STATE OF CALIFORNIA
Franchise Tax Board

FTB File Exchange System – 1094 1095 Technical Specifications – Part 1

2026

Guide for electronic Minimum Essential Coverage Information Reporting for Software Developers and Transmitters.

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1 What's New This Year

- Schema Versions:
  - FTB is currently waiting for IRS to determine if schema changes will be made.
  - At the time of review, there were no new schema versions of either the File Exchange Schema or Information Returns Schema. Please refer to the latest schema files available on the *Minimum Essential Coverage (MEC) Information Reporting (IR)* *Technical Specifications webpage*. Test transmissions formatted according to these schemas will be accepted starting October 16, 2026.
- Test Cycle Process for Existing Transmitters:
  - Although Transmitters who have already tested with FTB do not need to retest again to obtain new Production CA-TCC, ***annual testing is highly recommended.*** Production CA-TCCs will automatically be extended.
- Test Cycle Process for New Transmitters:
  - New Transmitters are required to complete a Testing cycle to obtain Production CA-TCC and to transmit their production files for the 2026 Tax Year. The testing cycle for the 2026 Tax Year will open October 16, 2026.
  - For more information, please refer to the *FTB File Exchange System = 1094 1095 Testing Specifications*.

2 Introduction

Beginning January 1, 2020, all California residents must either have qualifying health insurance coverage, qualify for an exemption from the requirement to have coverage, or pay a penalty when they file their state tax return. In addition, insurance providers and certain employers must now report coverage information to the California Franchise Tax Board (FTB) each year by March 31, with an automatic extension to May 31. For more information about the filing deadline, please refer to Section 11 - Time to File in the *FTB File Exchange System – 1094 1095 Technical Specifications – **Part 2***.

This publication outlines the communication procedures, transmission formats, business rules, and validation procedures for files transmitted electronically through FTB's File Exchange (FX) System. To develop software for use with the FX System, Software Developers and Transmitters should use the guidelines provided in this document along with the Extensible Markup Language (XML) Schemas, business rules for the applicable forms, and FX API Specification documents included in the Technical Specifications Package.

2.1 Supporting Publications

This publication should be used in conjunction with the most current version of the following publications:

- *Pub 3895B - California Instructions for Filing Federal Forms 1094-B and 1095-B*
- *Pub 3895C - California Instructions for Filing Federal Forms 1094-C and 1095-C*
- *FTB File Exchange System – MEC IR Registration and Enrollment Guide*
- *FTB File Exchange System – 1094 1095 Testing Specifications*

The Pub 3895B and 3895C listed above have additional information regarding the electronic filing requirements. *Please remember corrected Information Returns must use the same filing method as the original information return*.

Additionally, the Technical Specifications Package supports the information provided in this publication. The Technical Specifications Package includes:

- FileExchange-fx_2021 – a zip file containing the Transmission Manifest Schema
- InformationReturns – a zip file containing the 1094 and 1095 Schemas.
- Business Rules – PDF files documenting the Business Rule validations run against data within the Transmission as part of asynchronous validations.
- FileExchange-API – the Open API specifications for the Application to Application (A2A) Transmission Channel.
- InformationReturnsTestScenarios – XML answer keys for the Test Scenarios described in the *FTB File Exchange System – 1094 1095 Testing Specifications*.

2.2 Purpose

The purpose of this publication is to provide specifications to electronically file Information Returns with FTB as part of California's Minimum Essential Coverage (MEC) Information Reporting (IR) Program, a component of California's Health Care Mandate (HCM). Additionally, this publication contains guidance to compose and successfully transmit compliant submissions to FTB.

The procedures in this publication should be used when electronically transmitting the following Information Returns beginning in process year 2026:

- 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*

All filing requirements apply individually to each reporting entity as defined by its separate Tax Identification Number (TIN). Transmitters should retain a copy of Information Returns (or have the ability to reconstruct the data) for *at least four years* from the reporting due date.

2.3 Communications and Help Desks

The MEC IR Program uses Subscription Services, FTB's email notification service, to share information regarding program changes, technical issues, and other updates. Go to **ftb.ca.gov** and search for **subscription services** to sign up for the "**Health Care Mandate"** list.

FTB has two Help Desks to assist with the MEC IR Program:

1. **The e-Services Help Desk** is the first point of contact for e-Services (MyFTB) Account Registration, Account Log In issues, or Account Updates (resetting password, updating email address, etc). If you experience e-Service Account issues, the Responsible Official should call the applicable number below:
    - Phone 800-353-9032
    - Phone 916-845-2829 outside the United States
    - Available weekdays, 8am to 5pm PST, closed on state holidays

    The e-Services Help Desk contact information is also listed on the MEC IR Help page.

2. **The MEC FX Portal Help Desk** is the point of contact for MEC IR Electronic Filing issues. The Responsible Official or Authorized User should contact the MEC FX Portal Help Desk via email FTBFXPortal@ftb.ca.gov regarding the issues below:
    - MEC IR Enrollment Issues
    - Transmission Issues
    - Rejected Transmissions, Submissions, and Records
    - Business Rules and Error Code Resolution
    - Updating Responsible Officials and Authorized Users

    The MEC FX Portal Help Desk contact information is also listed on the MEC IR Help page.

2.3.1 Health Care Mandate (HCM) Website

For additional information about California's HCM, please see the Healthcare Mandate webpage.

Additional information about the FX System can be found on the Report Health Insurance Information MEC IR webpage.

2.4 Federal and State Differences

Several enrollment process differences between the Internal Revenue Service (IRS) and FTB registration are described at the end of each section in more detail.

3 File Exchange (FX) System

FTB's FX System is comprised of three sub-systems: File Exchange Portal (**FX Portal**), File Exchange Application Programming Interface (**FX API**), and File Exchange Hub (**FX Hub**). Each of these sub-systems interact with one another to perform the full suite of functions necessary for intake and processing of transmissions. Figure 1 below depicts the integration points between the three sub-systems. The functions of each of the three sub-systems are described in more detail in the next sections.

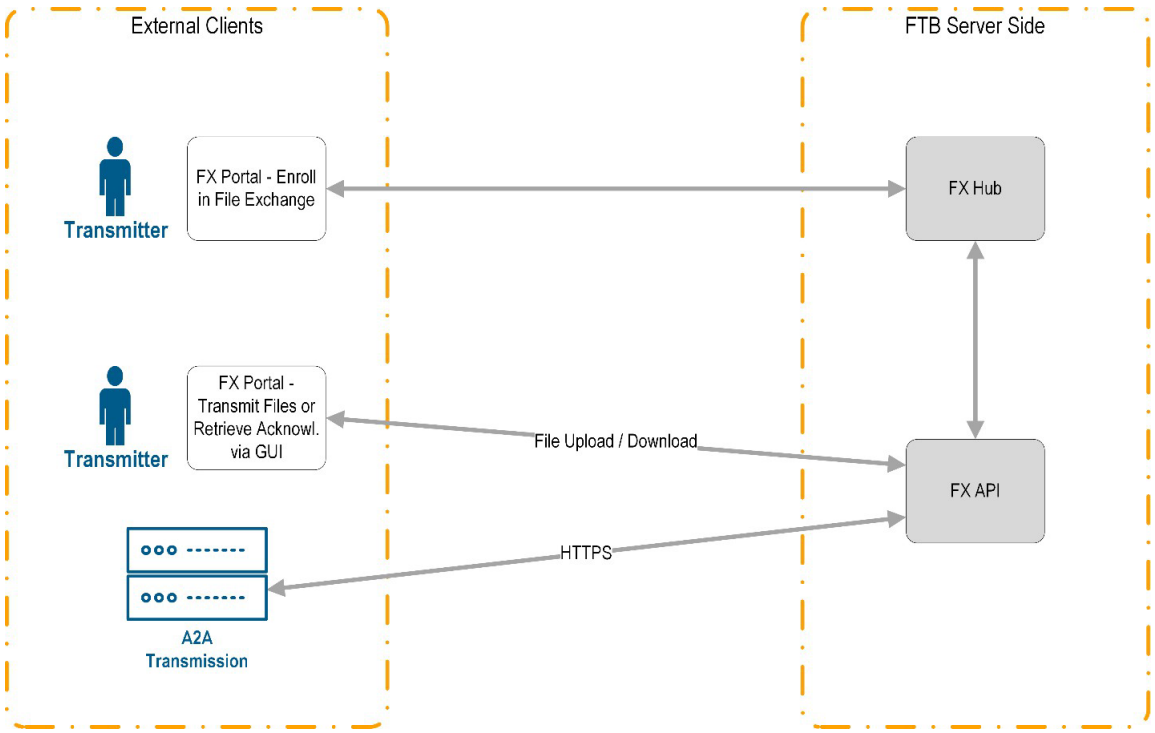


Figure 1: FX System Interactions

3.1 File Exchange Portal

The FX Portal is a Graphical User Interface (GUI) provided to support communication between FTB and Transmitters. Transmitters must register for an e-Services Account to access the FX Portal. Once registered, FX Portal allows Transmitters to:

- Enroll in the MEC IR Program
- Maintain the California Transmitter Control Codes (CA-TCCs), Secret Key, Application Identifiers (app_id) and Application Keys (app_key).
- Submit Information Returns via the User Interface (UI) channel (described in Section 6.1).
- Retrieve Acknowledgements via the UI channel described in *Section 7 of FTB File Exchange System – 1094 1095 Technical Specifications – **Part 2***.
- Submit Test transmissions for evaluation, regardless of the submission channel used.

For more information about registration, enrollment, and maintaining information in the FX Portal, see the *FTB File Exchange System – MEC IR Registration and Enrollment Guide.*

3.2 File Exchange Application Programming Interface (FX API)

The FX API handles the intake, synchronous file validations, and storage of transmission files for both Application to Application (A2A) transmissions and manual transmissions through the FX Portal UI channel. The validations performed by the FX API are described in more detail in Section 7.1.

3.3 File Exchange Hub (FX Hub)

The FX Hub handles the asynchronous file validations of transmission files for both A2A transmissions, and manual transmissions through the FX Portal UI channel. The validations performed by the FX Hub are described in more detail in Section 7.2. Additionally, the FX Hub receives enrollment forms from the FX Portal to be reviewed by internal FTB users. Enrollment is described in more detail in the *FTB File Exchange System – MEC IR Registration and Enrollment Guide*.

4 Transmissions and Submissions

This section provides an overview of transmission and submission definitions and requirements.

