Jotne

From IDEATION to MANUFACTURING and OPERATIONS

Share, exchange and archive your PLM data

EXPRESS Data Manager
TruePLM ™
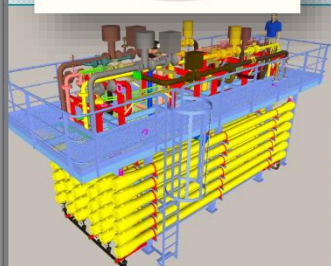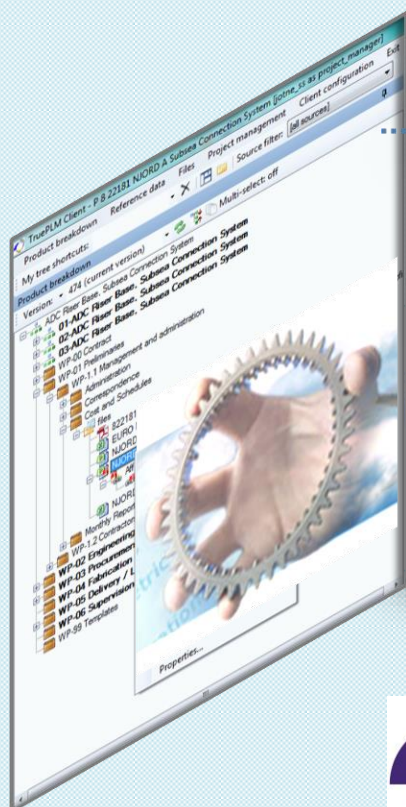
Why TruePLM?

Jotne EPM Technology is a member of the Jotne Group, specializing in Logistics Information Technology. Since 1988 the company has developed database solutions to handle standards such as ISO 10303 STEP, PLCS, ASD 1-5000 series etc. These are open specifications with public availability used by aerospace, space and defence-related industries to manage information about complex systems. Jotne has a staff of about 100 people, and its IT products are used by clients all over the world, including the US Department of Defence and leading aerospace, defence, and oil & gas companies.

With our 20 years of experience working with large organisations we have also been exposed to their data management requirements to exchange and share data with the customers, primes, partners suppliers and their various PLM and ERP systems. The Jotne response to this market is the TruePLM application where organizations can access and modify such PLM data in a user-friendly way, using ISO standard formats. In addition, the TruePLM application will serve as an archive repository for your systems and project data information.
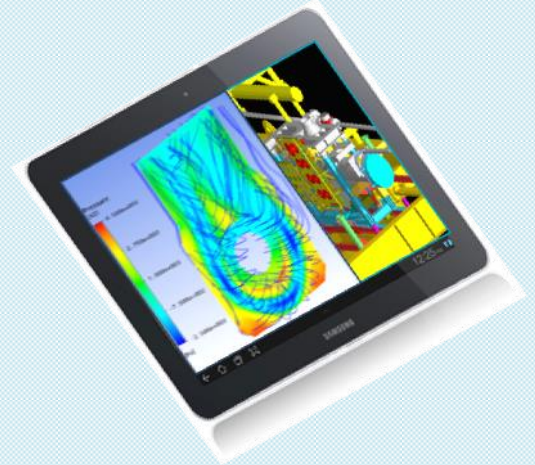
What is TruePLM?

TruePLM is a scalable solution for engineers that need to manage their PLM/CAD/CAE information using either portable devices, a multi-user server system within the firewall or multi-organisation cloud-based subscription services. Large and complex products such as aircraft, vehicles, oil and gas installations and ships depend on accurate engineering information for their successful operation and maintenance throughout a life cycle often measured in decades. This life cycle normally depends on a wide diversity of computer systems and information formats, which itself becomes a barrier to effective communication of engineering information across the supply chain. By using a common standard, we can eliminate the unnecessary cost of manually converting or re-entering information between different computer systems. The ISO PLCS (Product Life Cycle Support) standard (ISO 10303-239) covers the widest cross section of engineering applications. ISO 10303 STEP (Standard for the Exchange of Product Model Data) has been in use for over a decade to facilitate the flow of engineering information in both civil and military environments.

The TruePLM solution has been designed to provide maximum capabilities to companies executing concurrent engineering strategies.

