



Fannie Mae®

Fannie Mae
Implementation Guide for Loan Delivery Data

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Document Updates

The Implementation Guide for Loan Delivery Data (Implementation Guide) is authored by Fannie Mae. This document is intended for approved Fannie Mae sellers registered for Loan Delivery and other industry participants, including third-party technology solution providers that currently support the loan delivery XML file for Fannie Mae. The updates documented here are required under the Uniform Mortgage Data Program[®], through which Fannie Mae and Freddie Mac implemented the Uniform Loan Delivery Dataset (ULDD) under the direction of the Federal Housing Finance Agency.

The Implementation Guide will be updated as needed with sufficient notice before the changes are effective. To learn about future updates to the Implementation Guide:

- Sign up for Fannie Mae's Single-Family alerts at https://www.fanniemae.com/s/profile/notification?cmpid=EMAIL_PROMO.
- Visit the Fannie Mae's Loan Delivery Data Requirements page available on FannieMae.com at <https://www.fanniemae.com/singlefamily/uniform-loan-delivery-dataset-uldd> to download the latest Implementation Guide.



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Document Version and Revision History

Date	Version #	Description
June 28, 2010	1.0	Initial version
July 6, 2010	1.0.1	Updated: <ul style="list-style-type: none"> Section 3 Implementation Milestones – changed the <i>Mandate Release Phase I</i> – Early Q3 2011 timeframe to September 1, 2011. Section 6.6 UTF-8 Support – corrected ASCII 32-128 to ASCII 32-127 character set.
August 25, 2010	1.0.2	<ul style="list-style-type: none"> Removed Fannie Mae Delivery of Second Lien with Associated First Lien (Related Loan) from Usage Scenarios and XML Samples. Updated Data Format Type table to include DD (day) and YYYY (year) data formats. Usage scenarios titles to match Appendix B: Fannie Mae Usage Scenarios document. Information about the <i>Early Readiness Release</i> with phases and timelines. Provided additional information about the test tool.
March 29, 2011	1.0.3	<ul style="list-style-type: none"> Information about the <i>Mandate Release Phase I</i> with timelines. Updated Appendix A: Fannie Mae XML Data Requirements table. Added new column names and column definitions. Added information about Appendix D: Fannie Mae XML Data Reference. Added information about Fannie Mae XML Data Requirements Reference Tool for Phase I. Provided URL to access the MISMO Version 3.0 Candidate Recommendation 2010-05 Reference Model. Provided additional documents and URLs to Additional Resource section.
May 24, 2011	1.0.4	<ul style="list-style-type: none"> Section 5.2 Appendix B: Fannie Mae Usage Scenarios: <ul style="list-style-type: none"> Removed Scenario 4.4 Escrows. Added Scenario 4.5. Lender Paid Mortgage Insurance and Scenario 7. Fannie Mae Fixed-Rate Modification – Whole Loan Delivery. Section 5.3 Appendix C: Fannie Mae XML Samples: <ul style="list-style-type: none"> Added Scenario 7. Fannie Mae Fixed-Rate Modification – Whole Loan Delivery. Added section (6.8) called Managing Loan Delivery XML File Imports.
December 20, 2011	1.0.5	<ul style="list-style-type: none"> Updated ULDD Mandate date from March 19, 2012 to July 23, 2012. Updated the Fannie Mae ULDD implementation date from January 23, 2012 to April 23, 2012.
February 21, 2012	1.0.6	<ul style="list-style-type: none"> Updated the URLs for USPS and ISO 3166 standard (International Organization for Standardization). Updated the MISMO hyperlinks and instructions to access the Version 3.0 Candidate Recommendation 2010-05 Reference Model and associated Logical Data Dictionary.
August 7, 2015	2.0.0	<ul style="list-style-type: none"> Updated to remove references to initial implementations and refreshed content to make it current.
March 28, 2017	3.0.0	<ul style="list-style-type: none"> Updated to include references to extension containers needed for expanded HMDA data and ULI data in ULDD Phase 3. Updated to include support (with examples) of extension containers. Updated Appendix B references to include expanded/updated test cases. Reviewed and fixed all links in document.
June, 2018	3.0.1	<ul style="list-style-type: none"> Updated to remove references to past implementations Updated language around Phase 3 implementation, specifically resources supporting new requirements.



1. Introduction and Purpose

Under the direction of Federal Housing Finance Agency (FHFA), Fannie Mae and Freddie Mac, the government-sponsored enterprises (the GSEs), have defined and agreed upon a common set of loan delivery data requirements applicable to each GSE's loan delivery process and business policies. The Mortgage Industry Standards Maintenance Organization's (MISMO[®]) Version 3.0 Reference Model serves as the basis for the Uniform Loan Delivery Dataset (ULDD) that Fannie Mae requires for all single-family loan deliveries.

Uniform data requirements support improved quality and accuracy of the data while preserving each GSE's ability to determine what the data means to loan performance and loan quality in their individual businesses. The GSEs continue to exercise independent business judgment in evaluating, adopting, and maintaining business terms, credit policies, and analytics that are part of our individual customer relationships. Differences remain due to our unique business policies, mortgage products, and processes. The existence of the Uniform Loan Delivery Dataset helps both sellers and the GSEs manage risk through efficient collection and use of consistent information about loan terms, collateral, and borrowers.

2. Implementation Guide Overview

The Implementation Guide is designed to assist industry participants implement the MISMO Version 3.0 Reference Model in their loan delivery applications to meet Fannie Mae's requirement for submitting single-family loan delivery data in the MISMO XML file format.

The basic loan delivery XML file supported by each GSE was originally documented in the Uniform Loan Delivery Data Specification (ULDDS), where the differences in the data conditionality and/or supported enumerated values based on each GSE's credit policy and delivery eligibility requirements were highlighted. Due to the differences in how each GSE's loan delivery application supports data points and enumerated values, the ULDDS was discontinued and each GSE maintains GSE specific Implementation Guides. This Implementation Guide is specific to Fannie Mae's implementation of the ULDD and requirements for submitting loan delivery data in the MISMO file format to Fannie Mae's Loan Delivery application.

