STANDARDIZATION IN INDUSTRY 4.0

GOAL

Identification and promotion of the usage of standards in INDUSTRY 4.0 projects

Challenge

The standardisation is a key element for the digital inclusion in response to the industrial production globally, plays a crucial role in the Arrowhead Tools project within the WP10 – Standardisation. The main objectives of the Arrowhead Tools project are to contribute to the interoperability for IoT and SoS engineering tools and contribute as well to the interoperability and integration of data between all the systems of the automatization pyramid.

The main overall objective of MONDRAGON Corporation´s within the Arrowhead Tools project is considering existing standards and interoperability specifications relevant that could be applied in technology and demonstrators use cases. The need of new standards is leveraged by the different actors and players from industry, research, and small companies. MONDRAGON will accomplish the identification of Standards/WG involved in Arrowhead Tools and the technology which is relevant for the standardization, monitor and provide contribution for use cases and main manufacturing reference models/architectures and standards, as well as analyse the Semantic Approach focus on modelling and knowledge representation languages, methods.

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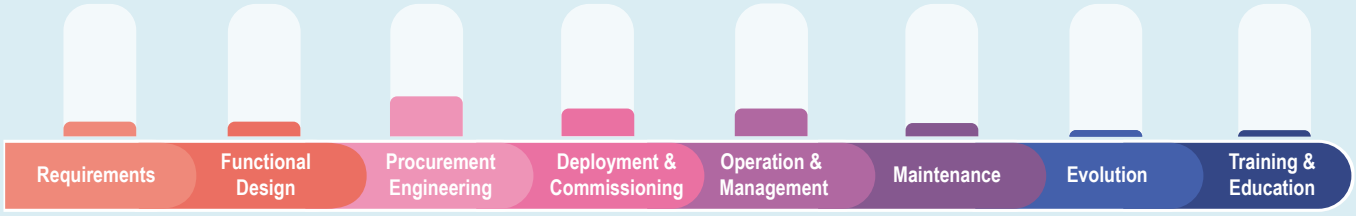
Engineering Phases



Results

MONDRAGON Corporation will analyse different methods for language standards, reference model, and communication standards. Will focus their contribution to existing and emerging standards where appropriate, as well as disseminating the best practices among partners and stakeholders.

LANGUAGE STANDARDS:

The representation and knowledge associated with specific applications and domains require the use of languages prepared for it. The principal standards of interest among use cases and partners are SysML, JSON, XML, CSV, RDF, among others. The principal contribution could be focused on SysML as the principal standard for System Modelling Language.

REFERENCE MODEL AND METHODOLOGY STANDARDS:

The reference model is described as the need to standardise industrial processes and their representation throughout their life cycle and in the automation pyramid through one of the standards previously seen in the areas of Communication, Semantics, etc. and is based on the current Industry 4.0 reference models such as RAMI 4.0, the NIST Standards Landscape for Smart Manufacturing Systems model or the Industrial Internet Consortium - Industrial Internet Reference Architecture. Likewise, MONDRAGON will provide inputs to the work on Asset Administration Shell (AAS) based on experience gained from applying it in some use cases since AAS helps to implement as a real case the standardization for industry.

INTERFACE AND INDUSTRIAL COMMUNICATION STANDARDS:

In terms of communication, there are three main action areas; interoperability, industrial communication, and control systems. In terms of interoperability protocols that can be used in diverse layer of an industrial environment, the consortium highlighted OPC-UA and MQTT. MONDRAGON will analyse the characteristics of industrial protocols for implementing in specific domains.

Partner Data

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