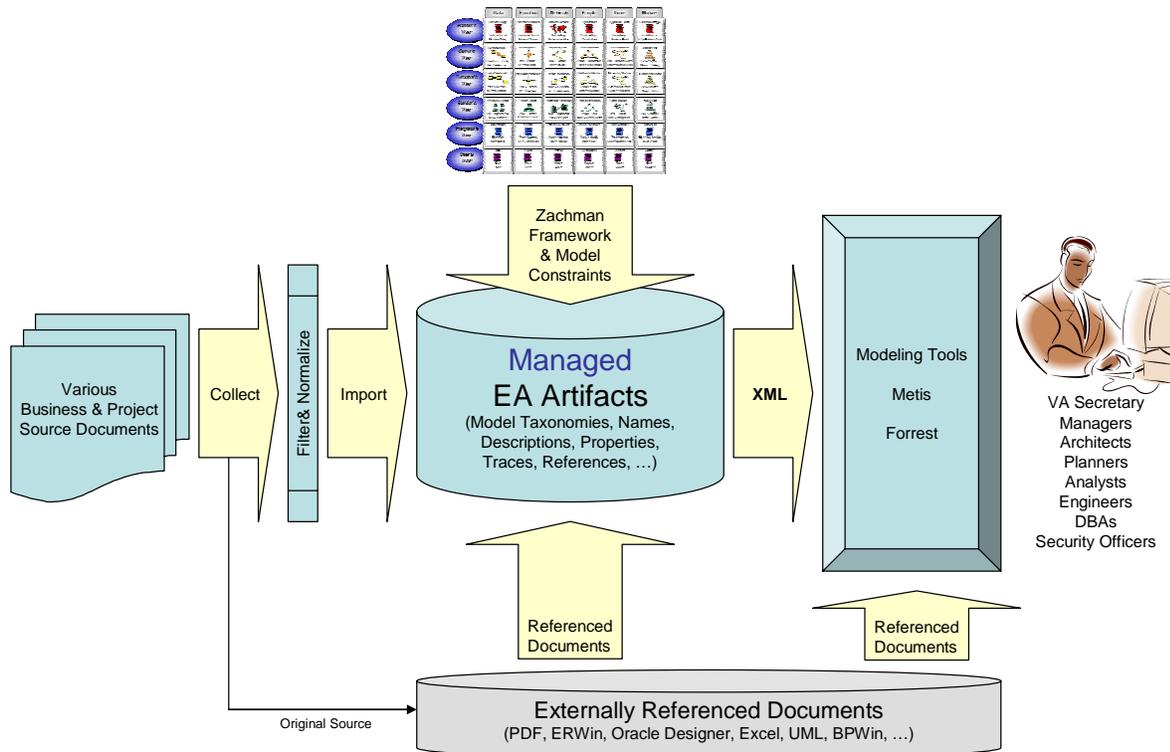


Veterans Affairs Enterprise Architecture Repository Import Process

The following graphic presents a high-level overview of the Office of Enterprise Architecture Management (OEAM) Enterprise Architecture (EA) repository environment.



OEAM collects EA information from various business and project source documents. Prior to data import, OEAM filters the collected information for artifacts relevant to the VA Enterprise Architecture and normalizes the data to minimize redundancy. The current repository is a centralized database server using Borland CaliberRM. OEAM structures the repository data according to the Zachman Framework and the primitive models they are developing for each framework cell. Original source documents are stored on the centralized server where they can be externally referenced by the repository or the EA website. Data export involves the conversion of EA artifacts in the repository to a XML representation that is imported into Metis and Forrest. The EA serves a broad range of VA users with information generated for Metis and Forrest from CaliberRM XML data.

Efficient and accurate data import is possible if the collected data is carefully organized. The sections below discuss the various information types imported into the repository. The emphasis is on data from Excel spreadsheets and Word documents; but there is also a discussion of other specialized data sources (such as XML, Erwin, etc.)

EA Artifacts

The heart of the VA EA approach is a repository of “atomic” EA artifacts. The goal is to decompose the VA architecture into artifacts that represent fundamental pieces of architecture. OEAM imports the classified artifacts into a modeled (structured) data environment. Then, existing VA business and software engineering rules relate the artifacts. This forms a flexible information set used for EA presentation, analysis, and document generation.

