

DDI Foundation Tools Program: Roadmap

The purpose of the DDI-FTP Roadmap is to provide anyone interested in the program with a description of the planned components and general guidelines for their development. This document outlines the overall framework, describes the various components and their relationships, recommends the technologies and tools to be used for the implementation, and contains guidelines and best practices for software developers. The Roadmap is used to track the development progress and priorities.

The DDI-FTP Framework and the product Road Map is available for review in the document below. The DDI-FTP follows the general recommendations provided by the Open Data Foundation for the development and operation of open source tools for managing social, behavioral and economic data and metadata.

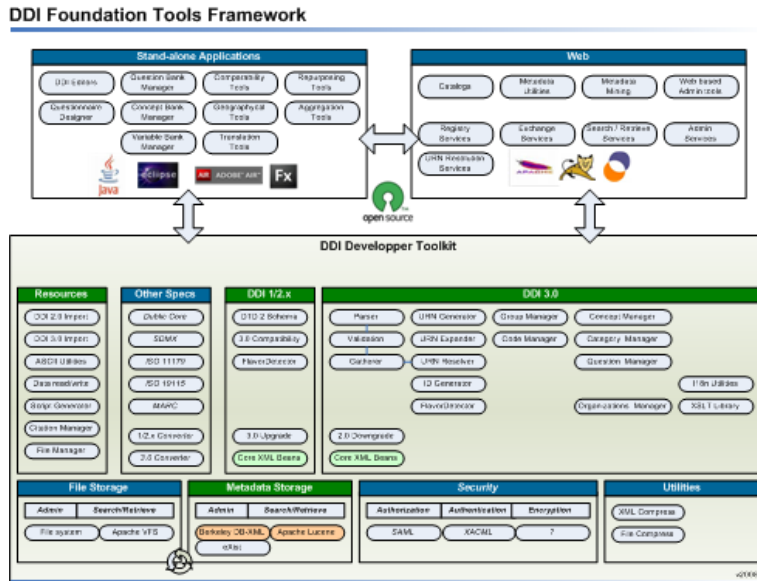
["DDI-FTP: Framework and Road Map". Feb 2008](#)

["Managing social, behavioral and economic data and metadata: Guidelines for Tools Development and Recommendations for Operating Environment", Open Data Foundation, Feb 2008](#)

["DDI Editor Framework Specifications \[DRAFT\]", DDI Foundation Tools Program, Oct 2008](#)

Framework overview

The following diagram illustrates the main components of the framework and road map. Click on thumbnail to see a larger version.



Products Groups

Name	Description
Stand-Alone Products	Desktop-based application for data/metadata managers and end-users
Web-Based Products	End-user applications or light administrative tools accessible over the Internet (or Intranet) using a standard Web browser
Web Services	Web service oriented architecture for the management of DDI and related resources. Provides access to metadata and data through commonly used Web services protocols such as SOAP, REST, and others.
DDI 1/2.x Utility Library	Function library to manage DDI 1/2.x documents
DDI 3.0 Utilities	Libraries to manage DDI 3.0 documents
DDI 3.0 URN Library	Library to facilitate the management of URNs and Identifiers in DDI 3.0
DDI 3.0 Scheme Library	Tools to facilitate the management of DDI 3.0 Schemes
DDI 3.0 Grouping and Comparability Library	Library to facilitate the grouping of DDI 3.0 entities and the use of the comparability features.
DDI 3.0 Physical Product Libraries	Libraries to facilitate the management of record layouts, data cubes and physical data file instances.



