ENOVIAVPM Solutions V1R4 — Improve Worldwide Collaboration in Product Design

Overview
ENOVIAVPM Solutions Version 1 Release 4 supports enhanced innovation and collaboration during product and process development.

Features
- Supports “design in context” best practices for the definition, configuration, management, and optimization of product designs, manufacturing, and maintenance processes, and associated product information, including the manufacturing resources definition and plant definition.
- Provides an environment for concurrent engineering where controlled changes can be immediately available to development teams.
- Supports global extended enterprises by providing facilities for distributed site data sharing and synchronization across multiple sites.
- In combination with the ENOVIA Portal, many functions available in ENOVIAVPM’s engineer role now available through the Web to extend support for distributed collaborative design processes across the design chain.
- Reveals the detailed network of information otherwise hidden in proprietary data produced by CAD and other modelling tools, enabling the design intent and knowledge to be more easily shared and used by the integrated product development team.
- A Concurrent License version of all previously announced Named User versions now available.
- Enhanced support for configured product definition: Full support for UNIX®-based CATIA Version 5.


Benefits
- Increases team collaboration and the ability to innovate.
- Improved overall competitiveness through increased existing market size or the development of new markets.
- Achieve competitive leadership through continuous product innovation.

Key Prerequisites
Workstation platforms:
- RS/6000®
- HP-UX 9000 Series
- Sun Solaris SPARC system family
- Silicon Graphics (SGI) workstations

A properly sized database is required, using either the DATABASE 2™ (DB2) or the Oracle database manager.

Planned Availability Date
May 4, 2001

At a Glance
ENOVIAVPM Solutions Release 4 includes the following capabilities and enhancements:
- Additional support for multisite extended enterprises:
  - Multisite brokered replication facilities
  - Web-based capabilities for product management and definition
  - Site-based ownership control
- Effective product-configuration management for granular definition and identification of product change through the use of rules-based configuration.
- Support extended enterprise product development processes through new multisite configured data-replication capabilities.
- Early awareness of ongoing product changes for easy implementation of late changes.
- Enhanced control over engineering progress by using program milestones to integrate changes into the product definition.
- Faster and controlled availability of up-to-date data and information throughout the development supply chain.
- Extended Web-based capabilities for product management and definition.
- Improved support for UNIX-based CATIA Version 5 users.
- Enhanced STEP support for data interchange of configured data using effectivity criteria.
- Named User and Concurrent User versions.

This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: http://www.ibm.com.
Immune support for VPDM processes:
- ENOVIA VPM provides major functions in the following domains:
  - Clash management: these functions provide support for tracking concurrent part design by using incremental clash analysis as an advanced project-management tool. They allow supervisors and engineers to automatically record and update the results of successive clash analysis using CATITF, ITFCHECK (for batch interference analysis), ENOVIA
  - Supply-chain and extended enterprise support:
    - ENOVIA VPM supports STEP (AP203 and AP214) to exchange data between sites.
    - ENOVIA VPM makes available its data and significant management, engineering, and communications functions to the extended enterprise via the ENOVIA 3d com product suite.
    - An enterprise can cover a wide spectrum of supply-chain data and process-sharing requirements by combining ENOVIA VPM multisite and data distribution support and ENOVIA VPM interoperability.
    - While several sites can share the same database facilities, multiple document vaults can be defined for a single ENOVIA VPM server, allowing data to be stored where it is most used, while being available at all sites.
    - Any site can cache graphical documents to reduce access time to remote vaults.
    - New in Release 4, ENOVIA VPM supports the selective exchange of data across multiple ENOVIA VPM sites.
  - Integration with other enterprise disciplines:
    - Project, program, and enterprise process management via interoperability with ENOVIA VPM workflow management and other capabilities.
    - Parts, MBoM product structures, and documents can be exchanged with SAP manufacturing through the production pipeline.
    - Data exchange using STEP standards is supported.
  - Early manufacturing involvement:
    - DELMIA manufacturing simulation tools can be used from ENOVIA VPM.
    - DELMIA IGRIP can be defined as an optional "viewer" for the configured virtual product. It can use the ENOVIA VPM database to store and retrieve necessary manufacturing environmental data (work center layout, timing constraints, resources). Configured CATIA Version 4 or CATIA Version 5 assemblies can be loaded into IGRIP and, if parts are moved, the new part position can be saved back into ENOVIA VPM.
    - DELMIA DPM is integrated and can use parts defined in ENOVIA VPM to define a manufacturing process. Output from DPM (CATProcess) can be stored against an ENOVIA VPM part.
    - ENOVIA DMU Navigator and CATIA Version 5 support:
      - ENOVIA VPM can attach ENOVIA DMU Navigator or CATIA Version 5 as UNIX viewers and/or editors to access CATIA Version 4 and CATIA Version 5 parts stored in ENOVIA VPM for visualization and analysis. When using CATIA Version 5, full assembly functions are available for hybrid CATIA Version 4/Version 5 assemblies. CATIA Version 5 parts and assemblies can be stored in ENOVIA VPM and mixed with parts modelled using CATIA Version 4.
      - CATIA Version 5 assembly functions such as product structure creation and manipulation can be used on a UNIX platform to cause the ENOVIA VPM data structures to be updated. Assembly constraints and published geometry defined in CATIA Version 5 are managed in configuration in ENOVIA VPM.
    - Relational design support (formerly referred to as associative design) allows designers to specify key product parameters during early conceptual design. It tracks the relationship between the specifications and the detailed design as the product evolves. Engineering changes that affect either the detailed parts or the initial design specifications cause warnings to be generated, and, in certain cases, can cause the design to be automatically recalculated. Relational design makes use of the hyperlinked knowledge stored in the database.
    - Configuration definition: major functional and ease-of-use features in the area of configuration definition make ENOVIA VPM the preferred choice for implementing DMU. For example, configuration criteria on product component links can include complex expressions that use multiple options. Configuration handlers become easier to define, redefine, and select. Option packages can be defined, simplifying the specification of configuration criteria.
    - Variant management: ENOVIA VPM manages a product-specification dictionary that allows options to be grouped into option categories on which business rules can be applied. The specification dictionary also allows conditional business rules to be defined, so that the use of a specification can cause other specifications to be validated and applied.
DMU management: ENOVIAVPM supports DMUs containing CATIA and non-CATIA product definition data. Equivalent level of function is available for both. ENOVIAVPM supports instance identification and control. Although ENOVIAVPM’s basic data structure uses a traditional “reference model” (a hierarchical Bill of Material (BoM) product structure), users can request that specific components be identifiable as unique part instances. In addition, instances in one product structure can be related to instances in another. Query attributes can be specified on instance links to allow instance characterization and selection. This can be particularly useful when specific instances are subject to events within a business process such as certification.

Part management: ENOVIAVPM provides support for part definition and management, including attribute, BoM, and structure definition. It includes powerful version and revision control and can be customized to include additional business rules. Separate version and revision numbering schemes can be assigned to each environment, table, and document representation type. Versioning and release numbering can be controlled via user exits to apply enterprise rules. When new part versions are created, the user can identify which revision of documents on the previous version must be copied over to the new part.

Action control: Actions can be used to authorize and track changes to product configurations. Actions are information folders that can be transferred between users. They are associated with a lifecycle. Promote/demote functions change the status of the Action. The Action folder can contain documents, dates, affected items, and the context in which the change is to occur (configuration, filter, clash criteria). The Action can also be used to carry the change effectivity. Relationships between input data and output items generated as a result of product structure changes are recorded. Actions can be defined without an association to a specific configuration. The user can individually reject the changes identified on an Action. Actions participate in the clash-management process. In enterprises where Action control is not required for configuration changes, it is possible to make changes without defining a related Action.

Authorization and Security: A People and Organization (P&O) framework in ENOVIAVPM controls access to functions and data. Batch jobs started from ENOVIAVPM can have their user passwords encrypted. Product structure links may be put under control of the authorization mechanisms. The P&O database is key to controlling update access to product information in a distributed enterprise.

Customization: ENOVIAVPM object interfaces (APIs), business exits, database definition using EXPRESS, and lifecycles provide extensive customization capabilities.

Accessibility by People with Disabilities
These programs can be operated by keyboard alone.

Euro Currency
These programs are not impacted by euro currency.

Product Positioning

Product Differentiators
• ENOVIAVPM and ENOVIAPM are positioned as complementary products satisfying the requirements of a process-centric system. They are built to support a customer’s global integration and distribution requirements. These include all aspects of the global and extended enterprise, from DMU to digital plant definition and digital operation, as well as suppliers. ENOVIAVPM supplies functions to help in product and process optimization, solution evaluation, and innovation. ENOVIAVPM Release 4 addresses the definition phases of the product development lifecycle:
  - It features enhanced change control, development of alternative technical solutions, configuration definition, and analysis using DMU facilities.
  - It supports recognized industry-best practices that emphasizes design in context, concurrent task implementation, and communication throughout the extended enterprise.
  - It uses a robust and tested architecture capable of supporting large numbers of users working in concurrent engineering. ENOVIAVPM can be used from the earliest phases of the development cycle.
• The optional ENOVIAVPM-ENOVIAPM interoperability feature allows a user to coordinate changes in both systems while maintaining the independent strengths of both.
• ENOVIAVPM Release 4 can be used with ENOVIA Portal and e-business solutions in order to provide Web-based access for all individuals within the enterprise to view ENOVIAVPM and other data.
• ENOVIAVPM Release 4 is CAD-independent, but is enabled through a CAD plug-in to support CATIA (Version 4 and Version 5) and DELMIA users, allowing native access to advanced design and manufacturing functions and data. ENOVIAVPM Release 4 easily migrates from current Dassault Systemes products such as CDM and CDMA, and compared to these offerings, it represents a major step towards more extensive product data management.
• ENOVIA Version 5 is a next generation product aimed at satisfying both the VPDM and the PDM markets. To this extent, its objectives go beyond those for ENOVIAVPM, specifically oriented to the VPDM market. ENOVIA Version 5 Release 6 is planned as the first release of the product. This release provides functions required during the intermediate phases of the product lifecycle:
  - Product, part, and structure definition
  - Action
  - EC
  - Lifecycle management
A BoM function allows manufacturing engineers to build alternative product structures for downstream functions.
• The customers that are clearly targeted by ENOVIAVPM rather than ENOVIA Version 5 are those having a significant CATIA Version 4 base. The ENOVIAVPM development plan includes additional and competitive support (relative to ENOVIA Version 5) for mixed CATIA Version 4/Version 5 customers.
• Customers who want to move completely off the UNIX platform and have clear short- to mid-term PDM requirements and also major long-term requirements in logistics and after-sales service should be looking at ENOVIA Version 5.

• Both products have significant development plans. ENOVIAVPM, in particular, is in large-scale production in many customer sites and is not recommended for these customers to migrate to ENOVIA Version 5.

