

Tutorial

Practical use of ISO 15926

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with

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Tentative agenda

- Introduction and scope 13:00 – 13:15
- “The life of an electric motor” + “Levels 0-2 (n)” 13:15 – 13:45
- Break 13:45 – 14:00
- The “modelling process” example “ambient operating temperature” 14:00 – 14:45
- Break 14:45 – 15:00
- iRING 15:00 – 15:45
- Break 15:45 – 16:00
- The “pressure transmitter”, Part 1 16:00 – 16:45
- Break 16:45 – 17:00
- The “pressure transmitter”, Part 2 17:00 – 17:45
- Summing up 17:45 – 18:00

Targeted users

- An introduction for people who want to start mapping their data to an ISO 15926 representation.
- This is about understanding some of the key concepts of ISO 15926, and how to use them when analysing your data for representation in ISO 15926
- Will touch upon some of the basic concepts underlying ISO 15926, but which are not explicitly stated, and that you need to understand how to use
 - 4 object type architecture
 - 3 levels of object types
- Not a “data modelling course”, more like a usage guide and examples
- This is not an implementation course

ISO 15926

- **The title of ISO 15926 is “Integration of lifecycle data for process plants including oil and gas production facilities”**
 - Not “Oil&Gas” as it is often known as.
 - Should have been “Integration of lifecycle data”
 - Note integration and lifecycle
- **This means that we in theory have to consider all data related to a “thing” through its life and from the various applications that are used to record data about it.**
- **We therefore need to define the data independent of the applications, hence also record it independently of the applications**
 - If we try to start from a particular application it will probably not support others.
 - Data is used across applications

ISO 15926 II

- **Need to concern ourselves with what things are, not how we record data about them.**
 - Then we find that “One man’s attribute is another mans class”
 - Steel pipe elbow
 - Piping designers say it is a “pipe elbow” with a “material of construction”
 - Materials engineers say it is a “lump of steel” with a “pipe elbow shape”
 - In the real world you can pick one up and measure it as well as examine its material properties
 - So it is both a “pipe elbow” and a “lump of steel”!!
- **Therefore a “warning”**
 - Do not think in terms of objects and attributes
 - In ISO 15926 “attributes become relationships”
- **We will look into how this is dealt with based on “types of attributes”**

ISO 15926 III

- **2 distinct use cases**
 - 1. Data exchange
 - 2. Data integration
 - We want to automate this to the extent possible, so precise data definition is key
- **This tutorial will focus on how to represent data related to manufactured products using ISO 15926 to explain some of the key concepts**
 - This is independent of industry
 - The principles also apply to
 - All stages of the design of an “assembled product”, e.g. a “package” or a complete “plant”
 - “Functional” and “physical” aspects, as well as “activities” and “processes”
 - Individual things and types/classes of things
- **Will describe some of the basic concepts underlying ISO 15926, but which are not explicitly stated**
 - Some of the basic concepts one need to know
 - 4 object type architecture, 3 levels

Status of usage of ISO 15926

- Many people and companies are talking about it
- Few actual implementations
- There is an initial set of Reference Data (RD) available
- But very limited, if any, available product/project data
- Data exchange capabilities are starting to make it to the market
- How to start using ISO 15926 as a basis for your data?
- You need to migrate data from external systems to start take the benefit
- This tutorial will give you an introduction on how to achieve this.

Semantics for process industry data: Where do you start?

- To put semantics to use for process industry data, you need to know which distinctions matter the most.
- This tutorial begins with an in-depth discussion of four categories that are basic to any industrial life-cycle: *Function*, *Component*, *Product*, and *Individual*, as defined in the IEC61346 standard .
- We move on to a concise review of basic ontological notions such as class, individual, and relation.
- You will learn how to apply these concepts using ISO 15926, in open, verifiable, and vendor-independent industrial information management.
- We go through detailed ISO 15926 models for a selection of challenging questions in industrial life-cycle semantics.
- Experiences from implemented ISO 15926 projects will be described along the way, ranging from data exchange mechanisms (iRing) to product catalogs (EqHub).