats are detected, the IRS performs receipt processing on the transmission and returns a Receipt ID, the UTID, and a Timestamp to the Transmitter or Issuer in the SOAP Response message as part of the synchronous session. The Receipt ID is the key information required for

a Transmitter or Issuer to retrieve the acknowledgement for the respective transmission. As such, the Receipt ID returned to the Transmitter or Issuer should be kept with the transmission and protected from loss or deletion.

If the Transmitter or Issuer does not receive the Receipt ID for some reason (e.g., the session times out or is terminated) or it is accidentally lost or deleted, call the AIR Help Desk toll-free at 1-XXX-XXX-XXXX and request the Receipt ID for the transmission. The Help Desk assistor will require the user to identify themselves and the UTID for the transmission in question and will provide the respective Receipt ID.

SOAP messages are exchanged with the IRS using the Web Services request-response model transport mechanism using the HTTPS protocol. For specific information on creating A2A Messages, refer to the *AIR Submission Composition and Reference Guide*, which can be found at [Location Pending].

Transmitters can transmit ACA Information Return submissions using Web Services. The IRS uses SOAP with HyperText Transfer Protocol (HTTP) binding for the transmission file, which are SOAP messages transported over a HTTPS connection (HTTP over TLS – Transport Layer Security). A comprehensive understanding of Web Service SOAP messaging is necessary in order to create software capable of transmitting data to the IRS.

The Transmitter or Issuer will be required to include their digital certificate and a digitally signed hash of the message in the WS-Security Header of the SOAP Message and invoke the appropriate URL for the Web Service endpoint that exposes the service that the Transmitter is invoking.

The ISS-A2A will perform authentication and authorization, threat mitigation, and initial validation. The ISS-A2A will return a fault if a transmission contains a threat, if a transmission fails initial validation, or if a connection with the endpoint cannot be established.

4.4.2.1   Strong Authentication

All external partner communication will need to support encryption using TLS 1.1 and TLS 1.2. Federal Information Processing Standards (FIPS) 140-2 compliant cryptography will be used for strong and secure communication between Transmitters and the IRS. The A2A registration and enrollment process for Transmitters and their application system is an automated process.

The user can log into the Information Submission Service (ISS) and access the Automated Enrollment (AE) application to enroll and maintain their application systems. The authorized user can perform the following functions relative to their A2A Client System ID (ASID) for their organization:

- Enroll, Update, Un-enroll ASID
- View a deleted ASID
- Inactivate, Activate ASID
- Replace the certificate for ASID

The *Automated Enrollment (AE) External User Guide* describes the User Interface for the AE application and can be found on IRS.gov at [Location Pending].

The IRS requires strong authentication when transmitting via the A2A channel, which will affect authentication techniques for all A2AWeb services. The strong authentication certificate/credential will replace the password and the ACA Information Returns Web Service endpoint Web Services Definition Language (WSDL) will accommodate this credential. Each Transmitter will be required to register their certificate with AIR through the AE application. Software Developers must use the set of WSDL files provided by the IRS to build their application so

that they can use strong authentication (IRS WSDL *ACA AIR-IEP XML LIBRARY 8.2 as of 11062014* file containing the string 'AppSysID').

The *AIR Submission Composition and Reference Guide* located at [Location Pending] is available that explains the integration and uses of this IRS-provided client code sample to support certificate-based authentication for AIR A2A Web services. In addition to the code itself, this guide provides necessary information for developers to use when integrating the new feature into client software that communicates with the IRS A2A Web services.

4.4.2.2 Certificate Management

The IRS requires the use client digital (X.509) certificates issued by IRS-designated certificate authorities (see listing below) to provide enhanced authentication of external partner application systems for A2A Web service processing. This capability is intended to mitigate threats defined in Treasury Department Publication 85-01, Department of the Treasury Information Technology (IT) Security Program, Vol. II, Handbook, Part 1, Sensitive Systems, Section 5.4.4.

To meet the requirements stated in the Treasury directive, the system will:

1. Provide verification of a digital signature of appropriate message parts produced using the private key for the X.509 certificate submitted with the authentication request, and shall prevent (fail) authentication if this verification fails.

2. Verify that a submitted X.509 certificate is properly formatted and is verified by appropriate CA signature, and shall prevent (fail) authentication if this verification fails.

3. Provide checks to ascertain that a submitted X.509 certificate has not been revoked, using most current Certificate Revocation List (CRL) resources from IRS-designated CAs, and shall prevent (fail) authentication if the certificate has been revoked. CRLs will be retrieved from each IRS-designated CA based on the schedule of available updates for that CA, so that the most up-to-date CRL will be made available for A2A authentication.

4. Provide checks to ensure that a submitted X.509 certificate has not expired, and shall prevent (fail) authentication if the certificate has expired.

5. Ensure that a submitted X.509 certificate matches a certificate previously registered for the application system using data stored in the IRS directory by an enrollment process, and shall prevent (fail) authentication if the match cannot be made.

6. Mitigate replay attacks for authentication.

7. Provide error handling by which any external failing strong authentication for any reason will receive a SOAP fault response message stating that "Authentication Failed."

8. Provide adequate capacity for A2A certificate-based authentication.

9. Ensure that authentication attempts and results are audited and incorporated into log files for audit and forensic purposes.

10. Accommodate external users that have one or more sites (and client certificates) associated with a single PKI sponsor.

11. Register valid certificates for each enrolled external application system using an automated enrollment process. The authentication credentials structure shall be changed for all A2A Web service requests to accommodate session-less requests.

A2A Transmitters must use digital certificates (X.509) versus passwords upon proper enrollment and registration of the certificate. Encryption of the signing key is important on your system. Do not store an unencrypted copy of the signing key on your system. The signing key should be stored in a standard encrypted key store.

The remainder of this section identifies the IRS approved Certificate Authorities where X.509 digital certificates may be obtained.

4.4.2.3 Authorized Certificate Authorities

[Pending Information]

4.5 Retrieving Acknowledgements

Transmitters, including Issuers, must have an active IRS account and have been approved to transmit ACA Information Returns. See Section 3 for information about obtaining and account and applying to for an ACA Information Return Application for TCC. AIR will allow the Transmitter or Issuer to either transmit submissions to the IRS or retrieve Acknowledgements for those transmissions from the IRS. The transmission Acknowledgement consists of the status of transmission and includes any details of errors that were found when the IRS processed the XML file. The status of the transmission includes one of the following:

- In Processing (the IRS has not completed processing the transmission)
- Accepted (no XML file or MTOM encoded attachment is included)
- Accepted with errors (an XML file or MTOM encoded attachment is included)
- Rejected (and XML file or MTOM encoded attachment may or may not be included)
- Not Found (The Receipt ID in the request was not found)

The details of errors found when IRS processed the XML file are made available to the Transmitter via display on their web browser (UI channel) or are included in an XML file attached to the SOAP Response in an MTOM encoded attachment (A2A channel). In the event that the error detail exceeds the 100 MB limit, the error reporting will be truncated and a message indicating that the error detail was truncated will be included.