• For ENOVIAVPM, the plan includes support for enterprise process migration by progressively moving key ENOVIAVPM functions onto the same Enterprise Architecture as that which will be used by ENOVIA Version 5. This will facilitate concurrent use of both products and allow users similar interface and best practice capabilities.

**SmoothStart™ /Installation Services**

SmoothStart Services are not provided.

**Trademarks**

DATABASE 2 and SmoothStart are trademarks of International Business Machines Corporation in the United States or other countries or both.
DB2 and RS/6000 are registered trademarks of International Business Machines Corporation in the United States or other countries or both.
Windows is a trademark of Microsoft Corporation.
UNIX is a registered trademark is a registered trademark of the Open Company in the United States and other countries.
Other company, product, and service names may be trademarks or service marks of others.
**ENOVIAVPM Components**

**BoM:** BoM manages product structure as a part hierarchy. Parts may be viewed as folders that group associated documents, CATIA Version 4 or Version 5 models, DELMIA work cell data, clash results, and other documents. Parts can represent assemblies or subassemblies when they are linked to components. Component links contain the instance matrix used for DMU positioning and zone calculations. ENOVIAVPM allows two-way intercommunication between CATIA Version 5 and ENOVIAVPM in the UNIX® environment. This allows the CATIA Version 5 user to build assemblies from mixed CATIA Version 4 and CATIA Version 5 models, position the parts, update the assembly by deleting or adding parts, and save the assembly as a positioned product structure tree in ENOVIAVPM. The product structure can be managed either as a “reference” tree, an “instance” tree, or both.

A GUI allows manipulation of the product structure so that parts and assemblies can be added to, withdrawn from, replaced, and saved in the database. Significant features allow the user to:

- Create, update, and delete parts and metadata describing part-related documents and CATIA models.
- Create and manage part instances. Selected part instances displayed in a graph can be identified and an instance record can be built. The instance record contains the exact hierarchical path from the graph’s root part to the end part. The instance record can contain user attributes that can be queried. It can be associated with an Action.
- Query the database to identify parts and documents. The part/document list resulting from a query is displayed in a window and part data may be selectively updated, deleted, or visualized. Documents associated with the parts may be loaded into an editor for modification. Typical editors are word-processing tools, CAD products, and so on.
- Customize and save settings. Users can change default characteristics of the workbench, save the new values, and retrieve them in a later session. The security password can be changed during a session.
- Build and store queries on objects (parts, models, documents). Beginners can query the ENOVIAVPM database without knowing the data structures, building queries using object attributes. Lists of values and common operators (such as “equals” or “is greater than”) prompt the user and facilitate creation of the query. Expert users are provided with graphical tools to help build complex queries. Stored queries can be combined into more complex queries.
- Use predefined queries on products, locked objects, and the last version of objects.
- Lock data to ensure its integrity when working on a new version of a part. Only the owner of the lock can modify the part. When the locked object is a part, its component links and associated documents are also locked. Objects can be locked individually.
- Version parts. A new version can retain the same part number, or it can be assigned a new number. In both cases, ENOVIAVPM makes a record of the change and allows the user to browse the part’s history. The default version-numbering scheme can be customized. When a new version is created, documents associated with the source version are copied onto the new part. The user can select which revision number of the CATIA models must be copied. When replacing a part in a PSN product structure, the user can choose from a list of all versions of the part, whether they have the same or different part numbers.
- Create revisions of part representations (models, documents). Revision numbering is under enterprise control. Each document type can have its own revisioning scheme.
- Manage part maturity to allow a part to be promoted through an enterprise-defined set of maturity values.
- Check in and check out selected objects.
- Display configured graphical product structures. A product structure can be displayed as an instance graph. The graph can contain parts and (optionally) associated documents. The elements of the structure that are displayed may be controlled by filter mechanisms. If the CAD “plug-in” is installed, the filter may also include the geometrical properties (positioned volume) of an associated model.
- Refresh graph.
- Display and update a configuration using ENOVIAPM criteria. A product structure graph can be developed based on ENOVIAPM configuration criteria (date, unit number, status). The graph can be updated by copying parts into it from a different graph.
- Save a product structure graph. The graph context, including configuration criteria and a list of selected items, is stored into a flat file. When the context is recalled, the original criteria (queries, filters, selections) are replayed and the graph displayed may be different from the original. Optionally, the complete graph contents can be saved in addition to the context data. When the data is reused, the graph displayed is identical to the one saved. This may enhance performance when the user is sure that no changes have been made since the original save.
- Edit the graphical product structures with easy-to-use contextual menus. Structures can be defined or updated with cut, copy, paste, and other operators. Part replacement can be predicated on the basis of one, all or a product-related instance filter.
• Use zone, volume, space map, and attribute criteria to selectively filter in or out components of a graphical assembly explosion. Volume filtering can be effected with real or rectangular bounding criteria.

• Analyze objects in the product graph to obtain detailed information on attribute values. Objects may be parts, part documents (CAD models), or part-to-part relationships.

• Select specific parts from multiple graphs and load the associated models into a viewer such as CATIA Version 4, 4D Navigator, CATIA Version 5, ENOVIA DMU Navigator, or DELMIA IGRIP to build a context-rich DMU.

• Analyze the validity of the links between part-related documents. Refer to the listed dependency relationships.

• Compare multiple product structures and graphically highlight the differences. The structures can be in separate graphs, or a graph structure can be compared against a structure stored in the VPM database.

• Save changes in ENOVIAVPM or ENOVIAPM. When one of the product structure graphs displays an ENOVIAVPM configuration, the differences highlighted as a result of a graph comparison can be transferred either to ENOVIAVPM (under control of an Action) or to ENOVIAPM (as an engineering change).

• Change the part or document maturity. BoM uses maturity-management services to control maturity states.

• Attach documents or document elements (Generative Technical Publications) to parts and create hyperlinks. Hyperlinks can be viewed and the system validates their integrity by checking that changes to upstream documents are propagated to dependent items. Most hyperlinks are automatically created by the system (3D to 2D dependencies, for example).

• Generate BoM reports online in text or HTML format.

• Exchange product data in STEP interchange format. Data can be imported into and exported from the ENOVIAVPM database. The data includes parts, product structures, and all associated documents, including CAD models. Application protocols supported are AP203 and AP214.

• Manage clash detection using CATITF, ENOVIA DMU Navigator, or CATIA Version 5. Clash results are structured and stored in ENOVIAVPM and include selected item attributes (part number, maturity) allowing management of individual clash occurrences. Clash items and their context can be specified on Actions and assigned for correction. When the product is opened from the Action, the graph is filtered in the context of both the configuration criteria and the interfering parts. Successive clash results update the existing list and allow project managers to track progress of design activities.

**CFG (Configuration):** Configuration identifies change and establishes an effectivity that determines under what conditions any particular change or group of changes is applicable. The effectivity conditions managed by ENOVIAVPM Version 1 are range, date, and option. Multiple options may be defined as complex effectivities using Boolean operators. Configured product definition supports the management of a single enterprise-specifications dictionary and related business rules that can be used to identify, using effectivities on part-to-part links, multiple product structures within a single product database, and multiple product specifications dictionaries. Configurations can be based on combinations of:

• Date and range effectivities.

• Multiple options linked with Boolean operators.

• Categories defined as mutually exclusive or mandatory. In each category, an option can be defined as the default one.

• Packages which can combine multiple options in expressions using Boolean operators.

• Modifications that can identify (sets of) changes as potential solutions to a design problem. Each modification can be defined on a common baseline configuration, ensuring independence of the changes while allowing analysis of the alternative solutions.

• Configuration handlers that can group multiple configuration criteria to simplify access to any particular configuration and define product baselines or other shared product structure.

• Business rules that determine the conditions under which options should be used.

Using configuration mechanisms to build alternative or successive versions of a product allows the designer to compare design alternatives in a configured DMU. With multiple configurations managed in the same database, there is less need to duplicate information and data integrity is enhanced. Other characteristics of the configuration change functions in ENOVIAVPM Release 4 include:

• Select a configuration handler from a sorted list.

• Control over the visibility of changes. Initially, a change is only available to the designer making the change. The change can be progressively made visible to more widespread groups as defined by the enterprise organization.

• Creation of new configurations by applying one or several alternative or complementary changes to a base configuration.

• Configuration handler management to create new configuration handlers using copy/ rename and select configuration handlers from a query panel.

• Configuration handler usage. When using configuration handlers to extract a configuration, the values in the configuration handler (options or “current date”) can be replaced with other option or date values.

• Support roll-up or bubble-up mechanism through the definition of both configured and non-configured parts. A configured part is an assembly whose links to component parts may be determined by the effectivity of the link; a configured part can therefore have multiple definitions. In a non-configured part, links to components are not controlled by an effectivity, so the part has only a single definition. A part must be versioned, or a new part created from it, if its component links are to change. The roll-up capability allows a part’s effectivity to be applied to (or pasted on) its parent assemblies, ensuring that the assembly can be exploded the same effectivity criteria as its components.

• Query configurations. Using the query, parent or component links for a selected part can be analyzed, identifying the valid effectivities for each and their status for any engineering change or modification.
Actions serve to record the individual parts that have been changed and can be used to communicate change and change progress within the enterprise. As changes are made to a product structure, they are recorded as individual items on the Action. Any "input" items identified on the Action are linked to the associated "output" items. When the Action is committed, the user can choose to accept or reject individual changes.

When an Action is created based on a clash interference report, the context identifies not only the configuration, but also the two conflicting part instances. This allows the engineer to immediately open a graph focused on the appropriate items.

Actions use maturity-management services. The actions can be by promoted or demoted. Promoting an Action changes its status, causing the behavior of the Action to be modified.

Actions may be "typed" and each Action type may have its own status graph.

Hyperlink Management

Hyperlinks, or technological links, are a key element in making engineering information usable throughout the extended enterprise, transforming data into knowledge. They provide a mechanism for implementing the multiple associations that naturally exist between the different objects that contribute to a complete product definition:

- Part is in contact with another
- A 2D drawing or NC cutter path is derived from this 3D model
- These two connectors make up an electrical circuit
- This assembly process uses this part instance

Impact analysis, work generation, automatic updating, technical documentation, and many other activities can be optimized. These also can be automated, provided the appropriate links are available in the database.

ENOVIAVPM manages hyperlinks in the form of dependency relationships between objects. The objects and the hyperlinks are stored in the database. ENOVIAVPM validates the integrity of object-to-object links as changes are made, so that related objects that may need updating as a result of a change are flagged.
• By managing object-to-object links, the system makes users aware of the potential effects of a changes. The system includes the help required to ensure that a change is implemented completely to enhance the quality of the change-management process.

