This is an image that reads as follows:

CMS Centers for Medicare & Medicaid Services
Center for Consumer Information & Insurance Oversight

Federal Data Services Hub (Federal DSH)

Hub-to-Opera Solutions Interface Control Document (ICD)

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# Purpose of Interface Control

This Interface Control Document (ICD) provides a common set of formats, methods, and protocols required to effectively define the interface between the Centers for Medicare & Medicaid Services (CMS) Federal Data Services Hub (Federal DSH), or the Hub, and Opera Solutions. The purpose of this ICD is to provide standard technical specifications for the Hub-to-Opera Solutions interface.

This document establishes the standard rules, requirements, and policies with which the development and implementation of the defined interface comply. This document is a result of collaborative work undertaken by CMS and Opera Solutions, and corresponds directly to the Priming Enrollment Information Business Service Definition (BSD) developed for the Affordable Care Act (ACA).

The intended audience for the Hub-to-Opera Solutions ICD is all Project stakeholders, including the Project sponsor, senior leadership, and the Project Team.

# Introduction

The Federal DSH provides centralized, standardized, and reliable services to the Marketplaces, Medicaid, the Children’s Health Insurance Program (CHIP), and the Basic Health Program (BHP) where applicable, which minimizes the administrative burden and information technology (IT) costs for Marketplaces and federal agencies by avoiding the development of 50-plus new point-to-point interfaces at each federal agency Partner.

Opera Solutions is the identified trusted data source (TDS) that provides information to the Marketplace/Medicaid, CHIP, and BHP (if applicable) based on the pre-audit compare process.

This ICD describes the relationship between the Hub and Opera Solutions, and specifies the interface requirements the participating systems must meet. It describes the concept of operations (CONOP) for the interface, defines the message structure and protocols that govern the interchange of data, and identifies the communication paths along which the Federal DSH Team, or the Team, expects data to flow.

The ICD provides the following information for the interface:

* General description of interface
* Assumptions where appropriate
* Description of data exchange format and protocol for exchange
* Estimated size and frequency of data exchange

The following appendices provide additional information:

* Appendix A - Interface Controls
* Appendix B - Glossary of Terms, Acronyms, and Definitions
* Appendix C - Referenced Documents
* Appendix D - Record of Changes
* Appendix E - Approvals

# Overview

The Patient Protection and Affordable Care Act (PPACA), also known as the ACA, requires a single, streamlined application that an individual may use for the following activities:

* Applying for enrollment eligibility in qualified health plan (QHP) through Marketplace
* Applying for advance payment of the premium tax credit (APTC)
* Applying for cost-sharing reductions (CSRs)
* Applying for Medicaid
* Applying for CHIP
* Applying for BHP (where applicable)

An individual must be able to file this application online, by telephone, in person, or by mail with any of the entities administering these programs. The ability for an individual to access the appropriate coverage across multiple programs, through a single, streamlined application using the coordinated eligibility process, helps ensure that no matter how an individual submits an application, or which program receives the application data, the individual experiences a consistent process, and receives a consistent eligibility determination, without the need to submit information to multiple programs.

The Hub coordinates the transmission of requests and responses among the Marketplaces, Medicaid, CHIP, BHP (if applicable), and Hub-to-Opera Solutions. The Hub also records transaction history to support audits of transmission requests and responses.

Opera Solutions performs a pre-audit compare process, comparing the pre-audit file from the Federally Facilitated Marketplace (FFM) with the pre-audit file Issuers send. Opera Solutions analyzes the outcome of the compare process. If the FFM needs enrollment information updates, Opera Solutions generates an updated flat file and sends the flat file to the Hub via Enterprise File Transfer (EFT). The Marketplace Electronic Data Interchange (MPEDI) picks up the flat file, converts the file into a Batch Update Utility (BUU) Extensible Markup Language (XML) file, and sends the XML file to the FFM via EFT so the FFM can update enrollment information.

# Assumptions, Constraints, and Risks

This section presents assumptions, constraints, and risks applicable to the Hub-to-Opera Solutions interface.

## Assumptions

The following assumptions apply to the Hub-to-Opera Solutions interface:

* The flat file layout sent from Opera Solutions is the same layout as the pre-audit flat file (v10) sent to Issuers with additional elements:
* Batch Identifier (ID)
* Record ID
* Issuer Tax ID
* Activity Indicator
* Policy Segment ID
* Superseded Indicator
* End-of-Year (EOY) Voluntary Term Indicator
* Plan Benefit Year
* Each flat file contains update information for enrollment groups per the Health Insurance Oversight System (HIOS).
* Opera Solutions sends flat files via the secured EFT mechanism.
* Each ZIP file received from Opera is a batch file that consists of flat files and a journal file.
* Each ZIP file contains flat files for one enrollment period: 2014, 2015, 2016, or 2017.
* The filename of the ZIP file the MPEDI sends to the FFM and the filenames of the data files inside the ZIP file have different file naming conventions.
* The journal file Opera generates is a pipe-separated value file (PSV file).
* The element 11 - Transaction Type Code in a flat file Opera sends does not contain a value of 2.
* The element 99 - Effectuation Effective Date Flag always contains a value of Y or N in the flat files received from Opera.
* If the element 99 - Effectuation Effective Date Flag does not contain a value, no AdditionalMaintenanceReason gets populated in the BUU XML file.
* The MPEDI continues to translate records for the EOY Voluntary term based on Transaction Type Code of 4 and Effectuation Effective Date Flag (Y/N) irrespective of the value sent in the EOY Voluntary term indicator on the flat file.

## Constraints

The following constraints apply to the Hub-to-Opera Solutions interface:

* Connectivity must exist between Opera Solutions and the Hub to process transactions.
* Each member record must contain the exact number of elements named in the flat file layout.
* The date and timestamp in the ZIP file the MPEDI generates must be the same as the date and timestamp sent in the Opera ZIP file.
* The date and timestamp in the journal file the MPEDI generates must be the same as the date and timestamp sent in the Opera ZIP file.
* The journal file the MPEDI generates is a PSV file.