This Fannie Mae Implementation Guide includes the following Fannie Mae-specific requirements and information:

- Fannie Mae-supported enumerations (allowable values) for the corresponding MISMO data points when the field format is enumerated.
- The ULDDS Conditionality documented in Appendix D: Fannie Mae XML Data Reference lists Conditionally Independent (CI) data points, noting differences in GSE conditionality. This Implementation Guide further defines CI data points as either Required (R), Conditionally Required (CR), or Optional (O) for purposes of delivery to Fannie Mae; refer to diagram below.

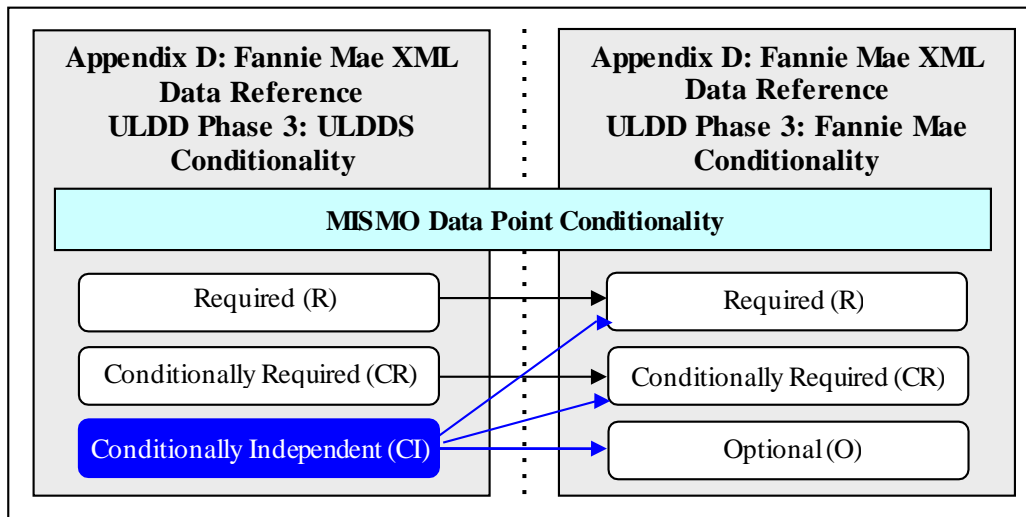


Figure 1 - ULDDS to ULDD Conditionality Mapping

- Implementation notes are Fannie Mae specific and provide business requirements clarification.

3. Introduction to MISMO Version 3.0

MISMO is the leading technology standards development body for the residential and commercial real estate finance industries. It is a wholly owned subsidiary of the Mortgage Bankers Association. The MISMO standards are grounded in an open process to develop, promote, and maintain voluntary electronic commerce procedures and standards that allow mortgage lenders, investors in real estate and mortgages, servicers, industry vendors, borrowers, and other parties to exchange real estate finance–related information and eMortgages more securely, efficiently, and economically.¹

In May 2010, the MISMO Residential Governance Committee approved the publication of the MISMO Version 3.0 Reference Model. MISMO Version 3.0 is designed to facilitate one data model, which promotes data transparency and strengthens data validation. This model was updated in May of 2010. The XML-based MISMO Version 3.0 uses the full World Wide Web Consortium (W3C[®]) schema standard. It uses a common architecture and logical model, which results in the same format for any origination process and between processes (for example, between loan origination, secondary market, and loan servicing). This approach results in a consistent data structure with greater interoperability and efficiency of reuse.

The ULDD identified in the Appendix D: Fannie Mae XML Data Reference is a subset of the complete MISMO Version 3.0 Reference Model, which will be used for the GSE loan delivery applications. The data is obtained from the MISMO Version 3.0 Schema published in May 2010 (see reference in table below). When updates are made to Appendix D: Fannie Mae XML Data Reference, we will provide the MISMO version and date of the schema used during our data mapping process. We will likewise update Fannie Mae documents. Fannie Mae may update this Implementation Guide in response to changes to the ULDD, or as Fannie Mae business needs may require.

¹ www.mismo.org



Table 1 - MISMO Version URL

Title and URL	Source	Date
Version 3.0 Residential Reference Model http://www.mismo.org/standards-and-resources/residential-specifications/mismo-version-30	MISMO	2010-05

Fannie Mae actively participated in the MISMO Workgroups that defined the MISMO Version 3.0 standards. The MISMO Workgroup’s membership included technical and business representation from key mortgage industry lenders and vendors. The use of industry-standard documents and data is recognized as a critical component for industry automation, streamlining, and interoperability.

The MISMO Version 3.0 Reference Model Identifier 3.0.0.263.12 continues to be the basis for the ULDD. As MISMO continues to publish newer versions of the Reference Model, Fannie Mae will work with Freddie Mac to evaluate the Model to determine whether to implement the new version. With the release of ULDD Phase 3, some data points are leveraged from MISMO Reference Model v3.4 and are included as extensions to the MISMO Reference Model v3.0. See section 5.12 *Supporting Extensions in MISMO Version 3.0 Reference Model* for further details.

4. Technical Overview

The Implementation Guide is designed to be used in combination with the following documents that work together to form the basis for creating a Fannie Mae loan delivery XML file. Refer to the following appendices and tools (which are provided as separate documents). Descriptions of each appendix are provided below:

- Appendix A: Fannie Mae XML Data Requirements
- Appendix B: Fannie Mae Usage Scenarios
- Appendix C: Fannie Mae XML Samples
- Appendix D: Fannie Mae XML Data Reference
- Appendix E: MISMO V. 3.0 Reference Model and ULDD Extension schema (.zip)
- ULDD Phase 3 Integration Test Cases

Table 2 - MISMO Reference Model and LDD URL

Document Name	URL
MISMO Version 3.0 Candidate Recommendation 2010-05 Reference Model and Logical Data Dictionary	<p>These two files are available at http://www.mismo.org/standards-and-resources/residential-specifications/mismo-version-30</p> <p>Note: Other versions of the MISMO Version 3.0 Reference Model are not compatible with the ULDD implementation.</p> <p><i>*Create a User ID and password to access files on the MISMO website; send questions regarding the MISMO website to info@mismo.org.</i></p>



The following subsections provide details about the appendices, which are key implementation documents.