4.1 Transmission/Submission Definitions and Limitations

A **transmission** is a unique package of digital documents comprising of the following:

- **Manifest**, describing the Transmitter, transmission, and the payload
- **Form Data File**, containing one or more **submissions** in XML format

Before the transmission can be received by the FX API, the Manifest must pass validation checks.

For the purposes of this document, a **submission** is defined as the combination of a single header, a single transmittal form (Form 1094-B or Form 1094-C), and its associated information returns (Form 1095-B or Form 1095-C). For example, a submission is either:

- One Header, one Form 1094-B, and one or more Form(s) 1095-B, or
- One Header, one Form 1094-C, and one or more Form(s) 1095-C

For the purposes of this document, a **record** is defined as a single 1095-B or 1095-C form included within the submission.

Note: FTB does not enforce naming conventions for the Manifest or Form Data File.

4.1.1 Transmission Requirements

A transmission *must:*

- Contain only one Manifest
- Contain only one Form Data File
- Contain one or more submissions in the Form Data File
- Use the SHA-256 Checksum algorithm

A transmission *must not:*

- Contain submissions of different types (i.e. only one of Forms 1094/1095-B or 1094/1095-C but *not both*)

- Exceed 100 MB of uncompressed and unencrypted XML[1]

When submitted via the A2A channel, transmissions must use the **multipart/form-data** content type and be encoded as described in the World Wide Web Consortium (W3C) Hypertext Markup Language (HTML) 4 specification (text/plain encoding is not supported). More information about transmissions through the A2A channel can be found in Section 6.2. Unicode Transformation Format-8 (UTF-8) is the only supported character set. More information about W3C HTML 4 specification can be found here.

It is recommended that transmissions include as many submissions as possible within a transmission rather than sending multiple transmissions that only include a single submission.

[1] Transmissions for Transmitters electing to use the UI channel will be limited to 10 MB. Transmitters electing to use the A2A channel will be allowed up to a 100 MB transmission size.

4.1.2 Submission Requirements

A submission *must:*

- Consist of a single header, a single transmittal (1094-B or 1094-C) and as many associated Information Returns (1095-B or 1095-C) as will fit within the transmission file size limit.
- Have the same number of actual information returns (Form 1095-B or 1095-C) as reported on the transmittal (1094-B or 1094-C).
- Have the same number of submissions (1094-B or 1094-C) as indicated in the Manifest.

A submission *must not:*

- Contain records of different form types (e.g. Forms 1094/1095-B and 1094/1095-C may not coexist in the same submission)
- Contain records for more than one tax year

Figure 2, below, shows the conceptual structure of a submission as included in either a Form Data File or transmitted to the FX API as multipart/form-data.

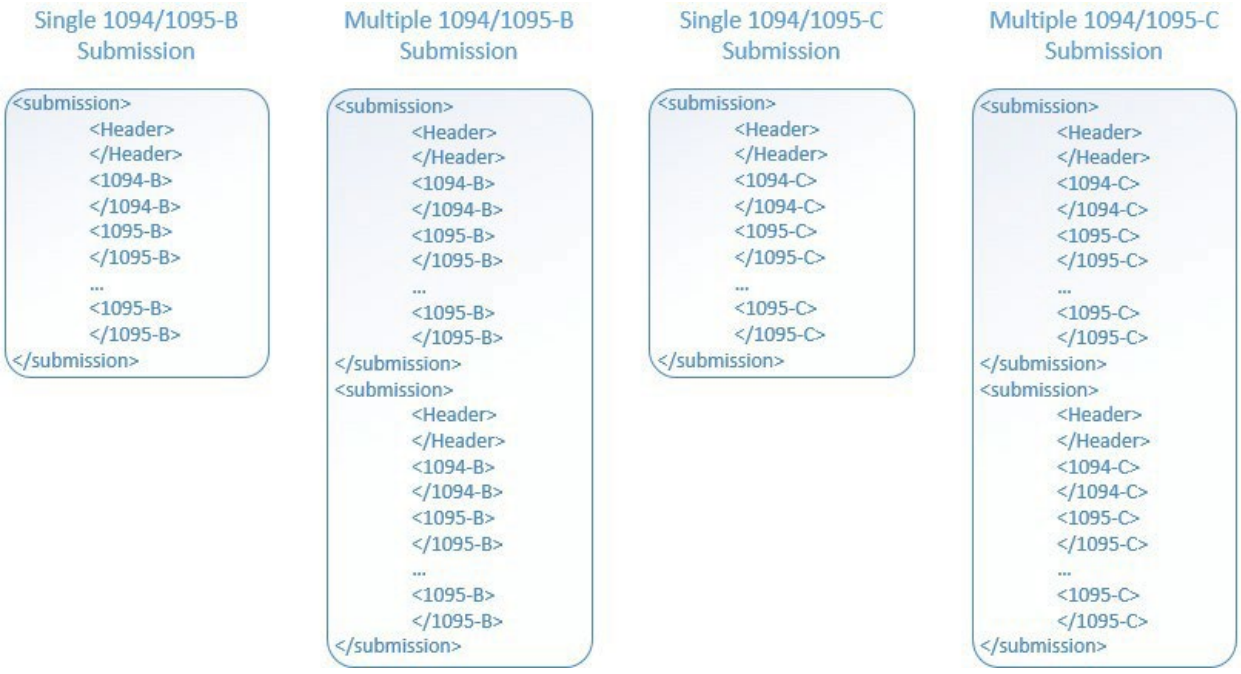


Figure 2: Submission Conceptual Structure

4.2 Uniquely Identifying the Transmission

All transmissions must have a **Unique Transmission Identifier** (UTID). Along with the submission and record identifiers, the UTID enables a concise method to identify every element within a transmission.

The UTID's format, shown below in Figure 3, comprises three parts separated by a colon (":") as follows:

- **Universally Unique Identifier** (UUID), as defined in Internet Engineering Task Force (IETF) Request for Comments (RFC) 4122. A UUID is a 128-bit number represented by 32 hexadecimal [0-9 & A-F] digits separated into five, hyphen-separated groups. **89971352-c160-4e39-a0c2-c0582777c3d4** is an example of an RFC 4122-compliant UUID. **USE ONLY lowercase** characters. *Do not use your Secret Key as the UUID*.
- **FTB System ID** (SYSID), a four-digit hexadecimal number left-padded with "0". All MEC IR transmissions use SYSID **0001**.
- **California Transmitter Control Code** (CA-TCC), a five-digit hexadecimal number left-padded with "0". There are two versions of the CA-TCC:
    - **Test:** The Test CA-TCC is issued upon enrollment approval and is used to transmit test transmissions.
    - **Production:** The Production CA-TCC is issued *upon completion of the required annual testing cycle* and is used to transmit production transmissions containing real MEC IR data. Please see the *FTB File Exchange System – 1094 1095 Testing Specifications* for more information on the required annual testing cycle.

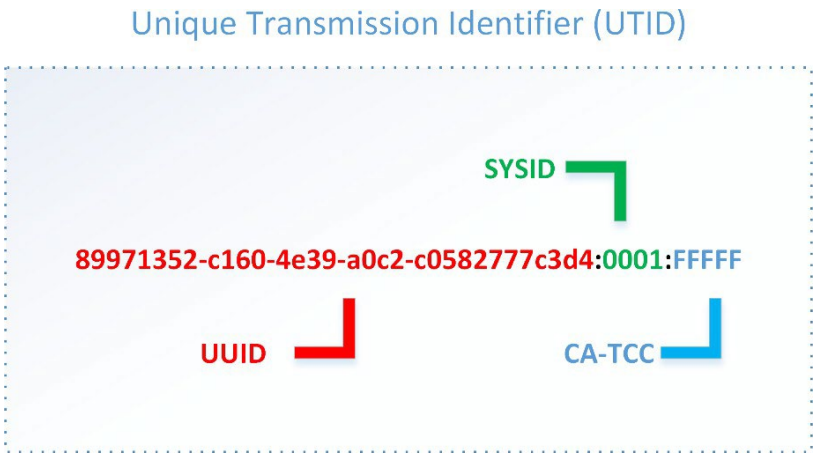


Figure 3: Layout of Unique Transmission Identifier (UTID)

The UTID is validated for uniqueness upon receipt. If the system has processed a transmission with that identifier, *even if it was ultimately rejected*, the transmission will be rejected, and no further processing occurs. Transmissions with corrected information refer to the original via the **Receipt Identifier** (RECEIPTID), which is assigned and returned to the Transmitter upon successfully transmitting a file through FX API. For further details on submitting correct information, please refer to *Section 8 in the FTB File Exchange System – 1094 1095 Technical Specifications – **Part 2**.*

Every submission within a transmission *must* have a unique **Submission Identifier** (SID). This value *must* be a positive integer starting at 1 for the first submission and should increase sequentially by 1 for each subsequent submission. This number *must not* include leading zeroes and does not need to be unique across transmissions; it must be unique only within a single transmission.

Every record (e.g. Form 1095-B or Form 1095-C) within a submission *must* have a unique **Record Identifier** (RID). This value *must* be a positive integer starting at 1 for the first record and should increase sequentially by 1 for each subsequent record. This number *must not* include leading zeroes and does not need to be unique across submissions; it must be unique only within a single submission.

The identifiers are important during error identification and recovery. By combining the RECEIPTID, SID, and RID, errors can be concisely conveyed to the Transmitter. For example, an error found in a submission will contain the following information in the acknowledgement file:

```
TransmissionId
ReceiptId
SubmissionId
```

Whereas an error found on a record (e.g. Form 1095-B or Form 1095-C) will contain the following information in the acknowledgement file:

```
TransmissionId
ReceiptId
SubmissionId
RecordId
```

Likewise, the Transmitter uses the same fields to precisely identify target submissions or records when submitting resubmissions to resolve errors or corrections to update accepted records. Submission and record errors are returned to the Transmitter in the form of an acknowledgement file. More information about validations can be found in Section 7.

For additional information about retrieving acknowledgements, please see *Section 9 of FTB File Exchange System – 1094 1095 Technical Specifications – **Part 2***.

Please see *Section 10 of FTB File Exchange System – 1094 1095 Technical Specifications – **Part 2*** for additional information about correcting errors in a transmission and submitting corrections.

4.3 How to Split Transmissions

If a transmission exceeds the 10MB limit for FX Portal or 100MB limit for A2A, it will need to be split into smaller transmissions in order to be transmitted. The process is the same for both the 1094/1095-B and 1094/1095-C form types. Each transmission needs to be split to maintain a valid structure with 1095s associated to a 1094 and with the 1094 reflecting an accurate count of the associated 1095s. The Transmitter will need to make sure the Manifest files reflect the accurate number of submissions in the corresponding form data file and that the TransmissionChecksum value is updated to accurately reflect the updated form data file.