4.5.1   Retrieving Acknowledgements via the UI Channel

Transmitters may request a status of the transmission. IRS' response to this request will also include a detailed acknowledgement which will contain details such as any business rules validation errors, and TIN validation results. The Transmitter or Issuer will be required to log in to the IRS Integrated Enterprise Portal (IEP) and invoke the appropriate URL for AIR. The Transmitter shall select the option to retrieve acknowledgements.

Once the required information is interactively entered, the user submits the request. The Receipt ID (along with the TCC) is the key information required for a Trading Partner to retrieve the Acknowledgement for the respective transmission. As such, the Receipt ID returned to the Third Party should be kept with the transmission and protected from loss or deletion. Note: When retrieving acknowledgements via the UI Channel, no XML files are required to be uploaded.

The IRS retrieves the transmission status and, if processing errors were identified by the IRS, provides the capability to view the error detail as part of the synchronous session.

For details on how to construct and receive status and acknowledgements see *AIR Submission Composition and Reference Guide* [Affordable Care Act Information Returns (AIR) Program](#) on irs.gov

4.5.2　Retrieving Acknowledgments via the A2A Channel

The Transmitter or Issuer will be required to include their digital certificate and a digitally signed hash of the message in the WS-Security Header of the SOAP Message and invoke the appropriate URL for the Web Service endpoint that exposes the IRS-ACAAckngService service within the ACAGetTransmitterBulkRequestStatus.wsdl. The Receipt ID is the key information required for a Trading Partner to retrieve the Acknowledgement for the respective transmission. As such, the Receipt ID returned to the Third Party should be kept with the transmission and protected from loss or deletion.

Required information pertaining to the Transmitter or Issuer and the transmission are included as part of the SOAP message (in the SOAP Header) that is transmitted to the IRS in a SOAP Request message.

The IRS consumes the SOAP message and performs security scanning and XML Schema validation on the inbound transmission. If threats are detected or XML Schema validation fails, the IRS will reject the transmission and inform the Transmitter or Issuer of the rejection. If no security threats are detected, the IRS retrieves the acknowledgement including the status and the file (if processing errors were identified by the IRS), and returns the status and the file (as applicable) in the SOAP Response message as part of the synchronous session. The file (if included) is an uncompressed native XML formatted file that will not exceed 100 MB attached to the message as an MTOM encoded attachment.

SOAP messages are exchanged with the IRS using the Web Services request-response model transport mechanism using the HTTPS protocol. For specific information on creating A2A Messages, refer to the *AIR Submission Composition and Reference Guide*, which can be found at [Location Pending].

4.6 XML Overview for AIR

The IRS uses XML, a language that specifies the structure and content of electronic documents and files to define the electronic format of ACA information returns. This section explains some of the elements of an XML document.

4.6.1　AIR XML File Schema File Structure

This section describes the AIR XML Schema file structure and how the schemas will be packaged as of the date this publication was issued.

Schemas for a given ACA Information Return are developed by the respective projects and submitted to the IRS Unstructured Data Practice (UDP) Group. The UDP Group integrates the project XML Schemas into a standard ACA XML Common Library. The ACA XML Common Library consists of several common XML Schema building blocks as follows:

- IRS-CAC.xsd – contains common aggregate components
- IRS-CBC.xsd – contains common basic components
- IRS-SDT.xsd – contains specialized data types.

The ACA XML Common Library is built following IRS Enterprise Standards, Naming, and Design Rules.

The common XML Schema building blocks are packaged into a COMMON folder within the XML Library structure as follows:

XML Library *n.n*
    COMMON

The ACA XML Library for AIR also includes the following folders:

EXT
    IRS-EXT-ACA-AIR-5.0.xsd

MSG
    Various .xsd and .xml – contains the Message, Form Data File, Manifest File, Error Data File and other XML Schemas

SRV
    ACAGetTransmitterBulkRequestService – the WSDL for the transmission endpoint
    ACAGetTransmitterBulkRequestStatus – the WSDL for the retrieve acknowledgements endpoint

    There are four business rule files, one for each Form 1094-B, Form 1095-B, Form 1094-C, and Form 1095-C. The business rule files are located on irs.gov at the [Location Pending].

4.6.2   AIR XML Structure

For more information on how to compose submission and transmission files sent to IRS for processing using the AIR System, refer to the *AIR Submission Composition and Reference Guide* posted to at [Location Pending].

When entering character data into an XML document, it is important to ensure that the specified encoding supports the characters provided. By design, AIR uses Unicode Transformation Format-8 (UTF-8). AIR does not support any other encoding scheme (for example, UTF-16 and UTF-32).

4.6.3   Prohibited Special Characters

Software Developer, Transmitters, and Issuers must not include certain special characters in any character data included in the XML of the SOAP message or the XML file attached to the SOAP message. The following special characters must not to be included in any of the data fields for either Forms 1094/1095-B or Forms 1094/1095-C transmissions:

Table: Special Characters Not To Be Included in Any Data Field

Character	Character Description
&	*Ampersand*
'	*Apostrophe*
"	*Quotation Mark*
--	*Double Dash*
#	*Hash Key*

<	*Less Than*
>	*Greater Than*

A transmission which contains any of the special characters identified in Table 3-1, either in the SOAP Message or in the XML file, will be rejected upon receipt by the IRS.

- *Example 1:* If a record has a last name data field containing **O'Brien**, then the transmission must not include the apostrophe so that the data field instead contains **OBrien**.
- *Example 2:* If a record has an employer name data field containing **A&B**, then the transmission must not include the ampersand so that the data field instead contains **AB**.
- *Example 3:* If a record has an address data field containing **Shepard's Road**, then the transmission must not include the apostrophe so that the data field instead contains **Shepards Road**.

4.6.4   Tag Names

Each field on an ACA Information Return document is identified using an XML tag name within the XML schema.