4.1. Appendix A: Fannie Mae XML Data Requirements (PDF version)

Appendix A is a protected static view of Appendix D in PDF format. This is provided as a convenience for users with a fixed view of the data. Refer to the Appendix D section below for additional details and context.

4.2. Appendix B: Fannie Mae Usage Scenarios

Easy-to-follow usage scenarios are provided for several mortgage loan products and pools that capture fictitious data to illustrate how the loan delivery data is populated within the corresponding loan delivery XML file.

Additionally, as part of ULDD Phase 3, Appendix B includes:

- 10 borrower demographic information test cases that provide guidance when working with complex demographic information, including URLA screen shots.
- One test case shared by Fannie Mae and Freddie Mac, containing test borrowers who have a credit report profile compatible with DU.
- A graphic representation of the Demographic Information container structure.

4.3. Appendix C: Fannie Mae XML Samples

To support the usage scenarios and illustrate how the loan delivery data is populated within the loan delivery XML file, several XML file samples are provided. The XML samples reflect the data captured in usage scenarios applicable to Fannie Mae’s Loan Delivery application.

4.4. Appendix D: Fannie Mae XML Data Reference (Excel version)

Appendix D details the specific data points that support Fannie Mae’s unique business process and policy requirements. This document is designed to provide a flexible format for viewing, sorting, and understanding the data points in Excel format. This provides sellers and vendors with the ability to determine the appropriate use of each data point as it applies to Fannie Mae’s Loan Delivery application.

The Appendix D was created to enable an easy merge between the Fannie Mae and Freddie Mac Business Implementation Guide updates. Using the Sort ID column will assist sellers and vendors in reconciling the accuracy of the merge and any changes they make in their working versions of this document.

Appendix D consists of the following columns:

Table 3 - Column Names and Descriptions

Column Name	Column Name Description
Sort ID	This column lists the unique number assigned to the MISMO data point, which provides the ability to sort and display the data in the original order.
FNM Data Point Mandate Date	This column lists the Fannie Mae mandate date for the data point. The mandate date is the date on which the data point is required to be delivered for all loans.
FNM Revision Effective Date	This column lists the Fannie Mae effective date for the data point revision.
Change Description (Columns Updated)	This column contains a description of whether the data point is new to the Fannie Mae ULDD specification, or if it is an existing data point that requires an update and which column or columns contain the change.



Column Name	Column Name Description
Data Point New / Net New / Revision	This column lists data points by the type of implementation work required (e.g. implement a new data point or revise an existing data point). New indicates a data point that is new for Fannie Mae only. Net new indicates a new data point for both GSEs.
Data Point Change Type	This column lists data points by more specific type of implementation work required related to whether it is labeled as 'new', 'net new', or as a 'revision' in the 'Data Point New / Revision' column.
XPath	This column lists the XPath used to navigate through the XML document to the corresponding MISMO data point.
Parent Container	This column lists the parent container name of the corresponding MISMO data point.
MISMO Data Point Name	This column lists the MISMO term name for a corresponding data element or attribute.
MISMO Definition	This column lists the MISMO definition for the corresponding data point.
Loan Role Type	This column only applies to MISMO data points in the LOAN container and lists the following Loan Role Type values: <ul style="list-style-type: none"> • SubjectLoan • RelatedLoan The cell is blank when the data point is not in the LOAN container.
Loan State Type	This column only applies to MISMO data points in the LOAN container and lists one or more of the following Loan State Type values: <ul style="list-style-type: none"> • AtClosing • AtModification • Current The cell is blank when the data point is not in the LOAN container.
Party Role Type	This column only applies to MISMO data points in the PARTY container and lists the following Party Role Type values: <ul style="list-style-type: none"> • Appraiser • AppraiserSupervisor • Borrower • DocumentCustodian • HomeownersAssociation • LoanDeliveryFilePreparer • LoanOriginationCompany • LoanOriginator • LoanSeller • NotePayTo • Payee • Servicer • WarehouseLender The cell is blank when the data point is not in the PARTY container.



Column Name	Column Name Description
ULDDS Conditionality	<p>This column lists the GSE conditionality of the corresponding MISMO data point as originally defined in the ULDDS. The conditionality column lists contains one of three indicators:</p> <ul style="list-style-type: none"> • Required (R): The corresponding data point must be included in the loan delivery XML file on all loan delivery transactions. • Conditionally Required (CR): The corresponding data point must be included in the loan delivery XML file on all loan delivery transactions when a defined business condition exists. These conditions are consistent for each of the GSEs' loan delivery applications. • Conditionally Independent (CI): The corresponding data point must be included in the loan delivery XML file on all loan delivery transactions when a defined business condition exists. These conditions are NOT consistent for both of the GSEs' loan delivery applications. Refer to the GSE's Conditionality column to determine the appropriate usage of the data point.
FNM Conditionality	<p>This column lists the Fannie Mae conditionality of the corresponding MISMO data point. The column lists one of two conditionality indicators:</p> <ul style="list-style-type: none"> • Required (R): The data point must be included in the loan delivery XML file on all loan delivery transactions. • Conditionally Required (CR): The corresponding data point must be included in the loan delivery XML file on all loan delivery transactions when a defined business condition exists. These conditions are consistent for each of the GSEs' loan delivery applications. The conditionally required parameters are provided as well. • Optional (O): The corresponding data point is listed as an R or CR in Freddie Mac's ULDD. Incorporating these data points as part of system interfaces and processes is optional for Fannie Mae submissions.
FNM Conditionality Details	<p>This column provides the criteria for the Fannie Mae conditionality of the corresponding MISMO data point.</p>
FNM Implementation Notes	<p>This column provides additional instructions or clarification for supporting the corresponding MISMO data point.</p>
ULDDS Format	<p>This column lists the data format types supported by the ULDD:</p> <ul style="list-style-type: none"> • Amount • Boolean • Date • Datetime • Day • Enumerated • Numeric • Percent • String <p>Refer to section 5.10, Data Format Type, for additional information about the supported data value formats.</p>



Column Name	Column Name Description
FNM Supported Enumerations	This column only applies to MISMO data points with enumerated indicator and lists the Fannie Mae supported MISMO enumerations (allowable values) for the corresponding MISMO data point. The cell is blank when the MISMO data point does not have associated valid values.
FNM Format	This column identifies a number of data points where Fannie Mae has a different format length restriction compared to the format length specified in the ULDDs Format column. An asterisk (*) indicates there is a difference.