4.4 Federal and State Differences: Transmissions and Submissions

Key differences from IRS AIR transmission and submission definitions are described in Table 1, below.

Table 1: IRS and FTB Reporting Differences – Transmissions and Submissions

IRS	FTB
Transmissions are structured using the IRS AIR Schemas	Transmissions are structured using the FTB FX System Schemas
Transmissions must contain submissions for only a single tax year.	Transmissions may contain submissions for one or more tax years. Submissions must be for one single tax year.
Transmissions must indicate if they are Original (O), Correction (C), or Replacement (R) transmissions.	All transmissions are considered "original" transmissions. Corrections to fix errors or update information within a submission or record may be submitted in the same transmission as new records.
Submissions do not contain headers.	Submissions require headers.

5 XML Overview

The FTB accepts transmissions in XML format. XML is a textual, human-readable data interchange language maintained by W3C. It is "extensible" by virtue of a flexible and mature schema language that facilitates the definition of shared vocabularies that encompass both structure and semantics. This section provides an overview of the use of XML in the FX System.

In general, XML schemas that are developed to capture data from a paper form will follow the form layout. parent elements will be defined for the form itself and fields on the form will be grouped together based on sections, if defined, on the form. Attempts are made to structure, order, name, and concisely yet thoroughly annotate the schema and elements without technical jargon so that a reader can easily determine where, in the schema, form fields are defined.

The schema files themselves are organized in a folder structure, and separate files are created at the atomic level. For example, separate schema files might be created to define transmission, submission, form A, form B, and schedule C. This is done so a reader can easily find a definition by navigating through a well-organized folder structure instead of searching through a single, large schema file. The exceptions to this are the "common" files that contain collections of simple and complex type definitions that are used across schemas. More information about schema files and layouts can be found in Section 5.4, below.

Form instructions will dictate if sections and elements within the schemas are defined as required or optional, and all attempts will be made to enforce this upfront in the schema instead of through business rule validation done by the File Exchange (FX) Hub. This is done so that consumers can validate and resolve issues early in the process and within their own system instead of later in the process after they have transmitted the data and are awaiting a response.

Re-use plays a major role in design as well. Simple and complex types defined from other sources (e.g., IRS) or programs (e.g., e-file) may be included or imported and used in-lieu of creating new or very similar local types.

5.1 XML Structure

When entering character data into an XML document, it is important to ensure that the specified encoding supports the characters provided. The FX System uses UTF-8, without Byte Order Mark (BOM). It does not support any other encoding scheme (e.g., UTF-16 and UTF-32).

5.2 Schema Validation

A significant benefit of using XML schemas to electronically file Information Returns is the XML instance documents (i.e. submissions/records) can be validated against the schemas that define the structure and data types prior to submitting the Information Returns for further processing. This provides the advantage of checking errors as early as possible.

FTB *strongly encourages* validating Information Return submissions and records against the most current schema version. Schema validation failures are the main reason FTB rejects Information Returns submitted in XML with the MEC IR Program. When the transmission file passes initial validation, the FX Hub System validates the submissions/records contained in the file. Submission/record validation consists of two parts: schema validation (Manifest/XML File schema) and Business Rule validation.

FTB recommends each return be run against a validating parser prior to being submitted. 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 adheres to the XML Schema. Schemas provide the basic definition for elements (i.e., field length, data type, prescribed patterns, enumerations, etc.). Data integrity depends on each data element complying with the data format specifications. If the MEC IR preparation software uses MEC-defined XML schemas to create the XML Information Return, there should be no data format errors.

The FX Hub System verifies by validating each Information Return in the transmission file against the schemas. The Information Return documents must conform to the version of the XML schema specified. MEC conducts XML schema validation on the form data file before processing. Any schema validation failures are reported back to the originating entity. If the XML does not conform to the XML Schema (ie: missing required elements or XML not well formed), the MEC will reject and return an error code. The

acknowledgement data file contains the error codes, the error descriptions, and the XPath reference to the element found to be in error.

In general, all data elements presented by virtue of an opening and a closing tag must contain a value. Empty or null tags (even for optional data elements) will likely result in a transmission rejection.

Note: When an error is found during schema validation, processing stops while 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.

5.3 Prohibited and Constrained Special Characters

The XML specification defines a set of special characters that *may not* appear as element values (i.e. the text between an opening and closing tag pair). Instead, they must be **escaped** using a pre-defined **entity reference**. As an XML consumer, the FX System places the same constraint on Transmitters. Please reference Table 2 below which shows the set of special characters and their escape values.

Table 2: XML Special Characters

Character	Description	Escape Characters
&	Ampersand	&
'	Apostrophe	'
<	Less Than	<
"	Quotation Mark	"
>	Greater Than	>

Additional characters may be excluded for particular forms. If so, this will appear as a constraint in the relevant schema definition. ***A space should be used in place of a hyphen for hyphenated names.***

5.4 MEC IR Program XML Schema Package Structure

The XML schemas needed for participation in the MEC IR Program include schema packages for the following:

- FTB FX Transmission Manifest
- FTB FX 1094/1095-B and 1094/1095-C

Each schema package also includes a set of sample instances of the XML files, as well as a schema crosswalk that describes the fields and types used in the form of an Excel spreadsheet. The crosswalk is intended to provide a simplified and convenient view into the schema. However, in some cases, values in the crosswalk may not contain data because it is not explicit in the schema. The schema takes precedence over any missing values from the crosswalk.

The schemas described in the coming sections are included as part of the Technical Specifications Package provided with this publication.

5.5 FTB FX Transmission Manifest Schema

This section describes the FX Transmission Manifest Schema in more detail. The full suite of files needed for the FX Transmission Manifest can be found in the latest publication of the FileExchange- fx_2021_YYYYMMDD.zip file. The latest publication is indicated by the date in the file name.

5.5.1 Folder Layout

Type	File Name	Description
	fx_2021	Container folder for file exchange schema.
	FileExchangeTypes.xsd	Contains types created for the file exchange schema.
	TransmissionAcknowledgement.xsd	The acknowledgement that is returned to the Transmitter when a transmission status is requested. Contains status of the transmission, submissions, and records including details of any errors.
	TransmissionManifest.xsd	Defines the content of a transmission manifest. The content describes a transmission.
	TransmissionReceipt.xsd	The receipt that is returned to the Transmitter during the synchronous session. Contains a

Type	File Name	Description
		unique receipt id of the transmission.

5.5.2 Schema

Figure 4 below is a visualization of key elements defined in TransmissionManifest.xsd.

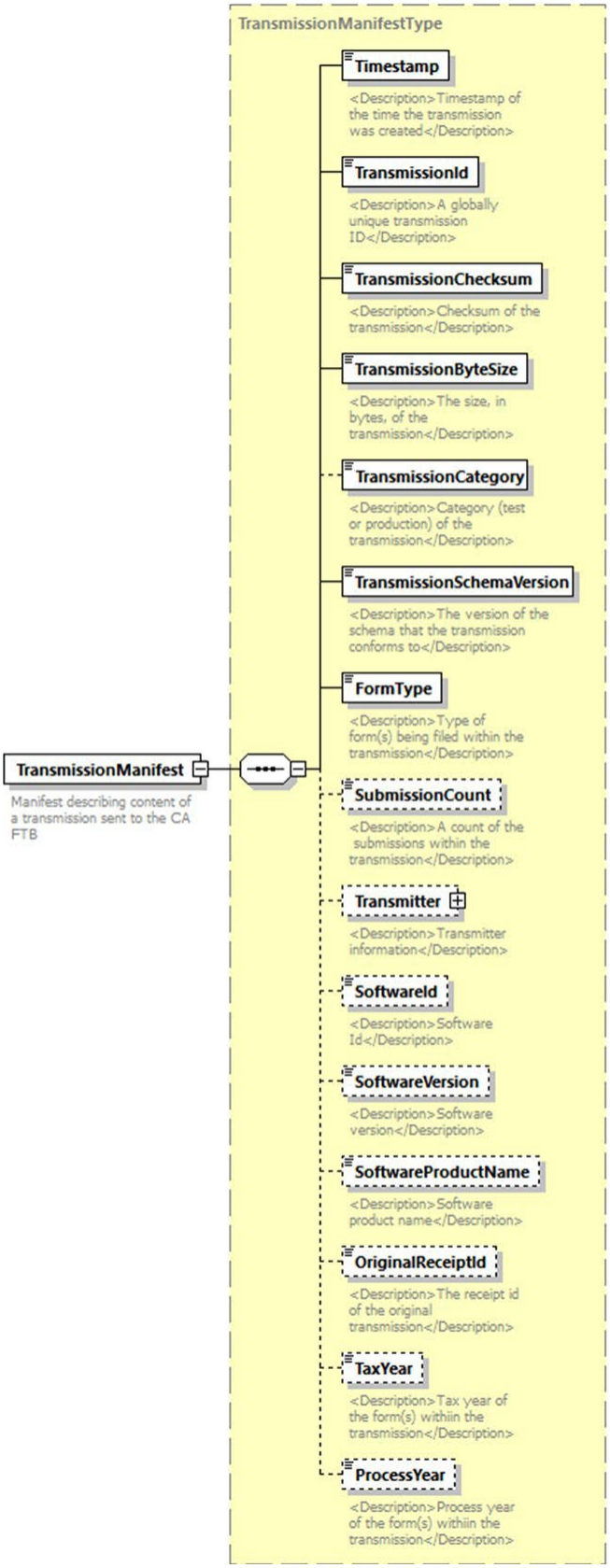


Figure 4: Transmission Manifest Visualization

5.5.3 Sample Instance

A sample Manifest that conforms to TransmissionManifest.xsd can be found in the SampleInstances folder within the FileExchange-fx_2021_YYYYMMDD.zip file included in the Technical Specifications Package. Figure 5 below depicts a sample manifest for a 1094-B transmittal form with 1095-B Information Returns.

```
<?xml version="1.0" encoding="UTF-8"?>
<fx:TransmissionManifest xmlns:fx="https://api.ftb.ca.gov/fx_2021' xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="
https://api.ftb.ca.gov/fx_2021 ../TransmissionManifest.xsd">
    <fx:Timestamp>2020-02-04T09:30:47Z</fx:Timestamp>
    <fx:TransmissionId>f693517a-c496-4e71-861b-f1df318823f1:0001:B72AB</fx:TransmissionId>
    <fx:TransmissionChecksum>4E74512F1D8E5016F7A9D9EAEBBEEDB1549FED5B63428B736EECFEA98292D75F</fx:TransmissionChecksum>
    <fx:TransmissionByteSize>22568</fx:TransmissionByteSize>
    <fx:TransmissionCategory>T</fx:TransmissionCategory>
    <!--The value in the "TransmissionSchemaVersion" element is an example. The actual value will be specific to the filing-->
    <fx:TransmissionSchemaVersion>InformationReturns_v2.0</fx:TransmissionSchemaVersion>
    <!--The value in the "FormType" element is an example. Potential values are listed in the schema and will be specific to the filing-->
    <fx:FormType>IRS1094/1095B</fx:FormType>
    <fx:SubmissionCount>12</fx:SubmissionCount>
</fx:TransmissionManifest>
```

Figure 5: Transmission Sample Instance – Manifest

5.5.4 Business Rules

Any Business Rules run against the transmission Manifest are included with the Business Rules for the particular form being transmitted. See Section 5.6.4 and Section 5.6.7 for more information.