Internationalization / Localization Utilities	Libraries to support the management of multi-lingual metadata
XSL Transformations	Collection of XSL Transformations for DDI
DDI Conversion Library	Library to facilitate the conversion of DDI metadata between specifications
XMLBeans	Java classes for the management of DDI documents based on the Apache XML Beans technology Provides object classes/methods to manage DDI 1/2.x and 3.0 metadata. See http://xmlbeans.apache.org/ for further information.
Data Management Libraries	Tools to manage statistical data files
Resource Management Libraries	Tools to manage digital resources such as documents, multimedia and other files.
File Storage System	Tools to facilitate the storage and retrieval of files
Metadata Storage System	Libraries to facilitate the storage and retrieval of metadata
Security	Tools to control access to resources and provide authentication, authorization and encryption of data and metadata
General Utilities	Collection of various system utilities

High Priority Products

Name	Description	Group
DDI Converter	A tool to convert DDI documents between different versions of the DDI and to other metadata specifications. The initial focus on this tool is on the upgrade of DDI 1/2.x documents into 3.0 as well as the downgrade of a 3.0 document into earlier versions.	Stand-Alone Products
DDI 3.0 URN Resolution Services	A service to support the conversion of a URN into a URL	Web Services
ID Generator	Function(s) to generate DDI 3.0 unique IDs.	DDI 3.0 URN Library
URN Generator	Functions to generate a DDI 3.0 URN based on an element identifier.	DDI 3.0 URN Library
DDI 3.0 XMLBeans	Apache XMLBeans for DDI 3.0	XMLBeans
Prototype Editors	Simple DDI editors to be used for training purposes and testing of the DDI-FTP framework. The focus will be on viewing and editing subset of the DDI 3.0 (or 1.2/x)	Stand-Alone Products
DDI 3.0 Parser / Validator	DDI 3.0 specific XML parser that performs schema and second level validation of DDI 3.0 documents.	DDI 3.0 Utilities
URN Resolver	Functions to convert a DDI 3.0 URN into a URL	DDI 3.0 URN Library
Scheme Manager	An abstract class to define methods to be implemented by all scheme managers	DDI 3.0 Scheme Library
DDI 3.0 XSLT Library	Library of XSL Transformations for DDI 3.0/x	XSL Transformations
DDI 2.0 to 3.0 Upgrade Functions	Functions that take a DDI 1/2.x document and convert to a DDI 3.0 document. The process should be as automated as possible but will most of the time require user interaction to provide information and make mapping decision.	DDI Conversion Library
DDI 2.0 to 3.0 Upgrade Guide	Guide for the preparation of DDI 1/2.x document for upgrade to 3.0	DDI Conversion Library

Products List

Stand-Alone Products	
<i>Desktop-based application for data/metadata managers and end-users</i>	
Name	Description
DDI Converter	A tool to convert DDI documents between different versions of the DDI and to other metadata specifications. The initial focus on this tool is on the upgrade of DDI 1/2.x documents into 3.0 as well as the downgrade of a 3.0 document into earlier versions.
Prototype Editors	Simple DDI editors to be used for training purposes and testing of the DDI-FTP framework.

	The focus will be on viewing and editing subset of the DDI 3.0 (or 1.2/x)
Prototype Grouping Tools	A tool that imports details of question, variable, category, code, universe, and concept and then display the items selected for comparison side by side. The goal would be to be able to view the source and target and then enter the comparison information in the DDI comparison structure.
DEXT Exchange Tools	DEXT Exchange Tools is a collaborative project between the UK Data Archive and the Open Data Foundation for the development of data archiving and conversion tools. Supported by the UKDA Data Exchange Tools (DEXT) initiative, the project aims at the development of open source utilities for the conversion of quantitative data into a standard archiving format and export to common statistical packages or database systems. This initial product is a proof of concept and focuses on SPSS as the input data format with data export capabilities to ASCII, SAS, Stata, and SPSS. The application is based on the DDI specification and supports metadata export to DDI 2.0 and DDI 3.0.
StatsProgs2DDI	Conversion tool from statistical package formats to DDI Version 3.0. Currently the tool includes a SPSS converter; further planned formats are SAS, and Stata. This component is contributed by GESIS/ZUMA. Requires SPSS 14+.

Web-Based Products

End-user applications or light administrative tools accessible over the Internet (or Intranet) using a standard Web browser

Name	Description
DDI Survey Catalog	End-user application to browse catalog of surveys and their related metadata
WebDEXT for SPSS	A web based application to export DDI 2.0 or 3.0 metadata from SPSS files and to generate setup files for SAS, SPSS and Stata.