• Hyperlinks may be implemented by a modelling tool such as CATIA, in which case an appropriate plug-in mechanism is required. ENOVIA VPM Version 1 Release 4 makes six built-in plug-ins available:
  - CATIA Version 4
  - CATIA Version 5 (including ENOVIA DMU)
  - DELMIA/IGRIP
  - DELMIA DPM
  - ENOVIA DMU Navigator
  - ENOVIA VPM Generative Technical Publications

  ENOVIA VPM Version 1 hyperlinks include entity-to-entity relations. These are relations that establish logical relationships between CAD models.

  The ENOVIA VPM CATIA Version 4 model links are:
  - 2D drawing to 3D model
  - NC model to 3D model
  - Skin entity to skin entity
  - Solid entity to skin entity
  - Solid entity to solid entity
  - Mesh entity to solid entity
  - Mesh entity to explicit surfacic entity
  - Skin model to wireframe model
  - Kinematics model to 3D model

  The ENOVIA VPM CATIA Version 5 model links are:
  - Assembly constraints
  - Relational design technological links
  - Application relationships

  These links are automatically created by the appropriate CATIA modellers. The number of entities linked across two models can be displayed in the Dependency graph.

  Document element-to-part or model relationships. These hyperlinks are used and managed by the ENOVIA VPM Generative Technical Publications solution. A user interface is provided to allow these links to be created. They cover:
  - Part metadata to techpub item
  - Model to techpub item

  BoM relations: These links for the following assembly and associated document relations that are typically found in a PDM system are generally created using copy/cut/paste operations in the product structure graph:
  - Assembly to sub-assembly
  - Sub-assembly to component
  - Assembly, sub-assembly, or component to CATIA model or document

  User-defined relations. These can be any links between documents and/or CATIA models. A user interface allows definition of these links. Links are graphically visualized in the product structure window. In this case, the window provides access to part version history. Previous or succeeding part versions can be displayed, whether they have the same or a different part number. Where-used queries are supported and can identify using products. The links themselves can be queried to identify their configuration criteria, and the Action that caused their presence in the structure can open a hyperlink management (or “dependency”) graph.

  In this case, the window provides information on the validity of the links. In particular it indicates if both of the objects participating in the link are at the same release level; a model that is updated or versioned causes a warning to be set and the user should probably update the related object.

  The hyperlink-management graph (also known as a “concurrent-engineering graph”) shows the links as a hierarchy, starting from a source object, the graph shows any number of objects connected one with the other at multiple levels. The graph can visualize the links going from source to target, or target to source. From the graph, it is possible to open the appropriate document or model and show the part information.

  Some examples of processes enabled by ENOVIA VPM hyperlinks are:
  - Relational design: This process manages the relationships between objects, such as specification and detailed design. Using ENOVIA VPM facilities, task evaluation, and object updating (that could potentially cause a complete automatic redesign of the product) are greatly simplified. For instance, a general layout diagram identifying key design parameters can be related to skin and 3D models, providing shape control over the linked solids. Changes in either the initial definition or any of the related components are immediately flagged in the hyperlink management graph, and may be propagated throughout the objects using batch update capabilities.
  - Clash management: This makes use of BoM structure links and clash result pointers to enable management of part design when checking with interference analysis.
  - Power-train design: The multiple models used to design very complex parts can be linked and automatically updated with the batch facility when changes are made in any part of the product.

P&O: Roles and associated capabilities can be specified to provide an authorization context for different users or groups. The enterprise organization can be defined, and roles can be associated with groups (departments, for instance) or individuals. Each role defines the privileges provided to the role. The privileges can be generic (such as use of the complete configuration function) or it can be as granular as necessary, so that the individual functions can be controlled.

Enterprise organization and promotion mechanisms go hand in hand, so that if a private change is made visible, the visibility of changes is extended to the higher levels of the organization.

ENOVIA VPM objects such as parts may be grouped and access rules can be defined so that, combined with the role and privilege mechanisms, it is possible to define a level of security as granular as required.

The user workbench provides query and update capabilities on people, organization structures, roles, and authorizations. The query can specify search criteria, and new entries can be created in the database.

Changes in ENOVIA VPM Release 4

• Ability to define security groups or clusters that correspond to any search criteria (assembly, attribute value)

• Association of organizations to physical sites
Enterprise-defined P&O criteria are stored in an ENOVIAVPM database for greater security.

P&O manages privileges as access rights to individual processes (the “version part” process may or may not be available) and, if the process accesses data, to a data group or family. ENOVIAVPM provides default “private data” and “organization” data groups. The data belonging to a data group is identified by attribute values in the data object.

Several process access rights can be aggregated into a process group. The use of groups can simplify the management of access rights.

An administrator can be assigned at any organizational level to control the definition of the lower levels of the organization, and the attribution of access rights to associated persons. It is possible to define a hierarchy of data and process administrators that allows delegation of privilege rights, thus limiting the workload of the higher-level administrators. For example a tier 1 subcontractor could be identified as being part of the company’s organizational structure. Subcontractor personnel could access their own data and processes, controlled by the subcontractor’s own data administrator, or to data and processes to which they were given access by virtue of any specific rights granted to the organization to which they belong.

**Publish/Subscribe:** The publish/subscribe mechanism allows users and processes to subscribe to events and then be informed when the event occurs. Typical events include changing an object maturity from one level to another, creating a new part version, and updating a CAD model.

Publish/subscribe enhances communication within the enterprise. Users are immediately informed of changes to objects in which they have an interest. Their time is optimized since they no longer have to spend time on changes that do not concern them.

The user can choose to have immediate event notification via a mail service. Otherwise the events will be placed in an event queue that the user can query from time to time.

The user workbench provides query and update capabilities on events.

**Maturity Management:** Maturity management allows the enterprise to define a set of states or “maturity levels” that an object can take. The maturity of the object progresses from its current state to the next as the object is promoted. Maturity states can be defined for parts, documents, and actions. As maturity progresses from one state to another, either as a result of its promotion or for any other reason, the object will cause publication of the event to subscribed users. During event publication, an enterprise-defined action can be triggered that can, for example, validate the change or synchronize it with other data in the system.

By defining granular states for objects, the enterprise can apply any required level of control to an object. Concerned users can subscribe to parts or actions and be automatically informed about their progress from one maturity level to another, thus enhancing their reactivity to change.

**Interoperability with ENOVIAPM:** These functions allow a user to work in the ENOVIAVPM environment to design and analyze a product, transferring product information between ENOVIAVPM and ENOVIAPM as necessary to share the product definition information with both systems and with the wider enterprise.

New parts, versions, and product structures can be created in ENOVIAVPM or ENOVIAPM. The equivalent parts can be created using the interoperability feature in the other system. The engineer has total freedom to implement a digital description of the product using ENOVIAVPM features and configuration criteria.

When an enterprise-defined level of maturity has been reached, you can build a product graph from an ENOVIAVPM configuration in the PSN. You can also build a product graph from an ENOVIAPM configuration within the PSN. By using an enhanced “graph compare” function, ENOVIAVPM Release 3 compares the two graphs, analyzes them assuming that the product structures are similar, and identifies new or removed links. The changes (new or deleted links, new parts/items) can be selectively transferred to ENOVIAPM or ENOVIAVPM under a user-defined Action or engineering change.

ENOVIAPM structures visualized in an ENOVIAVPM PSN window can be published to a STEP file.

When the engineering change is released in ENOVIAPM, you can propagate the release process into ENOVIAVPM by freezing the equivalent parts.

**Interoperability with SAP Manufacturing:** These functions allow you to work in the ENOVIAVPM environment to design and analyze a product, transferring product information to SAP as necessary for manufacturing planning.

The ENOVIAVPM user works in the main menu or PSN (to exchange resolved product structures) to identify parts, assemblies, and part representations that need to be transferred to SAP. Objects can be selected and a “push to SAP” function allows the data to be placed under the control of an SAP “change master”. New to Release 4:

- A synchronize function that allows an administrator to assign a responsible system (SAP or ENOVIAVPM) to each attribute and synchronize the attribute values when required.
- Access to SAP Material definition panels. On request (and provided the user is logged on to SAP), you can have direct access to SAP material function.

**Plug-ins:** A number of plug-ins are delivered with ENOVIAVPM. They require that the two systems be running on UNIX platforms:

1. A CATIA Version 4 Release 2.0 Refresh 1, and later, plug-in (with appropriate PTFs) allows for:
   - CATIA Version 4 to use ENOVIAVPM as a model repository
   - Associativity (cross-system highlighting) between the DMU in CATIA Version 4 (including 4D Navigator) and the product-structure graph
   - CATIA Version 4 to store part positioning data in the ENOVIAVPM Release 4 database
   - The use of CATIA Version 4 model geometry and positioning data as filter criteria when accessing a configured product structure
   - ENOVIAVPM to use CATIA Version 4 (including 4D Navigator) as a DMU viewer
• The maintenance and visualization of CATIA Version 4-specific hyperlinks such as those between the following CATIA Version 4 data objects:
  - Solid to solid
  - 3D model to drafting
  - 3D model to mesh
  - 3D model to kinematics and 3D model to robotics

2. A CATIA Version 5 Release 6 SP1®, and later, plug-in in the UNIX environment allows for:
• The use of ENOVIA DMU Navigator as a model viewer to receive CATIA Version 4 models that are managed in the ENOVIAVPM database
• Associativity between the DMU in CATIA Version 5 and the product structure graph
• CATIA Version 5 to store part definitions, assembly structures, part positioning, and technological link data in the ENOVIAVPM database (CATIA Version 5 Release 6 SP1, and later)

3. A DELMIA IGRIP Release 5.1 plug-in allows for:
• The use of IGRIP as a model viewer to receive CATIA Version 4 models managed in the ENOVIAVPM database
• Associativity between the DMU in IGRIP and the product structure graph
• IGRIP to store part positioning data in the ENOVIAVPM database
• IGRIP environmental data (devices and resources from a DELMIA Device Library, simulation parameters, results) to be stored in and retrieved from ENOVIAVPM database

4. A DELMIA DPM plug-in allows for:
• Access to ENOVIAVPM data (parts and CATIA models) by DPM
• Storing and retrieving DPM process definitions as documents in ENOVIAVPM

Generative Technical Publications: Using ENOVIAVPM Generative Technical Publications Release 4, technical documentation can be managed as part of a configured product to ensure that the product and its related documentation are consistent. The technical documentation function can break a document down into its related components including chapters, paragraphs, figures, make changes to selected parts of the document, and apply effectivities to the changes. The document as a whole does not require duplication.

You can choose to view and edit the complete document, or just selected portions of it. The document structure can be viewed as a graphical hierarchy of document components, from which the required components may be identified. The selected components or the whole document are extracted and transferred as a file to the word processor. If the user makes changes to the document, the file is analyzed to identify only the document components that have been modified and stores the changed components in the database.