TruePLM will help its users to:

Increase Data Management Capabilities	*Increase Document Management Effectiveness*	*Support information longevity*
Support of concurrent processes and document dependencies	*Archive data in an open standard format, PLCS*	*Improve Information Quality Management*
Consolidate design models in a repository based on open standards compliant formats	*Improve communication with contractors and partners, using open and publicly available standards*	*Create solutions for Life Cycle Data Management*

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Project Managers and Engineers need to interact with many stakeholders to complete their innovations and bring better products to the market, both faster and at a lower cost, and with increased quality.
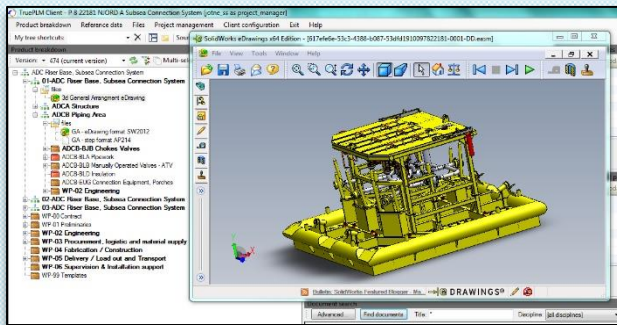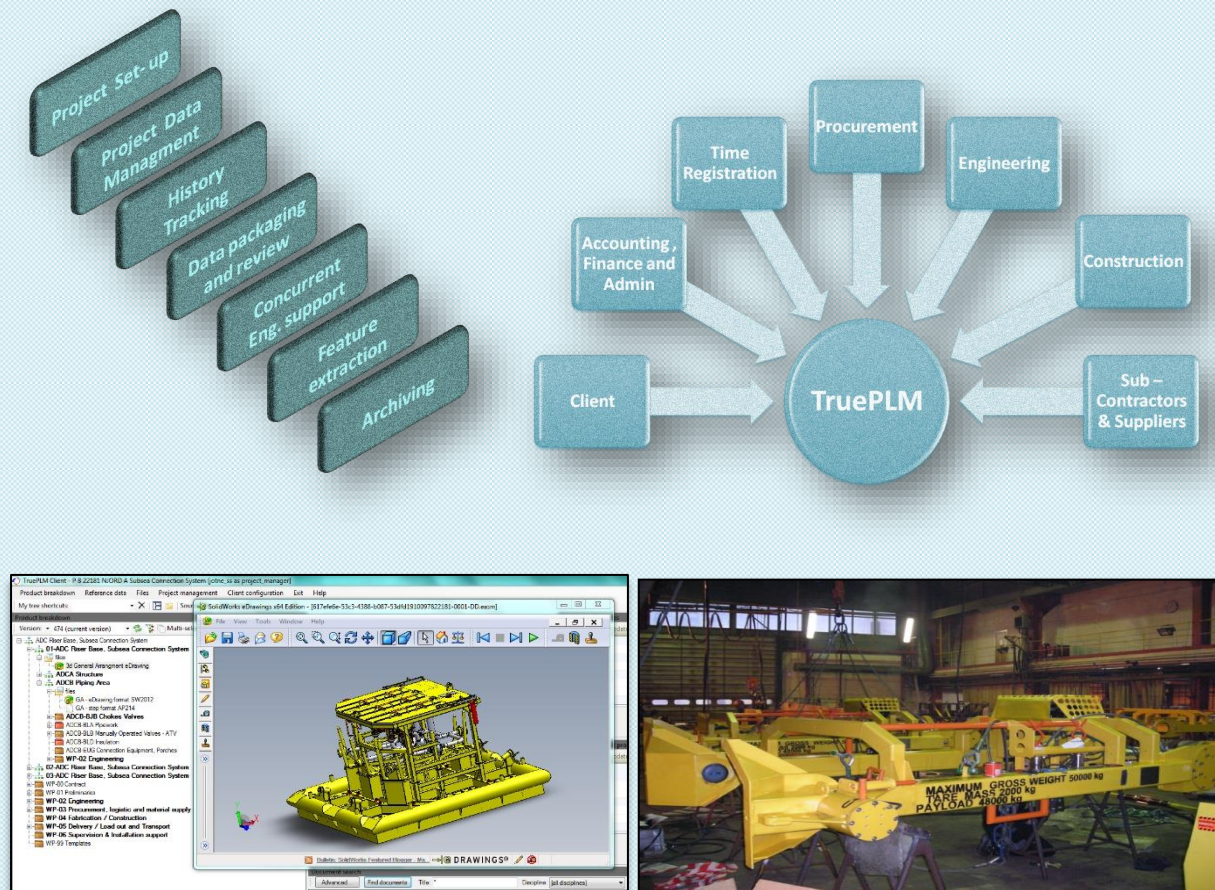
Today's manufacturing industries are under continuous pressure to deliver competitive products faster. At the same time, they must reduce the development cost and the cost of product ownership. In addition, they have to protect their intellectual property while working in shared environments and while sustaining business growth and competitiveness. In order to achieve this goal, collaboration across the product development lifecycle is critical. Unfortunately, collaboration introduces many complications that must be addressed in order to ensure the integrity and consistency of product development information. These product development processes now also span increasingly complex business environments that bring together multiple companies, each with their own systems and processes.