Web Services

Web service oriented architecture for the management of DDI and related resources. Provides access to metadata and data through commonly used Web services protocols such as SOAP, REST, and others.

Name	Description
DDI 3.0 Registry	A service to support the registration, search and retrieval of DDI 3.0 entities
DDI 3.0 URN Resolution Services	A service to support the conversion of a URN into a URL

DDI 1/2.x Utility Library

Function library to manage DDI 1/2.x documents

Name	Description
DTD2Schema	Utility function to convert a DTD-based DDI 1/2.x document into a XMLSchema based version. The library performs validation and reports any problems (along with potential solutions) to the user.
DDI 1.2/x Flavor Detector	Utility function(s) that attempt to detect the metadata producer and/or software used to prepare the DDI document. This information is useful to other components in order to gain knowledge on the expected content of the DDI Document. Could also be used to assign a DDI Profile when upgrading to DDI 3.0.
DDI 3.0 Compatibility Test	Function to assess the degree of compatibility of a DDI 1/2.x document with the DDI 3.0 specification.

DDI 3.0 Utilities

Libraries to manage DDI 3.0 documents

Name	Description
DDI 3.0 Parser / Validator	DDI 3.0 specific XML parser that performs schema and second level validation of DDI 3.0 documents.
DDI 3.0 Gatherer	Method(s) to process a DDI 3.0 document containing external references and collect the various pieces of information to recompose a local instance of the document with all references replaced with their actual content.
CodeBook Manager	Class to facilitate the management of DDI 3.0 variables, codes, categories, formats, logical record, physical data product and physical instance from the classic perspective of a code book. This will provide applications (and users) with a virtual "view" of the DDI 3.0 that replicates the typical approach used by statistical packages.

DDI 3.0 URN Library

Library to facilitate the management of URNs and Identifiers in DDI 3.0

Name	Description
ID Generator	Function(s) to generate DDI 3.0 unique IDs.
URN Generator	Functions to generate a DDI 3.0 URN based on an element identifier.
URN Resolver	Functions to convert a DDI 3.0 URN into a URL

DDI 3.0 Scheme Library

Tools to facilitate the management of DDI 3.0 Schemes

Name	Description
Scheme Manager	An abstract class to define methods to be implemented by all scheme managers
Concept Manager	Class to facilitate the management of concepts
Universe Manager	Class to facilitate the management of universes
Question Manager	Class to facilitate the management of questions
Classification Manager	Class to facilitate the management of categories and codes
Geography Manager	Class to facilitate the management of geography structure and locations
Variable Manager	Class to facilitate the management of variables
Organizations Manager	Class to facilitate the management of organizations and individuals

DDI 3.0 Grouping and Comparability Library

Library to facilitate the grouping of DDI 3.0 entities and the use of the comparability features.

No product defined in this group

DDI 3.0 Physical Product Libraries

Libraries to facilitate the management of record layouts, data cubes and physical data file instances.

Name	Description
ASCII File Metadata Manager	Library to facilitate the management of ASCII files metadata
Proprietary Files Metadata Manager	Library to facilitate the management of proprietary files metadata
Cubes Metadata Manager	Library to facilitate the management of data cubes

Internationalization / Localization Utilities

Libraries to support the management of multi-lingual metadata

Name	Description
XML Spell Checker	Tool to check spelling in XML metadata

XSL Transformations

Collection of XSL Transformations for DDI

Name	Description
DDI 1/2.x XSLT Library	Library of XSL Transformations for DDI 1.2/x
DDI 3.0 XSLT Library	Library of XSL Transformations for DDI 3.0/x
XSLT Utility Library	Library of XSL Transformations for other metadata specifications