The column definitions enclosed in the table above are also provided in the *Column Description* tab available in Appendix D: Fannie Mae XML Data Reference

5. Creating an XML File

The loan delivery XML file must be created using the XML format described in Appendix A (or D): Fannie Mae XML Data Reference, which is based on the Uniform Loan Delivery Dataset and MISMO Version 3.0 Reference Model. Additional data points not available in the MISMO Version 3.0 Reference Model are accessed using extension containers.

The MISMO Version 3.0 Reference Model provides all the data elements, attributes, and enumerated values. Refer to Appendix A (or D): Fannie Mae XML Data Reference for the full details on the elements, attributes, and enumerated values that are supported, as well as the conditionality rules for each MISMO data point.

If an enumerated value is needed that is not currently in the MISMO Version 3.0 Reference Model, the enumerated value of “Other” with the corresponding “OtherDescription” for that field will be used. When the “OtherDescription” field is used, the specific allowable content will be defined by Fannie Mae. Refer to Appendix A (or D): Fannie Mae XML Data Requirements to determine which MISMO-enumerated values are supported in the “OtherDescription” data point. Free-form text may be supported when specified for individual “OtherDescription” fields. When appropriate, Fannie Mae will work with Freddie Mac and the MISMO Workgroups to have new data values defined and incorporated into the enumerated fields in a future version of the MISMO Reference Model.

The order of the data elements within the loan delivery XML file is very important and must match the order outlined in the MISMO Version 3.0 Reference Model. The order of the attributes within each element is not significant. It is highly recommended that systems support a parser that complies with the W3C XML specifications. The loan delivery XML file must be well-formed and fully validated, and it must adhere to the MISMO Version 3.0 Reference Model standard. The following two files are available as part of the Reference Model, and required to validate the loan delivery XML file using a parser:

- MISMO_3_0.xsd
- xlink.xsd

In order to include the extension containers within the MISMO_3_0.xsd file and have it validate correctly, a reference to an extension schema must be included with the MISMO_3_0.xsd file. Including the following file:

- ULDD_Phase_3_Extension.xsd

This allows the schema to load properly and place the extension containers in the proper location and validate. See section 5.12 *Supporting Extensions in MISMO Version 3.0 Reference Model* for additional details.



5.1. XML Container Hierarchy

There are many containers within the full MISMO Version 3.0 Reference Model; the ULDD only utilizes a subset. Figure 2 (below) provides a high-level overview of the MISMO Version 3.0 Reference Model and container hierarchy structure documented in the ULDD Specification.

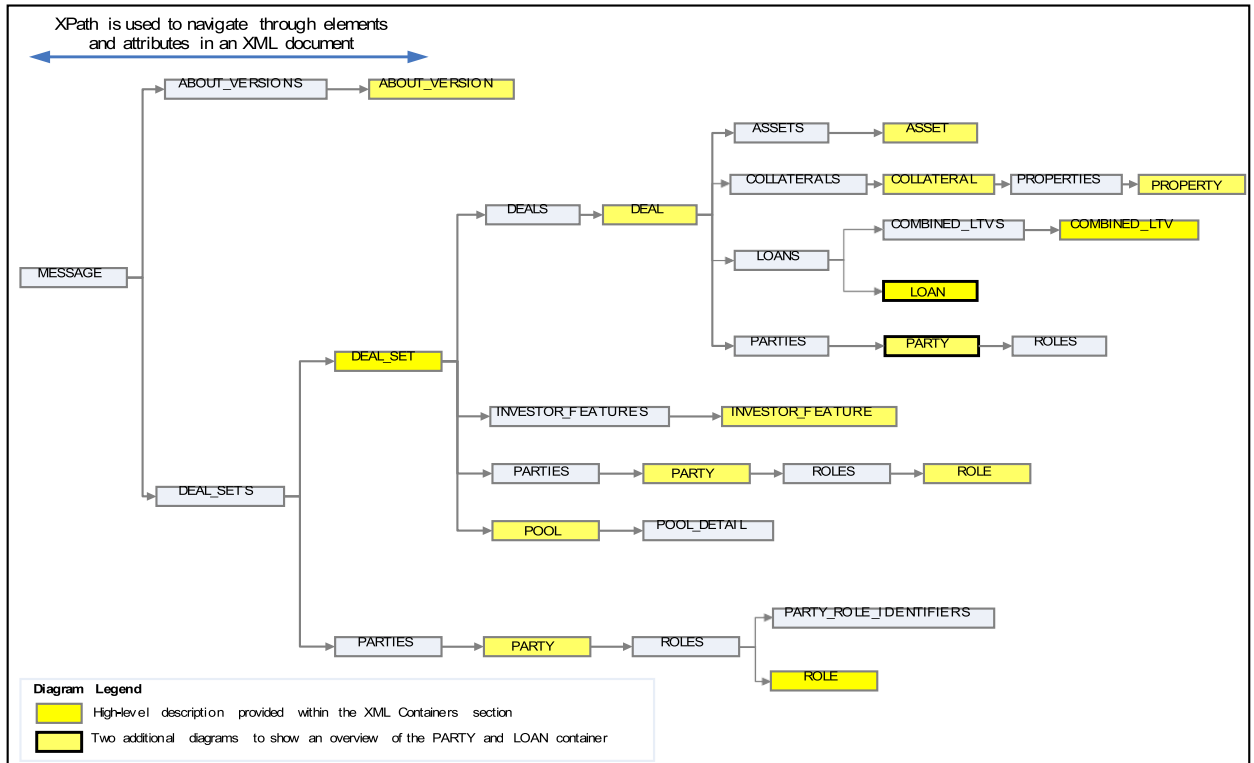


Figure 2 - MISMO Version 3.0 Reference Model - High - Level Container Hierarchy Overview

In order to provide access to newer data points in the later versions of the MISMO Reference Model, extension containers are leveraged. This allows the data points to be represented in the MISMO Version 3.0 Reference Model. In ULDD Phase 3, extension containers are used to deliver updated borrower demographic information, as well as the Universal Loan Identifier.