Tag names were created using the following conventions:

- A meaningful phrase with the first letter of each word capitalized and using no spaces (upper Camel case)
- A length of not more than 30 characters
- Standard abbreviations to meet the tag name 30 character limit

The Tag Names, also known as Element Names were standardized by IRS for all ACA Information Return forms. A notional example of a simple XML element that identifies the record number in a submission would be:

```
<xsd:element ref="UniqueRecordID" minOccurs="1" maxOccurs="unbounded"/>
```

A notional example of a complex XML element that identifies all of the data elements required for Form 1094-B would be:

```
<xsd:complexType name="Form1094BUpstreamDetailType">
    <xsd:annotation>
        <xsd:documentation>
            <Component>
                <DictionaryEntryNm>Form 1094-B Upstream Detail Type</DictionaryEntryNm>
                <MajorVersionNum>2</MajorVersionNum>
                <MinorVersionNum>0</MinorVersionNum>
                <VersionEffectiveBeginDt>2015-04-20</VersionEffectiveBeginDt>
                <VersionDescriptionTxt>Initial version</VersionDescriptionTxt>
                <DescriptionTxt>Form 1094-B - Transmittal of Health Coverage Information Returns</DescriptionTxt>
            </Component>
        </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element ref="SubmissionId"/>
        <xsd:element ref="TestScenarioId" minOccurs="0"/>
        <xsd:element ref="irs:TaxYr"/>
        <xsd:element ref="BusinessName" minOccurs="0"/>
        <xsd:element ref="irs:BusinessNameControlTxt" minOccurs="0"/>
        <xsd:element ref="irs:TINRequestTypeCd" minOccurs="0"/>
        <xsd:element ref="irs:EmployerEIN"/>
        <xsd:element ref="ContactNameGrp" minOccurs="0"/>
        <xsd:element ref="ContactPhoneNum" minOccurs="0"/>
        <xsd:element ref="MailingAddressGrp" minOccurs="0"/>
        <xsd:element ref="Form1095BAttachedCnt" minOccurs="0"/>
        <xsd:element ref="Form1095BUpstreamDetail" maxOccurs="unbounded"/>
        <xsd:element ref="JuratSignaturePIN" minOccurs="0"/>
        <xsd:element ref="irs:PersonTitleTxt" minOccurs="0"/>
        <xsd:element ref="irs:SignatureDt" minOccurs="0"/>
    </xsd:sequence>
    <xsd:attribute name="recordType" type="xsd:string" use="required"/>
    <xsd:attribute name="lineNum" type="xsd:integer" use="required"/>
    <!-- recordType and lineNum are COTS Mandatory Element-->
</xsd:complexType>
```

4.6.5   Attributes

Attributes provide additional information or describe a constraint of a data element.

- The first letter of the first word of an attribute name is lower case; the first letter of each subsequent word is capitalized (lower camel case).

For instance, in the example of the simple XML element *UniqueRecordID* above, minOccurs=*"1"* identifies that the inclusion of the UniqueRecordID is required (e.g., if there are Recipient records included in the submission, each Recipient record must have a UniqueRecordID) and maxOccurs=*"unbounded"* identifies that there is no limit to the number of UniqueRecordIDs that can be included in the XML (e.g., the 100 MB file size constrains the number of Recipient records that can be included in a submission).

4.6.6   Repeating Group

Repeating groups are specified in XML schema definitions using the minOccurs and maxOccurs facets on sequence or choice definitions. An example of a repeating group is as follows:

<xsd:element ref=*"EmployerCoveredIndividual"* maxOccurs=*"unbounded"*/>

The reference element EmployerCoveredIndividual is a required element and there are no constraints as to how many of these elements can be included in the submission. The reference element resolves to the eFile Type EmployerCoveredIndividualType:

<xsd:element name=*"EmployerCoveredIndividual"* type=*"EmployerCoveredIndividualType"*>

EmployerCoveredIndividualType is a complex data element that includes the nodes Covered Individual Name, Social Security Number or Data of Birth, and several other indicators required for the repeating group. All of the elements of the EmployerCoveredIndividualType repeat as each EmployerCoveredIndividual is reported.

The ability to repeat information within the XML Schema is the electronic equivalent of attaching additional forms when there is insufficient space on the form to include all of the information that must be filed (e.g., If there are more than six covered individuals, complete one or more additional Forms 1095-B, Part IV).

4.6.7   AIR Schema and Business Rules

IRS created a XML schema for each of the different types of ACA Information Returns (Form 1094-B, Form 1094-C, Form 1095-B, and Form 1095-C), Transmission File, and Acknowledgement File. Each schema version also has a respective set of business rules that are used during AIR validation.

Each year, new legislation and/or improvements to IRS programs impact the IRS forms and processing procedures. The IRS evaluates these changes to determine if updates to the XML schemas and business rules are necessary.

When schemas are posted to IRS.gov, IRS will identify when the schemas are available in the ACA ATS and Production environments. Software Developers are not required to retest when new schemas (minor or major) are posted. However, the IRS strongly recommends the use of ACA ATS to retest when Software Developers update their software in response to schema changes.

Note: If there are critical changes required due to late legislation changes, national disasters, or errors identified during testing or production, the IRS may issue updated XML schemas and business rules after December and during the Processing Year (PY).

XML Schema and business rules can be found at the IRS web site [Location Pending].

General Information about Version Numbers follows.

Each version of the XML schemas and the corresponding business rules have a unique version number assigned. It is important to note the following principles regarding version numbers:

- Each information return's schema version has an associated set of business rules with the same version number. This ensures that each updated schema version includes an updated set of business rules.

- The "Form*nnnn*UpstreamDetailType" complex element includes a documentation element and dictionary entry name that identifies the form including the major and minor version numbers of the schema for each return type as well as the effective begin date for the XML Schema. For example, the "Form1095BUpstreamDetailType" from the IRS-Form1094-1095BTransmitterUpstreamMessage.xsd file shown below identifies the schema version as v1.0 with an effective date of 2015-01-27.

```xml
<xsd:complexType name="Form1095BUpstreamDetailType">
    <xsd:annotation>
        <xsd:documentation>
            <Component>
                <DictionaryEntryNm>Form 1095-B Upstream Detail Type</DictionaryEntryNm>
                <MajorVersionNum>1</MajorVersionNum>
                <MinorVersionNum>0</MinorVersionNum>
                <VersionEffectiveBeginDt>2015-01-27</VersionEffectiveBeginDt>
                <VersionDescriptionTxt>Initial version</VersionDescriptionTxt>
                <DescriptionTxt>Form 1095-B - Health Coverage Information Return</DescriptionTxt>
            </Component>
        </xsd:documentation>
```

- Each business rule document's version number identifies the version and effective begin date of the business rules.