5.6 FTB FX 1094/1095-B and 1094/1095-C Schemas

Transmissions containing 1094/1095-B forms and transmissions containing 1094/1095-C forms follow very similar patterns. The folder layouts for both types of transmissions are below. Schemas, sample instances, and Business Rules are described separately. The full suite of files needed can be found in latest publication of the InformationReturns_vX.X_YYYYMMDD.zip file. The latest publication is indicated by the date in the file name.

5.6.1 Folder Layout

Type	File Name	Description
	InformationReturns_vX.X	Container folder for Information Return schemas
	Common	Container folder for schemas that contain reused data types
	CA-eFileTypes.xsd	Contains types created for the FTB CA e-File Program and are reused for MEC IR filings
	CA-IndividualTypes.xsd	Contains types created for the FTB CA Individual e-File Program and are reused for MEC IR Program filings
	efileTypes.xsd	Contains types created for the IRS e-File Program and are reused for MEC IR Program filings
	FileExchangeTypes.xsd	Contains types created for the FTB File Exchange Program and are reused for MEC IR Program filings
	HealthCareInformationReturnTypes.xsd	Contains types created for the FTB CA MEC IR Program
	HealthCareTypes.xsd	Contains types created for the FTB CA MEC IR Program
	Return109495B	Container folder for return 1094B/1095B schemas
	IRSForm1094B	Container folder for IRS Form 1094B schema
	IRSForm1094B.xsd	Defines fields that exist on the IRS Form 1094B
	IRSForm1095B	Container folder for IRS Form 1095B schema
	IRSForm1095B.xsd	Defines fields that exist on the IRS Form 1095B

Type	File Name	Description
	HealthCareReturn109495Bsubmission.xsd	Wrapper for a single Information Return submission. Contains header, 1094B, and 1095B documents
	HealthCareReturn109495Btransmission.xsd	Wrapper for the entire 1094/1095B Information Return transmission. Contains one to many submissions. This is what is submitted to the FTB
	Return109495C	Container folder for Return 1094C/1095C schemas
	IRSForm1094C	Container folder for IRS Form 1094C schema
	IRSForm1094C.xsd	Defines fields that exist on the IRS Form 1094C
	IRSForm1095C	Container folder for IRS Form 1095C schema
	IRSForm1095C.xsd	Defines fields that exist on the IRS Form 1095C
	HealthCareReturn109495Csubmission.xsd	Wrapper for a single Information Return submission. Contains header, 1094C, and 1095C documents
	HealthCareReturn109495Ctransmission.xsd	Wrapper for the entire 1094/1095C Information Return transmission. Contains one to many submissions. This is what is submitted to the FTB
	HealthCareReturnHeader.xsd	Defines fields that are a part of a return filing but do not exist on the 1094/1095 forms themselves

5.6.2 1094-B and 1095-B Schema

Figure 6, below, is a visualization of key elements defined in HealthCareReturn109495Btransmission.xsd.

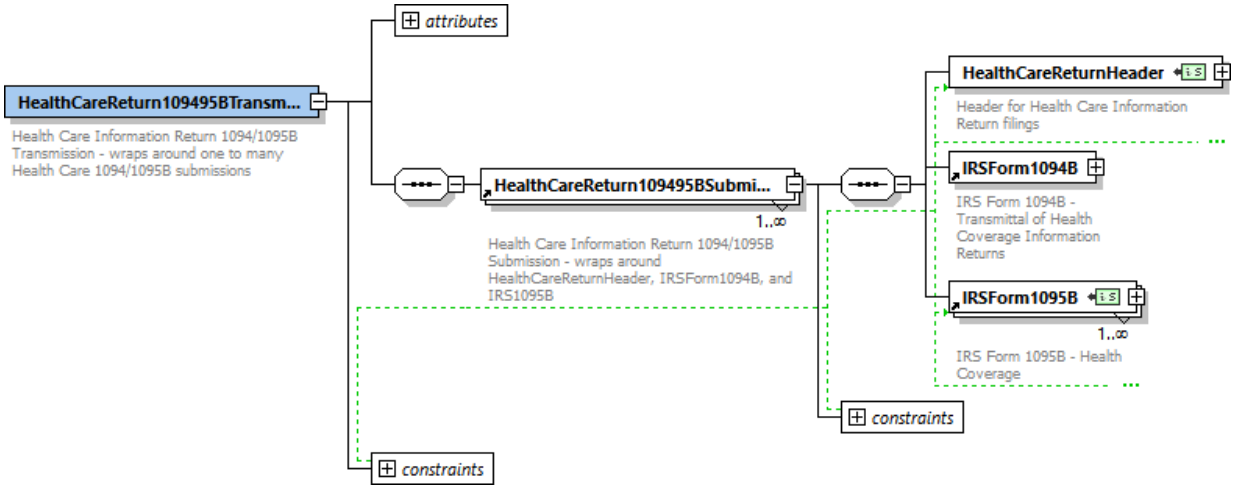


Figure 6: Transmission Schema – 1094/1095B

5.6.3 1094-B and 1095-B Sample Instance

A sample instance that conforms to HealthCareReturn109495Btransmission.xsd can be found in the SampleInstances folder within the InformationReturns_vX.X_YYYYMMDD.zip file included in the Technical Specifications Package. Figure 7 below depicts a 1095B sample instance.

```
<?xml version="1.0" encoding="UTF-8"?>
<hci:HealthCareReturn109495BTransmission xmlns:irs="http://www.irs.gov/efile" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:hci="http://www.ftb.ca.gov/healthcare-informationreturns" schemaVersion="InformationReturns_v2.0" xsi:schemaLocation="
http://www.ftb.ca.gov/healthcare-informationreturns ../InformationReturns_v2.0/Return109495B/HealthCareReturn109495BTransmission.xsd">
  <hci:HealthCareReturn109495BSubmission>
    <hci:HealthCareReturnHeader documentId="Header">
      <hci:SubmissionId>1</hci:SubmissionId>
      <hci:Timestamp>2021-02-17T09:30:47Z</hci:Timestamp>
      <hci:TaxYear>2021</hci:TaxYear>
    </hci:HealthCareReturnHeader>
    <hci:IRSForm1094B documentId="1094B">
      <hci:Filer> ... </hci:Filer>
      <hci:Form1095BCount>2</hci:Form1095BCount>
      <hci:Signature> ... </hci:Signature>
    </hci:IRSForm1094B>
    <hci:IRSForm1095B documentId="1095B-1">
      <hci:RecordId>1</hci:RecordId>
      <hci:CorrectedInd>0</hci:CorrectedInd>
      <hci:ResponsibleIndividual>
        <hci:IndividualName>
          <hci:FirstName>MIGUEL</hci:FirstName>
          <hci:MiddleName>JAMES</hci:MiddleName>
          <hci:LastName>FIZZAH</hci:LastName>
        </hci:IndividualName>
        <hci:TIN>000008203</hci:TIN>
        <hci:USAddress>
          <irs:AddressLine1Txt>301 MITCHELL ROAD</irs:AddressLine1Txt>
          <irs:AddressLine2Txt>426 S CENTINELA AVENUE SUITE</irs:AddressLine2Txt>
          <irs:CityNm>CORANA</irs:CityNm>
          <irs:StateAbbreviationCd>SD</irs:StateAbbreviationCd>
          <irs:ZIPCd>27617</irs:ZIPCd>
        </hci:USAddress>
        <hci:HealthCoverageOrigin>A</hci:HealthCoverageOrigin>
      </hci:ResponsibleIndividual>
      <hci:EmployerSponsoredCoverage> ... </hci:EmployerSponsoredCoverage>
      <hci:IssuerInformation>
        <hci:BusinessName> ... </hci:BusinessName>
        <hci:EIN>007746312</hci:EIN>
        <hci:USAddress> ... </hci:USAddress>
        <hci:ContactPhone>9161234567</hci:ContactPhone>
      </hci:IssuerInformation>
      <hci:CoveredIndividual>
        <hci:Name>
          <hci:FirstName>MIGUEL</hci:FirstName>
          <hci:MiddleName>JAMES</hci:MiddleName>
          <hci:LastName>FIZZAH</hci:LastName>
        </hci:Name>
        <hci:SSN>000008203</hci:SSN>
        <hci:EntireYearCoverage>1</hci:EntireYearCoverage>
      </hci:CoveredIndividual>
      <hci:CoveredIndividual>
        <hci:Name>
          <hci:FirstName>NANCY</hci:FirstName>
          <hci:LastName>FIZZAH</hci:LastName>
        </hci:Name>
        <hci:SSN>006009135</hci:SSN>
        <hci:EntireYearCoverage>1</hci:EntireYearCoverage>
      </hci:CoveredIndividual>
    </hci:IRSForm1095B>
    <hci:IRSForm1095B documentId="1095B-2"> ... </hci:IRSForm1095B>
  </hci:HealthCareReturn109495BSubmission>
</hci:HealthCareReturn109495BTransmission>
```

Figure 7: Transmission Sample Instance – 1095B

5.6.4 1094-B and 1095-B Business Rules

In addition to XML Schema validations, Business Rule validations will be run against the data within the transmission. The Business Rules for the 1094/1095-B schema can be found in the latest publication of the *CA Bus Rules 109495-B vX.X MM-DD-YY* document included in the Technical Specifications Package. The latest publication is indicated by the date in the file name.

Additional information about Business Rules and how to interpret them can be found in Section 7.2.

5.6.5 1094-C and 1095-C Schema

Figure 8 below is a visualization of key elements defined in HealthCareReturn109495Ctransmission.xsd.