DDI Conversion Library

Library to facilitate the conversion of DDI metadata between specifications

Name	Description
DDI 2.0 to 3.0 Upgrade Functions	Functions that take a DDI 1/2.x document and convert to a DDI 3.0 document. The process should be as automated as possible but will most of the time require user interaction to provide information and make mapping decision.
DDI 3.0 to 2.0 Downgrade Functions	Functions that convert a DDI 3.0 document into one of the official version of DDI 1/2.x.
DDI 2.0 to 3.0 Upgrade Guide	Guide for the preparation of DDI 1/2.x document for upgrade to 3.0
DDI1/2.x Mappers	Collection of functions and XSL transformations to convert DDI 1/2.x to/from various metadata specification such as Dublin Core, MARC, etc.
DDI3 Mappers	Collection of functions and XSL transformations to convert DDI 3.0 to/from various metadata specification such as Dublin Core, MARC, SDMX, etc.
Boundary Converter	Library to facilitate the conversion of geographic boundary files (E00,ESRI shape files, etc.) into the DDI format. The purpose is not to convert detailed boundaries into the DDI format but rather to generate bounding boxes or a reduced set of points.

XMLBeans

Java classes for the management of DDI documents based on the Apache XML Beans technology Provides object classes/methods to manage DDI 1/2.x and 3.0 metadata. See <http://xmlbeans.apache.org/> for further information.

Name	Description
DDI 1.0 XMLBeans	Apache XMLBeans for DDI 1.0
DDI 1.1 XMLBeans	Apache XMLBeans for DDI 1.1

DDI 1.2 XMLBeans	Apache XMLBeans for DDI 1.2
DDI 1.2.1 XMLBeans	Apache XMLBeans for DDI 1.2.1
DDI 1.2.2 XMLBeans	Apache XMLBeans for DDI 1.2.2
DDI 1.3 XMLBeans	Apache XMLBeans for DDI 1.3
DDI 2.0 XMLBeans	Apache XMLBeans for DDI 2.0
DDI 2.1 XMLBeans	Apache XMLBeans for DDI 2.1
DDI 3.0 XMLBeans	Apache XMLBeans for DDI 3.0
SDMX 1.0 XMLBeans	Apache XMLBeans for SDMX 1.0
SDMX 2.0 XMLBeans	Apache XMLBeans for SDMX 2.0

Data Management Libraries

Tools to manage statistical data files

Name	Description
SPSS Reader	Java package to read SPSS data files and (1) export the data to various ASCII formats and (2) generate metadata in DDI 2.0 and DDI 3.0 formats. This component is contributed by the UK Data Archive DEXt initiative and the Open Data Foundation.
Stata Reader	Java package to read Stata data files, generate DDI 2.0 and 3.0 metadata and optionally export data in ASCII formats
SAS Reader	Java package to read SAS data files, generate DDI 2.0 and 3.0 metadata and optionally export data in ASCII formats
Setup File Generator	Functions using DDI metadata to generate setup files for the import of ASCII data into SPSS, Stata, SAS, SQL and other software packages

Resource Management Libraries

Tools to manage digital resources such as documents, multimedia and other files.

Name	Description
Dublin Core Library	Tool to facilitate the compilation of Dublin Core metadata
Citation Management Library	Library to facilitate the shared management of paper citation

File Storage System

Tools to facilitate the storage and retrieval of files

Name	Description
File Storage System	Tool to add, update, delete digital resources in a file repository
File Query Engine	Tool to search and retrieve digital resources from a file repository

Metadata Storage System

Libraries to facilitate the storage and retrieval of metadata

Name	Description
DDI 3.0 Metadata Store	Library to add, update, delete DDI 3.0 documents in a XML repository
DDI 3.0 Metadata Query Engine	Library to search and retrieve DDI 3.0 documents from an XML repository
DDI 1/2.x Metadata Store	Library to add, update, delete DDI 3.0 documents in a XML repository
DDI 1/2.x Metadata Query Engine	Library to search and retrieve DDI 3.0 documents from an XML repository

Security

Tools to control access to resources and provide authentication, authorization and encryption of data and metadata

Name	Description
User Security Manager	Library to add, update, delete users and groups in the security system
Resource Security Manager	Library to register add, update, delete resources in the security system
Policy Manager	Library to manage and retrieve user and group access rights to resources
Metadata Crypto	Library for the encryption/decryption of XML
Data Crypto	Library for the encryption/decryption of files

General Utilities

Collection of various system utilities

Name	Description
XMLZip	Library for the compression of XML documents