An EA artifact consists of a text-only name (64 characters or less) and a description that can include tables and JPEG graphics. Since users in many different analytical contexts will view the same artifacts, it is necessary to provide unique, descriptive names (in title case), and clear, grammatical, and complete descriptions. The data provider should keep in mind that users could view individual artifacts on the EA website. To support this view, the artifact name and description must stand alone as much as possible.

Microsoft Excel and Microsoft Word Documents

Users may enter artifacts into CaliberRM one at a time, or by importing a Microsoft Word document. The most common method is the Word document since it allows the orderly preparation of a large number of artifacts off-line from the repository. Most legacy VA architecture documentation is in the form of Word documents. It is possible to reformat many of these documents to meet CaliberRM import requirements.

The essential companion to the Word document is Microsoft Excel spreadsheet. Most databases facilitate the export of data to Excel spreadsheets. In addition, Excel is a convenient medium for organizing data input. Appendix A provides a sample Excel Spreadsheet formatted for subsequent CaliberRM import. The header is only required as a convenience in identifying the data type in each column. Each row represents an EA artifact, its name, and its description. The formal FEA PRM hierarchy organizes the data, and the headers clarify its close association with the BRM hierarchy. It is also possible to add additional columns for information on relationships to other EA artifacts.

Users must copy the Excel data to a Word file. A simple copy and paste will do (and is not even necessary if the user created a Word table in the first place). The Word table is logically equivalent to the Excel table. Final Word document processing involves a few simple steps:

1. Remove the Excel table header via Word > Table > Delete > Rows.
2. Select the first column via Word > Table > Select > Column and set the style to Heading 1.
3. Repeat Step 2 for each successive column using the next available header style, Header 2, Header 3, and so on.
4. For the last column, use the special style “Clear Formatting”. This sets the descriptions to a neutral style favorable to the web publishing supported by CaliberRM.
5. The Word import document is generated via Word > Table > Convert > Table to Text. The following conversion popup appears. Select “Paragraph marks” (The setting of “Convert nested tables” does not matter).



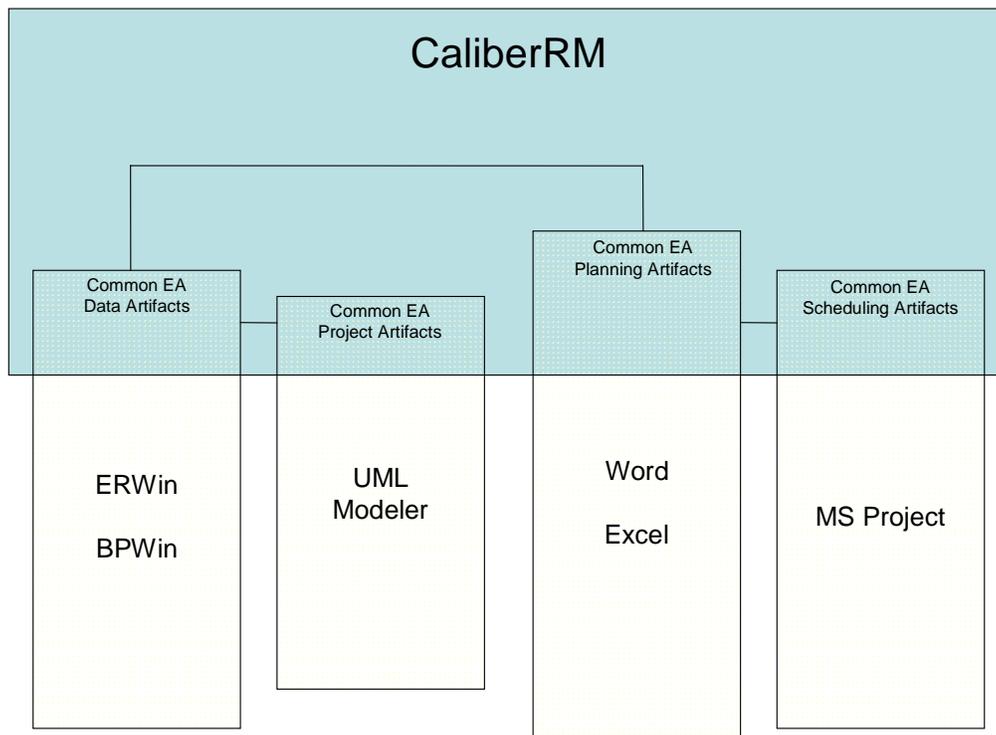
6. Remove the extraneous paragraph marks produced by empty cells.