## Risks

No risks currently apply to the Hub-to-Opera Solutions interface.

# General Interface Requirements

This section presents general interface requirements for the Hub-to-Opera Solutions Interface.

## Interface Overview

An overview of the Hub-to-Opera Solutions interface follows:

1. Opera Solutions sends a ZIP file containing flat files and a journal file to the MPEDI via the EFT mechanism. Opera Solutions places the ZIP file in the upload folder in EFT.
2. EFT moves the ZIP file to a folder location for the MPEDI to pick up the file.
3. The MPEDI picks up the ZIP file, archives the ZIP file, and unzips the file Opera Solutions sends.
4. The MPEDI verifies the following:

* If number of flat files sent in ZIP file matches number sent in Opera journal file
* If date and timestamp on ZIP file matches date and timestamp in Opera journal file

1. The system executes both these checks on every ZIP file received. If either one of these or both the checks fail, file processing stops and the MPEDI initiates an e-mail alert.
2. Only if both checks pass, the counts and date and timestamp match, the MPEDI translates the flat files into a BUU XML file.
3. If the translation is successful, the MPEDI validates the BUU XML file for its structure.
4. If the BUU XML file is valid, the MPEDI sends the BUU XML file to match counts from the journal file generated.
5. The MPEDI checks if all flat files sent in the batch translate in order to generate an MPEDI journal file.
6. If the translation process is not complete, the MPEDI waits until translation of the entire batch of flat files.
7. If the translation process is complete, the MPEDI generates a journal file.
8. The MPEDI generates a report for every flat file translated and sends the report to the Opera Solutions download folder via EFT. This report describes whether translation from flat file to BUU XML file and validation of the BUU XML file is successful.
9. The MPEDI verifies if the number of valid BUU XML files generated matches the number in the MPEDI journal file and also verifies if the total number of files in the MPEDI journal file matches the total number of files in the Opera Solutions journal file.
10. If the counts do not match, the MPEDI moves the files to an error folder and creates an e-mail alert.
11. If the counts match, the MPEDI zips the BUU XML files, the MPEDI journal file, and the Opera Solutions journal file.
12. The MPEDI sends the zipped file to the FFM via EFT.
13. The FFM picks up the XML file and validates the file for its structure.
14. If the XML file is valid, the FFM sends the file for further processing.
15. If the XML file is not valid, the FFM contacts the MPEDI Team via e-mail or phone and moves the file to an internal error folder within the FFM. Once the FFM processes the XML file, the FFM generates a Business Application Acknowledgement (BAA), which transmits directly to Opera Solutions.

Figure 1 - Opera Solutions/Hub Interface depicts an overview of the Hub-Opera Solutions interface.

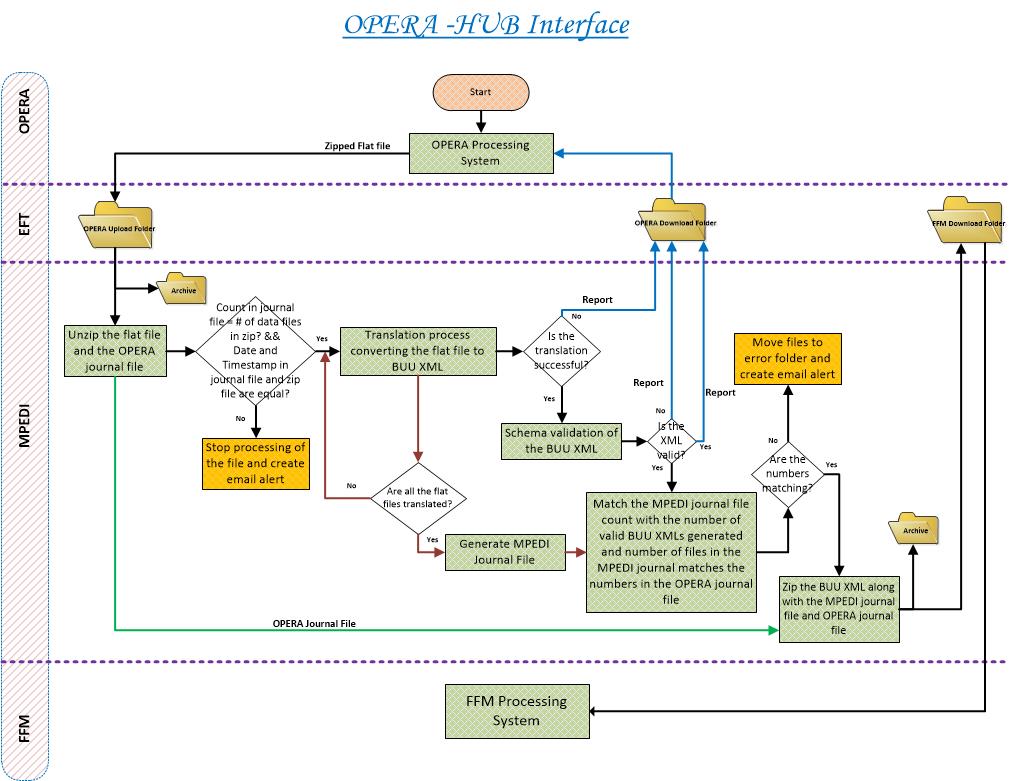


Figure 1 - Opera Solutions/Hub Interface

## Functional Allocation

Opera Solutions generates a flat file and sends the flat file to the MPEDI via EFT. The MPEDI translates the flat file into a BUU XML file and validates the BUU XML file for structure. The MPEDI sends a report to Opera Solutions via EFT for every flat file received. The report describes whether the translation from flat file to BUU XML file and validation of the BUU XML file was successful. If the translation or validation was not successful, the report contains an error message reporting failure. Opera Solutions determines the error and provides the correct file to the MPEDI.