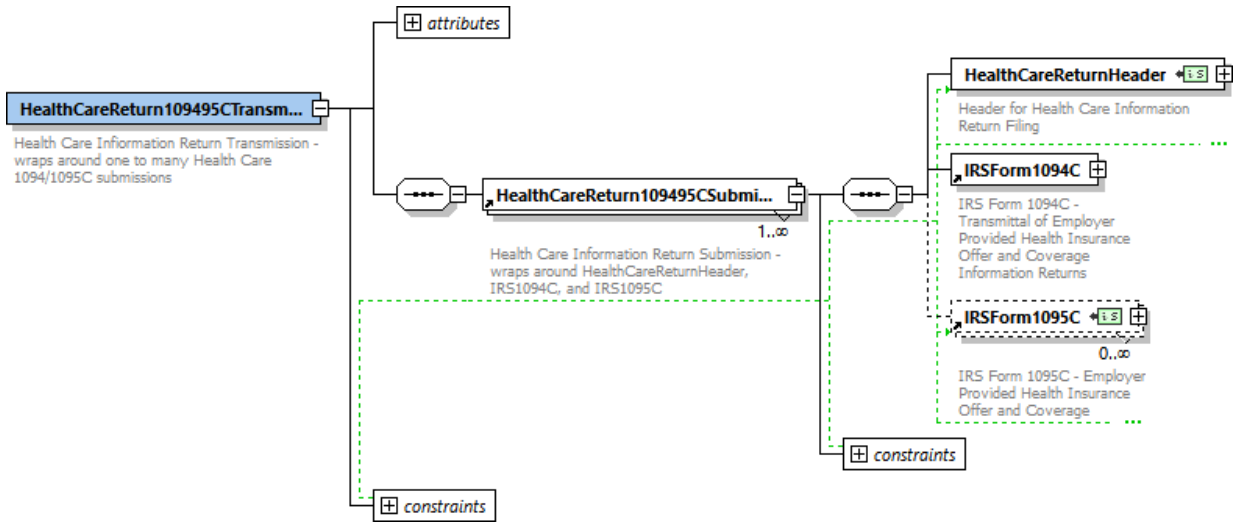


Figure 8: Transmission Schema – 1094/1095C

5.6.6 1094-C and 1095-C Sample Instance

A sample instance that conforms to HealthCareReturn109495Ctransmission.xsd can be found in the SampleInstances folder within the InformationReturns_vX.X_YYYYMMDD.zip file included in the Technical Specifications Package. Figure 9 below depicts a 1095C sample instance.

```
<?xml version="1.0" encoding="UTF-8"?>
<hci:HealthCareReturn109495CTransmission xmlns:irs="http://www.irs.gov/efile" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:hci="
http://www.ftb.ca.gov/healthcare-informationreturns" schemaVersion="InformationReturns_v2.0" xsi:schemaLocation="http://www.ftb.ca.gov/healthcare-informationreturns
../InformationReturns_v2.0/Return109495C/HealthCareReturn109495CTransmission.xsd">
  <hci:HealthCareReturn109495CSubmission>
    <hci:HealthCareReturnHeader documentId="Header">
      <hci:SubmissionId>1</hci:SubmissionId>
      <hci:Timestamp>2021-02-17T09:30:47Z</hci:Timestamp>
      <hci:TaxYear>2021</hci:TaxYear>
    </hci:HealthCareReturnHeader>
    <hci:IRSForm1094C documentId="1094C">
      <hci:CorrectedInd>0</hci:CorrectedInd>
      <hci:EmployerInformation> ... </hci:EmployerInformation>
      <hci:Form1095CCount>3</hci:Form1095CCount>
    </hci:IRSForm1094C>
    <hci:IRSForm1095C documentId="1095C-1">
      <hci:RecordId>1</hci:RecordId>
      <hci:CorrectedInd>0</hci:CorrectedInd>
      <hci:EmployeeInformation>
        <hci:Name> ... </hci:Name>
        <hci:SSN>006009868</hci:SSN>
        <hci:USAddress> ... </hci:USAddress>
      </hci:EmployeeInformation>
      <hci:ALEContactPhone>9161234567</hci:ALEContactPhone>
      <hci:EmployeeOfferOfCoverage> ... </hci:EmployeeOfferOfCoverage>
      <hci:EmployerProvidedCoverage>0</hci:EmployerProvidedCoverage>
      <hci:CoveredIndividual>
        <hci:Name>
          <hci:FirstName>JEROME</hci:FirstName>
          <hci:MiddleName>RIGOBERTO</hci:MiddleName>
          <hci:LastName>NOSUK</hci:LastName>
        </hci:Name>
        <hci:SSN>000009868</hci:SSN>
        <hci:EntireYearCoverage>1</hci:EntireYearCoverage>
      </hci:CoveredIndividual>
      <hci:CoveredIndividual>
        <hci:Name>
          <hci:FirstName>DARLENE</hci:FirstName>
          <hci:MiddleName>MARTHA</hci:MiddleName>
          <hci:LastName>LELEI</hci:LastName>
        </hci:Name>
        <hci:SSN>008006461</hci:SSN>
        <hci:EntireYearCoverage>1</hci:EntireYearCoverage>
      </hci:CoveredIndividual>
    </hci:IRSForm1095C>
    <hci:IRSForm1095C documentId="1095C-2"> ... </hci:IRSForm1095C>
    <hci:IRSForm1095C documentId="1095C-3"> ... </hci:IRSForm1095C>
  </hci:HealthCareReturn109495CSubmission>
</hci:HealthCareReturn109495CTransmission>
```

Figure 9: Transmission Sample Instance – 1095C

5.6.7 1094-C and 1095-C Business Rules

In addition to XML Schema validations, Business Rule validations will be run against the data within XML. The Business Rules for the 1094/1095-C schema can be found in the latest publication of the *CA Bus Rules 109495-C vX.X MM-DD-YY* document included in the Technical Specifications Package. The latest publication is indicated by the date in the file name.

Additional information about the Business Rules and how to interpret them can be found in Section 7.2.

5.7 Federal and State Differences: XML Schemas

Key differences between IRS AIR XML Schemas and FTB XML Schemas are described in Table 3 below.

Table 3: IRS and FTB Reporting Differences – XML Schemas

IRS	FTB
Transmissions are structured using the IRS AIR Schemas.	Transmissions are structured using the FTB FX System Schemas.
Transmissions must contain submissions for only a single tax year.	Transmissions may contain submissions for one or more tax years. Submissions must be for one single tax year.
Transmissions must indicate if they are Original (O), Correction (C), or Replacement (R) transmissions.	All transmissions are considered "original" transmissions. Resubmissions to fix errors or corrections to update information within a record may be submitted with new records.
Submissions do not contain headers.	Submissions require headers.
XML Schemas contain a few required fields and minimal schema validations.	XML Schemas contain as many validations as possible to include in the schemas.

6 Transmitting Information Returns

FTB maintains two channels for transmitting Information Returns:

1. The **User Interface (UI) Channel**, which provides a secure, web browser-based method for submitting XML forms that comply with the file schemas.
2. The **Application to Application (A2A) Channel**, a RESTful API that facilitates A2A information exchange over a standard HTTPS connection.

With the notable exception of the UI channel's user-facing elements, both channels

behave in a similar way. The FX API runs a series of synchronous validation checks on the transmission. Should all validations pass, the FX API routes the transmission to the FX Hub for asynchronous validations, and the Transmitter receives a RECEIPTID which they may use to request an acknowledgement or submit resubmissions or corrections. Should any synchronous checks fail, the FX API rejects the transmission, and the Transmitter receives an error; a RECEIPTID is not provided. Error codes are described in more detail in Section 7.1.

The FX API is evaluating the elements in the following files:

- The **Manifest File**, which contains the Transmitters information and data describing the transmission (the transmission's **metadata**). Key values in the Manifest file include, but are not limited to, the following:
    - **TransmissionID (UTID)** – A unique transmission identifier/transmissionID is comprised of 3 parts separated by a colon (":"): *UUID* (universally unique identifier), *SYSID*, and *CA-TCC*. The UTID is validated for uniqueness upon receipt. If the system has processed a transmission with that identifier even if it was ultimately rejected, then the transmission will be rejected, and no further processing occurs. Transmissions with corrected information refer to the original via the RECEIPTID, which is assigned and returned to the Transmitter upon successfully transmitting a file through FX API. *Please remember the UUID is not the Secret Key. Please do not use your Secret Key as the UUID portion of your UTID.*
    - **TransmissionChecksum** - The TransmissionChecksum is the SHA256 hash (a standardized calculation) of the form data file. The TransmissionChecksum ties the Manifest to the form data file, so the TransmissionChecksum value must be calculated from the finalized form data file. If any updates are made to the form data file after the original TransmissionChecksum was calculated (including small updates such as changing the timestamp in the form data file), the TransmissionChecksum needs to be recalculated to accurately reflect the updated form data file.
    - **SubmissionCount** – Number of 1094 forms in the form data file. The submission count in the Manifest file should match the number of 1094 forms within the transmission.
    - **TransmssionSchemaVersion** – This is the version of the schema being used for the transmission. *The current supported schema is "InformationReturns_v2.0". This should match the value provided in the form data file.*
    - **TransmissionCategory** – This value indicates whether the transmission is

a Test transmission or a Production transmission. When transmitting Test data, TransmssionCategory should be T. When transmitting Production data, TransmssionCategory should be P.

- **Form Data File** includes submissions of forms 1094/1095-B or 1094/1095-C data. Key values in the Form Data file include, but are not limited to, the following:
  - **TransmissionSchemaVersion** – This is the version of the schema being used for the transmission and it is provided in the HealthCareReturn109495BTransmission tag. *The current supported schema is "InformationReturns_v2.0". This should match the value provided in the manifest file.*
  - **Submission** – The Form Data file must contain one or more submissions. A submission contains a 1094 and its associated 1095 records. The structure and elements required in the submission are dependent upon which forms are being transmitted (1094/1095-B or 1094/1095-C). Please refer to the InformationReturns_v2.0 schema for clarification on required elements and structure.

If a transmission encounters either synchronous or asynchronous errors, please refer to the Common Errors page for troubleshooting tips and support.