Appendix B presents the result of this transformation. This Word file is now ready to send to the EA Repository administrator for CaliberRM import.

Other Forms of Enterprise Architecture Information

Not all VA architecture data comes in Excel and Word documents. The normal solution analysis and development cycle produces numerous document types. Common examples include requirements models (CaliberRM), relational models (Erwin, Oracle), UML models (Rational Rose), IDEF0 models (BPwin), XML representations (Altova), project schedules (Microsoft Project), specialized complex spreadsheets and documents, database schemas, and so on. These tools represent data as complex models that might be difficult to import into the EA artifact environment.

How much of this complex modeled data should users decompose into EA artifacts? The following diagram suggests minimizing data decomposition...



In most cases, the data representation of the modeling tool is the best representation. On the other hand, it is not usually possible to relate data items from one representation to the other. One solution to this problem is to create EA artifacts from the tool that are *essential* to interaction with other EA artifacts. How much data designers should decompose from any specific tool depends on the capabilities of that tool and *what EA questions VA needs to answer*. Until we have a better set of end-user questions it will be necessary to decompose into artifacts with caution. The current EA metamodel is a reasonable guide for starters. The metamodel often indicates that models will only be externally referenced. When designers have a good reason to decompose these external references, it will be possible to modify the metamodel and provide the required artifacts.

One common example of this quandry are relational models (ERwin or Oracle Designer). In EA 4.0, the VA Corporate Database (CDB) physical model was provided as an ERwin dataset. The EA team realized that we might want to relate project database tables to CDB tables; then we would know the extent of (or lack of) data reuse provided by CDB. It seemed reasonable that this would be done at the table level rather than the column level. Since CDB provided a set of functional Entity-Relationship views for the tables, the tables were provided as EA artifacts. The functional views were also provided as JPEG graphics linked to the tables. The CDB contained 529 tables and was organized into 33 views. There were on the order of 10,000 attributes and perhaps a thousand relationships. If the end-user requires more information, they can link to the ERwin model for all the details.

Appendix A – Sample Excel Spreadsheet

This example Excel spreadsheet is a small fragment of the Federal Enterprise Architecture (FEA) Performance Reference Model (PRM).

Results Measurement Area	Measurement Category (BRM LoB)	Measurement Group (BRM Function)	Measurement Subgroup (BRM Subfunction)	Business Function Description (PRM and BRM)
Mission and Business Results				A measurement result area of the PRM that captures the outcomes that agencies seek to achieve.
	Services for Citizens			Captures the extent to which results related to services that the federal government provides both to and on behalf of the American citizen are achieved.
		Community and Social Services		Includes all activities aimed at creating, expanding, or improving community and social development, social relationships, and social services in the United States. This includes all activities aimed at locality specific or nationwide social development and general social services. This Line of Business includes general community development and social services programs, as well as earned and unearned benefit programs that promote these objectives.
			Homeownership Promotion	Homeownership promotion includes activities devoted to assisting citizens interested in buying homes and educating the public as to the benefits of homeownership. NOTE: Activities devoted to the provision of housing to low-income members of the public are located in the Housing Assistance Sub-Function.
			Community and Regional Development	Community and Regional Development involves activities designed to assist communities in preventing and eliminating blight and deterioration, assist economically distressed communities, and encourage and foster economic development through improved public facilities and resources.
			Social Services	Social Services are designed to provide meaningful opportunities for social and economic growth of the disadvantaged sector of the population in order to develop individuals into productive and self-reliant citizens and promote social equity. Included in this category are social welfare services extended to children and adults with special needs, such as the orphaned, neglected, abandoned, disabled, etc. Such services include family life education and counseling, adoption, guardianship, foster parents.
			Postal Services	Postal Services provides for the timely and consistent exchange and delivery of mail and packages between businesses, organizations, and residents of the United States or between businesses, organizations, and residents of the United States and the rest of the world. It also includes the nation-wide retail infrastructure required to make Postal Services easily accessible to customers. (Note: The commercial function of mail is more closely aligned with the "Business and Industry Development" Sub).
		Defense and National Security		Protect and advance U.S. national interests and, if deterrence fails, decisively defeat threats to those interests.
			Strategic National and Theater Defense	Strategic National and Theater Defense involves establishing national and multinational military objectives; sequencing initiatives; defining limits and assess risks for the use of military and other instruments of national power; developing global plans or theater war plans to achieve these objectives; and providing military forces and other capabilities in accordance with strategic plans.