- The "Active Validating Schema Version" specifies the business rules and schema version that will be used to validate an information return that has been received by the IRS during a timeframe. This provides a mechanism for different versions to be accepted at the same time. It also enables an older version to be validated against a newer version's set of schemas and business rules. The IRS will publish all valid schema/business rule versions.

The active validating schema version will be the most recent schema version posted to IRS.gov. IRS will provide the "Start" dates when schemas are available in Production and ACA ATS. These "Start" dates also represent when the latest schema posted becomes the active validating schema.

4.6.8   Validating Schema Versions

Throughout the year, multiple versions of XML schemas and business rules may be posted to IRS.gov. Depending on if the schema change is major or minor; AIR may not require the schema version found in the return data to match the schema version used by AIR during validation. In general, there is always one active validating schema version for each return type in a processing year. The schema/business rules tables will include the Start dates, and End dates if applicable, for ATS and Production. The IRS strives to limit the number of schema and/or business rule revisions, especially after production opens.

- **Minor Schema Changes -** When IRS issues revised schemas for a return type and changes the increment for the minor number, AIR continues to accept returns composed using previous schema versions. When the minor number is changed, IRS allows Software Developers to decide for themselves whether they need to use the new version or not based on what is included in their tax preparation software and what changes were made to the schemas.

  Returns may be composed using previously published schema versions but IRS will only validate against the "active validating schema version" when the return is processed. For example:

  If the current schema version is 1.0 and the schema change is minor, IRS will assign the new number 1.1. The active validating schema version is 1.1. AIR will continue to accept returns composed using version 1.0. However, all returns (whether composed with version 1.0 or 1.1) will be validated with the new version, 1.1.

- **Major Schema Change -** When IRS issues revised schemas for an information return type and changes the increment for the major number, all returns must be composed by software using the new version. If information returns are composed using previously published schema versions, they will not validate against the active validating schema version when the return is processed and will be rejected.

  For example, if the current version is 1.1 and the IRS decides it can no longer accept information returns composed using schema version 1.1 (or v1.0), it will assign the new major number 2.0. The active validating schema version is 2.0. Returns submitted with 1.1 or earlier will be rejected for using an unsupported schema version.

  Software Developers and Transmitters should select the applicable form type on the AIR Schemas and Business Rules page to get information about all active and prior year schemas and business rules used by the AIR Production and ATS.

4.6.8.1   Example of Schema Versioning

Below is a sample of the AIR Forms XML Schemas Versioning

```xml
    </xsd:complexType>
    <xsd:complexType name="Form1094BUpstreamDetailType">
        <xsd:annotation>
            <xsd:documentation>
                <Component>
                    <DictionaryEntryNm>Form 1094B Upstream Detail Type</DictionaryEntryNm>
                    <MajorVersionNum>1</MajorVersionNum>
                    <MinorVersionNum>0</MinorVersionNum>
                    <VersionEffectiveBeginDt>2014-08-20</VersionEffectiveBeginDt>
                    <VersionDescriptionTxt>Initial version</VersionDescriptionTxt>
                    <DescriptionTxt>Upstream Transmission detail for 1094B Forms.</DescriptionTxt>
                </Component>
            </xsd:documentation>


    <xsd:complexType name="Form1095BUpstreamDetailType">
        <xsd:annotation>
            <xsd:documentation>
                <Component>
                    <DictionaryEntryNm>Form 1095B Upstream Detail Type</DictionaryEntryNm>
                    <MajorVersionNum>1</MajorVersionNum>
                    <MinorVersionNum>0</MinorVersionNum>
                    <VersionEffectiveBeginDt>2014-11-04</VersionEffectiveBeginDt>
                    <VersionDescriptionTxt>Initial version</VersionDescriptionTxt>
                    <DescriptionTxt>Form1095-B (Issuer) Info Return - Health Insurance Coverage
                </Component>
            </xsd:documentation>


    <xsd:complexType name="Form1094CUpstreamDetailType">
        <xsd:annotation>
            <xsd:documentation>
                <Component>
                    <DictionaryEntryNm>Form 1094C Upstream Detail Type</DictionaryEntryNm>
                    <MajorVersionNum>1</MajorVersionNum>
                    <MinorVersionNum>0</MinorVersionNum>
                    <VersionEffectiveBeginDt>2014-08-20</VersionEffectiveBeginDt>
                    <VersionDescriptionTxt>Initial version</VersionDescriptionTxt>
                    <DescriptionTxt>Employer - Upstream Transmission detail for 1094C Forms.</Descri
                </Component>
            </xsd:documentation>


    <xsd:complexType name="Form1095CUpstreamDetailType">
        <xsd:annotation>
            <xsd:documentation>
                <Component>
                    <DictionaryEntryNm>Form 1095C Upstream Detail Type</DictionaryEntryNm>
                    <MajorVersionNum>1</MajorVersionNum>
                    <MinorVersionNum>0</MinorVersionNum>
                    <VersionEffectiveBeginDt>2014-11-04</VersionEffectiveBeginDt>
                    <VersionDescriptionTxt>Initial version</VersionDescriptionTxt>
                    <DescriptionTxt>Form1095-C (Employer) Info Return - Employer-Provided Health Insuranc
                </Component>
            </xsd:documentation>
```

Figure: Sample of AIR Forms Schemas

The schema/business rules tables will include the Start dates, and End dates if applicable, for ATS and Production. IRS always strives to limit the number of schema and/or business rule revisions, especially after production opens.

5 Transmission Methods for AIR

5.1 Transmitting Through the ISS-A2A Channel

Transmitters can transmit ACA Information Return submissions using Web Services. The IRS uses SOAP with HyperText Transfer Protocol (HTTP) binding for the transmission file, which are SOAP messages transported over a HTTPS connection (HTTP over TLS – Transport Layer Security). A comprehensive understanding of Web Service SOAP messaging is necessary in order to create software capable of transmitting data to the IRS.

The Transmitter or Issuer will be required to include their digital certificate and a digitally signed hash of the message in the WS-Security Header of the SOAP Message and invoke the appropriate URL for the Web Service endpoint that exposes the service that the Transmitter is invoking.

The ISS-A2A will perform authentication and authorization, threat mitigation, and initial validation. The ISS-A2A will return a fault if a transmission contains a threat, if a transmission fails initial validation, or if a connection with the endpoint cannot be established.

