ISA-95 Overview

The ISA-95 standard describes the interface content between manufacturing operations and control functions and other enterprise functions. The goals are to increase uniformity and consistency of interface terminology and reduce the risk, cost, and errors associated with implementing these interfaces. The standard can be used to reduce the effort associated with implementing new product offerings. It is an excellent starting point for successfully implementing interfaces between enterprise (ERP) and control systems (SCADA) through the MES Layer.

ISA originally stood for Instrument Society of America. ISA have evolved into more than just instruments and beyond America, and as a result changed to International Society of Automation. ISA has set many standards used for automation, but the Track and Trace Module is specifically built around the ISA-95 standard that was developed to automate the interface between enterprise financial systems and control systems on the plant floor. Information that the top level system or ERP (Enterprise Resource Planning) has about upcoming production requirements is needed on the plant floor. Likewise, some of the production details from the plant floor is valuable at the ERP level.

Plant floor control systems are designed to control processes and machines and are not well suited to handle much production data. They can make control decisions in the 5mS to 200mS range, but have limited historical storage and database capabilities.

ERP systems are well suited to managing financial, inventory, receivables etc. They do a great job of accepting orders, checking if additional raw material should be ordered, paying vendors, and reporting - all of which can be updated anytime during a day, week, month, quarter or even year. Both the speed of the plant floor control systems and the planning and tracking ability of an ERP system is needed in the middle ground. This middle ground is commonly referred to as MES (Manufacturing Execution System) and MOM (Manufacturing Operations Management).

The objectives of the ISA-95 standard are to provide a consistent operational model and terminology that is a foundation for the different levels to communicate. In addition, systems on the same level can communicate in a consistent manner. It was developed to be applied in all industries and all sorts of batch processes, continuous processes, and discrete manufacturing.

In this era of manufacturing, data stored in proprietary systems or in systems requiring hours of custom programming to share data, will not provide what is needed. In this era, manufacturing information systems must be data centric solution. Operations has their wish list and the cost, schedule and risk to create such a system is monumental and as a result typically doesn't happen. In other cases, funding is approved and the project is started, but it falls short of expectations. There has to be an easier way!

If we started from scratch and developed our own, which was tempting because modeling after the ISA-95 standard is not an easy task, we would be yet another company with a different model that others have to learn and adapt to. If we did, we would be doing our customers and the industry a disservice. Therefore, the Sepasoft Track and Trace Module is aligned with the ISA-95 model to integrate with your ERP and SCADA resources.