

Technical Overview of Windchill ESI and ERP Connector

The following outlines the functions of the key components of a Windchill ESI or ERP Connector system.

Info*Engine provides the standard interface to Windchill PDMLink, creating a single channel to multiple external environments, including the Windchill ESI business logic.

Windchill ESI services produce output from Windchill PDMLink in a format that can be easily accepted by the EAI software components of Windchill ESI. This output can then be processed and mapped to a distribution target such as an ERP system. The output from Windchill PDMLink is in XML format; it is transported to the EAI software through XML messages that are delivered using a JMS provider such as TIBCO Enterprise Message Service (EMS).

While the response message (that represents the data being published) is in plain XML, the result response message (that holds information on whether or not the overall and sub-transaction statuses could be updated in Windchill successfully) is an XML message that is SOAP encoded

This messaging architecture supports bidirectional communication, guarantees message delivery, and provides a common interface to different EAI applications. JMS enables Windchill PDMLink to send messages that contain data in a predefined format, communicate information about the publishing of this data to the EAI software components of Windchill ESI, and receive the status of the success or failure of attempts to publish. Since JMS communication is between two systems: Windchill PDMLink and EAI components, Windchill ESI uses JMS point-to-point communication via JMS queues. JMS guarantees message delivery; therefore, messages published to the queue remain in the queue until the EAI or Windchill ESI services retrieve them. Messages are not dropped if there is no response.

The Windchill ESI business logic in the EAI software accepts the product structure data from Windchill ESI services and parses it to appropriate business objects so that it can be transferred to the distribution targets. Since each distribution target may differ from others in many ways, such as the format in which data is accepted, how updates are performed, or with the type of business-level errors that might arise, the EAI software components keep these differences transparent to Windchill PDMLink by automatically mapping and manipulating the data in a format acceptable to the distribution target.

TIBCO BusinessWorks includes the following components that help the flow of data between Windchill PDMLink and distribution targets:

- The TIBCO Designer graphical user interface (GUI) allows users to configure ERP adapters, create and test the design of business processes, and deploy these processes.
- The TIBCO BusinessWorks engine runs the business processes.
- TIBCO Administrator, a browser-based interface, monitors and manages the business processes and machines.

Each of these components communicates using a messaging system called TIBCO Rendezvous (RV).

TIBCO provides several default ERP adapters for major ERP vendors to enable seamless data translation. The EAI software components use these adapters to integrate Windchill PDMLink applications with the distribution targets.

Related Links

[Introduction to Windchill ESI](https://firstrobotics.ptc.com/Windchill-WHC/ESITechOverview_install.html)