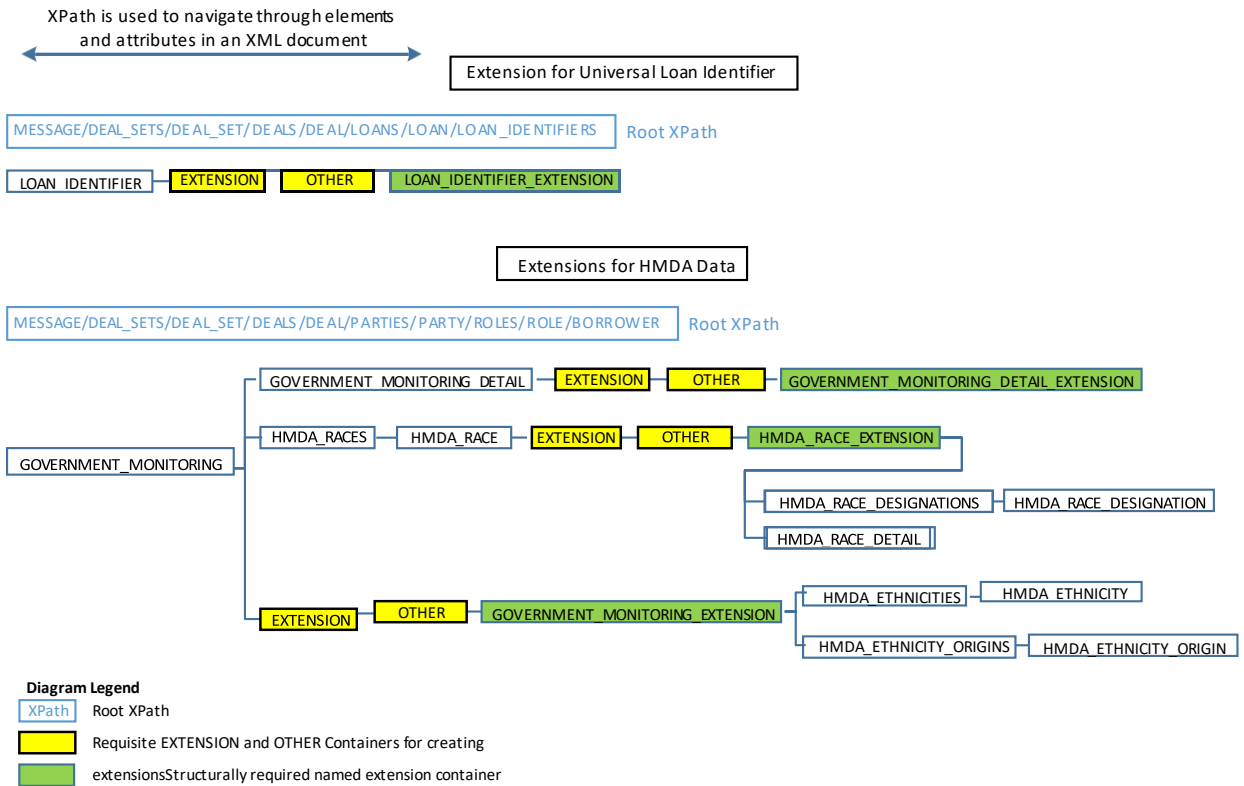


Figure 3 – Extension Hierarchy in MISMO Version 3.0 Reference Model

5.2. XML Container Description

The MISMO Version 3.0 Reference Model utilizes a hierarchical container structure as shown in Figure 1. The loan delivery XML file referenced in this Implementation Guide is contained within the root element of **MESSAGE**. To clarify the differences with the plural and the singular container names, pluralized MISMO container names (e.g., LOANS) indicate that the singular container name (e.g., LOAN) is a repeatable container within the pluralized container (e.g., LOANS). For example, there may be multiple LOAN containers within a single LOANS container.

To better understand how these containers apply to Fannie Mae’s loan delivery process, refer to the XML containers table below:

Table 4 - XML Containers and Descriptions

Container Name	Container Description
ABOUT_VERSION	Captures the version number of Fannie Mae’s Implementation Guide that was used to create the loan delivery XML file and the date and time that the loan delivery file was created. There is only one occurrence of the ABOUT_VERSION container per loan delivery file.
DEAL_SET	Represents a collection of DEAL containers that may or may not be related. A delivery file may contain several DEAL_SET containers, one per combination of pool/pool suffix of loans. Only one DEAL_SET container should be provided for Cash deliveries.



Container Name	Container Description
DEAL	Represents a single loan delivery. Contains multiple instances of LOAN containers that together provide all data points needed to define the delivered loan and any supporting information from associated related loans.
COLLATERAL	Contains the PROPERTY container that captures information about the property that secures the delivered loan. There is only one COLLATERAL container used per delivered loan.
PROPERTY	Captures information about the property that secures the delivered loan. There is only one PROPERTY container per delivered loan.
ASSET	Fannie Mae does not support the ASSET container. If provided in the loan delivery XML file, the ASSET container will be ignored.
POOL	Only required for MBS submissions and captures information about pooling of loans for securitization.
PARTY	Captures specific information about each person or entity that plays a role in the loan origination and delivery process. Because there are many roles in this process, there will be multiple PARTY containers within a DEAL. Every loan delivery (DEAL container) will have a separate PARTY container for each party, such as: Borrower, Appraiser, Appraiser Supervisor, Loan Originator, and Loan Origination Company. The PARTY container will also be repeated for multiple borrowers. The PARTY container also appears under the DEAL_SETS and DEAL_SET containers to capture additional party information. Refer to Appendix A: Fannie Mae XML Data Requirements for a complete list of supported PARTIES.
ROLE	Captures details about the role each party plays in the delivered loan.
INVESTOR_FEATURE	It exists in both the DEAL_SET and LOAN container, and captures special loan characteristics.
COMBINED_LTV	Captures combined loan-to-value (CLTV) ratios.
LOAN	Represents a <i>portion</i> of the data that defines a single loan delivery. Each LOAN container defines a point in time for the state of a loan being delivered or data from an associated related loan. Together, the multiple LOAN containers within a DEAL fully define a single loan delivery (a DEAL).