The Jotne approach to this problem is to establish and use a common or master data unified repository in which product and process information from many sources (such as systems, companies, etc.) can be merged and consolidated. The TruePLM repository is designed to handle many product versions and configurations and distinguish between information packages received from multiple suppliers and partners delivered to many customers. Using the ISO 10303 standards the Jotne solution addresses your requirements of interoperability, and Long Term Archiving and Retrieval (LOTAR) as defined by the AIA/ASD standardization effort of the same name.
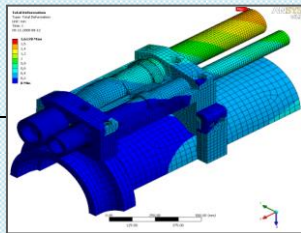
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User requirements addressed by TruePLM

General system objective: The system shall provide, in a product-structure-based way, project data sharing, team collaboration and long-term archiving tools.

Project lifetime scope: The application shall support the project activities across all the phases from conceptual design until launch and deployment.

Configuration control tool: It shall be possible to use the software system as a configuration control tool to manage the different versions of the system structure and data related to it.

Presentation of system data in tree structures: The system data shall always be related to the product structure tree and presented in such a tree structure.

Locking of in-work data: The system functionality shall avoid that two users modify and submit the same information, to avoid modifications being accidentally overwritten.

Versioning of data: The system shall support versioning of product data.

Search for product data: The system shall support search of product data.

User access control: Access to the system shall be limited by a login system. Access to the projects and project data shall be limited according to the type of users and permissions required and assigned to him or her.

Date exchange and sharing: The system needs to exchange data using ISO and other industry standards.

Traceability of the history of data: The system shall track the history of the different version submitted to the system during the development of the project.

Archival of project data: The following archiving capabilities shall be supported:
- archival of integrated life cycle data in a standard representation.
- long term storage of structured system data.

Integration with specific project tools: For viewing and editing the specific data contents, it shall be possible for users to open files in the file-type specific application from TruePLM.

Project plan information: The system shall store basic information about the project plan:
- planned milestones
- scheduled events
- planned actions.

Baselines: The system shall allow to create baselines of all or of parts of the project data at any time, and to relate baselines to milestones.

Project data contents: The system shall allow storing of project data that are in form of files, including documents, software, manuals, structured documents, etc.

Data dependency representation: The system shall allow managing of dependencies between documents and data, in order to identify, check and correct the possible effect of changes in requirements or project data.

TruePLM offers

File Document Management

- Add files to breakdown elements
- Support different file formats
- Support structured documentation
- Store data distributed and locally
- View files and documents
- Edit files (Check in / Check out)
- Customize view/edit/diff functions
- Compare file versions
- Manage document relations and red flags
- Add "sticky notes" to documents
- Group documents as "Technical Data Packages" – TDP
- Search documents

IoT Integration

- ISO 10303 Repository for IoT integration
- Digital Twin capability to connect with AI framework and store sensor data for further analyses
- Extend its application user interface capabilities with new internet technologies and the PLM server capabilities with blockchain technologies.

Product Breakdown Management

Product breakdown structures (PBS) are used throughout the life of a project or product to collect and organise data and documents. Many different types of breakdowns and baselines may be needed, such as product structure, bill of material (eBOM and mBOM), task breakdown, work breakdown structure, contract data requirements list (CDRL) and more.