Prior to submitting annual Production data to FTB, Transmitters must also complete an annual Testing cycle using their Test CA-TCC. Completed Test transmissions are reported for evaluation via the FX Portal on the "Submit Test Scenarios for Evaluation" page regardless of the submission channel used. When the Testing scenarios pass, a Production CA-TCC is issued, and the Transmitter may send Production data to FTB using that Production CA-TCC. Production CA-TCCs are associated to the form type(s) indicated by the Transmitter on the "Submit Test Scenarios for Evaluation" page in FX Portal. *Transmitters will only be able to transmit Production form data files for form types associated with their Production CA-TCC*. The Production CA-TCC will expire annually on December 15 and a new Production CA-TCC will be issued following completion of the next Testing cycle. For more information about the Testing cycle, please see the *FTB File Exchange System – 1094 1095 Testing Specifications*.

Note: As mentioned in Section 2.1, *any corrected Information Returns must use the same filing method as the original Information Return*.

Note: Transmitters who have already completed an annual Testing cycle with FTB do not need to retest again to obtain a new Production CA-TCC. Production CA-TCCs will automatically be extended. ***Annual testing is highly recommended***.

Note: New Transmitters are **required** to complete a Testing cycle to obtain Production CA-TCC and to transmit their Production files for the 2026 Tax Year. The Testing cycle for the 2026 Tax Year will open October 16, 2026.

6.1 Transmitting via the UI Channel

Transmission of Information Returns via the UI channel is done through a page in the FX Portal sub-system. Prior to using the UI channel, Transmitters *must:*

- Register for an e-Services Account
- Enroll for the MEC IR Program

When enrollment in the MEC IR Program is completed, the Transmitter is issued a Test CA-TCC and a Secret Key to use when transmitting Information Returns via the UI channel. For Transmitters using FX Portal, the system applies the Secret Key for the Transmitter. This means the Transmitter will not need to incorporate the Secret Key into the transmission files. For more information about registering for an e-Services account and enrolling for the MEC IR Program, please refer to the *FTB File Exchange (FX) System – MEC IR Registration and Enrollment Guide.*

Transmitters *must also complete* an annual Testing cycle using the Test CA-TCC prior to submitting production data to FTB. After transmitting the required Test transmissions for the necessary form types, Transmitters report their Test transmissions via the FX Portal on the *"Submit Test Scenarios for Evaluation"* page to indicate they are ready to have their transmissions evaluated. When the Test Scenarios pass, the production CA-TCC will be issued, and the Transmitter may send Production data to FTB. Production CA-TCC is associated to the form type(s) indicated by the Transmitter on the *"Submit Test Scenarios for Evaluation"* page in FX Portal. Transmitters will only be able to transmit Production form data files for form types associated with their Production CA-TCC. **The Production CA-TCC will expire annually on December 15** and a new Production CA-TCC will be issued following completion of the next Testing cycle. For more information about the Testing cycle, please see the *FTB File Exchange System – 1094 1095 Testing Specifications*.

Note: Transmitters who have already Tested with FTB do not need to retest again to obtain new Production CA-TCC. Production CA-TCCs will automatically be extended. ***Annual Testing is highly recommended***.

Note: New Transmitters are required to complete a Testing cycle to obtain Production CA-TCC and to transmit their Production files for the 2026 Tax Year. The Testing cycle for the 2026 Tax Year will open October 16, 2026.

Transmitters must access the FX Portal sub-system via links provided on the MEC IR Webpage. To ensure your browser is compatible with the FX Portal, review the information on the Website Help webpage.

After logging in, the Transmitter must submit *two uncompressed and unencrypted* XML files as listed below:

- The **Manifest File** contains the Transmitter's information and data describing the transmission (the transmission's **metadata**).
- **Form Data File** includes submissions of forms 1094/1095-B or 1094/1095-C data.

To create the **Manifest File**, Transmitters should use the TransmissionManifest.xsd schema file. To create the **Form Data File**, Transmitters should use either the HealthCareReturn109495Btransmission.xsd schema file or the HealthCareReturn109495Ctransmission.xsd schema file. These schemas are described in more detail in Section 5. The schemas themselves can be found in the Technical Specifications Package.

On submission, the FX API validates the transmission synchronously. If any failures occur, the transmission is rejected with an error code. More information about synchronous validations and error codes can be found in Section 7.1.

If all FX API synchronous validations pass, the transmission is routed to the FX Hub for further validation, as described in Section 7.2, and the UI displays the Receipt ID. The Receipt ID is used in future sessions to:

- Retrieve an acknowledgement of previously submitted transmission
- Post correction records for an accepted record
- Post resubmission records for rejected records
- Post resubmission submissions for rejected submissions on an Accepted with Errors Transmission

The Receipt ID *does not provide proof* that the transmission was either Accepted or Rejected. The Receipt ID provides proof that FTB received the transmission. *The Transmitter must retrieve the acknowledgement using the Receipt ID to obtain proof of Acceptance or Rejection.* More information about retrieving an acknowledgement and transmission status can be found in *Section 9 of FTB File Exchange System – 1094 1095 Technical Specifications –* ***Part 2*****.** More information about resubmitting or correcting information sent in a transmission can be found in *Section 10 of FTB File Exchange System – 1094 1095 Technical Specifications –* ***Part 2.***

6.2 Transmitting via the A2A Channel

Like the UI channel, in order to transmit Information Returns via the A2A channel, a Transmitter must:

- Register for an e-Services Account
- Enroll for the MEC IR Program

When enrollment in the MEC IR Program is completed, the Transmitter is issued a test CA-TCC and a Secret Key to use when transmitting Information Returns via the A2A channel. Additionally, Transmitters using the A2A channel must register their application system as a software package. The software package is assigned an app_id and app_key pair to use in transmissions via the A2A channel. For more information about registering for an e-Services account and enrolling for the MEC IR Program, please refer to the *FTB File Exchange System – 1094 1095 Testing Specifications.*

Transmitters *must also complete* an annual Testing cycle using the Test CA-TCC and Secret Key *prior to* submitting Production data to FTB. After transmitting the required Test transmissions for the necessary form types, Transmitters report their Test transmissions via the FX Portal on the *"Submit Test Scenarios for Evaluation"* page to indicate they are ready to have their transmissions evaluated. When the Testing Scenarios pass, the Production CA-TCC is issued, and the Transmitter may send Production data to FTB. Production CA-TCC is associated to the form type(s) indicated by the Transmitter on the *"Submit Test Scenarios for Evaluation"* page in FX Portal. Transmitters will only be able to transmit Production form data files for form types associated with their Production CA-TCC. The Production CA-TCC will expire annually on December 15 and a new Production CA-TCC will be issued following completion of the next Testing cycle. For more information about the Testing cycle, please see the *FTB File Exchange System – 1094 1095 Testing Specifications.*

Note: Transmitters who have already tested with FTB do not need to retest again to obtain new Production CA-TCC. Production CA-TCCs will automatically be extended. ***Annual Testing is highly recommended.***

Note: New Transmitters are required to complete a Testing cycle to obtain Production CA-TCC and to transmit their production files for the 2026 Tax Year. The testing cycle for the 2026 Tax Year will open October 16, 2026.

The FX API presents a TLS 1.2-encrypted RESTful endpoint. It employs standard HTTPS semantics using the POST method to send files and the GET method to retrieve

acknowledgements. Transmissions *must include* a **Manifest** and **Form Data file**—XML that conforms to the FTB provided schemas. When taken together, these are referred to as *Transmission Payload* and are encoded in multipart/form-data format that use specific headers and fields. All requests are authenticated and authorized, and each is evaluated for structural integrity.

The FX API accepts authentic, structurally sound transmissions and routes them to the FX Hub for processing. For transmissions that pass synchronous FX API validations, the Transmitter receives an HTTP 201 response, the body of which comprises a brief XML document that contains a RECEIPTID and the UTID. The schema for this brief XML document is defined in TransmissionReceipt.xsd and can be found in the latest publication of the FileExchange-fx_2021_YYYYMMDD.zip file. The latest publication is indicated by the date in the file name.

Note: *The RECEIPTID should be kept with the original transmission*. It is required when requesting processing status or transmitting corrections. If the Transmitter does not receive a RECEIPTID (e.g.: the session times out or is terminated) or it is accidentally lost or deleted, please request the acknowledgement using the Transmission History Page in the FX Portal before contacting the MEC FX Portal Help Desk. More information about retrieving an acknowledgement can be found in *Section 7 of FTB File Exchange System – 1094 1095 Technical Specifications – **Part 2*.** Information on how to contact the MEC FX Portal Help Desk can be found in Section 2.3.

Two other values are also provided in the response headers: a unique Transaction ID (X-FtbApi-TxId) and a Timestamp (X-FtbApi-TxTs). FTB support personnel may request the Transaction ID when working to resolve incidents.

The FX API rejects transmissions that fail synchronous validations. These validations and any resulting errors are described in more detail in Section 7.1, as well as the Open API Specifications (OAS) that define which HTTP response the Transmitter will receive. The OAS is the authoritative document for transmissions. If any discrepancies exist between the OAS and other publications, defer to the OAS.

6.2.1 Transmission and Payload Structure

Transmissions submitted via the A2A channel are encoded as multipart/form-data[2] and must:

- Be sent via a TLS 1.2-encrypted https connection.
- Use the HTTP POST method.
- Include a Content-Type header with the value multipart/form-data; boundary must be included.
- Include two custom HTTP headers, app_id and app_key, that contain credentials issued during registration.
- Include two custom HTTP headers, X-FtbApi-TrTs and X-FtbApi-TrnsId that provide a Timestamp and the UTID respectively and participate in the signing process (see Section 6.2.2). The Timestamps are acceptable both with and without fractional seconds.
- Have a field named Manifest with an embedded XML document that complies with TransmissionManifest.xsd.
- Have a field named Transmission with an embedded XML document that complies with one of the following:
    - HealthCareReturn109495Btransmission.xsd
    - HealthCareReturn109495Ctransmission.xsd
- Be signed in accordance with the Amazon Web Services (AWS) Signature Version 4 and use AWS4-HMAC-SHA256 as the value of the Authorization header.

A logical transmission is shown in Figure 10 on the next page.

The boundary is part of the Content-Type header. It needs to be excluded from the Authorization Header signature calculation. The Content-Type header must be multipart/form-data *without* the boundary for the signature calculation. The Authorization Header is part of the boundary calculation when the request is sent. Including the boundary in the signature generation changes the boundary, which would change the signature. Additionally, "\n" should be used for new line characters as other new line characters (e.g. "\r\n") can impact the signature calculation, as well.

[2] This encoding was introduced in the HTML 4 specification. See here for details.