ENOVIAVPM Generative Technical Publications includes a plug-in facility that supports the creation of hyperlinks between document components and ENOVIAVPM parts. When a part is changed, ENOVIAVPM can display the hyperlinks and identify related documents that may require updating. The system thus ensures that a change is implemented completely, enhancing the quality of the change management process.

ENOVIAVPM Generative Technical Publications Release 1 supports documents created using FrameMaker, a product from Adobe Systems, Inc.

Benefits of Using ENOVIAVPM: In a development environment, user benefits from ENOVIAVPM include:
• ENOVIAVPM Version 1 queries and accesses product information. An intuitive user interface allows you to browse through product structures, specifying spatial zones and other criteria to select those parts of the product that are to be displayed, allowing you to focus quickly on specific portions of product data.
• Technological link management. With the built-in CATIA Version 4 and CATIA Version 5 plug-ins, more and more CATIA functions manage their hyperlinks in ENOVIAVPM, including multimodel links and 3D to 2D relationships. Hyperlinks can be accessed using standard ENOVIAVPM facilities, ensuring that related documents stored in the database are consistent.
• Relational design to ensure that the multiple objects manipulated in the geometry authoring environment are synchronized.
• Variant management to control multiple product options and effectivities.
• Support on UNIX platforms for configured products containing CATIA Version 5.
• Display and edit product structures. The Product Structure Navigator (PSN) provides a powerful GUI to view and update graphical product structures using an intuitive user interface.
• Configured design in context. With the CATIA or DELMIA plug-ins installed, multimodel CATIA or DELMIA sessions can be created to build a DMU environment which allows the use of all CATIA functions or DELMIA simulation.
• Analysis and product fly-through using the 4D Navigator or ENOVIA DMU Navigator.
• DMU management functions such as incremental concurrent design.
• MultiCAD mixed environment DMU creation providing the ENOVIA DMU Navigator optional products that support Pro/E, Unigraphics, or IDEAS geometry are installed.
• Interoperability with ENOVIAPM and SAP.

Technical Section
• ENOVIAVPM Release 4 extends the CDMA and previous ENOVIAVPM release data schemas.
• The ENOVIAVPM application workbench user interface is designed for ease of use:
  - An ENOVIAVPM Database Access window is used for access to and management of data objects such as parts and documents.
  - An ENOVIAVPM PSN window contains a graphical product structure display that allows understanding and modification of the product structure.
- All applicable commands are accessible through menu or toolbar items. Item behavior and accessibility depends on the context: logon id and role, security schema, user profile, and current selection.
- Application-specific commands are accessible in contextual or local menus (right mouse button). All commands, along with the associated label, icon, short-help (contextual prompt help), long-help (status line help), and mnemonic can be customized with a settings files. A clipboard allows Copy/Paste of objects between applications windows.
- ENOVIAVPM Database Access window:
  - Multiple query styles are supported through a powerful and intuitive user interface, from a simple character string search to the ability to build complex SQL search criteria. User-specific settings files save preferences and queries.
  - Queries made to the database use the same query interface as queries made to objects displayed in the ENOVIAVPM PSN window.
  - Default objects and attributes displayed and functions accessed are defined within the user profile, and some features can be controlled by the user using the “Setting” function.
  - ENOVIAVPM objects (actions, parts, CAD models, documents) can be managed at any time using appropriate menu options and/or iconic functions.
  - Function access is checked against the ENOVIAVPM security schema on processes based on the user’s current logon id and role.
  - Data access is checked against the ENOVIAVPM security schema on data groups based on the user’s current logon id, role, and organization.
  - User exits are executed synchronously with the process to allow customer defined rules or control plug-ins.
  - ENOVIAVPM object lifecycle is enabled with version, revision, promote, and demote services.
- ENOVIAVPM PSN window:
  - The PSN visualizes graphical configured product structures. It allows manipulation of the structures (copy/cut/paste) and provides query and selection capabilities to build a DMU in an associated viewer session.
  - Product assemblies visualized by the PSN can optionally use configuration and effectiveness controls.
  - As product components are accessed and displayed, filter criteria can be applied to control the components displayed by the PSN. Criteria may identify zones, bounding box volumes, exact volume using space-map technology, or any object attribute values.
  - Changes made to the product structure are performed in memory and are only made persistent in the database at the end of the user’s transaction.
- DMU visualization edition can be done into CATIA Version 4 (including 4D Navigator), CATIA Version 5, or ENOVIA DMU Navigator (all using the built-in CATIA plug-ins) or a DELMIA IGRIP and DPM (with the DELMIA plug-in) session. External CAD or document viewers can be added. Pro/E, Unigraphics and IDEAS parts, and assemblies can also participate in DMU.
- Open architecture.
- Ability to plug in external methods.
- Ability to launch external processes.
- User exits capabilities on all functions.
- The ENOVIAVPM object schema is customizable and can be extended (attributes, tables).

**Functions Provided:** Depending on the user profile being used, all functions of ENOVIAVPM may not be accessible.

**APIs Provided:** ENOVIAVPM delivers a high level of openness for fast integration of new applications by the user or third parties.

Public C++ methods are provided to allow customers to develop additional functions on top of those delivered by ENOVIA. CDM facilities and user exits such as triggers remain available.

ENOVIAVPM Release 4 augments the APIs already available and also provides JDBC routines to develop in a client Java™ environment.

### Technical Information

**Hardware Requirements:** Because ENOVIAVPM Release 4 is a workstation application, when planning for an installation, consideration should be given to the type of workstation, operating systems, amount of disk space and real memory required, supported relational databases, and recommended software levels. These prerequisites are outlined below. Depending on the implementation, use of a license management tool, such as IBM License Use Management (LUM) may be required.

**Hardware Requirements in an AIX® Environment**

**Processor Requirements**

ENOVIAVPM may be used on any RS/6000® supported under AIX Versions 4.3.2 or 4.3.3

**Note:** With Release 4, ENOVIAVPM no longer supports Release 3.0 and 3.1 of AIX Version 4.

**Required Processor Components and Features**

- Real memory: A minimum of 256 MB of real memory is required.
- A CD-ROM drive for program installation.
- Installation of ENOVIAVPM Release 4 for RS/6000 requires an internal or external CD-ROM drive. This drive requires a SCSI High-Performance Input/Output (I/O) Controller, which is either standard or an optional feature (depending on the RS/6000 model).
- A CD-ROM drive is required to view the online documentation in HTML format.
- Product documentation explains installation on other network-connected RS/6000 machines after the initial installation with the drive.
- Direct Access Storage: ENOVIAVPM Release 4 licensed programs and configurations, user data and user programs may be stored on any internal or external Direct Access Storage Devices (DASD) supported by the RS/6000.
The following DASD requirements are approximate:
- All installed products of ENOVIAVPM Release 4: 700 MB + usage environment. Refer to the Program Directory to estimate disk-space requirements for specific products and configurations.
- Minimum Paging Space: 256 MB.

Optional Components and Features
Locally-attached plotters:
- ENOVIAVPM Release 4 directly supports locally attached IBM color pen plotters and can be used with other OEM plotters (refer to the Software Requirements in an AIX Environment section for more details)
- Printers, plotters, and compatible print formats
- IBM-GL
- CalComp C907
- Hewlett-Packard: HP Graphics Language/2 (HP-GL/2)
- OCE Graphics GPR50: VDF Plotting Routines (program number 501400659)
- Versatec: Versatec Color Graphics Language (VCGL): Versatec Graphics Software (VGS) 2.0
- Versatec Random Format (VRF): Versatec Graphics Software (VGS) 2.0
- PostScript
- Includes a configuration file used at run-time.

Note: Customers should contact the appropriate plotter vendor for plotter connection and technical support.

Configuration Requirements
- RS/6000
- Graphics device adapter
- Color graphics display
- Keyboard
- Three-button mouse
- CD-ROM drive²

² For installation only

Graphics Processors
Graphics devices (one of the following)
- POWER GXT150, GXT150L, GXT150M, and GXT150P (feature numbers 2767, 2660, 2650, and 2648)
- POWER GXT250P and GXT255P (feature numbers 2851 and 2852)
- GXT255P (the use of AIX mode "ONLY8BIT=TRUE" is recommended)
- POWER GXT500 and GXT500D (feature numbers 2644 and 2646)
- POWER GXT500P 12-Bit and GXT550P 24-Bit (feature numbers 2854 and 2855)
- POWER GXT800P 24-Bit and GXT800M 24-Bit (feature number 2853 or 2859 and 2850)
- POWER GXT1000 Model 001 or 002 (machine type 7250-001 or 7250-002)
- POWER GXT2000P
- POWER GXT3000P (feature number 2825)

Note: Other adapters are not supported by ENOVIAVPM Release 4. Although this product might run with other adapters, incidents encountered that are specific to other adapters will not be accepted for analysis or correction.

Peripheral Requirements
Required components and features:
- Three-button mouse (feature number 6041)
- An alphanumeric keyboard
- Display

One display compatible with the graphics devices listed above (for example, an IBM 6091 19-inch color display).

Hardware Requirements in a Hewlett-Packard Environment
Processor Requirements
Any HP9000 Series 700 including B-Class, C-Class or J-Class workstations, supported under HP-UX 10.20 A.C.E. 4 (June 99) or HP-UX 10.20 A.C.E.5 (December 99), or HP-UX 11.00 A.C.E. (November 99), provided that the following requirements are met.

Note: Because of binary differences between HP-UX 10.20 and HP-UX 11.0, support of HP-UX 11.0 is limited to a strict runtime environment. Operations that involve compiling and linking objects should be conducted on HP-UX 10.20 and copied on HP-UX 11.0 systems for execution.

Required Processor Components and Features
- Real memory: A minimum of 256 MB of real memory is required.
- An internal or external CD-ROM drive is required for program installation.
- This equipment is required to perform an initial installation. Product documentation explains installation on other network-connected HP workstations after the initial installation with the drive.
- A CD-ROM drive is required to view the online documentation in HTML format.
- Disk space: ENOVIAVPM Release 4 licensed programs and configurations, user data, and user programs may be stored on any internal or external disk by the HP workstation.
- Approximate disk space requirements are as follows:
  - All installed products of ENOVIAVPM Release 4: 700 MB + usage environment.
  - Refer to the Program Directory to estimate disk space requirements for specific products and configurations.
  - Minimum Swap Space: 256 MB.