5.2 Transmitting Through the ISS-UI Channel

Transmitters or Issuers must have an active IRS account and have been approved to transmit ACA Information Returns. See Section 3 for information about submitting the ACA Information Return Application for Transmitter Control Code (TCC). The Transmitter, including Issuer, will be required to log in to the IRS Integrated Enterprise Portal (IEP) and invoke the appropriate URL for AIR. AIR will allow the Transmitter or Issuer to either transmit submissions to the IRS or retrieve Acknowledgements for those transmissions from the IRS. The Transmitter shall select the option to transmit submissions to the IRS.

The Forms 1094 and Forms 1095 data and manifest file are included in an uncompressed native XML file. Once the required information is interactively entered, the client uses their Web Browser to browse for the respective uncompressed native XML file that contains Forms 1094 and Forms1095 along with the uncompressed native XML file and uploads the files to the IRS.

5.3 Threat Mitigations in AIR Transmissions

The ISS will only accept XML file attachments and will run security checks on each message and attachment before routing to IRS AIR back-end systems.

All files being transmitted through the ISS-A2A or ISS-UI channels will be checked for threats. In the event the system detects a threat in the Transmission File, the following steps will be taken:

- ISS will perform threat mitigation and initial validation on authorized connections.
- The Transmission will be rejected and an error response will be returned.
- The Transmitter must remove the infected data and then retransmit the file.

Table below defines fault codes and messages from the ISS.

Fault Code	Service Leg	Channel	Reason	Fault Message
TPE1001	Request	A2A/UI	Message Delivery Failure	Unable to route request to web Service Provider
TPE1100	Request	A2A/UI	Authentication Failure	Authentication failed
TPE1102	Request	A2A/UI	Service Window Closed	Requested service is not available at this time. Please resubmit during normal operation hours
TPE1103	Request	A2A/UI	Service Provider Unavailable	The number of acceptable simultaneous requests has been exceeded. Please resubmit your request in a few minutes
TPE1104	Request	A2A/UI	Request not compliant with policy requirements	Request is not compliant with web service policy requirements
TPE1105	Request	A2A/UI	XML is not well-formed	Message not formatted properly and/or cannot be interpreted. Please check message and try again
TPE1106	Request	A2A/UI	SOAP message does not conform to WSDL	Request message violates WSDL schema specification
TPE1107	Request	A2A/UI	Message too large	Request message exceeds maximum size limit
TPE1108	Request	A2A/UI	Potential Code Injection	Request message contains unexpected content
TPE1109	Request	A2A/UI	Potential SQL Injection	Request message contains unexpected content

Fault Code	Service Leg	Channel	Reason	Fault Message
TPE1110	Request	A2A/UI	Potential Document Structure Threat	Request message contains unexpected content
TPE1111	Request	A2A/UI	Authentication Failure	Authentication failed against Internal Identity Provider
TPE1112	Request	A2A/UI	HTTP compression Failure	Request message must be sent using HTTP compression
TPE1113	Request	A2A/UI	ACABusinessCorrelationId missing	Invalid ACABusinessCorrelationId was identified on the Request message
TPE1114	Request	A2A/UI	Message not MTOM encoded	Request message must be MTOM encoded
TPE1115	Request	A2A/UI	Unable to decode MTOM	Internal Error Occurred while decoding MTOM message. Please resubmit
TPE1116	Request	A2A/UI	MessageID missing	Invalid MessageID on the request message
TPE1117	Request	A2A/UI	Unable to encode MTOM	Internal Error occurred while encoding MTOM message. Please resubmit
TPE1120	Request	UI	Unable to create ACA Business Header	Internal server error. Unable to upload file.
TPE1121	Request	UI	Unable to add attachment to SOAP message	Internal server error. Unable to upload file.
TPE1122	Request	UI	Failed to convert from HTTP post to SOAP	Internal Error occurred while transforming HTTP request. Please contact Service Provider

Fault Code	Service Leg	Channel	Reason	Fault Message
TPE1126	Request	UI	Failed to connect to the SiteMinder Policy Server	Unable to authenticate connectivity at this time. Please try again later.
TPE1127	Request	UI	Missing credentials in HTTP request	Message not formatted properly and is missing HTTP credentials. Please check message and try again
TPE1128	Request	UI	Failed to authenticate in SiteMinder	Unable to authenticate credentials. Please try again.
TPE1129	Request	UI	Failed to be authorized via SiteMinder	Unable to authenticate credentials. Please try again.
TPE1130	Request	UI	Failed to retrieve a valid Test File Indicator	Request contains Invalid Test File Indicator Field
TPE1201	Request	A2A/UI	Attachment is malformed	Message attachment not formatted properly and/or cannot be interpreted. Please check message and try again
TPE1203	Request	A2A/UI	Potential Code Injection	Request message attachment contains unexpected content
TPE1204	Request	A2A/UI	Potential SQL Injection	Request message attachment contains unexpected content
TPE1205	Request	A2A/UI	Potential Document Structure Threat	Request message attachment contains unexpected content

| Fault Code	Service Leg	Channel	Reason	Fault Message
TPE1206	Request	A2A/UI	Extra attachment(s)	Request message contains more than one attachment. Please resubmit with only one attachment
TPE1207	Request	A2A/UI	Missing attachment(s)	This web service requires an attachment to be included with request message. Please add attachment to request and resubmit

5.3.1 Threat Mitigation Through ISS-A2A

ISS-A2A will perform threat mitigation and initial validation on authorized connections. ISS-A2A will return a fault if a transmission contains a threat, if a transmission fails initial validation, or if a connection with the endpoint cannot be established.

Faults differ from errors – a fault is an issue during transmission, whereas an error is the result of business rules processing failure. The Fault Generation process is common to each of ISS-A2A process flows. Fault messages generated to ISS-A2A are always be routed to the Service Consumer. Errors will be logged, and the ISS-A2A operations teams will be notified.