5.3. Loan Container Repeatability

The MISMO Version 3.0 Reference Model supports multiple occurrences of the LOAN container. This provides the ability to capture loan characteristics of the delivered loan at different points in time, as well as the loan characteristics of loans associated with the delivered loan. Multiple LOAN containers are defined by two concepts – **Loan Role** and **Loan State** – which work together to identify the containers needed to capture required loan characteristics. Data points within the LOAN container will have different conditionality, depending on the Loan Role and Loan State (refer to Appendix A: Fannie Mae XML Data Requirements for details).

5.3.1. Loan Role

LoanRoleType is an attribute of the LOAN container. It is not an element. LoanRoleType identifies data for the delivered loan versus data for an associated loan.

- A LOAN container with LoanRoleType = **SubjectLoan** is always required. This identifies the LOAN container that holds characteristics of the loan being delivered.
- A LOAN container with LoanRoleType = **RelatedLoan** is used only when it is necessary to specify characteristics of a loan that is associated with the delivered loan. The RelatedLoan container is used to capture information about a loan that is related to the subject loan. For example, the RelatedLoan container will capture information about the second lien associated with a delivered first lien. Refer to Fannie Mae’s Usage Scenario 3: Fannie Mae Fixed-Rate 30-Year Purchase with Associated HELOC (Related Loan).

5.3.2. Loan State

The Loan State is represented by a type and date within the LOAN_STATE container. These elements identify the point in time for which all data points within that LOAN container apply. The LoanStateDate element identifies the date at which the specified elements in each LOAN container are applicable. Enumerated values for LoanStateType include the following:

- **AtClosing**: A snapshot of specific loan data at the completion of the closing process.
- **Current**: A snapshot of specific loan data as of the date deemed “current” and represents the date that the data is retrieved from the seller’s delivery system.
- **AtModification**: For loans with modifications, a snapshot of specific loan data at the time the modification becomes effective.

Appendix A (or D): Fannie Mae XML Data Reference describes under which Loan State each data point must be delivered. At a minimum, every delivered loan (LoanRoleType = **SubjectLoan**) will have at least two LOAN containers. LOAN containers with other Loan States may be required depending on the characteristics of the loan being delivered.

The tables below explain how each loan state is used for delivered (subject) loans and supporting (related) loans.



Table 5 - Subject Loan State

LoanStateType	Conditionality	LoanStateDate	Comments
AtClosing	Applies to all subject loans.	Original/Note Date.	For modified loans, the AtClosing Loan container will only contain a subset of data. Refer to Appendix A: Fannie Mae XML Data Requirements for the required MISMO data points in this scenario.
Current	Applies to all subject loans.	Date the data is retrieved from the seller's delivery system.	A Current LOAN container is always required for all subject LOANs.
AtModification	Applies to subject loan when the loan has been modified prior to delivery.	Loan Modification Effective Date (data point in the delivery dataset).	Only required for modified loans; the loan delivery XML file also requires Current and AtClosing Loan containers – see AtClosing comment above.

Table 6 - Related Loan State

LoanStateType	Conditionality	LoanStateDate	Comments
AtClosing	Captures second lien loan information.	Original/Note Date.	The loan delivery data must represent the original closing data at the time of closing or the data populated on the note associated with the specified mortgage loan.
Current	Captures second lien loan information.	Date the data is retrieved from the seller's delivery system.	
AtModification	Captures second lien information, when the loan has been modified prior to closing.	Loan Modification Effective Date (data point in the delivery dataset).	

5.4. XLink

The XLink feature is not currently being used in connection with Fannie Mae's implementation of the ULDD and requirements for submitting a loan delivery XML file to Fannie Mae's Loan Delivery application.

5.5. Uniform Resource Identifier (URI)

The URI feature is not currently being used in connection with Fannie Mae's implementation of the ULDD and requirements for submitting a loan delivery XML file through Fannie Mae's Loan Delivery application.



5.6. UTF-8 Support

To allow use of special characters and symbols within the loan delivery XML file, systems will need to support and apply Unicode Transformation Format-8 (UTF-8) encoding.

Systems must specify the UTF-8 in the XML encoding attribute as follows: `<?xml version="1.0" encoding="UTF-8"?>`. Specifying UTF-8 encoding at the beginning of the loan delivery XML file denotes that the document character set is UTF-8-compliant.

5.7. MISMO Version 3.0 Reference Model

The MISMO Version 3.0 Reference Model defines each data point and their expected order. A system's loan delivery XML file should be validated against the MISMO Version 3.0 Reference Model (Schema) to ensure that the file is well formed and contains the supported data points in the expected order, and that the data points are spelled correctly and are of the correct MISMO data type.

To access the MISMO Version 3.0 Reference Model, visit the MISMO website at <http://www.mismo.org/standards-and-resources/residential-specifications/mismo-version-30>

5.8. Managing Loan Delivery XML File Imports

The quickest way to add a large amount of loan and commitment data to Loan Delivery is to import a file. The Loan Delivery application supports the ability to import either uncompressed or compressed files and is limited to a maximum number of 10,000 loans per file. Files can be compressed by encoding the information using fewer bits in order to reduce its original size. File compression can be achieved using WinZip® the Windows Zip (.zip format) utility, which is the only compression format that Fannie Mae supports. The file compression could shrink the file size by 80–90 percent that will help to reduce the file import waiting time.

If the loan delivery XML file contains over 10,000 loans it will not be processed by Loan Delivery and the system will generate the following error message: *"Import file exceeds maximum reasonable size."* This error message applies to either compressed or uncompressed files since it is based on a maximum number of loans.

Reducing the number of loans in the loan delivery XML file will help reduce the file size and prevent receiving an error message. Submitting smaller files will be easier when reviewing error messages as the Import Status Report or Package Edits information will be related to each individual file. Fannie Mae does not recommend using splitting tool software since this may create problems with the structure of the loan delivery XML file.

5.9. Special Characters

There are several reserved characters that cannot be included in the value of a data point unless they are properly "escaped." The following table shows common characters and corresponding character encodings that must be properly escaped for the loan delivery XML file to be valid. (This table does not contain a comprehensive list of all the reserved characters.)

