Create your Digital Twin in days, not months.

Attend the *free* ISO/IoT/PLM workshop
27th & 29th September 2021 : 14.00 – 16.00 CET (2 Sessions)

Day 1: Introduction to the *ISO 10303 (STEP)* repository, as a PLM module
Day 2: Creating the *Open Standard Based Digital Twin*, by connecting your IoT sensors using the open-source Eclipse Arrowhead software

Registration: Send mail to horizon@jotne.com

Jotne®

What will you learn?

Develop an understanding for the concept of using your existing CAD and PLM information to automatically to put your Digital Twin in operation. The workshop will give an overview of ISO 10303 concepts and how to integrate with IoT. Introduction to the PLM module, IoT framework and application interoperability will be highlighted. Bring your own STEP files to test out.

Who should attend?

Digital Twin / Transformations team members
CAD/CAE and PLM users
Managers (IT, PDM, CAD, ERP, MRP), system integrators, supervisors, and others with an interest in the STEP standard, IoT & PLM.

ARROWHEAD TOOLS   KYKLOS 4.0   CHANGE2TWIN   DAIS   DRYADS

Supported by advanced EU H2020 projects

Day 1

14:00 – 14:15	**Digital Twin activities at the European Space Agency** *Keynote Speaker: Gianluigi Baldesi , European Space Agency (ESA)*
14:15 – 14:40	**Introduction to Digital Twin and ISO 10303 standards** *Kjell Bengtsson, Jotne*
14:40 – 15:05	**Using ISO 10303 standards for simulation and structural test data** *Remi Lanza, Jotne*

15:05 – 16:00	**Use case of the ISO 10303 PLM module, reference data and IoT storage**
	Practical examples of Digital Twin using the ISO 10303 repository
	   o The Mountain Bike
	   o The Crane
	Jochen Haenisch and Mona Chaure, Jotne

Moderator of the Day
Dr. Tor Dokken, Chief Scientist, Sintef

Day 2

14:00 – 14:45	**Eclipse Arrowhead Framework**	
	Dr. Jens Eliasson, ThingWave AB	
14:45 – 15:10	**IoT integrations with the ISO 10303 repository**	
	Roman Filatov, Jotne	
15:10 – 15:35	**Application of a standard based framework for Digital Twin implementation**	
	Mariane Prado Motta, Cirtes	
15:35 – 16:00	**Summary of the workshop and way forward**	
	Presenters, Jotne Team and Attendees	
	Moderator of the Day	
	Kjell Bengtsson, Jotne	

Presenter's Bio

➢ Gianluigi Baldesi, ESA: Senior manager with 10+ years of technology leadership experience in assessing and executing complex projects for future aerospace missions in a cross-cultural environment. Recognized at European level for successfully fostering innovation and driving the use of advanced technology across a range of industries. Managed around 100-million-euro investment to develop advanced aerospace systems and manufacture technologies for Europe's next-generation rockets. Ensuring the right implementation of an innovative multi-billion-euro public-private partnership by work hand in hand with the key stakeholders (customers, team, institutions, partners).Currently in charge of developing, updating, and implementing of a coherent ESA corporate strategy translating Agency-level objectives into corporate goals.

➢ Kjell Bengtsson, Jotne: is a Vice President at Jotne, has a Mechanical Engineering background and a diploma in Marketing. He started out at Volvo Car and General Electric doing CAD/DB applications and later management positions and is now VP at Jotne EPM Technology. Kjell has been exposed to ISO 10303 (STEP),and other related standards for the last 25 years and is actively involved in Open Standards Based Digital Twin implementation projects in the most complex defense and aerospace sector projects. Kjell is a Member of the Board of PDES Inc and supports other industry organizations like AIA/ASD, NIAG (NATO), FSI, CENSSS, AIOTI, NAFEMS and more. Further, Kjell also manage the Jotne extensive R&D portfolio at EU and the European Space Agency (ESA).

➢ Remi Lanza, Jotne: completed M.Sc. in Mechanical Engineering in 2015 within the field of finite element analysis. He joined Jotne in 2016 where he started his industrial PhD with the Norwegian University of Science and Technology (NTNU). He completed his thesis "Capture and reuse of engineering knowledge in digital twins" in 2020 and is currently employed as a Mechanical Engineer. During and after his PhD research Remi was involved in ISO 10303-209 standardization activities, and projects related to SDM, PLM, Digital Twin, FEM/test correlation and development of data exchange applications.

➢ Jochen Haenisch, Jotne: leads the Aeronautics, Defence and Space business area in Jotne. He has contributed to and managed many data interoperability implementations applying various STEP standards including ISO 10303-209 (Multidisciplinary analysis and design), ISO 10303-239 (Product LifeCycle Support, PLCS) and ISO 10303-242 (Managed model-based 3D engineering). In 1990 he entered into the ISO Subcommittee for Industrial Data, ISO/TC 184/SC 4, the home of STEP. He regularly attends their plenary meetings as head of delegation for Norway. Currently he is deputy convenor of WG12, Common Resources.

➢ Mona Chaure, Jotne: works as an Application Engineer at Jotne. She completed MSc. in Maritime Operations and have experience in the Automotive and Oil & Gas Industries as a Mechanical Engineer. Expertise in the Design, PLM and Vehicle Integration.

Presenter's Bio

➢ Dr. Tor Dokken is Chief Scientist and Research Manager for the Geometry group in the Department of Mathematics and Cybernetics in SINTEF Digital. He has followed the development of STEP from its start with a special focus on and geometry centred applications. Hi is currently the coordinator of the H2020 Change2Twin (2020-2024) focusing on digital twins in manufacturing.

➢ Dr. Jens Eliasson: is a co-founder and committer of Eclipse Arrowhead and CEO of ThingWave AB. His background is Associate Professor at Luleå University of Technology working with Industrial Internet of Things as a core faculty member of the EISLAB research group. He is currently an active developer of several core system of the Eclipse Arrowhead e.g., DataManager, TimeManager, Configuration, and the Service Registry. He is also actively participating in the Eclipse Arrowhead roadmap working group. Currently, he is working with Industrial IoT, 5G, and Eclipse Arrowhead. He is a co-architect of the Arrowhead Framework and has been involved in several European R&D projects where Arrowhead has been used.

➢ Roman Filatov: has advanced expertise in web app development: Java and JavaScript, XML, Rest API, STEP to XML and back conversion; works at Jotne and have background as engineer-designer of complex acoustic devices. Roman is the architect and developer of key components in the Jotne Software. Recently he was tasked to design and implement the connection between the Arrowhead software and the ISO 10303 module, using the REST API. This has now successfully been implemented in many projects.

➢ Mariane Prado Motta: is a R&D Engineer at Cirtes. She is experienced in the field of machine learning, data analytics, machine vision and project management. In her current position, Mariane leads projects on the development of monitoring and optimization solutions for manufacturing process. Mariane has Mechanical Engineer degree and is currently conducting a PhD work on machining monitoring systems based on artificial intelligence techniques.