Configuration Requirements
- HP Workstation Processor
- Graphics card
- Color graphics display
- Keyboard
- Three-button mouse
- CD-ROM
Required Graphics Processors

Graphics cards:
- VISUALIZE 8
- VISUALIZE 24
- VISUALIZE 48
- VISUALIZE 48XP
- VISUALIZE FXE
- VISUALIZE FX2
- VISUALIZE FX4
- VISUALIZE FX5
- VISUALIZE FX6
- VISUALIZE FX10

Peripheral Requirements

Two types of connectors can be used for a peripheral component:
- HP-HIL connector
- Serial connector

Required components and features:
- Three-button mouse (A2839B or A2838A)
- An alphanumeric keyboard
- One display compatible with the graphics cards listed above

Hardware Requirements in an SGI Environment

Processor Requirements

Any O2, Indigo2, Octane, Octane 2, Onyx, Onyx2, or Onyx3000 workstation based on any R4000, R4400, R4600, R5000, R8000, R10000, and R12000 processor supported under IRIX 6.5

Required Processor Components and Features

- Real memory: A minimum of 256 MB of real memory is required.
- An internal or external CD-ROM drive is required for program installation.
- This equipment is required to perform an initial installation; product documentation explains installation on other network-connected SGI workstations after the initial installation with the drive.
- A CD-ROM drive is required to view the online documentation in HTML format.
- Disk space: ENOVIAVPM Release 4 licensed programs and configurations, user data, and user programs may be stored on any internal or external disk by the SGI workstation.
- Approximate disk space requirements are as follows:
  - All installed products of ENOVIAVPM Release 4 Solutions: 700 MB + usage environment.
  - Refer to the Program Directory to estimate disk space requirements for specific products and configurations.
  - Minimum Swap Space: 256 MB

Configuration Requirements

- SGI Workstation Processor
- Graphics card
- Color graphics display
- Keyboard
- Three-button mouse
- CD-ROM Drive

Required Processor Components and Features

Graphics device adapter (one of the following):
- XZ
- Extreme
- Integrated graphic adapter on O2 workstations
- Solid Impact or SI/SE
- High Impact
- Maximum Impact or MXI/MXE
- VPro V6
- VPro V8
- VPro V10
- VPro V12
- RE (Reality Engine)
- RE2 (Reality Engine)
- InfiniteReality
- InfiniteReality 3

Peripheral Requirements

Required components and features:
- SGI three-button mouse
- An alphanumeric keyboard
- One display compatible with the listed graphics cards

Hardware Requirements in a SUN Environment

Processor Requirements

Any SparcStation 20 Model 71, Ultra1, Ultra2, Ultra10, Ultra30, Ultra60, Ultra 80, or SUN Blade 1000 workstation based on UltraSPARC processor, supported under Solaris 2.6.0, Solaris 7, or Solaris 8.

Required Processor Components and Features

- Real memory: A minimum of 256 MB of real memory is required.
- A CD-ROM drive is required for program installation; this drive must be compatible with the following SUN models:
  - For UltraSPARC Creator3D workstations, internal CD ROM (ref X6153A) or external CD ROM (ref X6151A).
  - For Sparc Station 20, internal CD ROM (ref X578A) or external CD ROM (ref X6152A).
- Product documentation explains installation on other network-connected SUN machines after the initial installation with CD drive.
- A CD-ROM drive is required to view the online documentation in HTML format.
- Disk space: ENOVIAVPM Release 4 licensed programs and configurations, user data, and user programs may be stored on any internal or external disk by the SUN machines.
- Approximate disk space requirements are as follows:
  - All installed products of ENOVIAVPM Release 4 solutions: 700 MB + usage environment
  - Refer to the Program Directory to estimate disk space requirements for specific products and configurations.
  - Minimum Swap Space: 256 MB

Configuration Requirements

- SUN workstation
- Graphics card
- Color graphics display
• Keyboard
• Three-button mouse
• CD-ROM drive

Required Processor Components and Features

Graphic device adapter (one of the following):
• ZX
• Creator3D
• Creator Series III
• Elite3D for Ultra10 440 MHz, Ultra60, or SUN Blade 1000 workstations
• Expert3D

Peripheral Requirements

• SUN three-button mouse
• An alphanumeric keyboard
• One display compatible with the listed graphics cards

Relational Database DASD Requirements

A relational database is required for proper operation of ENOVIAVPM Release 4. A minimum of 700 MB of hard disk space is necessary for system installation. 150 MB should be available for database application and data files. Refer to the Software Requirements section for supported database products.

Compatibility

ENOVIAVPM provides a consistent user interface, database, and application programming interfaces. Data is compatible among the supported operating systems:

• AIX
• HP-UX
• IRIX
• Solaris

ENOVIAVPM is able to use and exchange data in industry-standard formats including STEP AP203 and AP214.

Performance Considerations

Performance and response time are influenced by several factors including processor and operating system, amount of system memory, channel speeds, the number, type, and organization of terminals, and the size of the data elements being used. ENOVIAVPM is designed for optimum benefit under all supported operating systems.

Software Requirements: The overall requirements for ENOVIAVPM Release 4 are identical to those for ENOVIAVPM Release 1. CATIA and DELMIA plug-ins are supplied with the products and require no additional prerequisites. However, for CATIA V4, CDA and CDR must be separately installed. If ENOVIAVPM is used to manage CATIA V5 data only, there is no requirement to install CATIA V4.

For ENOVIAVPM Generative Technical Publications Release 1, FrameMaker from Adobe Systems Inc. is required.

When using the appropriate CAx plug-ins, the following minimum software levels are required:

• CATIA V4 Release 2.0 Refresh 1.
• CATIA V5 Release 3.0 Service Pack 6 (recommended).
• DELMIA Version 5.11, or higher.
• Refer to the Portal MultiCAx plug-in documents for the appropriate level of support for Pro/E, IDEAS, and Unigraphics.

When using ENOVIAVPM interoperability, the level of ENOVIAVPM supported is Version 3 Release 2 Snap B Refresh 2, and later.

ENOVIAPM interoperability with SAP requires SAP R/3 4.X. It is available in the AIX, HP-UX, and Solaris environments.

Software Requirements in the AIX Environment:
ENOVIAPM Release 4 is designed to operate with the following system software:

• AIX Version 4 Release 3.2 or Release 3.3 with:
• C Set ++® for AIX Application Runtime:
  - At minimum level 3.6.4 for AIX 4.3.2
  - At minimum level 4.0.2 for AIX 4.3.3
• With IBM C and C++ for AIX Compilers and associated corequisites when development environment is required (note that C and C++ for AIX Compilers 3.6 are interoperable with the above runtime environments).
• IBM XL FORTRAN Runtime Environment (xlfte), at level 5.1.0, 5.1.1 (5765-C11 or 5801-AAR-7070, part number 04L2123, depending on geographic area), or 7.1.0 (5765-E03) and associated corequisites when XL Fortran development environment is required.
• Common Desktop Environment (CDE) delivered with the Operating System
• IBM PEX and PHIGS, OpenGL and GL3.2 (delivered with the Operating System)
• FrameMaker V5.1
• Supported relational databases:
  - DB/2 Version 6.1
  - Oracle Server Version 8.0.4, or Oracle 8.0.6, or Oracle 8.1.5 to 6.1.7

Notes:
  - Refer to RETAIN® or the ENOVIAVPM Version 1 Release 4 Program Directory for the appropriate PTF to be applied.
  - For installation purposes, the FORTRAN: XL FORTRAN Compiler Version 5.1.0 (5765-C10 or 5801-AAR-7069, part number 04L2110 depending on geographic area) or Version 5.1.1, or Version 7.1.0 (5765-E02) is required.
  - C/C++: IBM C and C++ for AIX Compiler Version 3.6.4 or Version 3.6.6. C++ Compiler 3.6 is shipped as the batch compiler with VisualAge® C++ Professional for AIX V4 (5765-D52 or part number 30L8178, product 5765-D52 feature 0001, depending on geographic area).
  - With Release 4, ENOVIAVPM no longer supports Release 3.0 or 3.1 of AIX Version 4

DBCS support requirements — DBCS-enabled version of the operating system.

Software Requirements in the HP Environment:
ENOVIAPM Release 4 is designed to operate with the following system software:

• HP-UX 10.20 A.C.E. 4 (June 99), HP-UX 10.20 A.C.E. 5 (December 99), or HP-UX 11.0 A.C.E. (November 99)
• HP-PEX and HP-PHIGS Runtime Environment (delivered with the operating system)
• Fortran Runtime (delivered with the operating system)
• HP-UX ANSI C++ (aC++) Runtime Environment, at minimum level 1.21 (delivered with the operating system)
• CDE, the supported desktop environment
• Powershade (included with HP-UX when graphics adapter is ordered)
• FrameMaker Version 5.1
• Supported relational databases:
  - DB/2 Version 6.1
  - Oracle Server Version 8.0.4, 8.0.6, or 8.1.7 (on the server side only; requires an HP-UX 11.0 server)

**Note:** Refer to RETAIN and/or ENOVIAVPM Version 1 Release 4 Program Directory for the appropriate PTF to be applied.

Refer to your HP representative for further information on hardware and software migration programs.

**Note:** For installation purposes, the following compilers are required:
  - FORTRAN: HP-UX FORTRAN/9000 (B3907AA)
  - C: HP-UX C/ANSI C (B3899BA)
  - C++: HP-UX ANSI C++, Version 1.21 (aC++, B3911DB)

**Note:** Because of binary differences between HP-UX 10.20 and HP-UX 11.0, support of HP-UX 11.0 is limited to a strict runtime environment. Operations that involve compiling and linking objects should be conducted on HP-UX 10.20 and copied on HP-UX 11.0 systems for execution.

DBCS support requirements — DBCS-enabled version of the operating system.

**Software Requirements in the SGI Environment:**
ENOVIAVPM Release 4 is designed to operate with the following system software:

- IRIX 6.5.2m
- IRIX Interactive Desktop (delivered with the operating system)
- FrameMaker Version 5.1
- Supported relational databases:
  - DB2® 6.1 (client side only)
  - Oracle Server Version 8.0.4 or 8.0.6

**Notes:**
- IRIX system software delivers the C++ Run-time and FORTRAN Run-time required by ENOVIAVPM Release 4.
- For installation purposes using FORTRAN 77, C or C++, SGI MIPSpro Compilers Version 7.2.1 are required (ABI o32 is the only supported ABI).
- Refer to RETAIN or the ENOVIAVPM Release 4 Program Directory for the appropriate PTF to be applied.

DBCS support requirements — DBCS-enabled version of the operating system.

**Software Requirements in the Sun Environment:**
ENOVIAVPM Release 4 is designed to operate with the following system software:

- Solaris 2.6.0, Solaris 7, or Solaris 8
- CDE 1.2
- Fortran 4.2 runtime required by ENOVIAVPM delivered with ENOVIAVPM.

- OpenGL

**Supported relational databases:**
- DB/2 Version 6.1
- Oracle Server Version 8.0.4, Oracle 8.0.6, or Oracle 8.1.5 to 8.1.7

**Note:** Refer to RETAIN and/or ENOVIAVPM Version 1 Release 4 Program Directory for the appropriate PTF to be applied.

For installation purposes, FORTRAN/C/C++: SUN Workshop Compilers Version 4.2 required.