## Data Transfer

Opera Solutions transmits the ZIP file to the Hub using EFT. Table 1 - File Naming Convention for ZIP File Sent from Opera Solutions to Hub and Table 2 - File Naming Convention for Data Files within ZIP File Opera Solutions Sends to Hub provide the file naming convention to follow when transmitting the flat file.

Table 1 - File Naming Convention for ZIP File Sent from Opera Solutions to Hub

| File Type | ZIP Filename Sent from Opera Solutions to EFT | ZIP Filename Sent from EFT to MPEDI |
| --- | --- | --- |
| ZIP File | OPR.FunctionCode.DYYMMDD.THHMMSSmmm.Environment | FunctionCode.OPR.DCCYYMMDD.THHMMSSmmm.Environment |

Table 2 - File Naming Convention for Data Files within ZIP File Opera Solutions Sends to Hub

| File Type | Data File Filename Sent from Opera Solutions to EFT | Data File Filename Sent from EFT to MPEDI |
| --- | --- | --- |
| Flat File | OPR.FunctionCode.DYYMMDD.THHMMSSmmm.Environment | OPR.FunctionCode.DYYMMDD.THHMMSSmmm.Environment |

The MPEDI unzips the file and verifies if the counts in the Opera journal file match the flat file sent within the ZIP file, and if the date and timestamp in the Opera journal file matches the ZIP file. If the counts don’t match or if the date and timestamp don’t match or both the checks fail, file processing stops and the MPEDI creates an e-mail alert. Only if both checks pass, the MPEDI translates the flat file into a BUU XML file and validates the XML file for structure. The MPEDI generates a journal file after translation of the batch of flat files is complete. The MPEDI verifies if the counts in the MPEDI journal file match the counts of valid BUU XML files generated. The MPEDI also verifies the number of files in the MPEDI journal file matches the number of files in the Opera Solutions journal file. If the counts don’t match, the MPEDI moves the files to an error folder and creates an alert. If the counts match, the MPEDI zips the BUU XML file, MPEDI journal file, and Opera journal file and sends the ZIP file to the FFM via EFT. Table 3 - File Naming Convention for ZIP File Sent from Hub to FFM and Table 4 - File Naming Convention for Data files within ZIP File Sent from Hub to FFM provide the file naming convention to follow for transmitting the ZIP File to the FFM via EFT.

Table 3 - File Naming Convention for ZIP File Sent from Hub to FFM

| File Type | ZIP Filename Sent from MPEDI to EFT | ZIP Filename Sent from EFT to FFM |
| --- | --- | --- |
| ZIP File | EDI.FunctionCode.DYYMMDD.THHMMSSmmm.Environment | FunctionCode.EDI.DCCYYMMDD.THHMMSSmmm.Environment |

Table 4 - File Naming Convention for Data files within ZIP File Sent from Hub to FFM

| File Type | Data File Filename Sent from MPEDI to EFT | Data File Filename Sent from EFT to FFM |
| --- | --- | --- |
| XML File | EDI.FunctionCode.DYYMMDD.THHMMSSmmm.Environment | EDI.FunctionCode.DYYMMDD.THHMMSSmmm.Environment |

The MPEDI generates a report for every flat file translated to a BUU XML file. The MPEDI sends this report back to Opera Solutions via EFT by placing the report in the Opera Solutions download folder. Table 5 - File Naming Convention for Report Sent from Hub to Opera Solutions provides the file naming convention to follow for transmitting the report to Opera Solutions via EFT.

Table 5 - File Naming Convention for Report Sent from Hub to Opera Solutions

| File Type | Filename Sent from MPEDI to EFT | Filename Sent from EFT to Opera Solutions |
| --- | --- | --- |
| XML File | EDI.FunctionCode.DYYMMDD.THHMMSSmmm.Environment | FunctionCode.EDI.DCCYYMMDD.THHMMSSmmm.Environment |

Table 6 - File Naming Standard presents specific information for each attribute in the flat file filename.

Table 6 - File Naming Standard

| Attribute | Description |
| --- | --- |
| Function Code | See Table 7 - Function Codes for 2014, 2015, and 2016. |
| DYYMMDD | Date in YYMMDD format where first character D is static |
| THHMMSSmmm | Time in HHMMSSmmm format where first character T is static |
| Environment | Environment Code - P is for Production Environment (PROD) and T is for non-PROD |

Table 8 - Opera Solutions/MPEDI Interface Processing Steps for Sending a ZIP file from Opera Solutions to the MPEDI provides function codes for 2014, 2015, 2016, and 2017 for the flat file, the BUU XML file, and the report in the Production Quarantine Environment (PRODQ) and PROD.

Table 7 - Function Codes for 2014, 2015, 2016, and 2017

| Year | Environment | Flat File | BUU Enrollment XML | Report |
| --- | --- | --- | --- | --- |
| 2014 | PROD | O834BP | I834BP | IBURP |
| 2014 | PRODQ | O834BU | I834BU | IBUR |
| 2015 | PROD | OCF15P | ICF15P | IBR15P |
| 2015 | PRODQ | OCF15 | ICF15Q | IBR15 |
| 2016 | PROD | OCF16P | ICF16P | IBR16P |
| 2016 | PRODQ | OCF16Q | ICF16Q | IBR16Q |
| 2017 | PROD | OCFP | ICFP | IBRP |
| 2017 | PRODQ | OCFQ | ICFQ | IBRQ |

## Transactions

Opera Solutions and the Hub use a secure EFT process to exchange data. The data Opera Solutions sends is a ZIP file, which contains flat files and a journal file. The flat file and the journal file Opera Solutions sends are PSV files.

## Security and Integrity

The TIBCO Managed File Transfer (MFT) tool enables Opera Solutions and the Federal DSH to transfer files using Secure File Transfer Protocol (SFTP). SFTP ensures that data securely transfers using a private and safe data stream.