- Create project and product breakdown structures
- Create templates
- Import PBS from standards like ISO 10303 STEP/PLCS, AIA/ASD S-Series, GEIA-0007, MIL-STD-31000 (CDRL) and more.
- Import PBS from released/archived data directly in zipped format
- Add, rename, move and delete breakdown elements
- Add user defined breakdown element types
- Create domains and sub-domains
- Define and add properties to breakdown elements
- Create versions of breakdowns
- Create baselines (snapshots)
- List baselines and their contents, compare versions of baselines
- Search breakdown structures
- Create Organisation, Product and Links
- Blockchain, Notification and Generate documents.

Access Control

- Create default permissions
- Customize access control for
- User type, Domain and Sub-domain
- Role and Project
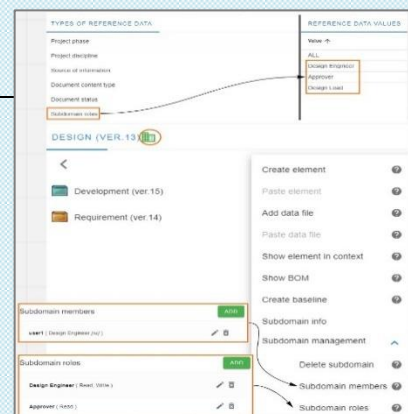
TruePLM user interface example
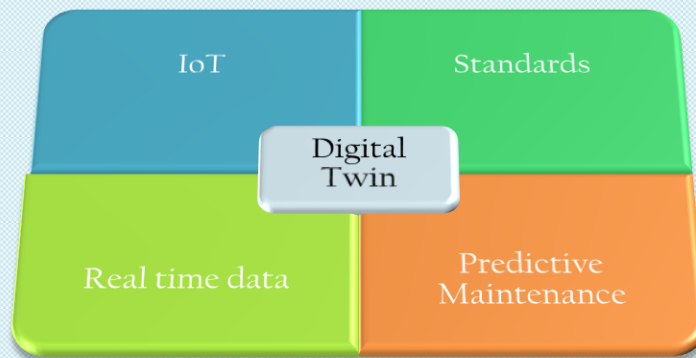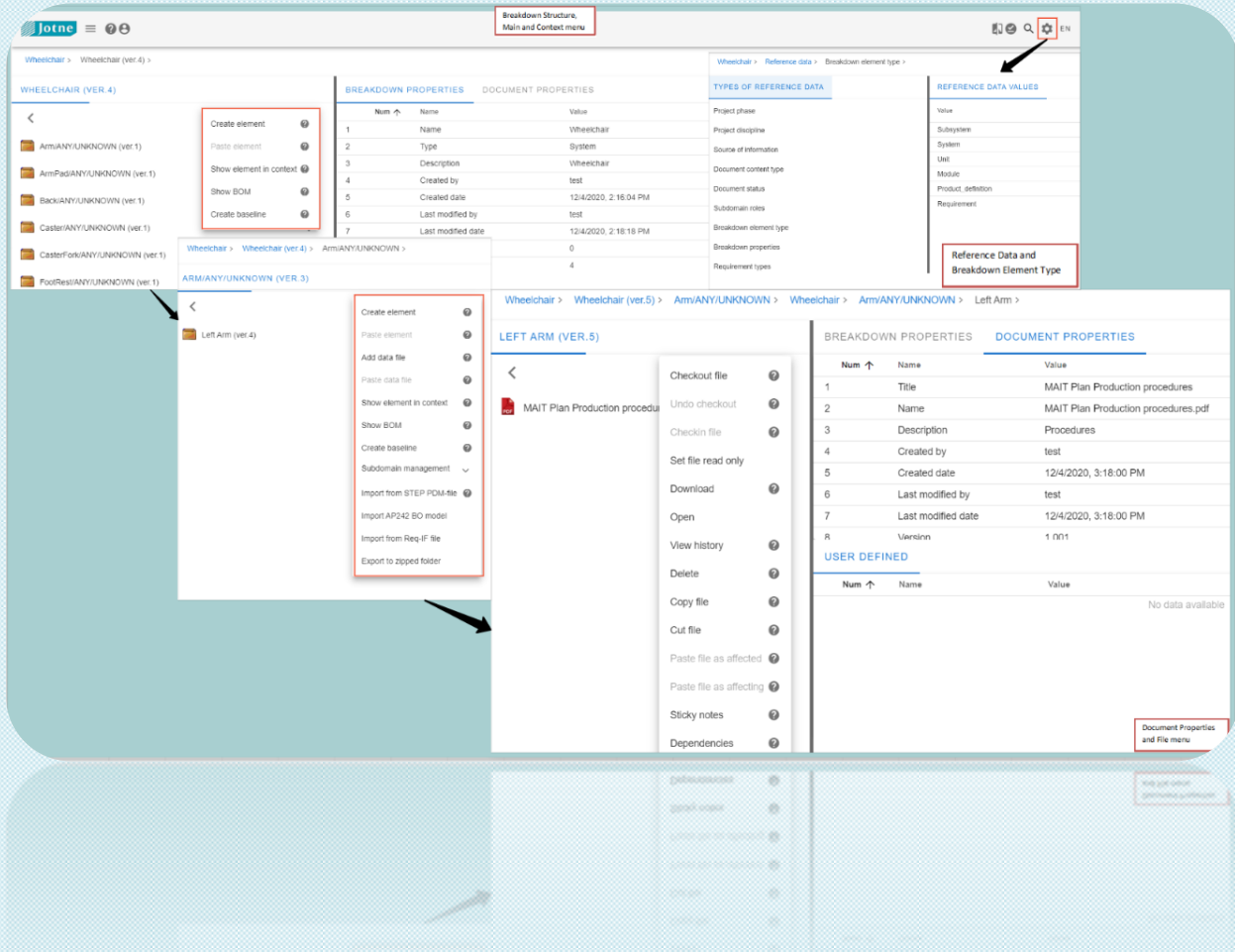
The EXPRESS Data Manager™ suite of complimentary products