HTTPS Request

HEADERS

```
POST /api.ftb.ca.gov/fx/v1/transmissions
Host: api.ftb.ca.gov
Content-Type: multipart/form-data; boundary=mimeboundary
X-FtbApi-TrnsId: 7cdc34fa-b3a6-445c-bbf6-cd0bdf47ef49:0001:00001
X-FtbApi-TrTs: 2020-01-15T00:05:32.000Z
app_id: [Application ID]
app_key:[Application Key]
Authorization: AWS4-HMAC-SHA256 Credential=[CA-TCC]/[ISO 8601 date]/ftb/fx/aws4_request,
  SignedHeaders=content-type;host;x-ftbapi-trnsid;x-ftbapi-trts, Signature=[SHA-256 HMAC]
…
```

PAYLOAD

```
--mimeboundary
Content-Disposition: form-data; name="manifest"

<manifest>
       <manifest-header/>
</manifest>

--mimeboundary
Content-Disposition: form-data; name="transmission"

<transmission>
       <submission>
              <Header>
              </Header>
              <1094-B>
              </1094-B>
              <1095-B>
              </1095-B>
              …
              <1095-B>
              </1095-B>
       </submission>
</transmission>

--mimeboundary--
```

Figure 10: API Request Logical Structure

6.2.2 Transmission Authentication

Transmissions are authenticated in two steps:

1. Application ID (app_id) and Application Key (app_key) validation
2. Signature verification

6.2.2.1 Application ID and Key Validation

The FX API authenticates all transmissions via the app_id and app_key tokens. The app_id and app_key are sent as custom HTTP headers. The tokens, issued at enrollment, *must always be used together*. Keys are only valid for a specific app_id and are automatically renewed annually; an app_id is valid until explicitly disabled. For more information about how to disable an app_id, please see the *FTB File Exchange System – MEC IR Registration and Enrollment Guide*.

Transmitters must register each software package that interacts with the FX API. Each software package receives a unique app_id and app_key. With the exception of the period one month prior to expiration, only one app_key is active at a time. During that period, a second app_key is activated to ensure keys may be retired without disrupting the Transmitter's ability to transmit files using the A2A channel.

Note: The app_id and app_key *are not* used for the SoftwareName and SoftwareID elements found in the Manifest file.

The FX API responds with an HTTP 403 response when the app_id and app_key fail to validate.

6.2.2.2 Signature Verification

After app_id and app_key verification, the FX API verifies the transmission's digital signature. This provides assurance that:

- The Transmitter has possession of the CA-TCC Secret Key
- The Payload was not corrupted or altered during transmission

Secret Keys are issued to Transmitters, *not* software packages (i.e. a single Secret Key is shared between all of the Transmitter's software packages). They are issued at enrollment and are good for 12 months or until they are deactivated for a valid business reason. With the exception of the period one month prior to expiration, only one Secret Key is active at a time. During that period, a second Secret Key is activated to ensure the original may be retired without disrupting the Transmitter's ability to submit

transmissions. For more information about how to deactivate a Secret Key or CA-TCC, please see the *FTB File Exchange System – MEC IR Registration and Enrollment Guide*.

Transmitters use the AWS Signature Version 4 algorithm to generate the signature. A detailed description—including code samples in multiple languages—is available at Amazon's AWS Documentation website. The following sections detail the peculiarities of the FTB implementation. Unless otherwise noted, the signature must be generated exactly as described in Amazon's documentation.

Location

The signature and all supporting materials *must* be presented in the Authorization header and have the following form:

```
[Algorithm] Credential=[access key ID/Credential Scope],
SignedHeaders=[Signed Headers], Signature=[Signature]
```

Whitespace *must be* included as shown above.

Algorithm

You must use SHA-256 as the hashing algorithm. It must be identified as `AWS4-HMAC-SHA256` in the transmission.

Credential

Per Amazon's AWS documentation, the credential is comprised of an access key ID and the credential scope:

```
Credential=access key ID/credential scope
```

For FTB File Exchange System purposes, the credential must *be formed as follows* (where the `[CA-TCC]` serves as the access key ID and `[YYYYMMDD]/ftb/fx/aws4_request` is the credential scope):

Credential
`[CA-TCC]/[YYYYMMDD]/ftb/fx/aws4_request`

Where:

- **CA-TCC** is the California Transmitter Control Code issued upon enrollment approval for the MEC IR Program
- **YYYYMMDD:** a four-digit year, two-digit month, and two-digit day on which the Transmission is sent

For example, if your CA-TCC is A0132 and the transmittal date is January 10th, 2020, then the credential is:

```
a0132/20200110/ftb/fx/aws4_request
```

All alphabetic characters must be in lowercase as shown above.

Signed Headers

Transmitters *must* sign the following headers: host, content-type, x-ftbapi-trts, x-ftbapi-trnsid. The headers must be presented as a semicolon (";") separated list. Transmitters *may* choose to sign additional headers but must include them in the list. Assuming required headers only, the list would be as follows:

```
content-type;host;x-ftbapi-trnsid;x-ftbapi-trts
```

Signature

The signature is a hexadecimal-encoded string as described in the AWS documentation. The Canonical Request (see Amazon's AWS Documentation website) *must* include a hash of the transmission's Payload. Generate the Payload by concatenating the value of the Transmission Field to the value of the Manifest Field. Transmitters *must not* include any multipart/form-data constructs (e.g., boundary delimiters, Content-Disposition headers, etc.) in the signed Payload. This means that the content-type should be "multipart/form-data" with the boundary omitted during signature calculation.

Assuming:

1. The CA-TCC is 00001
2. The transmittal date is November 3, 2020
3. Only the default headers are signed

The Authorization header would be as follows:

```
Authorization: AWS4-HMAC-SHA256
Credential=00001/20201103/ftb/fx/aws4_request, SignedHeaders=content-
type;host;x-ftbapi-trnsid;x-ftbapi-trts, Signature=
93172505708f79ecf986cd36d0f2b1cead4ba513f63e757f69c2426749bf366f
```

To see the Payload and other values that went into generating the above signature, please see the example files included with the Open API Specifications zip file.

6.2.3 Transmission Authorization

During enrollment, FTB authorizes applications to transmit specific forms. Once authenticated, transmissions are authorized according to the following rules:

1. The CA-TCC provided in the credential must belong to the Transmitter identified in the app_id header
2. The CA-TCC must be active
3. The Production CA-TCC must apply to the forms included in the transmission (The Test CA-TCC applies to all form types)
4. The CA-TCC must be authorized for use in the target environment (either Testing or Production)

The FX API will reject any transmission that fails any one of these checks without providing a receipt. This process is summarized in Figure 11, below.

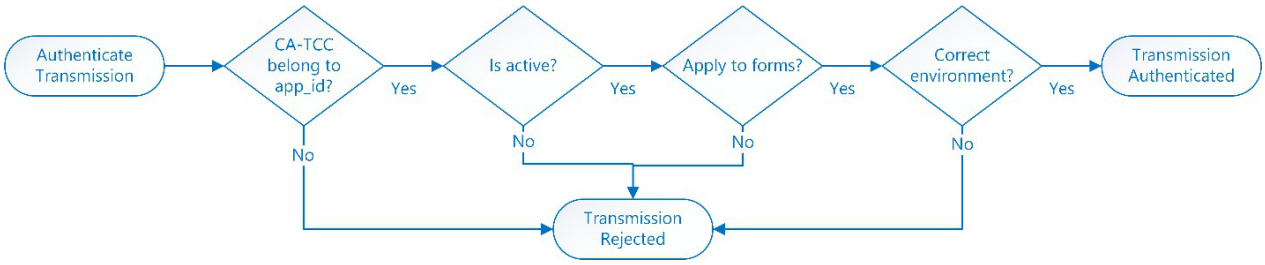


Figure 11: A2A Authorization Process

Unauthorized transmissions are rejected without further processing.

6.3 Federal and State Differences: Transmitting

The primary difference between IRS transmitting and FTB transmitting is in the service integration technology. IRS uses SOAP services and FTB uses RESTful services. IRS transmissions are structured using IRS Schemas. FTB transmissions are structured using the FTB Schemas. As a result, all specifications for transmissions described in this section are distinctly different from those described in IRS transmission publications.

7 Validating the Transmission

Transmissions undergo two phases of validation: **synchronous validation** and **asynchronous validation**. If any validation step fails, an error code is returned. The error code prefix determines at which point the failure occurred. Any error codes prefixed with "FXE" are synchronous validation failures identified by the FX API. Any other error codes are asynchronous validations. The error codes are defined in the *Business Rules* included in the Technical Specifications Package.

7.1 Synchronous Validations

The FX API sub-system performs the synchronous validations on the transmission. The following validations occur:

1. Transmission is free of viruses
2. File size does not exceed 100 MB for A2A transmissions or does not exceed 10MB for UI transmissions
3. File is readable by FX API
4. A2A only – transmission is *authenticated* (described in Section 6.2.2)
5. A2A only – transmission is *authorized* (described in Section 6.2.3)
6. Manifest is present and adheres to FTB XML Schema
7. Form Data File is present
8. UTID is unique
    a. **Note**: The UUID component of the UTID *is not* a Secret Key
9. Transmission is not a duplicate (as identified by the SHA-256 hash)
10. File can be written to persistent storage
11. CA-TCC authorized forms match the provided form type code

If all validations pass, the transmission is read and written to persistent storage. The FX API generates a RECEIPTID, which is passed back in a HTTP 201 response to the Transmitter along with the UTID as part of the same session. ***If any validation steps fail, the entire transmission is rejected and no RECEIPTID is generated. The transmission is rejected with an HTTP 400 response and one of the error codes listed in Table 4, on the next page.*** A2A Transmitters may receive some additional error codes that UI Transmitters do not due to the nature of the transmission channels. The Transmitter must resolve the identified error and resubmit as a new transmission with a new UTID. The SHA-256 hash on the rejected transmission will not cause a duplicate transmission failure if the same transmission is resubmitted with a new UTID.

Table 4: File Exchange API Error Codes for Transmission

Error Code	Service Leg	Reason	Channel	Error Message
FXE001	Request	Message delivery failure	A2A	We are experiencing a technical issue. Please try your request again later. We apologize for any inconvenience.
FXE001	Request	Message delivery failure	UI	Our system is currently unavailable. Please try your request later. To see if FTB's website is undergoing system maintenance at this time, visit the scheduled maintenance page.
FXE002	Request	Manifest does not schema validate	A2A	Our system found a schema validation issue with the Manifest. Verify your file complies with the standards in FTB File Exchange System Technical Specifications and try again.
FXE002	Request	Manifest does not schema validate	UI	Our system found a schema validation issue with the Manifest. Verify your file complies with the standards in FTB File Exchange System Technical Specifications and try again.
FXE003	Request	Manifest XML is not well-formed	A2A	Our system found a formatting or other issue with the Manifest. Verify your file complies with the standards in FTB File Exchange System Technical Specifications and try again.
FXE003	Request	Manifest XML is not well-formed	A2A	Our system found a formatting or other issue with the Manifest. Verify your file complies with the standards in FTB File Exchange System Technical Specifications and try again.