To send files to the Hub, Opera Solutions must obtain a system ID and an SFTP client that supports Secure Shell (SSH)2 keys.

The platform provides different folders and access privileges to Opera Solutions. Opera Solutions has its own separate landing zone. UNIX-style access modes control folder access for applications.

TIBCO MFT provides the ability to perform full audits of file transfers. A log file contains information describing when each file was sent, where it was sent, to whom it was sent, and who initiated the transfer. The information is visible locally, but managed centrally.

# Detailed Interface Requirements

This section specifies the requirements for the interface(s) between the Federal DSH and Opera Solutions.

## Requirements for Hub-to-Opera Solutions Interface

This section provides requirements for Opera Solutions to exchange transactions between the MPEDI and the Federal DSH. Opera Solutions, the MPEDI, and the Federal DSH exchange the ZIP file via the EFT mechanism as a batch process.

### Assumptions

See Section 4.1 - Assumptions.

### General Processing Steps

Table 8 - Opera Solutions/MPEDI Interface Processing Steps for Sending a ZIP file from Opera Solutions to the MPEDI provides general processing steps and organizational responsibilities for transmitting ZIP files between Opera Solutions, the MPEDI, and the Federal DSH interfaces.

Table 8 - Opera Solutions/MPEDI Interface Processing Steps for Sending a ZIP file from Opera Solutions to the MPEDI

| Processing Steps | Responsible Organization | Description |
| --- | --- | --- |
| Generate a ZIP file that contains the updated flat file and a journal file to send to the FFM via the Hub. | Opera Solutions | Opera Solutions generates a ZIP file that contains the files updated during the pre-audit compare process, and a journal file, and sends the ZIP file to the MPEDI via EFT. The MPEDI unzips the file, translates the flat files into BUU XML files, generates a journal file, zips the BUU XML files, Opera journal file, and MPEDI journal file, and sends the ZIP file to the FFM via EFT. |
| Generate reports for a flat file the MPEDI receives; send the report back to Opera Solutions via EFT. | MPEDI | The MPEDI generates a report for every flat file translated to a BUU XML file, which MPEDI sends back to Opera Solutions via EFT. |

### Interface Processing Time Requirements

Opera Solutions sends the ZIP file that contains the flat files and a journal file to the Hub via EFT. The Hub receives the file in batch format. The EFT load determines the processing time for ZIP files sent from Opera Solutions to the MPEDI. The MPEDI scripts pick up the ZIP file from the EFT location every 5 minutes. The MPEDI processes the ZIP file on a near real-time basis.

### Message Format (or Record Layout) and Required Protocols

This section provides the layout details of the flat file exchanged between Opera Solutions, the MPEDI, and the Federal DSH.

#### File Layout

Figure 2 - Flat File Layout provides the layout of the flat file exchanged between Opera Solutions, the MPEDI, and the Federal DSH.



Figure 2 - Flat File Layout

Table 9 - MPEDI Journal File Layout provides the layout of the pipe separated file exchanged between the MPEDI and the FFM.

Table 9 - MPEDI Journal File Layout

| Element Name | Element Description |
| --- | --- |
| MIDAS Filename | Individual flat filename received from Opera (Multidimensional Insurance Data Analytics System (MIDAS)) |
| EDI Translated Filename | Individual translated BUU XML filename generated by MPEDI |
| EDI Report Filename | Individual XML Report filename generated by MPEDI |
| Policy Success Counts | Number of policies successfully translated for each file |
| Policy Failed Counts | Number of policies failed during translation for each file |
| Member Counts | Total number of members present in each file |
| Status | Identifies if file successfully translated and validated |
| Error Message | Identifies reason for translation or validation failure |

Figure 3 - BUU Service XML Schema presents the XML schema for the BUU Service.



Figure 3 - BUU Service XML Schema

#### Data Assembly Characteristics

See Section 6.1.4.1 - File Layout.

#### Field/Element Definition

Figure 4 - Flat File Data Elements provides the data elements present in the flat file mapping to elements in the BUU XML.



Figure 4 - Flat File Data Elements

### Communication Methods

Opera Solutions places the ZIP file that contains flat files and a journal file in their designated upload folder in EFT. EFT moves the ZIP file to a folder location for the MPEDI to pick up. The MPEDI picks up the ZIP file, unzips the file, and translates the files into a BUU XML file. The MPEDI validates the BUU XML file and generates a journal file. The MPEDI then zips the BUU XML file, MPEDI journal file, and Opera journal file, and sends the ZIP file to the FFM via EFT. For every flat file translated, the MPEDI places a report in the Opera Solutions-designated download folder for Opera Solutions to pick up. Figure 5 - EFT Folder Structure for Opera Solutions and Figure 6 - EFT Folder Structure for the FFM depict the EFT folder structure for Opera Solutions and the EFT folder structure for the FFM.

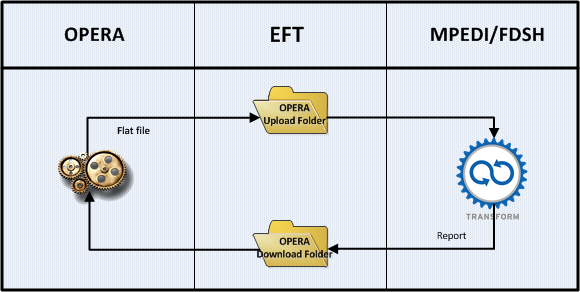


Figure 5 - EFT Folder Structure for Opera Solutions

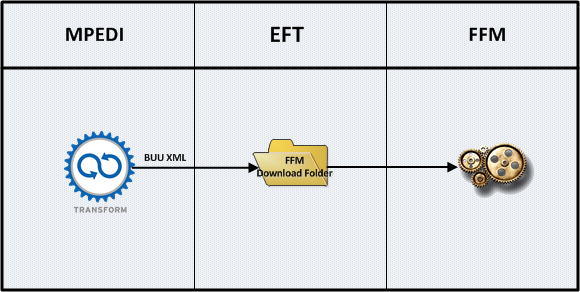


Figure 6 - EFT Folder Structure for the FFM

#### Interface Initiation

The following list provides the interface initiation sequence:

1. Opera Solutions sends the ZIP file that contains the flat files and a journal file to the MPEDI through EFT. Opera Solutions places the ZIP file in the Opera Solutions upload folder in EFT.
2. EFT moves the ZIP file to a folder location for the MPEDI to pick up the file.
3. The MPEDI picks up and unzips the ZIP file.
4. The MPEDI verifies the following:

* If counts in Opera journal file match flat files sent in ZIP file
* If date and timestamp in journal file match ZIP file

1. Upon verification, if one or both checks fail, file processing stops and the MPEDI generates an e-mail alert.
2. Only if both checks pass, the MPEDI translates the flat files into BUU XML files.
3. After translation of all flat files sent in the ZIP file, the MPEDI generates a journal file.
4. The MPEDI verifies if counts in the journal file match the valid BUU XML file generated, and if the number of files in the MPEDI journal file matches the Opera journal file.
5. If the counts don’t match, the MPEDI moves the files to an error folder and generates an e-mail alert.
6. If the counts match, the MPEDI zips the BUU XML file, Opera journal file, and MPEDI journal file.
7. The MPEDI places the ZIP file in the FFM download folder in EFT.

#### Flow Control

The following list provides the flow sequence:

1. Opera Solutions sends the ZIP file that contains the flat files and a journal file to the MPEDI through EFT. Opera Solutions places the ZIP file in the Opera Solutions upload folder in EFT.
2. EFT moves the ZIP file to a folder location for the MPEDI to pick up the file.
3. The MPEDI picks up and unzips the ZIP file, and translates the flat files into a BUU XML file.
4. The MPEDI performs schema validation on the translated BUU XML file.
5. The MPEDI generates a journal file after translation for the batch completes.
6. If the XML file is valid, the MPEDI zips the BUU XML file, Opera journal file, and MPEDI journal file and places the files in the FFM download folder in EFT.
7. The MPEDI sends a report back for every flat file translated from Opera Solutions via EFT. The report captures whether the flat file received translates and validates successfully. The MPEDI places the report in the Opera Solutions download folder in EFT for Opera Solutions to pick up the report. This report provides a summary of the XML elements in Table 10 - XML Element Summary. Figure 7 - Sample Report is a sample report.

Table 10 - XML Element Summary

| Summary Type | Elements |
| --- | --- |
| Flat File Summary | * Flat File - Name of flat file received from Opera Solutions * Number of Issuers - Total number of Issuers present in flat file based on HIOS ID * Number of Households - Total number of enrollment groups present in flat file * Number of Members - Total number of members present in flat file * Number of Dependents - Total number of dependents present in flat file * Number of Subscribers - Total number of subscribers present in flat file |
| Translation Summary | * Number of Issuers - Total number of Issuers translated * Number of Households - Number of enrollment groups translated * Number of Members - Total number of members translated * Number of Dependents - Total number of dependents translated * Number of Subscribers - Total number of subscribers translated |
| Issuer Summary | Root element repeated n times based on number of HIOS present in flat file   * Sequence - Count of Issuer(s) * HIOS ID - HIOS ID * XML Translation File - Filename of translated XML file * Number of Households - Number of Enrollment Groups present in XML file * Number of Members - Number of members present in XML file * Number of Dependents - Number of dependents present in XML file * Number of Subscribers - Number of subscribers present in XML file |
| Issuer Level Errors | Reports errors occurring during translation for particular Issuer   * Error ID Policy ID - Exchange-assigned ID of subscriber whose enrollment group had errors during translation * Error Message - Java error message |
| XML Schema Definition (XSD) | Schema validation errors   * Results * XSD Validation Error - Reason for schema validation failure |



Figure 7 - Sample Report

Note: The Team has not established a recovery procedure for failure of this interface.

### Security Requirements

The Federal DSH uses a secured TIBCO MFT solution for EFT. The EFT system uses a set of shared file systems that provide locations/landing zones for placing files to send to Opera Solutions and picking up files received from Opera Solutions. Operating system (OS)-level user permissions control access to the shared file systems. Opera Solutions interfaces with EFT via an SFTP client or browser-based interface, both of which use Lightweight Directory Access Protocol (LDAP) authentications.

# Qualification Methods

The Hub and Opera Solutions jointly verify integration and interface requirements for major design components of the system. Design component interfaces progress through different phases, or types, of testing (test types), ranging from basic connectivity to more complex scenarios involving business logic. The various test types included in this section present use cases, test scenarios, test cases, synthetic (i.e., manufactured) test data, and expected results supplies, as appropriate. The Team uses test results (expected and actual) to verify system requirements. The use of a shared or common Test Environment (TEST) ideally mirrors PROD.

Testing for each business service and multiple combinations of business services determines that the service performs as follows:

* Performs in accordance with documented specifications
* Responds correctly to all business conditions presented by incoming data
* Moves data correctly from one business event to next
* Initiates business events in order required to meet business objectives of system

Test scenarios include positive and negative scenarios to verify systems correctly process data when data is correct and incorrect. The Hub and Opera Solutions agree on the procedures and data to collect for each test, and agree on specific criteria for success and failure. Table 11 - Major Test Types presents major test types.

Table 11 - Major Test Types

| Test Type | Test Definition | Key Details | Test Objective |
| --- | --- | --- | --- |
| Connectivity Test | Network Connectivity | Opera Solutions sends test flat file to MPEDI | Verify Opera Solutions and the Hub have communication ports/protocols open to support subsequent testing types; ensure Opera Solutions can successfully send a file to the MPEDI. |
| Integration Test | Opera Solutions-to-Hub | Opera Solutions sends flat file to Hub | Verify interoperability of Opera Solutions system functionality, hardware, software, and business logic with the Hub. |

Appendix A - Interface Controls

This section is not applicable to the Opera Solutions ICD.