**Software Installation:** Described in the Installation and Administration Guide.

**National Language Support:** The only language delivered for ENOVIAVPM Release 4 is English.

**Double Byte Character Set Enabled:** Yes

**Documentation**
- VPM Installation and Administration Guide
- VPM Users Guide
- Generative Technical Publications

**Licensing**

**Named User and Concurrent User Licensing**
Prior releases of ENOVIAVPM were available only with named-user licensing. To provide customers with additional purchasing and licensing flexibility, ENOVIAVPM 1.4 will be available as concurrent-user licensed role-based configurations (engineer, manager) ENOVIAVPM utilizes a P&O database to define and manage these configurations and the individual usage profiles available to users. At sign-on, ENOVIAVPM will look identical to end users whether a customer continues to use named-user licensing or moves to the new concurrent-user licensing method. Licenses for configurations defined in usage profiles will be taken at sign-on time and released when the user session is discontinued. Named-user requires that one role-based configuration is available for each corresponding user defined in the P&O database. Concurrent-user requires customers to have sufficient quantities of each role-based configuration available for concurrently signed-on users of that configuration.

**Use of CATIA Licenses**
When an ENOVIAVPM Version 1 Release 4 user first calls CATIA Version 4 for design in context, the CATIA V4 plug-in is called which takes one each of CATIA CDA, CDR, and COM licenses. Similarly, CATIA COM licenses are also taken if one of the following operations is attempted:

- Create a part
- Version a part with same or new part number
- Duplicate a part
- Revision a CATIA model
- Perform a quick import
- Create a read a STEP file
Note: If ENOVIAVPM is used to manage CATIA Version 5 data only, there is no requirement to install CATIA Version 4 products or licenses.

Use of ENOVIAVPM Licenses

When an ENOVIAVPM Version 1 Release 4 user calls ENOVIAVPM for any of the interoperability functions, an ENOVIAVPM Software Development Kit (SDK) Author license is requested. If the SDK license is not available, an ENOVIAVPM Director license is requested.

Multiuser Environment

When using ENOVIAVPM in a multiuser environment with IBM LUM, IBM LUM Runtime code Version 4.0 or 4.5 is required on AIX, HP-UX, IRIX, and Sun license servers and clients. IBM LUM Runtime Version 4.5 is delivered with AIX Version 4 Release 3.2 and 3.3. For HP, SGI, and Sun platforms, you can download LUM Runtime Version 4.5.5 or higher from the following IBM Internet site:

http://www.ibm.com/software/is/lum/download

IBM LUM is available to licensed ENOVIAVPM users whose installations include multiple IBM, HP, SGI, or Sun workstation machines that are interconnected by a TCP/IP-supported token-ring or Ethernet local area network or for concurrent execution of ENOVIAVPM programs on a single workstation.

ENOVIAVPM for UNIX workstations use LUM to control the number of licenses acquired for the program. Using LUM administration facilities, system administrators can configure ENOVIAVPM products for workstations to permit access to ENOVIAVPM programs on one of the several workstation platforms provided.

Single-User Environment without License Manager

In an installation without IBM LUM, ENOVIAVPM Solutions for workstation licensed programs can be licensed to operate on a single workstation. In this mode of operation, ENOVIAVPM program use is restricted to the workstation for which it is registered during the installation process. In any configuration, either stand-alone or LAN when more than one use of an ENOVIAVPM licensed program is desired on a single workstation, IBM LUM is required.

Note: For more information about IBM LUM, go to the LUM Web page at:

http://www.ibm.com/software/is/lum

For use with AIX, HP-UX, SGI IRIX, and Sun Solaris, IBM LUM is available for free from the following IBM Internet site:

http://www.ibm.com/software/is/lum/download

IBM LUM for AIX is also delivered as a standard component of AIX 4.3.

Performance Considerations: Performance and response time are influenced by several factors including processor and operating system, amount of system memory, channel speeds, the number, type, and organization of terminals, and the size of the data elements being used. ENOVIAVPM is designed for optimum benefit under all supported operating systems.

Planning Information

Customer Responsibilities

ENOVIAVPM Product Licensing Principles

Prior releases of ENOVIAVPM were available only with named-user licensing. To provide customers with additional purchasing and licensing flexibility ENOVIAVPM 1.4 will be available as concurrent-user licensed role-based configurations. ENOVIAVPM utilizes a P&O database to define and manage these configurations and the individual usage profiles available to users. At sign-on the P&O database will look identical to users whether a customer continues to use named-user licensing with ENOVIAVPM or moves to the new concurrent-user licensing method. Licenses for configurations defined in usage profiles will be taken at signon time and released when the user session is discontinued.

Installability: Tools and priced features are provided to assist the user in migrating from ENOVIA Version 1 Release 3 and from CATIA CDM/CDMA to ENOVIAVPM Version 1 Release 4.

Direct Customer Support: IBM provides telephone support for questions concerning the installation, use, and defects of ENOVIAVPM products. Eligible customers can call the IBM Support Center at 800-237-5511 in the United States or 800-465-2222 in Canada 24 hours a day. Calls will be forwarded to the IBM CATIA/ENOVIA Support Center in Poughkeepsie, New York for call-back between 8:00 a.m. and 8:00 p.m., Eastern time Monday through Friday except holidays.

For information about products, education, and support go to the CATIA/ENOVIA TechSupport Web page at:

http://techsupport.services.ibm.com/support/catia

For technical assistance, go to the CATIA/ENOVIA Technical Support e-services Web page at:

http://techsupport.services.ibm.com/catia/us-welcome

Note: DB2 Universal Database® (UDB) Version 6.1, delivered with ENOVIAVPM Version 1 Release 4, will follow its own support terms and conditions, as announced for that product (refer to Software Announcement 299-124, dated May 18, 1999).

Packaging: ENOVIAVPM Version 1 Release 4 licensed program material will be provided on CD-ROM, in compatible formats for each supported operating system.

Contents will include:

- VPM V1R4 Code CDs LCD4-2040-03 containing:
  - AIX 1 Concurrent and 1 Named User
  - HP-UX 1 Concurrent and 1 Named User
  - IRIX 1 Concurrent and 1 Named User
  - Sun Solaris 1 Concurrent and 1 Named User
  - VPM Program Directory

- Softcopy Collection Kit #SK21-0292 English containing:
  - VPMEnglish — ENOVIA Common
  - Vm1English — VPM 1 Documentation
  - VpiEnglish — VPM PM Interoperability
  - VsiEnglish — VPM SAP Interoperability

Technical Support e-services Web page at:

http://techsupport.services.ibm.com/support/catia
<table>
<thead>
<tr>
<th>Description</th>
<th>Workstation Platform (Operating System)</th>
<th>Feature Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENOVIAVPM 1.5 French Translation for CDM Engineer Solutions — AIX CD-ROM</td>
<td>RS/6000 (AIX)</td>
<td>6212</td>
</tr>
<tr>
<td>ENOVIAVPM 1.5 French Translation for CDM Engineer Solutions — HP-UX CD-ROM</td>
<td>Hewlett-Packard (HP-UX)</td>
<td>6213</td>
</tr>
<tr>
<td>ENOVIAVPM 1.5 French Translation for CDM Engineer Solutions — IRIX CD-ROM</td>
<td>Silicon Graphics (IRIX)</td>
<td>6214</td>
</tr>
<tr>
<td>ENOVIAVPM 1.5 French Translation for CDM Engineer Solutions — Solaris CD-ROM</td>
<td>Sun Microsystems (Solaris)</td>
<td>6215</td>
</tr>
</tbody>
</table>

- DB2 Application Package #L41L-1685 Shrink wrapped DB2 V6.1 called “IBM DB2 Universal Database Enterprise Edition Version 6.1”
- DB2 FixPack #LCD4-5347 for DB2 Version 6.1
- Informal Publications:
  - The Licensed Program Specification (LPS) (GH52-1321)
  - The Registration Memo (GI10-6906)
  - The Current User’s Memo (GI11-0413)

**Security, Auditability, and Control**

The announced programs use the security and auditability features of the host hardware or operating system software.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

**Customer Financing:** IBM Global Financing offers attractive financing to credit-qualified commercial and government customers and Business Partners in more than 40 countries. IBM Global Financing is provided by the IBM Credit Corporation in the United States. Offerings, rates, terms, and availability may vary by country. Contact your local IBM Global Financing organization. Country organizations are listed on the Web at:

http://www.financing.ibm.com

---

### Ordering Information

**Previously Announced Terms and Conditions**

The terms and conditions previously announced for ENOVIAVPM are unaffected by this announcement.

**Current Licensees**

Current licensees of ENOVIAVPM Version 1 Release 4 Solutions will receive this update from IBM Software Delivery and Fulfillment automatically.

Shipment of this release is scheduled to be completed availability plus two weeks.

**New Licensees**

Orders for new licenses can be placed now.

Shipment will begin on the planned availability date.

Unless a later date is specified, orders entered before the planned availability date will be assigned a schedule date of one week following availability.

**Basic License**

**Note:** The ordering code, terms and conditions, for ENOVIAVPM Solutions announced in prior announcements have not changed. Refer to Software Announcement 200-186, dated June 20, 2000, for details.

To order a basic license, specify:

- The desired solution program number (for example, 5691-CDX)
- Feature number 9001 for asset registration, quantity 1
- The total number of users and desired payment method (Primary License Charge (PLC) or Annual License Charge (ALC) or Yearly License Charge (YLC)), using feature numbers as shown below:

  - For license quantities exceeding 250, contact your marketing representative for additional information.

Product feature numbers for the new Solutions in SPO 5628-VPM:

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Feature Number</th>
<th>Machine Type/Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENOVIAVPM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casual User Solution</td>
<td>2714</td>
<td>5691-REX</td>
</tr>
<tr>
<td>Administrator Solution</td>
<td>2710</td>
<td>5691-ADX</td>
</tr>
<tr>
<td>CDM Engineer Solution</td>
<td>2711</td>
<td>5691-CDX</td>
</tr>
<tr>
<td>Engineer Solution</td>
<td>2712</td>
<td>5691-DEX</td>
</tr>
<tr>
<td>Manager Solution</td>
<td>2713</td>
<td>5691-MSX</td>
</tr>
<tr>
<td>Product Engineer Solution</td>
<td>2715</td>
<td>5691-VPX</td>
</tr>
<tr>
<td>SAP-Interoperability Solutions</td>
<td>2716</td>
<td>5691-VSX</td>
</tr>
</tbody>
</table>
Billing Feature Numbers for ENOVIA VPM Solutions

Note: For order quantities exceeding 250, contact your marketing representative.

