How to Use the XML Schema Files in this Zip Package

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The information below relates to the currently adopted IEEE 1512 Incident Management Base standard and it companion volumes. This is designed as "revision 36" in the below. However, the methodology used and the naming conventions found are used in other ITS standards as well. While the IEEE standard is described here, this information can also be applied to any zip schema file set released by the standards developing organizations of ITS.

What this File Contains

This file and its content reflect a release of IEEE standards data for IEEE 1512 as adopted. The numbering system used allows a precise control of the release and therefore accommodates the need to know exactly what baseline of a standard is being used by a deployment. In the case of this particular zip file, this is release 36 of the ADOPTED IEEE 1512 standard, and reflects the content of that standard at this point in time. Other zip sets obtained from other standards may reflect *adopted* or *draft* editions of their work, as well as work customized for specific deployment needs.

This zip file contains a number of other text files reflecting the content of the adopted standard as published by the IEEE. Specifically, these files are the XML schema expressions which reflect the content of the adopted IEEE standard. These files all end with the *.XSD file type. The file *manifest.txt* contains a terse description of the files in the package as well. This file is reprinted below.

The content of the standard is divided into several files following the Functional Area Data Dictionary (FADD) system used in ITS. The sections of the standard in the "External Data Concepts" clause are expressed here as other FADD files. FADDs are short abbreviations (typically 4~5 characters) for a group of related work. This term is used in naming the resulting files. A list of well know FADDs is provided at the end of this document. Each major development effort (typically corresponding to one standard) has a FADD name it uses. For example, the FADD for the IEEE Incident Management effort is "IM" - and the most interesting file in this particular zip set starts with that term.

What you need to do to use these files

In order to use these schema files, the end deployment must first provide any additional missing content (typically local data) and remove any content not needed. This is discussed further below. It should be stressed that the schema set released as part of the adopted standard IS NOT SUITABLE FOR USE AS SHIPPED. It is expected that a user will need to customize this information before its practical use.

The details of this process are covered in other materials such as the User Guides, but this involves several general steps to produce a schema file set for local use:

1) Remove any messages from the standard you will not be using. Most deployments do not use the full and compete standard. Remove elements within the remaining defined types that will not be used. Remove any lower *orphan* elements as needed. The usual practice to determine what will be kept and removed is a multi-agency agreement regarding what data is to be shared and further details of how that sharing will occur.
2) Merge into the supporting schema files any additional content from other standards you will be using at the same time. Most deployments are not "pure," in that they need some additional message content from other efforts to be used.
3) Note that the numbering of the other schema files is at this time given as "00-00-00" (discussed further below). If you wish to use a *specific* version of another schema, or a complete schema, replace that file with the proper one and revise the import and namespace headers in the other files to link to it. The complete ITIS FADD is typically treated in this way.
4) Add any required local stubs at this point in the proper files. Note that even if you do not provide any unique local content for local extensions, you must still provide a stub so that the complete schema will resolve. If additional content for messages, data frames, or enumerations are needed, they would be added here at this time.
5) Confirm that the resulting set of files correctly will compile with the XML syntax checker of your choice.
6) Name the *folder* which contains the work product something different than its original name (in this case IM-03-00-36) so that you can easily determine what revision of your own work it is. It is suggested that you adopt a short FADD name and number the folder. So for example, your first effort might by placed in a folder called "MyDot-00-00-01" and the second one numbered –02 etc. By following this formula, your work will be readily exchangeable with other ITS deployments.

It should be obvious from the above that the ADOPTED IEEE schema set is simply a starting place for the deployment and that the deployment must make many design decisions regarding what parts of the standard to use as well as what other standards are to be used with it.

The IEEE 1512 schema itself

The critical file with the IEEE 1512 information is titled: IM-Draft-03-00-036.xsd This follows the naming outlined below. This file contains all of the data elements uniquely defined in the standard.

Note that the term *Draft* could be replaced with *Adopted* in this case because the file represents a final balloted standard. However, this is intentionally left as an exercise for the user because the term is also used in all the import files that in turn point to it. All of these may be changed as a function of the local editing process. Also, it may be that the final results, once edited, would more properly be named *Partial* in the file name.

All of the other files in the zip package are linked to this file in some way. Hence, they are needed to completely validate the files. With editing to remove unneeded content, some of the files may no longer be required. All of the content of these files is also found in the printed standard. Each FADD file is often a sub-set of another standard which the local deployment may decide to use in full.

Note that no *.WSDL file is provided because in this release no such dialog definitions were available. This is expected in future releases, and like the other files will require local editing to use.

Naming Conventions

Using the IEEE 1512 schema as an example, consider the name: IM-Draft-03-00-036.xsd This follows a five-part naming system that supports determining what release of the data is being used. All ITS schema releases from SDOs follow this naming, the details are as follows:

The FADD Term	A well known short phrase from the list provided below. Beside the FADD terms listed, local deployments select their own names (I95, CaDOT, AzDOT, NbDOR, MyDot, AzTech, etc.) to describe their derivative work products from the standards There is no registry of these names at this time.
The Type of File Release	A term (if preset) which describes the type of release. *Draft* is the most common. Use of this term is still not universal. Some have suggested terms such as *InBallot* or *Adopted*, or *Partial*, etc. but the list remains unclear at this time. The word *Local* is used to indicate a local expansion file for that FADD (typically there will be one such file for every FADD file). What is of greater importance in use of the schema is that the name strings must match to import and use the file.
The Major Release	The major release value of the standard. Typically only increased on balloted changes, but this varies with each SDO.
The Minor Release	The minor release value of the standard. Typically only increased on balloted changes, but this varies with each SDO. Some SDOs do not use this value, while others do (i.e. TMDD Rev 2.1 is expressed as 02-01-xx here).