Table 7 - Special Characters

Character	Properly Escaped	Description
&	&	Ampersand
<	<	Less-than sign
>	>	Greater-than sign
"	"	Quotation Mark
'	'	Apostrophe

Most XML software automatically performs this function and inserts the properly escaped characters.



5.10. Data Format Types

The data in a loan delivery XML file must pass certain data integrity rules. For example, an invalid enumeration or non-numeric data in a numeric field could cause the loan delivery XML file to fail schema validation. The table below provides additional guidance regarding the data format and how to populate data in the loan delivery XML file for Fannie Mae's Loan Delivery application. The data formats are more restrictive than the original MISMO data types:

Table 8 - Data Types and Formats

Data Format	Format	Comments
Amount	999999999.99	The amount data type represents a number for the dollar amount.
Boolean	true or false	The term names ending with Indicator have values of true or false . The true or false values must be provided in lower case or the loan delivery XML file will fail schema validation. Values of 0 and 1 or Yes/No are not supported.
Date	YYYY-MM-DD	The date data type represents a specific date. The date must contain a dash (-) between the Year, Month, and Date – for example: 2010-03-25 . There are some instances in which the date value will be required as YYYY (year). The expected date format is documented in Appendix A: Fannie Mae XML Data Requirements.
Datetime	YYYY-MM-DDThh:mm:ss	The datetime data type provides the capability to capture the date and time. This data type can also be used to capture only the date. The date and time must be provided unless specifically noted to only provide a date. When providing a date and time combination, the date and time must be separated by a designator "T" – for example 2010-03-25T15:21:47 . When a date only is specified, the designator "T" and time should NOT be included – for example 2010-03-25. The timezone portion of datetime field type is optional and will be ignored if provided.
Day	---DD	The day data type provides the capability to capture the day of a month. The DD (day) value must include three dashes prior to the two digit number. For instance, the fifteenth day of the month must be sent as: ---15.
Enumerated		The enumerated data type represents a list of predefined values, and applies to term names ending in Type, Description, Code, and Identifier (in some cases). For a complete list of supported enumerated values, refer to Appendix A: Fannie Mae XML Data Requirements.
Numeric	999999999	The numeric data type represents whole numbers only. The numeric value should not contain commas (,) or decimals (.).
Percent	999.9999	The percent data type represents arbitrary precision decimal numbers. For each decimal field, the total and fraction digits are specified. For instance, (3.4) states that the total digits can be no more than 3 and the fraction digits can be no more than 4. For example, the following values would be acceptable: (95.65) (1.55) (.3601) (999). Refer to the implementation notes provided in Appendix A: Fannie Mae XML Data Requirements.



Data Format	Format	Comments
String		The string data type represents character strings in a loan delivery XML file. Each string field has a maximum character limit specified. There are several data points (e.g., PostalCode, ContactPoint TelephoneValue, and TaxpayerIdentifierValue) that should not contain (-) dashes in the data value. Refer to Appendix A: Fannie Mae XML Data Requirements for a complete list.
Year	YYYY	The year data type provides the capability to capture the four digit year only. This data type must use the YYYY (year) format. For example: 2010.

5.11. Address Format Consideration

The address may be populated for various parties and may represent different address types. Systems are required to populate the complete unparsed street address (including unit, if applicable) in the AddressLineText data point. If the optional parsed street address MISMO data points are implemented, systems are still required to populate the unparsed street address. The example below illustrates how a mailing address is populated in the unparsed data points allocated for the address.

Table 9 - Example of Unparsed Party Mailing Address

Container Name	MISMO Data Point Name	Data Value
ADDRESS	AddressType	Mailing
	AddressLineText	123 East Main Street, Apt 250
	AddressAdditionalLineText	
	CityName	Anytown
	StateCode	VA
	PostalCode	20191
	CountryCode	US

The **Subject Property** address populated in the loan delivery XML file must accurately reflect the subject property address (including unit number, if applicable) documented on the Note associated with the specified mortgage loan.

5.12. Supporting Extensions in MISMO Version 3.0 Reference Model

With the new requirements presented in ULDD Phase 3, some of the data is available in later versions of the MISMO Reference Model. In order to access this new data and structures, extension containers are used in the current MISMO Version 3.0 Reference Model. This will give ULDD customers the flexibility to extend their XML documents with data points and structure that meet the demographic information and Universal Loan Identifier requirements and that are not specified in the MISMO v3.0 Reference Model.

5.12.1. Actions Taken by the GSEs

An extension MISMO schema was created to facilitate the provision of new ULDD data points until ULDD can be transitioned to a more current MISMO version. The extension file is named ULDD_Phase_3_Extension.xsd, and can be invoked by specifying the ULDD namespace in the prolog (header) of any Loan Delivery XML submission file.

The ULDD_Phase_3_Extension file contains four new Extension containers:
 LOAN_IDENTIFIER_EXTENSION,