Appendix B - Glossary of Terms, Acronyms, and Definitions

Table 12 - Glossary of Terms, Acronyms, and Definitions provides terms, acronyms, and associated definitions for terms and acronyms in this document.

Table 12 - Glossary of Terms, Acronyms, and Definitions

| Term | Acronym | Definition |
| --- | --- | --- |
| Advance Payment of the Premium Tax Credit | APTC | APTC assists qualifying Individuals participating in a Marketplace with premium payment amounts. |
| Affordable Care Act | ACA | The ACA (also PPACA) reforms certain aspects of the private health insurance industry and public health insurance programs, including increasing insurance coverage of pre-existing conditions and expanding access to insurance to Americans, while mandating an increase in total national medical expenditures. |
| Basic Health Program | BHP | Under the ACA, the BHP gives States 95 percent of what the Federal Government would spend on tax credits and subsidies for out-of-pocket costs for adults with an income between 133 and 200 percent of the federal poverty level and legally resident immigrants with incomes below 133 percent of the federal poverty level whose immigration status disqualifies them from federally-matched Medicaid. |
| Batch Update Utility | BUU | The BUU corrects problems with enrollment records. |
| Business Application Acknowledgement | BAA | The BAA Service reports business errors on an 834 transaction. |
| Business Service Definition | BSD | A BSD is an iterative and interactive exercise that provides detailed definition of business services on a conceptual level. An organization defines a business service with strong business involvement, and transfers sufficient knowledge to the business to enable the business to generate advantage out of service oriented architecture-enabled flexibility. |
| Center for Consumer Information & Insurance Oversight | CCIIO | CCIIO oversees the implementation of the Affordable Care Act provisions related to private health insurance. |
| Centers for Medicare & Medicaid Services | CMS | CMS is a federal agency within the U.S. Department of Health and Human Services that administers the Medicare program and works in Partnership with State governments to administer Medicaid, the State Children’s Health Insurance Program, and health insurance portability standards. |
| Children’s Health Insurance Program | CHIP | CHIP is a program HHS administers that provides matching funds to States for health insurance to families with children. The program covers uninsured children in families with incomes that are modest but too high to qualify for Medicaid. |
| Concept of Operations | CONOP | The CONOP is a methodology that describes current business operations and envisions a future transformation that meets the needs of stakeholders. This is a living document. |
| Cost-Sharing Reduction | CSR | CSR refers to the reduction of costs for essential health benefits based upon individual income in relation to the federal poverty level. |
| Division of New Development | DND | DND is a division within OTS concerned with the development of new systems for CMS. |
| End-of-Year | EOY | EOY refers to the last day of the year. |
| Enterprise File Transfer | EFT | EFT refers to software solutions that facilitate the secure transfer of data from one computer to another through a network on an Enterprise level. |
| Expedited Life Cycle | XLC | XLC is a tailored approach to Project execution and governance based on Project risk. |
| Extensible Markup Language | XML | XML is a set of rules for encoding documents in a machine-readable format. |
| Federal Data Services Hub | Federal DSH | The Federal DSH, or the Hub, helps States verify the income, citizenship, and other information about individuals when they seek health coverage through health insurance marketplaces and for Medicaid and Children’s Health Insurance Programs. |
| Federal Exchange Program System | FEPS | The FEPS consists of an FFM, which serves the needs of individuals within States where those States do not have their own State-run Marketplace, and the Federal DSH, which provides common services and interfaces to federal agency information. |
| Federally Facilitated Marketplace | FFM | An FFM serves the needs of individuals within states where those States do not have their own State-run health insurance marketplace. |
| Flat File | N/A | A flat file is a database that stores data in a plain text file. Each line of the text file holds one record, with fields separated by delimiters, such as commas or tabs. |
| Government Printing Office | GPO | The GPO is an agency of the legislative branch that provides printing and binding services for Congress and the departments and establishments of the federal government. |
| Government Task Leader | GTL | The GTL is a CMS technical representative responsible for monitoring contractor technical progress in accordance with the SOW. |
| Health Insurance Oversight System | HIOS | The HIOS allows the government to collect data from States, individuals, and small group market Issuers, to aggregate with other data sources and publicize on a consumer-facing Website. |
| Identifier | ID | An ID is a unique identifying set of characters assigned to a person or persons to ensure privacy and security on a computer system or network. |
| Information Technology | IT | IT is the branch of engineering that deals with the use of computers and telecommunications to retrieve, store, and transmit information. |
| Interface Control Document | ICD | An ICD describes system interface characteristics, subsystems, hardware configuration items, computer software configuration items, manual operations, and other system components. |
| Issuer | N/A | An Issuer issues insurance to an Applicant. |
| Java | N/A | Java is a programming language for use in the distributed environment of the Internet. |
| Lightweight Directory Access Protocol | LDAP | LDAP is an application protocol for querying and modifying data using directory services running over TCP/IP. |
| Managed File Transfer | MFT | MFT enables Enterprises to manage and control the critical information flows that run their dynamic business networks. |
| Marketplace | N/A | A Marketplace is a transparent and competitive insurance marketplace where individuals and small businesses can buy qualified health benefit plans. Marketplaces offer a choice of health plans that meet certain benefits and cost standards. |
| Marketplace Electronic Data Interchange | MPEDI | MPEDI provides data translation services for the Federal DSH. |
| Medicaid | N/A | Medicaid is the federal system of health insurance for people requiring financial assistance. |
| Multidimensional Insurance Data Analytics System | MIDAS | MIDAS centralizes and consolidates business logic into a metadata repository required to report and manage performance of the ACA. |
| Opera Solutions | N/A | Opera Solutions, LLC is a technology and analytics company mainly focused on capturing profit growth opportunities emerging from big data. |
| Operating System | OS | An OS is an interface between the hardware and a user that is responsible for the management and coordination of activities, and the sharing of the resources of a computer; it acts as a host for computing applications run on the machine. |
| Partner | N/A | Partners consist of Web Brokers and Issuers. |
| Patient Protection and Affordable Care Act | PPACA | The PPACA (also ACA) reforms certain aspects of the private health insurance industry and public health insurance programs, including increasing insurance coverage of pre-existing conditions and expanding access to insurance to Americans, while mandating an increase in total national medical expenditures. |
| Pipe-Separated Value File | PSV File | A PSV file is a simple, text format for a database table. Each record in the table is one line of the text file. A pipe (vertical bar) separates each field value of a record from the next character. |
| Plain Writing Act of 2010 | N/A | The Plain Writing Act of 2010 requires that federal employees use plain writing in every document the agency issues or substantially revises. |
| Production Environment | PROD | The PROD is where an application or system resides that hosts actual/real data (as opposed to test data) |
| Production Quarantine Environment | PRODQ | PRODQ segregates incoming files until the system can verify that they pose no threat, such as viruses. |
| Project Manager | PM | A PM is responsible for the planning, execution, and closing of a Project. |
| Qualified Health Plan | QHP | A QHP is an insurance plan a Marketplace certifies that provides essential health benefits, follows established limits on cost-sharing (like deductibles, copayments, and out-of-pocket maximum amounts), and meets other requirements. |
| Quality Software Services, Incorporated | QSSI | QSSI delivers a broad range of solutions, with particular expertise in Security and Privacy, Software Engineering, and Health Information Technology. |
| Rapid Program Deployments Group | RPDG | The RPDG is responsible for supporting the development and maintenance of CMS information technology systems and maintaining the readiness of systems operations. |
| Section 508 | N/A | Section 508, of the American Rehabilitation Act, is a federal law mandating electronic and information technology (including documents) developed, procured, maintained, or used by the federal government be accessible to people with disabilities. |
| Secure File Transfer Protocol | SFTP | SFTP is a network protocol that provides file access, file transfer, and file management functionality over a reliable data stream. |
| Secure Shell | SSH | SSH is a network protocol that allows data exchange using a secure channel between two networked devices. |
| Statement of Work | SOW | An SOW is a formal document that captures and defines the work activities, deliverables, and timeline a vendor executes in performance of specified work for a customer. |
| Test Environment | TEST | TEST is the environment where all testing of the system occurs. |
| TIBCO | N/A | TIBCO (previously The Information Bus Company) is a provider of infrastructure software for companies to use on premise or as part of cloud computing environments. |
| Trusted Data Source | TDS | TDSs are recognized, primary sources of valid and trusted data. TDSs provide secure information to support business processes and include federal agencies, State agencies, and other entities. |
| UNIX | N/A | UNIX is a multi-user operating system used to create most of the programs and protocols that built the Internet. |
| XML Schema Definition | XSD | XSD is a term for the XML Schema language. |
| ZIP File | N/A | ZIP is a file format for data compression and archiving. A ZIP file contains one or more compressed files that reduce file size. |
| Marketplace IT Group | MITG | MITG is a division of CMS, CCIIO. |
| Division of Project Management and Governance | DPMG | The DPMG is a department within the CMS, OTS, MITG. |
| Division of Marketplace IT Development | DMITD | DMITD is a division of CMS, CCIIO, Marketplace IT Group. |
| Chief Technology Officer | CTO | A CTO is an executive-level officer in a company or other entity whose focus is scientific and technological issues within an organization. |