Results Measurement Area	Measurement Category (BRM LoB)	Measurement Group (BRM Function)	Measurement Subgroup (BRM Subfunction)	Business Function Description (PRM and BRM)
			Operational Defense	Operational Defense involves linking tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events.
			Tactical Defense	Tactical Defense involves focusing on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives.
		Disaster Management		Involves the activities required to prepare for, mitigate, respond to, and repair the effects of all disasters whether natural or man-made.
			Disaster Monitoring and Prediction	Disaster Monitoring and Prediction involves the actions taken to predict when and where a disaster may take place and communicate that information to affected parties. Note: Weather forecasting, while central to Disaster Monitoring and Prediction, is more closely aligned with the "Environmental Monitoring and Forecasting" Sub-Function in the "Environmental Management Line of Business".
			Disaster Preparedness and Planning	Disaster Preparedness and Planning involves the development of response programs to be used in case of a disaster as well as pre-disaster mitigation efforts to minimize the potential for loss of life and property. This involves the development of emergency management programs and activities as well as staffing and equipping regional response centers, and mitigation-focused construction and preparation.
			Disaster Repair and Restore	Disaster Repair and Restore involves the cleanup and restoration activities that take place after a disaster. This involves the cleanup and rebuilding of any homes, buildings, roads, environmental resources, or infrastructure that may be damaged due to a disaster.
			Emergency Response	Emergency Response involves the immediate actions taken to respond to a disaster. These actions include, but are not limited to, providing mobile telecommunications, operational support, power generation, search and rescue, and medical life saving actions.
		Economic Development		Includes the activities required to promote commercial/industrial development and to regulate the American financial industry to protect investors. It also includes the management and control of the domestic economy and the money supply, and the protection of intellectual property and innovation.
			Business and Industry Development	Business and Industry Development supports activities related to the creation of economic and business opportunities and stimulus, and the promotion of financial and economic stability for corporations and citizens involved in different types of business.
			Industry Sector Income Stabilization	Industry Sector Income Stabilization involves all programs and activities devoted to assisting adversely impacted industrial sectors (farming, commercial transportation, etc.) to ensure the continued availability of their services for the American public and the long-term economic stability of these sectors.
			Intellectual Property Protection	Intellectual Property Protection involves all activities to protect and promote the ownership of ideas and control over the tangible or virtual representation of those ideas, including inventions and discoveries, literary and artistic works, and symbols, names, images, and designs used in commerce.
			Financial Sector Oversight	Financial Sector Oversight involves the regulation of private sector firms and markets (stock exchanges, corporations, etc.) to protect investors from fraud, monopolies, and illegal behavior. This also includes deposit protection.

Appendix B – Sample Word Import Document

Below is the sample Word import document generated from the FEA PRM spreadsheet fragment presented in Appendix A. To accomplish this, copy the Excel table from the spreadsheet and paste it into a Word document. Word converts the Excel spreadsheet table to a Word table. Change the columns of the table to styles HEADER1, HEADER2, and so on. Clear the description column formatting. Then convert the table to text (by paragraph). Remove the extraneous paragraph marks produced by empty cells. Note that the progressively higher header numbers are used by the CaliberRM import mechanism to establish the taxonomy hierarchy.

OEAM can import a Word document in this neutral format directly into CaliberRM. The names and descriptions are in a format easily reformatted by style sheets.

Mission and Business Results

A measurement result area of the PRM that captures the outcomes that agencies seek to achieve.

Services for Citizens

Captures the extent to which results related to services that the federal government provides both to and on behalf of the American citizen are achieved.