5.3.2 Threat Mitigation Through ISS-UI

If an error has occurred upon upload of the form and manifest file, the user will be returned to the upload page with an error marked in red. The upload page and upload error page are shown below.
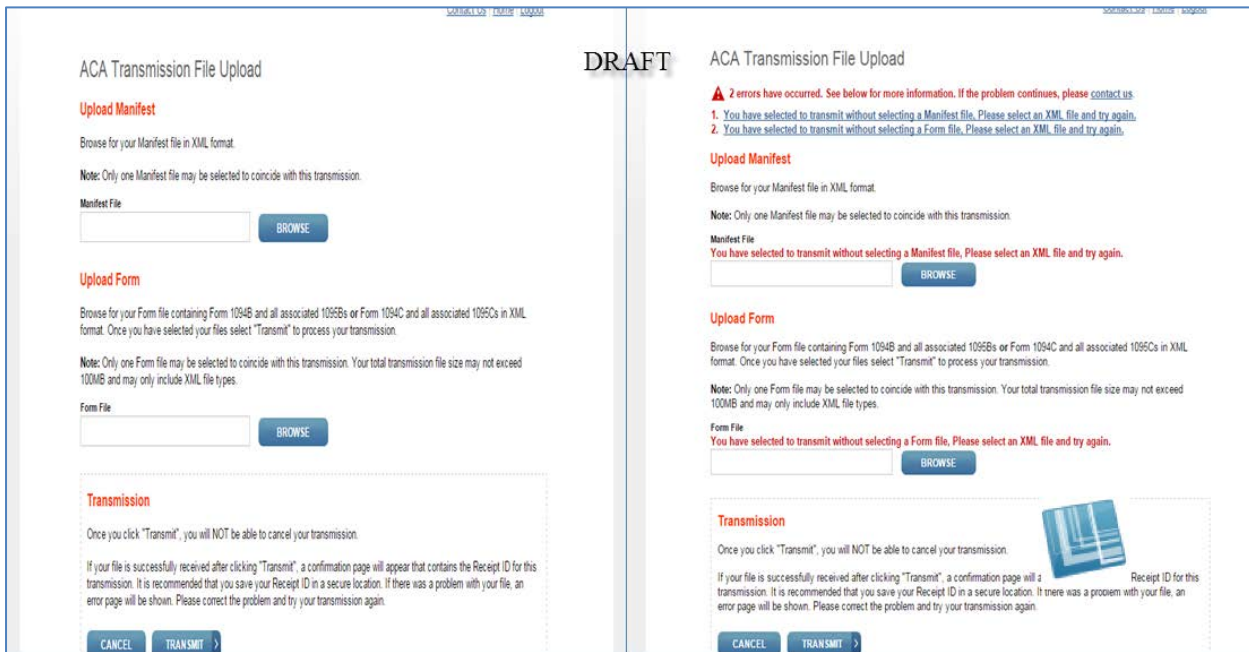
If an error has occurred upon submission status requests, the Transmission Status Details page will display an error table depicting the error codes and corresponding error details. The transmission status page can be seen below.
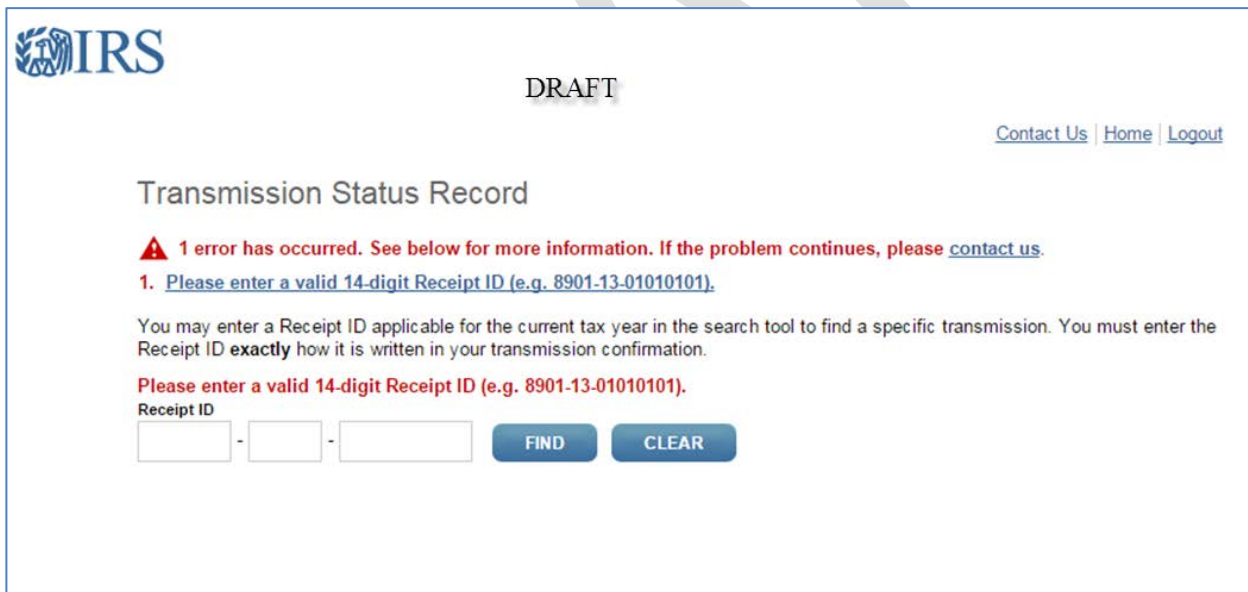
6 Validating the Transmission and Return Data

This section explains how AIR will perform validations of the transmission and return data through schema validations, Transmission Header and Manifest validation, and business rule checks.

When AIR receives a transmission, the following tasks are executed in order:

a. AIR validates that one and only one XML File is attached to the transmission
b. The XML File attached to the transmission is read and written to persistent storage

c. The Receipt ID and Timestamp are generated
d. The UUID is verified to be unique for the TCC
e. Checks are made on the transmission manifest
f. The Receipt ID, Timestamp, and Unique Transmission ID are returned to the Transmitter
g. A check is made to determine if this is a duplicate XML File (checksum is compared to accepted transmissions from TCC)
h. XML Schema validation is executed on the XML Form Data File
i. The XML Form Data File is queued for processing against the AIR Business Rules
j. Errors identified during processing against the AIR Business are written to the AIR database and inserted into an XML Error Data File that will be returned to the Transmitter in the Acknowledgement

When errors are identified with the transmission or AIR cannot read or write the XML Form Data File to persistent storage, the transmission will be rejected and the appropriate error code and description will be returned to the Transmitter in the SOAP Response message.

If the XML Form Data File fails XML Schema validation, the transmission will be rejected. The appropriate error code and description relevant to XML Schema validation will be returned when the Transmitter retrieves the Acknowledgement for the respective transmission.

When business rule errors are identified during processing the XML Form Data File, AIR will record the error codes and descriptions and return those errors in a XML Error Data File attached to the Acknowledgement SOAP Response message as an MTOM encoded attachment.