GOVERNMENT_MONITORING_DETAIL_EXTENSION,
GOVERNMENT_MONITORING_EXTENSION, and HMDA_RACE_EXTENSION

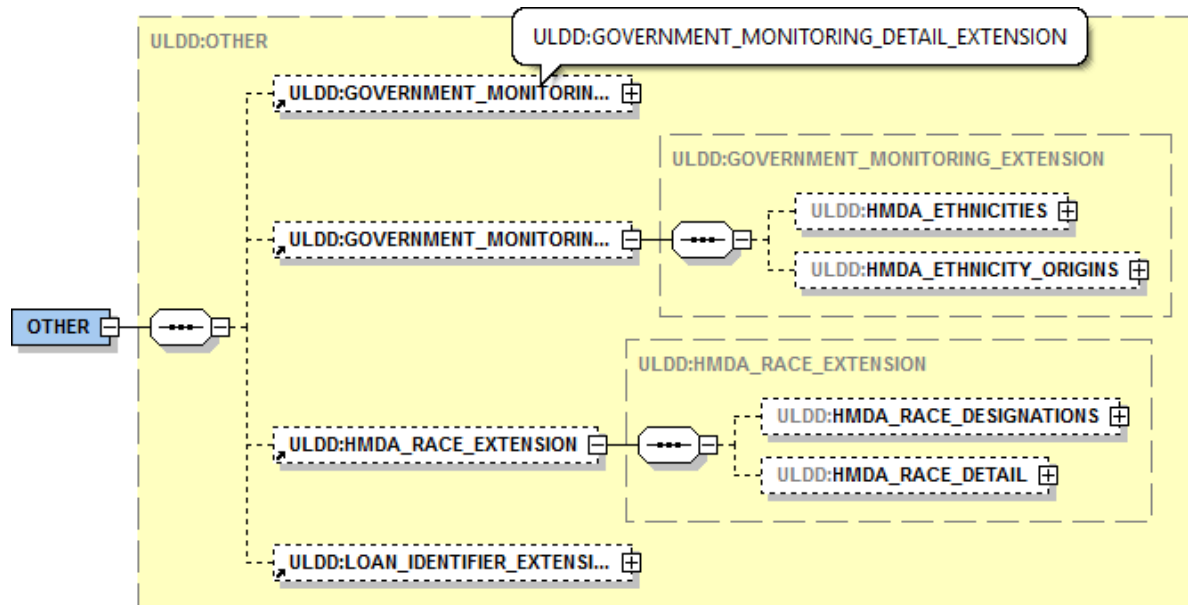


Figure 4 - Extension Containers leveraging "Other" container

5.12.2. How to invoke the ULDD extension

ULDD Customers will need to specify a namespace in their XML submission files that applies to both schemas, MISMO 3.0 and the ULDD extended schema. This solution will impact ULDD customers when they use the data points included in the Extension containers. An example is provided below which illustrates the necessary modifications to the submission file prolog:

```
<?xml version="1.0" encoding="UTF-8"?>
|<MESSAGE xmlns="http://www.mismo.org/residential/2009/schemas" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
|  xmlns:ULDD="http://www.datamodelextension.org/Schema/ULDD" MISMOResourceModelIdentifier="3.0[B263-12]"
|  xsi:schemaLocation="http://www.datamodelextension.org/Schema/ULDD file://xxxxx/ULDD_Phase_3_Extension.xsd">
```

Figure 5 – Updated header to include extension.xsd.

5.12.3. Declaring Data Points from Extended Containers

In order to invoke the data points or enumerations within the extended containers, customers will declare a container under the OTHER container structure. The containers and data points under the OTHER structure will follow a hierarchy in alphabetic order that is consistent across the MISMO model. The following example illustrates the use of data points under the HMDA_RACE_EXTENSION container:



```
<GOVERNMENT_MONITORING>
  <HMDA_RACES>
    <HMDA_RACE>
      <EXTENSION>
        <ULDD:OTHER>
          <ULDD:HMDA_RACE_EXTENSION>
            <ULDD:HMDA_RACE_DESIGNATIONS>
              <ULDD:HMDA_RACE_DESIGNATION>
                <ULDD:HMDARaceDesignationType>Korean</ULDD:HMDARaceDesignationType>
              </ULDD:HMDA_RACE_DESIGNATION>
              <ULDD:HMDA_RACE_DESIGNATION>
                <ULDD:HMDARaceDesignationType>Chinese</ULDD:HMDARaceDesignationType>
              </ULDD:HMDA_RACE_DESIGNATION>
            </ULDD:HMDA_RACE_DESIGNATIONS>
            <ULDD:HMDA_RACE_DETAIL>
              <ULDD:HMDARaceType>Asian</ULDD:HMDARaceType>
            </ULDD:HMDA_RACE_DETAIL>
          </ULDD:HMDA_RACE_EXTENSION>
        </ULDD:OTHER>
      </EXTENSION>
    </HMDA_RACE>
  </HMDA_RACES>
```

Figure 6 – Example illustrating multiple data points for HMDARaceDesignationType and HMDARaceType usage under HMDA_RACE_EXTENSION container

5.12.4. Universal Loan Identifier (ULI)

This is a unique identifier associated with the loan throughout the life of the loan transaction starting at submission of the loan application. The number is composed of 45 alphanumeric characters and is located under the LOAN_IDENTIFIER_EXTENSION container.

The following example illustrates a sample ULI in xml code:

```
<LOAN_IDENTIFIER>
  <EXTENSION>
    <ULDD:OTHER>
      <ULDD:LOAN_IDENTIFIER_EXTENSION>
        <ULDD:LoanIdentifier>10Bx939c5543TqA1144M999143X38</ULDD:LoanIdentifier>
        <ULDD:LoanIdentifierType>UniversalLoan</ULDD:LoanIdentifierType>
      </ULDD:LOAN_IDENTIFIER_EXTENSION>
    </ULDD:OTHER>
  </EXTENSION>
</LOAN_IDENTIFIER>
```

Figure 7 - Example of a Universal Loan Identifier in a XML file.



6. Additional Resources

Refer to the table below for a list of websites, documents, and URLs to access the additional documentation referenced in this Implementation Guide.

Table 10 - Additional Resources

Document Name or Website	URL
Loan Delivery Data Requirements	https://www.fanniemae.com/singlefamily/uniform-loan-delivery-dataset-uldd
Loan Delivery FAQs	https://www.fanniemae.com/content/faq/loan-delivery-faqs.pdf
ULDD FAQs	https://www.fanniemae.com/content/faq/uniform-loan-delivery-dataset-faqs.pdf
Loan Delivery Job Aids	https://www.fanniemae.com/content/job_aid/loan-delivery-job-aids.html
MISMO website	www.mismo.org/
MISMO Version 3.0 Candidate Recommendation 2010-05 Reference Model	http://www.mismo.org/standards-and-resources/residential-specifications/mismo-version-30
MISMO Version 3.0 and the Uniform Loan Delivery Data Specification: User Guide	https://www.fanniemae.com/content/technology_requirements/uldd-mismo-specification-user-guide.pdf
UTF-8 and Unicode Standards	www.utf-8.com/
W3C	www.w3.org/
State code – Use USPS list of two-character codes – Select Pub.28 for further detail.	http://about.usps.com/publications/welcome.htm
Country code – Use two-character codes from the ISO 3166 standard (International Organization for Standardization)	www.iso.org/iso/country_codes/iso_3166_code_lists/country_names_and_code_elements.htm