Error	Service Leg	Reason	Channel	Error Message Code
FXE004	Request	Potential threat detected	A2A	Your request does not meet FTB security requirements.
FXE004	Request	Potential threat detected	UI	Your request does not meet FTB security requirements.
FXE005	Request	Transmission not multipart/for m-dataencoded	A2A	The transmission was not formatted as multipart/form- data. Please review and try again.
FXE005	Request	Transmission not multipart/for m-dataencoded	UI	The transmission was not formatted as multipart/form-data. Please contact the MEC FX Portal Help Desk.
FXE006	Request	Transmission does not contain the manifest field	A2A	The transmission does not contain the required manifest field. Please review and try again.
FXE006	Request	Transmission does not contain the manifest field	UI	The transmission either does not contain the required manifest file, or the manifest file does not contain a required element. Verify your information and try again. If the problem persists, please contact the MEC FX Portal Help Desk.
FXE007	Request	Transmission does not contain the transmission field	A2A	The transmission does not contain the required `transmission` field. Please review and try again.
FXE007	Request	Transmission does not contain the transmission field	UI	The transmission either does not contain the required `Form Data` file, or the Form Data file does not contain a required element. Verify your information and try again. If

Error	Service Leg	Reason	Channel	Error Message Code
				the problem persists, please contact the MEC FX Portal Help Desk.
FXE008	Request	UTF-8 BOM encoding in the manifest file and cannot be interpreted	A2A	Our system has detected UTF-8 BOM encoding in the manifest file, and it cannot be interpreted. Please review the XML standards in *FTB File Exchange System Technical Specifications* and try again.
FXE008	Request	UTF-8 BOM encoding in the manifest file and cannot be interpreted	UI	Our system found UTF-8 BOM encoding in the manifest that cannot be interpreted. Verify your file complies with the standards in *FTB File Exchange System Technical Specifications* and try again.
FXE009	Request	Invalid signature	A2A	The digital signature our system computed for the transmission did not match the one provided. Please review and try again.
FXE009	Request	Invalid signature	UI	The digital signature our system computed for the transmission did not match the one provided. Please contact the MEC FX Portal Help Desk.
FXE010	Request	Missing credentials in HTTP request	A2A	The Authorization header is missing or malformed. Please review and try again.
FXE011	Request	Failed to authorize request	A2A	The credentials, while valid, are not authorized to send the transmission. Please check that your credentials are appropriate to the transmission type and form type and try again.

Error	Service Leg	Reason	Channel	Error Message Code
FXE011	Request	Failed to authorize request	UI	The credentials, while valid, are not authorized to send the transmission. Please check that your credentials are appropriate to the transmission type and form type and try again.
FXE012	Request	Request contains invalid Test File Code value	A2A	The transmission was sent with a CA-TCC that does not match the Transmission Category. Please check your credentials and manifest and try again.
FXE012	Request	Request contains invalid Test File Code value	UI	The transmission was sent with a CA-TCC that does not match the Transmission Category. Please check the manifest and try again.
FXE013	Request	UTID is missing or invalid	A2A	The transmission's UTID is missing, or our system found an error in its structure or uniqueness. Please review *FTB File Exchange System Technical Specifications* and try again.
FXE013	Request	UTID is missing or invalid	UI	The transmission's UTID is missing, or our system found an error in its structure or uniqueness. Please review *FTB File Exchange System Technical Specifications* and try again.
FXE014	Request	Bad Request structure	A2A	The request has a structural issue, such as an incorrectly formatted boundary. Please review and try again.

Error	Service Leg	Reason	Channel	Error Message Code
FXE015	Request	Extra attachments	A2A	Transmission's multipart/form-data contains fields other than manifest and transmission. Please review and try again.
FXE015	Request	Extra attachments	UI	Transmission's multipart/form-data contains fields other than manifest and transmission. Please contact the MEC FX Portal Help Desk.
FXE016	Request	Transmission is not well-formed XML	A2A	The transmission's **form data** was not well-formed XML. Verify your file complies with the standards in *FTB File Exchange System Technical Specification and* try again.
FXE016	Request	Transmission is not well-formed XML	UI	We found a formatting or potential security issue with the **form data**. Verify your file complies with the standards in *FTB File Exchange System Technical Specification and* try again.
FXE017	Request	Transmission ID not unique	A2A	The transmission ID was not unique. Please double check your transmission ID and try again.
FXE017	Request	Transmission ID not unique	UI	The transmission ID was not unique. Please double check your transmission ID and try again.
FXE018	Request	Transmission Form Data not unique	A2A	The transmission form data was not unique. Please double check your transmission form data and try again.

Error	Service Leg	Reason	Channel	Error Message Code
FXE018	Request	Transmission Form Data not unique	UI	The transmission form data was not unique. Please double check your transmission form data and try again.
FXE019	Request	UTF-8 BOM encoding in form data and file cannot be interpreted	A2A	Our system has detected UTF-8 BOM encoding in the form data. Please review and try again.
FXE019	Request	UTF-8 BOM encoding in form data and file cannot be interpreted	UI	Our system found UTF-8 BOM encoding in the **Form Data** that cannot be interpreted. Verify your file complies with the standards in *FTB File Exchange System Technical Specification* and try again.
FXE020	Request	Missing or malformed x-ftbapi-trnsid signed header in authentication header	A2A	The x- ftbapi-trnsid signed header in the Authorization header is missing or malformed. Please review your transmission, see *Section 6.2.2* in the *FTB File Exchange System Technical Specification*, and the Open API Specifications and then try again.
FXE021	Request	Missing or malformed x-ftbapi-trts signed header in authentication header	A2A	The x-ftbapi-trts signed header in the Authorization header is missing or malformed. Please review your transmission, see *Section 6.2.2 in the FTB File Exchange System Technical Specification,* and the Open API Specifications and then try again.

Error	Service Leg	Reason	Channel	Error Message Code
FXE022	Response	Unable to generate Receipt ID	A2A	The system was unable to generate a receipt ID. Please try again later. If the problem persists, please contact the MEC FX Portal Help Desk.
FXE022	Response	Unable to generate Receipt ID	UI	The system was unable to generate a receipt ID. Please try again later. If the problem persists, please contact the MEC FX Portal Help Desk.
FXE023	Request	TransmissionChecksum does not correspond with Form Data file	A2A	The TransmissionChecksum value in the manifest file did not correspond with the form data file provided. Please review your files and the Common Errors page before trying to transmit again.
FXE023	Request	TransmissionChecksum does not correspond with Form Data file	UI	The TransmissionChecksum value in the manifest file did not correspond with the form data file provided. Please review your files and the Common Errors page before trying to transmit again.
FXE024	Request	Missing or malformed content-type signed header in authentication header	A2A	The content-type signed header in the Authorization header is missing or malformed. Please review your transmission, *Section 6.2. in the FTB File Exchange System Technical Specification,* and the Open API Specifications and then try again.

Error	Service Leg	Reason	Channel	Error Message Code
FXE025	Request	Authentication header missing or malformed	A2A	The Authorization header is missing or malformed. Please review your transmission, *Section 6.2.2 in the FTB File Exchange System Technical Specification*, and the Open API Specifications and then try again.

If your transmission encounters synchronous errors, please refer to the Common Errors page for troubleshooting tips and support.

7.1.1 FX API Errors via the UI Channel

If an error occurs during the upload of the Manifest and Form Data file, the user is directed to a transmission failure page with the applicable error. *Please remember attempted transmissions that receive an FX API synchronous validation error have not successfully been received by FTB.*

7.1.2 FX API Errors via the A2A Channel

When submitting through the A2A channel, transmissions failing synchronous validations are rejected with an HTTP 400 with one of the error codes listed above in Table 4., Otherwise, transmissions may be rejected with an HTTP 403, HTTP 500, or HTTP 503 response without an FX Error code, as defined in the Open API Specifications.

7.2 Asynchronous Validations

The FX Hub sub-system performs the asynchronous validations on the transmission. The outcome of the validations determines the final status of the transmission, and any errors are written in the acknowledgement file for the transmission. The status and details about the acknowledgement file are described in more detail in *Section 7 in the FTB File Exchange System – 1094 1095 Technical Specifications – **Part 2***.

The following asynchronous validations occur:

1. Form Data File against XML Schema
2. Form Data File and Manifest against Business Rules

If all validations pass, the status of the transmission is "Accepted", and no error codes are written to the acknowledgement file. If any validation fails, the error code is written to the acknowledgement file, and the status of the transmission is set based on the type and severity of the error.

Error information will be provided back to the Transmitter when FTB identifies errors associated with a Business Rule. These errors are formatted as follows:

```
<Form Type> - <Business Rule ID>
```

The form type indicates where the error occurred. Valid form types are as follows:

- F1094B – error in the header or 1094-B submission
- F1095B – error in the 1095-B record
- F1094C – error in the header or 1094-C submission
- F1095C – error in the 1095-C record

The Business Rule ID provides a unique identifier for the rule that failed validation. Error codes and descriptions are specific to the form type validated. The specific error codes are defined in the Business Rules for the applicable form type and can be found in the Technical Specifications Package.

The general schema and transmission Manifest Business Rules are executed first, followed by the Header and Form Specific Rules, which are executed in the order they are listed. If the Business Rule has a severity of "Reject and Stop" and the form type is for a 1094-B or 1094-C, the entire submission is rejected and no more Business Rules are run for that submission. If the transmission only contains one submission that was rejected, then the entire transmission will receive a "Rejected" status.

For Business Rules with a severity of "Reject and Continue", the error is logged, and the remaining Business Rules are run. The final status of the transmission will be determined by the status of its submissions, as described in *Section 7.1 in the FTB File Exchange System – 1094 1095 Technical Specifications –* ***Part 2*****.**

If your transmission encounters asynchronous errors, please refer to the Common Errors page for troubleshooting tips and support.

7.3 Federal and State Differences: Validations

There are very few conceptual differences between the IRS AIR Transmission Validations and the FTB FX Transmission Validations. At a high level, the FTB FX Transmission Validations use different error codes, different error messages, different schemas to validate against, and different business rules. However, the process for applying these validations is very similar.