Jotne EPM Technology has established itself as one of the leading providers of solutions for product data technology – the open paradigm for the 21st century. Our product suite EXPRESS Data Manager™ is designed to meet the needs of engineering and manufacturing enterprises to accurately and reliably exchange and share technical data with colleagues, customers, subcontractors, suppliers and other business partners. The products fully implement the EXPRESS data-modelling language which supports most international product data technology standards - including ISO 10303. EXPRESS Data Manager™ can be used for data-modelling, application development, data management and quality assurance. Our product suite is under constant development to adapt to changes in customer needs as well as international and industry standards. Contact us for the latest news.

EDMserver™ *A Product Model Server capable of storing all data for complex systems, including native support for the ISO STEP/PLCS/IFC Data Models. The unified database system uses a model-driven architecture to manage the life cycle of products and systems.*

EDMsdk™ *A comprehensive package of tools for all EXPRESS users – application developers, system integrators, data modellers, etc.*

EDMvisualExpress™ *A complete tool for creating and visualizing data models based on the graphic notation EXPRESS-G.*

EDMmodelConverter™ *Quickly and easily uses EXPRESS-X to convert data from one EXPRESS schema to another.*

EDMmodelChecker™ *Validates a data set and ensures that it conforms to all rules and constraints defined in one or more EXPRESS schemas.*

EDMopenSimDM™ *Adopts product data management paradigms to engineering analysis to assist the user – both during product engineering and product operation - in managing and configuring design and analysis data.*

Business Partner Program *Our commitment to our partnership with you includes training and educational services, customer support and consulting services.*

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Enabling Open Information Systems

Organizations of any size achieve high performance by making timely, effective and efficient decisions. All decisions rely on a fundamental input: information. Organizations require capable people to make decisions but must also invest in the processes and technology that generate fit-for-purpose information. Such investment has led to information becoming a key enabler of the globally competitive marketplace and, thus, the world has entered the Information Age. Every information set possesses characteristics that determine the success of the decisions possible using the information content. Of these characteristics, the most critical are timeliness, accuracy, completeness and provenance. These are the characteristics of high-quality information.

High-quality information is most typically achievable through computer-based solutions. These solutions benefit from implementations using an information model that rigorously defines the information content.

Support for ISO 10303 standards

ISO International Organization for Standardization

Core data functionalities

data exchange *– use of computer files to transfer data between software applications*

data sharing *– use of a single common repository to provide data access to more than one software application*

data archiving *– storage of data for possible later retrieval by software applications (either through computer files or a data repository & potentially by software applications that do not even exist at the time of creating the data)*

The challenges of the Information Age

interoperability *of information technology, addressed by data exchange & sharing solutions*

*common enterprise-wide views of information, addressed by **data integration** solutions*

*obsolescence of information technology, addressed by **data archiving** solutions*

*freedom from vendor lock-in, addressed by **open data** solutions*

*multiple viewpoints, addressed by solutions embodying **data independence***

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