<table>
<thead>
<tr>
<th>Description</th>
<th>Feature Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENOVIA VPM Administrator Solution</td>
<td>PLC 0011</td>
</tr>
<tr>
<td></td>
<td>ALC 0006</td>
</tr>
<tr>
<td></td>
<td>YLC 0001</td>
</tr>
<tr>
<td>ENOVIA VPM CDM Engineer Solution</td>
<td>PLC 0011</td>
</tr>
<tr>
<td></td>
<td>ALC 0006</td>
</tr>
<tr>
<td></td>
<td>YLC 0001</td>
</tr>
<tr>
<td>ENOVIA VPM Engineer Solution</td>
<td>PLC 0011</td>
</tr>
<tr>
<td></td>
<td>ALC 0006</td>
</tr>
<tr>
<td></td>
<td>YLC 0001</td>
</tr>
<tr>
<td>ENOVIA VPM Manager Solution</td>
<td>PLC 0011</td>
</tr>
<tr>
<td></td>
<td>ALC 0006</td>
</tr>
<tr>
<td></td>
<td>YLC 0001</td>
</tr>
<tr>
<td>ENOVIA VPM Casual User Solution</td>
<td>PLC 0011</td>
</tr>
<tr>
<td></td>
<td>ALC 0006</td>
</tr>
<tr>
<td></td>
<td>YLC 0001</td>
</tr>
<tr>
<td>ENOVIA VPM Product Engineer Solution</td>
<td>PLC 0011</td>
</tr>
<tr>
<td></td>
<td>ALC 0006</td>
</tr>
<tr>
<td></td>
<td>YLC 0001</td>
</tr>
<tr>
<td>ENOVIA VPM SAP-Interoperability Solution</td>
<td>PLC 0011</td>
</tr>
<tr>
<td></td>
<td>ALC 0006</td>
</tr>
<tr>
<td></td>
<td>YLC 0001</td>
</tr>
</tbody>
</table>

New Upgrade/Migration Paths

From CATIA V4 or ENOVIA VPM V1R3 Products to New ENOVIA VPM V1R4 Products

<table>
<thead>
<tr>
<th>Description</th>
<th>Feature Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5691-ADX Upgrade from 5626-CDB</td>
<td>PLC 0020</td>
</tr>
<tr>
<td>5691-ADX Upgrade from 5691-ADM</td>
<td>PLC 0021</td>
</tr>
<tr>
<td>5691-CDX Upgrade from 5626-CDA</td>
<td>PLC 0020</td>
</tr>
<tr>
<td>5691-CDX Upgrade from 5691-CDE</td>
<td>PLC 0021</td>
</tr>
<tr>
<td>5691-DEX Upgrade from 5626-CDA</td>
<td>PLC 0020</td>
</tr>
<tr>
<td>5691-DEX Upgrade from 5691-ADE</td>
<td>PLC 0021</td>
</tr>
<tr>
<td>5691-DEX Upgrade from 5691-CDE</td>
<td>PLC 0022</td>
</tr>
<tr>
<td>5691-DEX Upgrade from 5691-CDX</td>
<td>PLC 0023</td>
</tr>
<tr>
<td>5691-MSX Upgrade from 5691-MSS</td>
<td>PLC 0020</td>
</tr>
<tr>
<td>5691-REX Upgrade from 5691-REV</td>
<td>PLC 0020</td>
</tr>
<tr>
<td>5691-VPX Upgrade from 5626-CDA</td>
<td>PLC 0020</td>
</tr>
<tr>
<td>5691-VPX Upgrade from 5691-ADE</td>
<td>PLC 0021</td>
</tr>
<tr>
<td>5691-VPX Upgrade from 5691-CDE</td>
<td>PLC 0022</td>
</tr>
<tr>
<td>5691-VPX Upgrade from 5691-CDX</td>
<td>PLC 0023</td>
</tr>
</tbody>
</table>

Notes

- The ENOVIA VPM Infrastructure Product (5691-VPM) is a no-charge prerequisite for any solution ordered under the System Program Order (SPO) (5628-VPM). The total number of seats ordered for 5691-VPM (as recorded under the platform feature numbers) must equal the combined total seats ordered for all other solutions. ENOVIA VPM Infrastructure Product (5691-VPM) was announced in Software Announcement 200-186, on June 20, 2000.

- All terms and conditions from previously announced ENOVIA VPM Solutions remain in place and are unchanged by this announcement.

- When placing an order for the ENOVIA VPM Solutions announced in this release at least one seat of the ENOVIA VPM Administrator Solution (5691-ADX) must be ordered for each SPO. When ordering previously announced ENOVIA VPM Solutions at least one seat of the ENOVIA VPM Administrator Solution (5691-ADM) must be ordered for each SPO.

In addition to the program number and feature information, specify the feature numbers and total users for each intended workstation platform:

<table>
<thead>
<tr>
<th>Workstation Platform</th>
<th>Feature Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIX</td>
<td>5350</td>
</tr>
<tr>
<td>HP-UX</td>
<td>5351</td>
</tr>
<tr>
<td>SGI IRIX</td>
<td>5352</td>
</tr>
<tr>
<td>Sun Solaris</td>
<td>5354</td>
</tr>
</tbody>
</table>

Note: The platform feature combined total should equal the total number of users across all solutions.

For example, assume you want to place a new SPO for 50 users of the Engineer Solution (5691-DEX), using PLC/ALC, to be used on AIX workstations, and reserve one seat of the prerequisite Administrator Solution.

For the Engineer Solution (5691-DEX), specify:
- Asset Registration, feature number 9001
- PLC feature number 0011, quantity 50
- ALC feature number 0006, quantity 50
- Platform feature number 5350, quantity 50

For the Administrator Solution (5691-ADX), specify:
- Asset Registration feature number, 9001
- PLC feature number 0011, quantity 1
- ALC feature number 0006, quantity 1
- Platform feature number 5350, quantity 1

Basic Machine-Readable Material: To ship machine-readable materials and publications and to register for future updates, one SPO (5628-VPM) must be placed in addition to the basic license orders (5691.xxx).
Within the SPO, specify the media feature number for each of the workstation platforms you will be using.

<table>
<thead>
<tr>
<th>Workstation Platform</th>
<th>Media Feature Number</th>
<th>Distribution Medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIX</td>
<td>3410</td>
<td>CD-ROM</td>
</tr>
<tr>
<td>HP-UX</td>
<td>3417</td>
<td>CD-ROM</td>
</tr>
<tr>
<td>SGI IRIX</td>
<td>3418</td>
<td>CD-ROM</td>
</tr>
<tr>
<td>Sun Solaris</td>
<td>3420</td>
<td>CD-ROM</td>
</tr>
</tbody>
</table>

**Customization Options:** Select the appropriate feature numbers to customize your order with the specific delivery options desired. These features can be specified on the initial or MES orders.

**Example:** If publications are not desired for the initial order, specify feature number 3470 to ship media only. For future updates, specify feature number 3480 to ship media updates only. If, in the future, publication updates are required, order an MES to remove feature number 3480; then, the publications will ship with the next release of the program.

<table>
<thead>
<tr>
<th>Description</th>
<th>Feature Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Shipments</td>
<td></td>
</tr>
<tr>
<td>Serial number only (suppresses shipment of media and documentation)</td>
<td>3444</td>
</tr>
<tr>
<td>Ship media only (suppresses initial shipment of documentation)</td>
<td>3470</td>
</tr>
<tr>
<td>Ship documentation only (suppresses initial shipment of media)</td>
<td>3471</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Update Shipments</th>
<th>Feature Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ship Media updates only (suppresses update shipment of documentation)</td>
<td>3480</td>
</tr>
<tr>
<td>Ship documentation only (suppresses update shipment of media)</td>
<td>3481</td>
</tr>
<tr>
<td>Suppress updates (suppresses update shipment of media and documentation)</td>
<td>3482</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expedite Shipments</th>
<th>Feature Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local IBM office expedite (for IBM use only)</td>
<td>3445</td>
</tr>
<tr>
<td>Customer expedite process charge ($30 charge for each product)</td>
<td>3446</td>
</tr>
</tbody>
</table>

Expedite shipments will be processed to receive 72-hour delivery from the time IBM Software Delivery and Fulfillment (SDF) receives the order. SDF will then ship the order via overnight air transportation.

**Unlicensed Documentation:** One English softcopy publication CD-ROM is automatically included in all shipments. National Language Versions (NLVs) of the softcopy publications in French, for the Engineer Product will be available at a later time at no charge. To order, specify the language using the feature numbers below. Only one additional copy of a kit can be ordered per license.

<table>
<thead>
<tr>
<th>Publication Name</th>
<th>Feature Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENOVIAVPM V1R4 Softcopy Collection Kit — English</td>
<td>7100</td>
</tr>
</tbody>
</table>

**Displayable Softcopy Publications:** ENOVIAVPM Version 1.4 product publications are offered in displayable in printable (HTML) and (PDF) softcopy form. All unlicensed manuals are included. The manuals are shipped on CD-ROM. Terms and conditions for use of the machine-readable files are shipped with the product.

<table>
<thead>
<tr>
<th>Description</th>
<th>Feature Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENOVIAVPM 1.5 French Translation for CDM Engineer Solutions — AIX CD-ROM LCD5-0117-00</td>
<td>RS/6000 (AIX) 6212</td>
</tr>
<tr>
<td>ENOVIAVPM 1.5 French Translation for CDM Engineer Solutions — HP-UX CD-ROM LCD5-0118-00</td>
<td>Hewlett-Packard (HP-UX) 6213</td>
</tr>
<tr>
<td>ENOVIAVPM 1.5 French Translation for CDM Engineer Solutions — IRIX CD-ROM LCD5-0119-00</td>
<td>Silicon Graphics (IRIX) 6214</td>
</tr>
<tr>
<td>ENOVIAVPM 1.5 French Translation for CDM Engineer Solutions — Solaris CD-ROM LCD5-0120-00</td>
<td>Sun Microsystems (Solaris) 6215</td>
</tr>
</tbody>
</table>

To view “Getting Started with ENOVIAVPM Version 1.4” on the Web, visit:


Select Products to get to the products page and then select ENOVIAVPM Version 1.4.

Additional Softcopy Collection Kits can be ordered through PUBORDER using the following numbers:

<table>
<thead>
<tr>
<th>Publication Name</th>
<th>Publication Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENOVIAVPM V1R4 Softcopy Collection Kit — SK21-0292</td>
<td>English</td>
</tr>
</tbody>
</table>

For French translation sets, order via MES using the no-charge feature numbers and correct platform LCD numbers listed above.
The displayable manuals are in HTML format and can be viewed in any of the supported environments using one of the HTML browsers listed in the Software Requirements section. The printable manuals are in PDF format and can be displayed and printed with Adobe Acrobat Reader at minimum level 3.0. The Adobe Acrobat Reader may be downloaded, at no charge, from:

http://www.adobe.com/prodindex/acrobat/readstep

Additionally, customers with the Enhanced Support Offering can view the latest ENOVIAVPM Version 1.4 publications in HTML form by going to:

http://service.software.ibm.com/catia.us/support

Then click on Technical Support.