Appendix C - Referenced Documents

Table 13 - Referenced Documents lists documents and standards this document references or that are applicable to the development of this document.

Table 13 - Referenced Documents

| Document Name | Date |
| --- | --- |
| Assuring Access to Affordable Coverage - Medicaid and CHIP Final Rule  <https://www.medicaid.gov/affordable-care-act/provisions/downloads/medicaidchip-eligibility-final-rule-fact-sheet-final-3-16-12.pdf> | March 16, 2012 |
| CMS Expedited Life Cycle (XLC) ICD Template v3.0  <https://www.cms.gov/Research-Statistics-Data-and-Systems/CMS-Information-Technology/XLC/Artifacts.html#ArtifactsI-P> | February 23, 2016 |
| Federal DSH Style Template  DSH\_Format\_Template | June 2016 |
| Federal Exchange Program System (FEPS) DSH Statement of Work (SOW) - Modification 11  DSH\_Mod\_11\_SOW | September 14, 2014 |
| Making Documents Section 508 Compliant  <https://www.cms.gov/Research-Statistics-Data-and-Systems/CMS-Information-Technology/Section508/508-Compliant-doc.html> | November 29, 2016 |
| Plain Writing Act of 2010  <http://www.plainlanguage.gov/plLaw/> | October 13, 2010 |
| PPACA  <https://www.gpo.gov/fdsys/pkg/BILLS-111hr3590enr/pdf/BILLS-111hr3590enr.pdf> | March 23, 2010 |
| U.S. Government Printing Office (GPO) Style Manual (30th Edition)  <https://www.gpo.gov/fdsys/pkg/GPO-STYLEMANUAL-2008/content-detail.html> | September 16, 2008 |

