



## Standards-Based Solution For ERP Integration

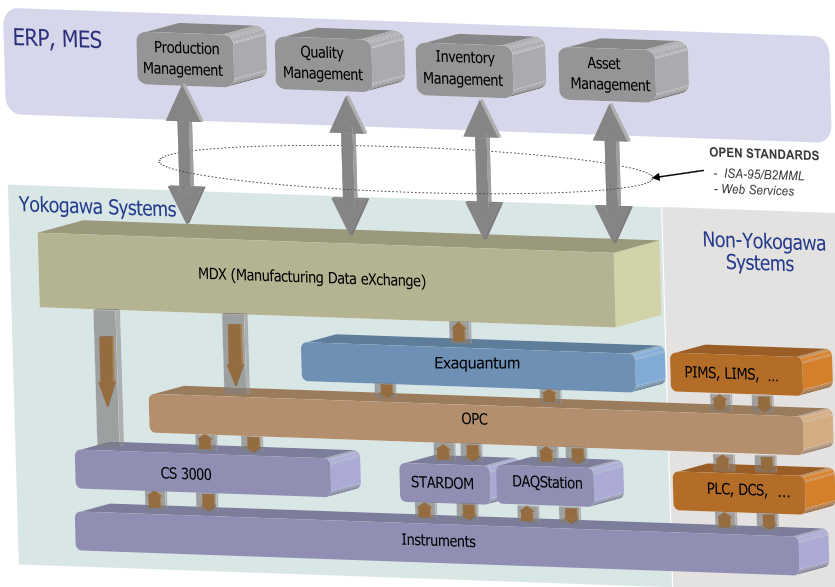
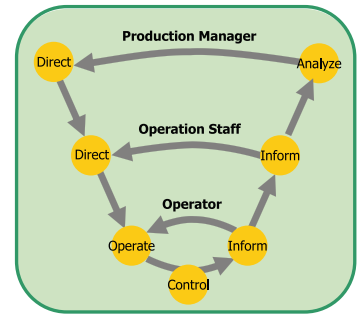
MDX is Yokogawa's solution to the challenges of integrating the business and production domains. Collaborative Production Management (CPM) requires the integration of key systems to facilitate the creation of usable information. These systems typically include Process Control Systems, Historians, CMMS, LIMS, Planning & Scheduling, Inventory Management and ERP.

Historically such integration has been achieved by utilizing a variety of proprietary protocols which are costly to both implement and support in the long term. MDX works with Yokogawa's flagship historian Exaquantum, and all of our OPC enabled products, as well as third party systems.

MDX enables standards based integration for both continuous and batch processes. It supports standard web services and the ISA-95 Enterprise-Control System Integration standard using B2MML (Business To Manufacturing Markup Language). This represents the next generation of integration technologies based upon open standards. These enable the business control loop to be closed by integrating real-time manufacturing data with business data. In addition to the enabling technology, Yokogawa provides the consulting and integration skills and services necessary to deliver and support integrated business solutions.

### Closing the Business Control Loop:

- \* Enables business driven operations
- \* Increases business agility
- \* Maximizes production throughput
- \* Enables supply chain optimization
- \* Decreases plant downtime
- \* Real-time manufacturing data is available to business decision makers
- \* Information is shared between organizational islands
- \* Reduces product change-over costs
- \* Reduces product roll-out cycle times
- \* Visualizes relevant information wherever needed within the enterprise



### MDX Architecture

MDX conforms to the ISA-95 standard which defines messaging interfaces between business and manufacturing operations functions

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## Integrate Your SAP And Control Systems

CS 3000 & Exaquantum displays in the SAP NetWeaver Business Portal



Yokogawa generated KPIs and alert notifications in the SAP NetWeaver Enterprise Portal

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MDX is certified by SAP for integrating control systems and Manufacturing Execution Systems (MES) with SAP's ISA-95 Solutions Package. MDX's interface to SAP's ERP systems enables manufacturers to close the business control loop at a lower total cost of ownership than previously possible.

With MDX production schedules, orders, production instructions, recipe values and set points can be sent from SAP's PP-PI module to CS 3000, CS Batch 3000 or other OPC enabled control systems. These control systems and the Exaquantum historian can send production results data back to the SAP system. The data includes materials consumed and produced, quality data, inventory data and critical quality and production values that are important to business level systems. This closes the loop between business and manufacturing systems. With its configurable data exchange, no programming is needed. It is also possible to map data between the ERP system and function blocks or recipes in the control system.

### SAP Integration benefits:

- \* Certified to work with SAP NetWeaver using ISA-95/B2MML
- \* Supports SAP NetWeaver Alerts and KPI messages
  - Real-time alerts from shop floor systems to SAP Enterprise Portal users
  - Real-time KPI data from shop floor systems to SAP Enterprise Portal users

MDX is based on the ISA-95 standard which has been adopted by Yokogawa as the basis for manufacturing operations management solutions. Use of open standards permits business and control systems to be decoupled, thereby reducing the impact of upgrading individual applications and enabling control systems to continue operation when business systems are down.

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VigilantPlant is Yokogawa's automation concept for safe, reliable, and profitable plant operations. VigilantPlant aims to enable an ongoing state of Operational Excellence where plant personnel are watchful and attentive, well-informed, and ready to take actions that optimize plant and business performance.

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