6.1 Transmission Validation

This section describes the checks that are made on the transmission and the errors that will be returned to the Transmitter if the transmission is rejected before it can be saved for further processing.

Table: AIR Error Categories

Error Prefix	General Description	Severity	Action
AIRFE (Attachment Count Error)	Unable to process request - no or multiple attachments	Transmission Rejected	Transmitter notified via SOAP Response to transmission message Transmitter resolves
AIRRE (File Read Error)	Unable to process request – cannot read or persist XML File	Transmission Rejected	Transmitter notified via SOAP Response to transmission message Transmitter resolves
AIRMF (Manifest Validation Error)	Error occurred validating the transmission Manifest	Transmission Rejected	Transmitter notified via SOAP Response to transmission message Transmitter resolves
AIRSH (XML Schema Validation Error)	Error occurred during XML Schema Validation – missing data elements or schema not well formed	Transmission Rejected	Transmitter notified via the Acknowledgement Transmitter resolves

Error Prefix	General Description	Severity	Action
AIRDP (Duplicate File)	The XML File is a duplicate	Transmission Rejected	Transmitter notified via the Acknowledgement Transmitter resolves
AIRCR (Correction validation failure)	Correction Information provided is invalid	Transmission Rejected	Transmitter notified via the Acknowledgement Transmitter resolves
AIRTN (TIN Validation Error)	TIN and Name do not match IRS records	Transmission Accepted with Error	Transmitter notified via the Acknowledgement Transmitter is expected to correct the data and send correction record to IRS
AIRBR (Business Rule Validation Error)	Error occurred while processing the record against the business rules	Transmission Accepted with Error	Transmitter notified via the Acknowledgement Transmitter is expected to correct the data and send correction record to IRS

6.1.1   Missing or Multiple Attachments

Checks for missing or multiple attachments occur during the transmission synchronous process.

AIR first validates that one and only one XML File is attached to the transmission. If there are no files attached, AIR will reject the transmission and return the appropriate error code and error description. If there is more than one XML File attached to the transmission, AIR will reject the transmission and return the appropriate error code and error description. If a transmission is received by AIR that either does not contain an attachment or contains more than one attachment, AIR will reject the transmission and return an error code with a prefix **AIRFE.**

6.1.2   Error Reading or Persisting the XML File

Errors reading or persisting the XML File occurs during the transmission synchronous process.

AIR extracts the XML File from the MTOM encoded attachment, reads the file and stores the file to persistent storage. If AIR cannot read, or persist, the XML File, AIR will reject the transmission and return an error code with a prefix **AIRRE.**

6.1.3   Manifest Verification Failure

The Manifest verification checks occur during the transmission synchronous process.

AIR will perform the following checks against the data included in the Manifest prior to returning the Receipt ID and associated information to the Transmitter in the SOAP Response message:

- Verify that the UUID extracted from the ACA Business Correlation ID is unique for the Transmitter Control Code (TCC) extracted from the ACA Business Correlation ID
- Verify that the Application ID extracted from the ACA Business Correlation ID is "SYS12"
- Verify that the Request Type extracted from the ACA Business Correlation ID is "T"
- Verify that the Transmitter Control Code (TCC – included in the ACA Business Correlation ID) is valid, in the "Active" status, and authorized to transmit the Information Returns included in the transmission
- Verify that the TCC is authorized to transmit the forms in the transmission and that the forms are in the "P" status
- Verify that the Test File Indicator is set to "P" (PROD vs. ACA ATS)
- Verify that the Software ID is valid and in the "P" status
- Verify that the ChecksumAugmentationNum (MD5 Checksum) included in the Manifest matches the computed XML File Checksum
- Verify that the DocumentSystemFileNm included in the Manifest matches the name of the file extracted from the MTOM encoded attachment

If the above verifications fail, AIR will reject the transmission and return an error code with a prefix *AIRMF*.

6.1.4   Duplicate XML File Detected

Duplicate file checks occur after the Transmitter has successfully submitted the transmission to the IRS.

AIR checks the computed MD5 Checksum and the size of the XML Form Data File against previously processed XML Files submitted by the respective TCC. If the checksum that AIR identified from the XML Form Data File on persistent storage match a XML Form Data File previously transmitted by that TCC, the file will be rejected as duplicate and return an error code with prefix *AIRDP*.

6.1.5   XML File Schema Validation Failure

XML Schema Validation occurs after the Transmitter has successfully submitted the transmission to the IRS.

IRS recommends each return be run against a validating parser prior to being submitted to IRS. This pre-validation is intended to identify the majority of potential error conditions and minimize the chance of receiving errors. A validating parser compares the XML document to the defined elements and attributes of the schemas to ensure a well-formed document that adheres to the XML Schema is transmitted to the IRS. Schemas provide the basic definition for elements – field length, data type, prescribed patterns, enumerations, etc. Data integrity depends on each data element complying with the data format specifications. If the Information Return preparation software uses the IRS-defined XML schemas to create the XML information return, there should be no data format errors in the return. The AIR system verifies this by validating each return in the transmission file against the schemas.

The information return documents must conform to the version of the XML schema they specify. AIR conducts XML schema validation on the XML File before processing. Any schema validation failures are reported back to the originating entity. If the XML does not conform to the XML Schema (missing required elements or XML not well formed), AIR will reject the transmission and return an error code with a prefix *AIRSH*.

The Error Data File contains the error codes, the error descriptions, and the Xpath reference to the element found to be in error.

Note: *When an error is found during schema validation, processing stops once schema validation completes. No Business rules will be applied to the submission, and if the error is found in the manifest, the submission (xml*

archive) will not be schema validated either. It is important that transmission files be run through a validating parser to find any errors before transmitting.

Table 5-2 includes notional samples of schema validation business rules.

Table: Schema Validation Business Rules

Error Code	Error Description Text	Error Category	Action
AIRSH100	The XML data has failed schema validation – missing required element(s)	XML Error	Transmission rejected
AIRSH101	The XML data has failed schema validation – format error – XML not well formed	XML Error	Transmission rejected

6.1.6   Business Rule Errors

Business rule checks occur after the Transmitter has successfully submitted the transmission to the IRS.

To the extent possible, the AIR business rules have been standardized across all information returns currently available in AIR. As additional information returns migrate to the modernized architecture, the associated business rules for those returns will be rewritten to maintain the standardization across all form types.