The Release Value	The incremental release value of the standard. Typically this comes from the underlying database that is used and always increases. Not all values result in released schemas. Often this is changed every time the database is edited.

One can see from this example that the file contains Incident Manager Content (IM) and is the 3rd major edition of the standard, the 36th actual revision.

Using the same logic, the file: IM-Local-Draft-03-00-036.xsd contains the local content for this same release.

Using the same logic, the file: ATIS-00-00-00.xsd contains the content from the ATIS (Advanced Traveler Information System) area and the edition or release from which it was taken is unknown (00-00-00). See the note on release editions below.

Folder Placement Conventions

It is recommended that the schema set, both in its original form and in its final edited form, and in both zipped and un-zipped forms, be placed into a folder hierarchy as follows. The files themselves all need to be in the same folder. They point to each other using local (rather than absolute) import path names, a convention of ITS XML styles.

The enclosing folder is normally named for the primary FADD and its release (in this case / IM-03-00-36) This is in turn enclosed in a folder with the FADD name and no revision (/IM) In this system, all the editions of the IM work are readily available at the same level. At the level of the IM folder, other FADD terms (ATIS, TMDD, or a unique deployment) are found. The folder named "ITS" is reserved for coordinated efforts between the SDOs using complete schemas that interoperate. Note that this tree allows adding new schema sets without disturbing the old. Lower case is preferred to avoid case issues with some computers.

The rest of the root of this can be any path desired. The resulting file path is then:

.../SomeXMLsite/schema/im/im-03-00-36/im-03-00-36.zip

Release Editions among other standards

While the files from the other standards efforts are numbered with "00-00-00" in the XML schema files, the edition to be used is made very clear in the actual adopted standard.

In the IEEE 1512 Incident Management family of standards, this can be found in Clause Two where each standard and its specific revision is given. Depending on the intention of

the committee, that reference may state a specific standard revision or may state a standard and its adopted successors. Other standards have similar defining text.

Additional Information You May Need

Some zips files also contain other useful information for deployments, such as on-line web based documentation about the schema files. Such information, when present, can generally be found in the /docs folder of the zip.

New Releases of this Information

As each new release of this information is published, they will be found alongside this file in a form similar to the folder placement recommendations mentioned above. Older editions are not destroyed because it represents a baseline that some builders have already used. When new editions of the IEEE standard are issued (for example the in-work 1512.4 edition), then a new schema family reflecting the changes made from that edition will be made available.

Well Known FADDs Used in ITS

The following is a short list of common FADD terms found in the ITS standards

ADUS	Archival Data User Services
ATIS	Advanced Traveler Information System
C2C	Center Two Center Commendations (SOAP and WSDL)
DSRC	Dedicated Short Range Communications
HPMS	Highway Performance Monitoring System
IM	Incident Management
ITIS	International Traveler Information System
ITS	Intelligent Transportation Systems
JXDD	Justice XML Data Dictionary
LRMS	Location Referencing Message Set
NTCIP	National Transportation Communications for ITS Protocols
RSPA	Research and Special Programs (a DOT program used in 1512)
TCIP	Transit Communications and Interfaces Profiles
TMDD	Transportation Management Data Dictionary

Manifest Text

The following files are part of the release IM-03-00-36.zip

ATIS-00-00-00.xsd	Portions of the ATIS schema used by the IM schema
ATIS-Local-00-00-00.xsd	Local extensions to the ATIS schema
DSRC-00-00-00.xsd	Portions of the DSRC schema used by the IM schema
DSRC -Local-00-00-00.xsd	Local extensions to the DSRC schema
IM-Draft-03-00-36.xsd	The IM schema (the primary schema of this standard)
IM-Local-Draft-03-00-36.xsd	Local extensions to the IM schema
ITIS-00-00-00.xsd	Portions of the ITIS schema used by the IM schema
ITIS-Local-00-00-00.xsd	Local extensions to the ITIS schema
JXDD-00-00-00.xsd	Portions of the JXDD schema used by the IM schema
JXDD-Local-00-00-00.xsd	Local extensions to the JXDD schema
LRMS-00-00-00.xsd	Portions of the LRMS schema used by the IM schema
LRMS-Local-00-00-00.xsd	Local extensions to the LRMS schema
NTCIP-00-00-00.xsd	Portions of the NTCIP schema used by the IM schema
NTCIP-Local-00-00-00.xsd	Local extensions to the NTCIP schema
RSPA-00-00-00.xsd	Portions of the RSPA schema used by the IM schema
RSPA-Local-00-00-00.xsd	Local extensions to the RSPA schema
TCIP-00-00-00.xsd	Portions of the TCIP schema used by the IM schema
TCIP-Local-00-00-00.xsd	Local extensions to the TCIP schema
TMDD-00-00-00.xsd	Portions of the TMDD schema used by the IM schema
TMDD-Local-00-00-00.xsd	Local extensions to the TMDD schema
ReadMe.doc	A description of how to understand and use these files
Manifest.txt	This file