Subsequent updates (technical newsletters or revisions between releases) to the publications shipped with the product will be distributed to the user of record for as long as a license for this software remains in effect. A separate publication order or subscription is not needed.

---

**Terms and Conditions**

**Licensing:** IBM Customer Agreement (ICA)

**Designated Machine:** Not required

**Variable Charges Apply:** No

**Installation License or Location License Applies:** No

**Use Restriction Applies**

**Use of DB2 UDB Components**

ENOVIAVPM Version 1 Release 4.0 is shipped with DB2 UDB Enterprise Edition. Customers who purchase the product are authorized to install and use this DB2 product only in association with the licensed use of the product for the storage and management of data used or generated by the product and not for other data management purposes. For example, this license does not include inbound connections to the database from other applications for queries or report generation. You are authorized to install and use these components only with and on the same machine as the product resides.

DB2 UDB Enterprise Edition is the only database that will be packaged with ENOVIAVPM Version 1 Release 4.0.

Additional licenses, features, or authorizations, as appropriate must be obtained to extend use levels.

**Named Licensing**

This is a role-based license mechanism. When you start ENOVIAVPM, an Infrastructure Product license is taken until you identify yourself and choose a role (through the VPM login panel). As soon as this is done, the system will take only those licenses attached to the selected role.

For VPM1 and CATIA V5 only, licenses such as COM, and CDR are not required. The declaration parameter must be set to catcdma.VPM.CATIA_MODELS.MNGT.

**Internal**

For VPM1 and CATIA V4 (with CATIA V5 or not):

- Licenses such as COM, CDR, and CDA are required.
- The declaration parameter must be set to catcdma.VPM.CATIA_MODELS.MNGT.

**Batch**

Remember that parts cannot be created in BATCH mode without CATIA V4 and the appropriate licenses.

**Educational Allowance:** Academic terms are available for the ENOVIAVPM Version 1 Release 4.0 products through the Special Bid Process. A qualifying institution for these products will be able to purchase the products for an annual fee.

For qualification criteria and detailed terms and conditions contact Buz Nowicki (qnnowicki@us.ibm.com) at 248-552-5981 for additional information and approvals.

**Volume Discount:** Contact your IBM representative.
Licensed Program Materials Availability

- Restricted Materials of IBM: None
- Non-Restricted Source Materials: None
- Object Code Only (OCO): All

Testing Period: None

Program Services

Licensed customers are entitled to the following benefits:

- Continued use of the product
- Central Service, including a Technical Support Center, for reporting defects in the licensed product will be provided:
  1. On the Internet
  2. Via telephone
  3. Via paper APAR forms (G150-0180)
- Any maintenance created to correct defects
- Any enhancement or maintenance releases to the licensed product

The following services are also provided:

- Telephone support for aid in resolving installation and usage questions.
- Paper APARs and any APAR support material may be mailed to:
  
  IBM Corporation
  Product Lifecycle Management
  2455 South Road P535
  Poughkeepsie, NY 12601
  Attn: ENOVIAVPM APAR Coordinator

The IBM Support Center, at 800-237-5511 in the United States and 800-465-2222 in Canada, will accept technical questions concerning maintenance, defects, installation, and usage of ENOVIAVPM 24 hours a day. Callers will be asked to supply their IBM customer number, the name of the software package (ENOVIAVPM), and their operating system. Incoming calls will be queued to the IBM CATIA/CADAM/ENOVIAVPM Technical Support Center for “call back” response between 8:00 a.m. and 8:00 p.m. Eastern time during the business week, excluding holidays.

Internet support is provided. For information about products, education, and support go to the CATIA/ENOVIA TechSupport Web page at:

http://techsupport.services.ibm.com/support/catia

For technical assistance, go to the Product Lifecycle Management Solutions TechSupport e-services Web page at:

http://service.boulder.ibm.com/es

Click on the “CATIA/ENOVIA Solutions Technical Support” link.

Program services for ENOVIAVPM Version 1 Release 4, including a Technical Support Center, will be available until November 4, 2002.

For a list of all currently supported Releases of ENOVIAVPM, refer to:

http://techsupport.services.ibm.com/support/catia

Warranted: Yes

Note: DB2 UDB Version 6.1, delivered with ENOVIAVPM Version 1 Release 4, will follow its own support terms and conditions, as announced for that product Software Announcement Letter 299-124, dated May 18, 1999.

Support Line: No

IBM Operational Support Services — Support Line: No

Other Support: IBM Support Center

Program Services

Prices

<table>
<thead>
<tr>
<th>Description</th>
<th>Feature Number</th>
<th>OTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENOVIAVPM Administrator Solution (5691-ADX)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLC</td>
<td>0011</td>
<td>$10,000</td>
</tr>
<tr>
<td>ALC</td>
<td>0006</td>
<td>1,500</td>
</tr>
<tr>
<td>YLC</td>
<td>0001</td>
<td>4,833</td>
</tr>
<tr>
<td>ENOVIAVPM CDM Engineer Solution (5691-CDX)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLC</td>
<td>0011</td>
<td>3,750</td>
</tr>
<tr>
<td>ALC</td>
<td>0006</td>
<td>563</td>
</tr>
<tr>
<td>YLC</td>
<td>0001</td>
<td>1,813</td>
</tr>
<tr>
<td>ENOVIAVPM Engineer Solution (5691-DEX)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLC</td>
<td>0011</td>
<td>7,500</td>
</tr>
<tr>
<td>ALC</td>
<td>0006</td>
<td>1,125</td>
</tr>
<tr>
<td>YLC</td>
<td>0001</td>
<td>3,625</td>
</tr>
<tr>
<td>ENOVIAVPM Manager Solution (5691-MSX)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLC</td>
<td>0011</td>
<td>5,000</td>
</tr>
<tr>
<td>ALC</td>
<td>0006</td>
<td>750</td>
</tr>
<tr>
<td>YLC</td>
<td>0001</td>
<td>2,417</td>
</tr>
<tr>
<td>ENOVIAVPM Casual User Solution (5691-REX)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLC</td>
<td>0011</td>
<td>3,000</td>
</tr>
<tr>
<td>ALC</td>
<td>0006</td>
<td>450</td>
</tr>
<tr>
<td>YLC</td>
<td>0001</td>
<td>1,450</td>
</tr>
<tr>
<td>ENOVIAVPM Product Engineer Solution (5691-VPX)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLC</td>
<td>0011</td>
<td>8,500</td>
</tr>
<tr>
<td>ALC</td>
<td>0006</td>
<td>1,275</td>
</tr>
<tr>
<td>YLC</td>
<td>0001</td>
<td>4,108</td>
</tr>
<tr>
<td>ENOVIAVPM SAP-Interoperability Solution (5691-VSX)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLC</td>
<td>0011</td>
<td>1,500</td>
</tr>
<tr>
<td>ALC</td>
<td>0006</td>
<td>225</td>
</tr>
<tr>
<td>YLC</td>
<td>0001</td>
<td>725</td>
</tr>
</tbody>
</table>
New Upgrade/Migration Paths

From CATIA V4 or ENOVIAVPM V1R3 Products to New ENOVIAVPM V1R4 Solutions

<table>
<thead>
<tr>
<th>Description</th>
<th>Feature Number</th>
<th>OTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>5691-ADX Upgrade from 5626-CDB</td>
<td>0020</td>
<td>$4,000</td>
</tr>
<tr>
<td>5691-ADX Upgrade from 5691-ADM</td>
<td>0021</td>
<td>0</td>
</tr>
<tr>
<td>5691-CDX Upgrade from 5626-CDA</td>
<td>0020</td>
<td>1,750</td>
</tr>
<tr>
<td>5691-CDX Upgrade from 5691-CDE</td>
<td>0021</td>
<td>1,250</td>
</tr>
<tr>
<td>5691-DEX Upgrade from 5626-CDA</td>
<td>0020</td>
<td>5,500</td>
</tr>
<tr>
<td>5691-DEX Upgrade from 5691-ADE</td>
<td>0021</td>
<td>2,000</td>
</tr>
<tr>
<td>5691-DEX Upgrade from 5691-CDE</td>
<td>0022</td>
<td>5,000</td>
</tr>
<tr>
<td>5691-DEX Upgrade from 5691-CDX</td>
<td>0023</td>
<td>4,250</td>
</tr>
<tr>
<td>5691-MSX Upgrade from 5691-MSS</td>
<td>0020</td>
<td>1,500</td>
</tr>
<tr>
<td>5691-REX Upgrade from 5691-REV</td>
<td>0020</td>
<td>2,000</td>
</tr>
<tr>
<td>5691-VPX Upgrade from 5626-CDA</td>
<td>0020</td>
<td>6,500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Feature Number</th>
<th>OTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>5691-VPX Upgrade from 5691-ADE</td>
<td>0021</td>
<td>$3,000</td>
</tr>
<tr>
<td>5691-VPX Upgrade from 5691-CDE</td>
<td>0022</td>
<td>6,000</td>
</tr>
<tr>
<td>5691-VPX Upgrade from 5691-CDX</td>
<td>0023</td>
<td>5,250</td>
</tr>
<tr>
<td>5691-VPX Upgrade from 5691-DEX</td>
<td>0024</td>
<td>1,500</td>
</tr>
<tr>
<td>5691-VPX Upgrade from 5691-VPD</td>
<td>0025</td>
<td>2,000</td>
</tr>
<tr>
<td>5691-VSX Upgrade from 5691-VSI</td>
<td>0020</td>
<td>1,000</td>
</tr>
</tbody>
</table>

**PLC/ALC:** Customers who pay a PLC and an ALC for a licensed program receive enhancements and future releases, if any, at no additional charge. Significant new functions may be offered as an optional feature and charged for separately. If a replacement program is announced and the customer elects to license the replacement program for a one-time or PLC/ALC and replace the prior program, an upgrade charge may apply.

The first payment consists of the PLC and the ALC. The ALC applies yearly thereafter.

**Program Upgrade Charge**

**Use Level Charge:** Charges for this program are based on usage levels. When a customer upgrades to a higher level of usage, a usage upgrade charge will apply, equal to the difference between the charge for the current level of usage and the higher level of usage.

**Trademarks**

GXT150L, GXT150M, and GXT1000 are trademarks of International Business Machines Corporation in the United States or other countries or both.

SP1, AIX, RS/6000, C Set ++, RETAIN, VisualAge, DB2, and DB2 Universal Database are registered trademarks of International Business Machines Corporation in the United States or other countries or both.

Java is a trademark of Sun Microsystems, Inc.

UNIX is a registered trademark of the Open Company in the United States and other countries. Other company, product, and service names may be trademarks or service marks of others.