Community and Social Services

Includes all activities aimed at creating, expanding, or improving community and social development, social relationships, and social services in the United States. This includes all activities aimed at locality specific or nationwide social development and general social services. This Line of Business includes general community development and social services programs, as well as earned and unearned benefit programs that promote these objectives.

Homeownership Promotion

Homeownership promotion includes activities devoted to assisting citizens interested in buying homes and educating the public as to the benefits of homeownership. NOTE: Activities devoted to the provision of housing to low-income members of the public are located in the Housing Assistance Sub-Function.

Community and Regional Development

Community and Regional Development involves activities designed to assist communities in preventing and eliminating blight and deterioration, assist economically distressed communities, and encourage and foster economic development through improved public facilities and resources.

Social Services

Social Services are designed to provide meaningful opportunities for social and economic growth of the disadvantaged sector of the population in order to develop individuals into productive and self-reliant citizens and promote social equity. Included in this category are social welfare services extended to children and adults with special needs, such as the orphaned, neglected, abandoned, disabled, etc. Such services include family life education and counseling, adoption, guardianship, foster parents.

Postal Services

Postal Services provides for the timely and consistent exchange and delivery of mail and packages between businesses, organizations, and residents of the United States or between businesses, organizations, and residents of the United States and the rest of the world. It also includes the nation-wide retail infrastructure required to make Postal Services easily accessible to customers. (Note: The commercial function of mail is more closely aligned with the "Business and Industry Development" Sub).

Defense and National Security

Protect and advance U.S. national interests and, if deterrence fails, decisively defeat threats to those interests.

Strategic National and Theater Defense

Strategic National and Theater Defense involves establishing national and multinational military objectives; sequencing initiatives; defining limits and assess risks for the use of military and other instruments of national power; developing global plans or theater war plans to achieve these objectives; and providing military forces and other capabilities in accordance with strategic plans.

Operational Defense

Operational Defense involves linking tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events.

Tactical Defense

Tactical Defense involves focusing on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives.

Disaster Management

Involves the activities required to prepare for, mitigate, respond to, and repair the effects of all disasters whether natural or man-made.

Disaster Monitoring and Prediction

Disaster Monitoring and Prediction involves the actions taken to predict when and where a disaster may take place and communicate that information to affected parties. Note: Weather forecasting, while central to Disaster Monitoring and Prediction, is more closely aligned with the "Environmental Monitoring and Forecasting" Sub-Function in the "Environmental Management Line of Business".

Disaster Preparedness and Planning

Disaster Preparedness and Planning involves the development of response programs to be used in case of a disaster as well as pre-disaster mitigation efforts to minimize the potential for loss of life and property. This involves the development of emergency management programs and activities as well as staffing and equipping regional response centers, and mitigation-focused construction and preparation.

Disaster Repair and Restore

Disaster Repair and Restore involves the cleanup and restoration activities that take place after a disaster. This involves the cleanup and rebuilding of any homes, buildings, roads, environmental resources, or infrastructure that may be damaged due to a disaster.

Emergency Response

Emergency Response involves the immediate actions taken to respond to a disaster. These actions include, but are not limited to, providing mobile telecommunications, operational support, power generation, search and rescue, and medical life saving actions.

Economic Development

Includes the activities required to promote commercial/industrial development and to regulate the American financial industry to protect investors. It also includes the management and control of the domestic economy and the money supply, and the protection of intellectual property and innovation.

Business and Industry Development

Business and Industry Development supports activities related to the creation of economic and business opportunities and stimulus, and the promotion of financial and economic stability for corporations and citizens involved in different types of business.

Industry Sector Income Stabilization

Industry Sector Income Stabilization involves all programs and activities devoted to assisting adversely impacted industrial sectors (farming, commercial transportation, etc.) to ensure the continued availability of their services for the American public and the long-term economic stability of these sectors.

Intellectual Property Protection

Intellectual Property Protection involves all activities to protect and promote the ownership of ideas and control over the tangible or virtual representation of those ideas, including inventions and discoveries, literary and artistic works, and symbols, names, images, and designs used in commerce.

Financial Sector Oversight

Financial Sector Oversight involves the regulation of private sector firms and markets (stock exchanges, corporations, etc.) to protect investors from fraud, monopolies, and illegal behavior. This also includes deposit protection.