The following error information will be returned to the transmitter when IRS identifies errors associated with a business rule:

   a.   AIRCR001 – AIR0025 (Validate correction information)
   b.   AIRTN500 – TIN and Name provided do not match IRS records
   c.   AIRBR400 – AIRBR499 (1094-B data consistency check)
   d.   AIRBR500 – AIRBR599 (1094-B data cardinality check)
   e.   AIRBR600 – AIR BR699 (1095-B data consistency check)
   f.   AIRBR700 – AIRBR799 (1095-B data cardinality check)
   g.   AIRBR800 – AIRBR899 (1094-C data consistency check)
   h.   AIRBR900 – AIRBR999 (1094-C data cardinality check)
   i.   AIRBR1000 – AIRBR1099 (1095-C data consistency check)
   j.   AIRBR1100 – AIRBR1199 (1095-C data cardinality check)

Because TY2014/PY2015 ACA Information Return filing is voluntary, IRS will not reject transmissions or submissions due to business rule errors. However, in future years, Information Returns will be subject to data quality checks and rejected if the data is deemed unusable by the IRS.

Business rules for the AIR forms will be posted to IRS.gov.

6.2 Status Record for Information Returns

Once a transmission has been successfully submitted to the IRS, the Transmitter can retrieve the Acknowledgement for that transmission using the Receipt ID the IRS returned during the transmission session. The status of the transmission is included in the Acknowledgement.

Regardless of if the information return is being processed or has completed processing, the Transmitter can request the Acknowledgement. If the Transmitter invokes the UI channel, an option is available to retrieve the Acknowledgement. If the Transmitter invokes the A2A channel, the Transmitter can request the Acknowledgement at the appropriate URL for the Web Service endpoint that exposes the *IRS-ACAAckngService* service witin the *ACAGetTransmitterBulkRequestStatus.wsdl* file.

Below are the values and their descriptions included in the Status Record for information returns.

Table: Status Values and Descriptions

Status Name	Description
In Process	The transmission identified by the Receipt ID was successfully submitted to the IRS, the IRS has not completed processing the XML File.
Accepted	The transmission identified by the Receipt ID was successfully submitted to the IRS, the IRS completed processing the XML File, no errors were found during processing.
Accepted with Errors	The transmission identified by the Receipt ID was successfully submitted to the IRS, the IRS completed processing the XML File, business rule errors were found during processing.
Rejected	The transmission identified by the Receipt ID was successfully submitted to the IRS, the IRS completed processing the XML File, errors were identified with the transmission that prevented IRS from processing the XML File.
Not Found	The Receipt ID in the request was not found.

An Acknowledgement that contains a status other than "In Process" provides proof that the ACA Information Returns in the transmission were either Accepted or Rejected.

6.3 Acknowledgement Schema

The Acknowledgement Schema for the Error Data File returned when a submission status is requested and containing errors found during transmission processing is shared among all ACA forms processed by AIR. The table below explains some of the elements in the Acknowledgement and the AIR forms to which they apply:

Table: AIR Forms Acknowledgement Schema Elements

Element Name	Explanation
UniqueTransmissionID	The UTID AIR derived from the ACA Business Correlation ID (See Section 1.3.2 of this document)
TransmitterControlCd	The Transmitter Control Code that submitted the transmission – must match the TCC provided in the Acknowledgement request
ShipmentRecordNum	A value computed by AIR TCC+2 character alphanumeric • A value computed by AIR – TCC+2 digit alphanumeric: A through Z excluding I and O • A1 through A9, B1 through B9,...Z1 through Z9, excluding I, O, and 0 (zero) • AA through AZ, BA through BZ, ...ZA through ZZ, excluding I and O
ReceiptId	The Receipt ID returned to the Transmitter when this transmission was submitted to IRS
FormTypeCd	The Form Type included in the transmission

Element Name	Explanation
Timestamp	A Timestamp when the Acknowledgement was provided to the Transmitter
SubmissionStatusCd	One of: • In Process • Accepted • Accepted with Errors • Rejected • Not Found
ErrorMessageDetail	A specific error code indicating accepted or rejected
DocumentSystemFileNm	The name of the uncompressed native XML file in the MTOM encoded attachment – applies only when a file is attached
CheckSumAugementationNum	The MD5 checksum value computed against the uncompressed native XML file in the MTOM encoded attachment – applies only when a file is attached
AttachmentByteSizeNum	The Byte size of the uncompressed native XML file in the MTOM encoded attachment – applies only when a file is attached

This refers to the Error Data File returned when there are business rules or other errors encountered during transmission processing. The Error Data File is attached to the SOAP Response for the status request.

6.4 Generating Acknowledgement Files

Once the transmission is received, the XML Form Data File is read and written to persistent storage, and checks are made on the transmission manifest data, the Receipt ID, assigned Shipment number, Timestamp, and Unique Transmission ID are returned to the Transmitter as part of the synchronous session. The AIR System responds with a receipt for the transmission or an error explaining what was wrong, if anything, with the transmission. The XML Form Data File is then queued for processing within the AIR application.

When AIR processes the XML Form Data File, an Acknowledgement for the transmission is generated indicating the status of the transmission (In Process, Accepted, Accepted with Errors, Rejected) and is available for the Transmitter to retrieve. Acknowledgement turnaround times are dependent on system load. During peak periods Acknowledgements may take two hours or more to be made available for the Transmitter. The Acknowledgement includes an uncompressed native XML Error Data File that contains errors found during validation. If there no errors are found during validation, the Error Data File is not included in the Acknowledgement and the transmission processing status will be "Accepted".

Note: *The XML Error Data File attached to the Acknowledgement is constrained to 100 MB. If the number of validation errors identified result in the XML File exceeding the 100 MB constraint, the file will be truncated and a message will be inserted at the end of the file indicating that the file was truncated.*

The Transmission Acknowledgement will include:

- Unique Transmission ID
- Transmitter Control Code
- Shipment Record Number for the transmission
- Receipt ID
- Form Type Code
- Timestamp
- Submission Status Code: In Processing, Accepted, Accepted with Errors, Rejected, Not Found
- Error Message Detail
  - Error Message Code (Error Code)
  - Error Message Text (Error Code Description)
  - XpathContent (link to error location within the transmitted Form Data File)
- Document System File Name
- Checksum Augmentation Number (MD5) – if a file is attached to the Acknowledgement
- Attachment Byte Size Number

Refer to the items in the Acknowledgement Schema (in the *IRS-Form1094-1095BCTransmitterRespMessage.xsd* file), for all of the items that can be included in the information return Acknowledgement.