Appendix D - Record of Changes

Table 14 - Record of Changes

| Version | Date | Revision/Change Description |
| --- | --- | --- |
| 1.0 | July 2014 | DSH\_INT\_ICD\_Hub\_Opera |
| 2.0 | February 2015 | DSH\_INT\_ICD\_Hub\_Opera  Various font, grammatical, punctuation, shading, formatting, date, version, pagination, glossary, and alignment corrections  Updated Figure 1 - Opera Solutions/Hub Interface  Updated Table 1 - File Naming Convention for ZIP File Sent from Opera Solutions to Hub  Updated Table 2 - File Naming Convention for ZIP file sent from Hub to FFM  Updated Table 3 - File Naming Convention for Report sent from Hub to Opera Solutions  Added Table 7 - Function Codes for 2014, 2015, and 2016  Updated Figure 5 - EFT Folder Structure for the FFM  Updated process in Section 5.1 - Interface Overview to expand process when XML file fails validation  Added Table 10 - XML Element Summary  Added Section 8 - XML Schema  Updated title for Kirk Grothe in Table 15 - Approvals  Updated CMS Business Owner from James Kerr to Mandy Cohen in Table 15 - Approvals |
| 2.1 | June 2015 | DSH\_INT\_ICD\_Hub\_Opera  Various font, grammatical, punctuation, shading, formatting, date, version, pagination, glossary, and alignment corrections  Updated EDI to MPEDI throughout document  Updated Section 4.1 - Assumptions  Updated Section 5.1 - Interface Overview  Updated Section 6.1.4.3 - Field/Element Definition  Updated Section 8 - XML Schema  Added Asad Shah, Requirements Team Lead to Table 15 - Approvals removed unnecessary signatories |
| 3.0 | August 2015 | DSH\_INT\_ICD\_Hub\_Opera  Various font, grammatical, punctuation, shading, formatting, date, version, pagination, glossary, and alignment corrections  Updated Section 4.1 - Assumptions  Updated Section 4.2 - Constraints  Updated Figure 1 - Opera Solutions/Hub Interface  Updated Section 5.1 - Interface Overview  Updated Section 5.3 - Data Transfer  Updated Section 5.4 - Transactions  Updated Section 6.1 - Requirements for Hub-to-Opera Solutions Interface  Updated Table 6 - Opera Solutions/MPEDI Interface Processing Steps for Sending a ZIP file from Opera Solutions to the MPEDI  Updated Section 6.1.3 - Interface Processing Time Requirements  Updated Figure 2 - Flat File Layout  Added Table 9 - MPEDI Journal File Layout  Replaced Benefit Enrollment with BUU globally  Replaced Figure 3 - Flat File Data Elements  Updated Section 6.1.5 - Communication Methods  Updated Section 6.1.5.1 - Interface Initiation  Updated Section 6.1.5.2 - Flow Control |
| 3.1 | November 2015 | DSH\_INT\_ICD\_Hub\_Opera  Various font, grammatical, punctuation, shading, formatting, date, version, pagination, glossary, and alignment corrections  CMS XLC ICD Template  Updated Section 4.1 - Assumptions  Added Table 2 - File Naming Convention for Data Files within ZIP File Opera Solutions Sends to Hub  Added Table 4 - File Naming Convention for Data files within ZIP File Sent from Hub to FFM  Updated Table 7 - Function Codes for 2014, 2015, and 2016 |
| 4.0 | April 2016 | DSH\_INT\_ICD\_Hub\_Opera  Various font, grammatical, punctuation, shading, formatting, date, version, pagination, glossary, and alignment corrections  Updated Section 4.1 - Assumptions  Updated Figure 2 - Flat File Layout  Updated Figure 3 - BUU Service XML Schema  Updated Figure 4 - Flat File Data Elements |
| 4.1 | November 2016 | DSH\_INT\_ICD\_Hub\_Opera  Various font, grammatical, punctuation, shading, formatting, date, version, pagination, glossary, and alignment corrections  Added 2017 to the list of OE years globally  Updated Table 7 - Function Codes for 2014, 2015, 2016, and 2017 |
| 5.0 | February 2017 | DSH\_INT\_ICD\_Hub\_Opera  Various font, grammatical, punctuation, shading, formatting, date, version, pagination, glossary, and alignment corrections  Updated Section 4.1 - Assumptions  Updated Section 5.1 - Interface Overview  Updated Figure 1 - Opera Solutions/Hub Interface  Updated Section 5.3 - Data Transfer  Updated Table 8 - Opera Solutions/MPEDI Interface Processing Steps for Sending a ZIP file from Opera Solutions to the MPEDI  Updated Section 6.1.5.1 - Interface Initiation |
| 5.1 | June 2017 | DSH\_INT\_ICD\_Hub\_Opera  Various font, grammatical, punctuation, shading, formatting, date, version, pagination, glossary, and alignment corrections  Updated Figure 3 - BUU Service XML Schema and Figure 4 - Flat File Data Elements |

Appendix E - Approvals

The undersigned acknowledge they have reviewed the ICD and agree with the information within this document. The undersigned, or their designated representatives, coordinate and approve changes to this ICD.

Table 15 - Approvals

| Document Approved By | Date Approved |
| --- | --- |
|  |  |
| Name: Jagadish Gangahanumaiah, Federal DSH Project Manager (PM), Quality Software Services, Incorporated (QSSI)  Role: Submitting Organization Approving Authority | Date |
|  |  |
| Name: Nalisa Jones, Marketplace IT Group (MITG), Division of New Development (DND), Division of Project Management and Governance (DPMG), Federal DSH Government Task Leader (GTL), CMS  Role: CMS Approving Authority | Date |
|  |  |
| Name: Kathryn Wetherby, Director, Division of Marketplace IT Development (DMITD), MITG, CMS  Role: CMS Approving Authority | Date |
|  |  |
| Name: Bobby Saxon, Chief Technology Officer (CTO), Center for Consumer Information & Insurance Oversight (CCIIO), CMS  Role: CMS Approving Authority | Date |
|  |  |
| Name: Letitia Royal, Group Director, MITG, CMS  Role: CMS Approving Authority | Date |
|  |  |
| Name: Aparna Kumar, Project Director, OPERA  Role: OPERA Approving Authority | Date |
|  |  |
| Name: Kim Kordosky, Principal Technical Architect, OPERA  Role: OPERA Approving Authority | Date |