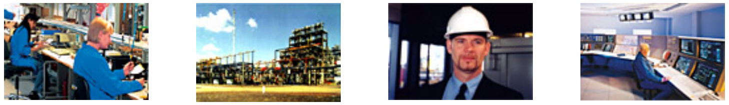
A Yokogawa Commitment to Industry

vigilance®



ISA-95を用いたERPとMESの統合

2008/5/19　ISA-95 (IEC62264) チュートリアル

IA事業部プロダクションエクセレンスセンター
MESグループ　川村　春久

横河電機株式会社

YOKOGAWA ◆

目次

- SAP-Yokogawaパートナーシップの経緯とINTERKAMA 2005での統合デモ
- B2MMLインタフェイスツールMDX
- IMC 2007での設備管理システムとの連携デモ

SAP-Yokogawa
パートナーシップの経緯と
INTERKAMA 2005での統合デモ

SAP-Yokogawaパートナーシップの経緯

- SAP
  - 2004年 ISA-95とB2MML (Business To Manufacturing Markup Language)のサポートを発表。
  - SAP eXchange Infrastructure (SAP XI)の中でB2MML を使用したISA-95パッケージを開発。
- Yokogawa :MES-ERP統合の基盤としてISA-95をサポート
  - SP95委員会のメンバー
  - WBF (**World Batch Forum)**にて、B2MMLの作成
- パートナーシップ
  - 2004年からB2MML関連で非公式に連携活動を継続
  - 2005年パートナーシップ協定の正式調印
  - Interkama 2005にてmySAP ERPとYokogawa MESとの統合デモ実施
  - B2MMLインタフェイスツールのMDXがSAP 2006の認証を取得

INTERKAMA 2005 (ドイツ･ハノーバー)

- ハノーバーメッセ2005
  - 2005/04/11～04/15 ドイツ北部のハノーバー市で世界最大の産業見本市
  - 11の専門分野別展示会
  - 3つのIndustrial Automation関連展示会：約1,800社が出展
    - 製造業向けITソリューション展示会のDigital Factory
    - FA分野の展示会　Factory Automation
    - PA分野の展示会　**INTERKAMA 2005**

Yokogawaﾌﾞｰｽ

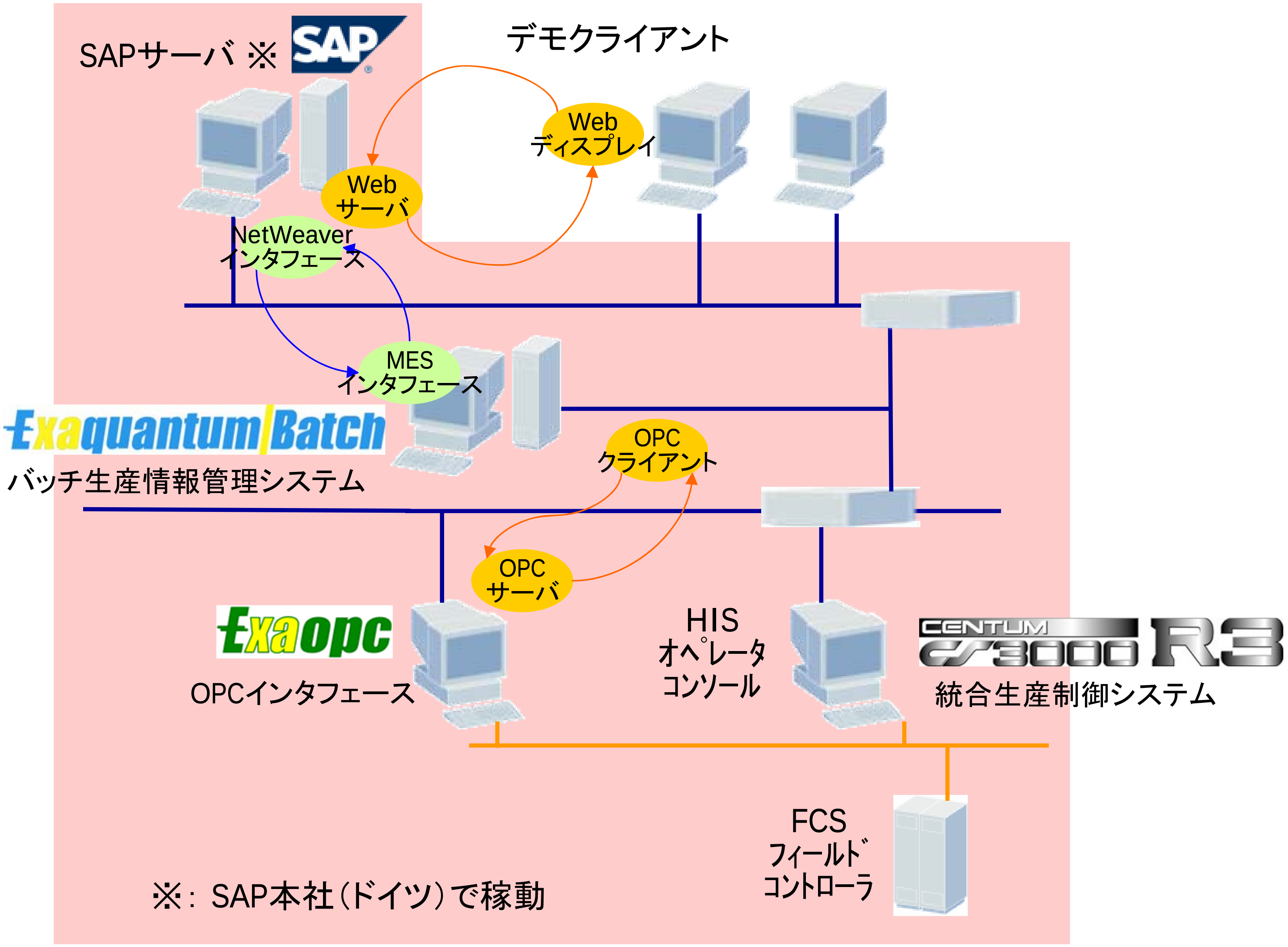
YOKOGAWA
Committed to Support Open Standards
HART
vigilant

SAP
INFORMATION

SAPﾌﾞｰｽ

**SAPﾌﾞｰｽ内
Yokogawa ｺｰﾅｰ**

統合デモシステムの構成



SAPサーバ ※

デモクライアント

Web
ディスプレイ

Web
サーバ

NetWeaver
インタフェース

MES
インタフェース

Exaquantum Batch

バッチ生産情報管理システム

OPC
クライアント

OPC
サーバ

Exaopc

OPCインタフェース

HIS
オペレータ
コンソール

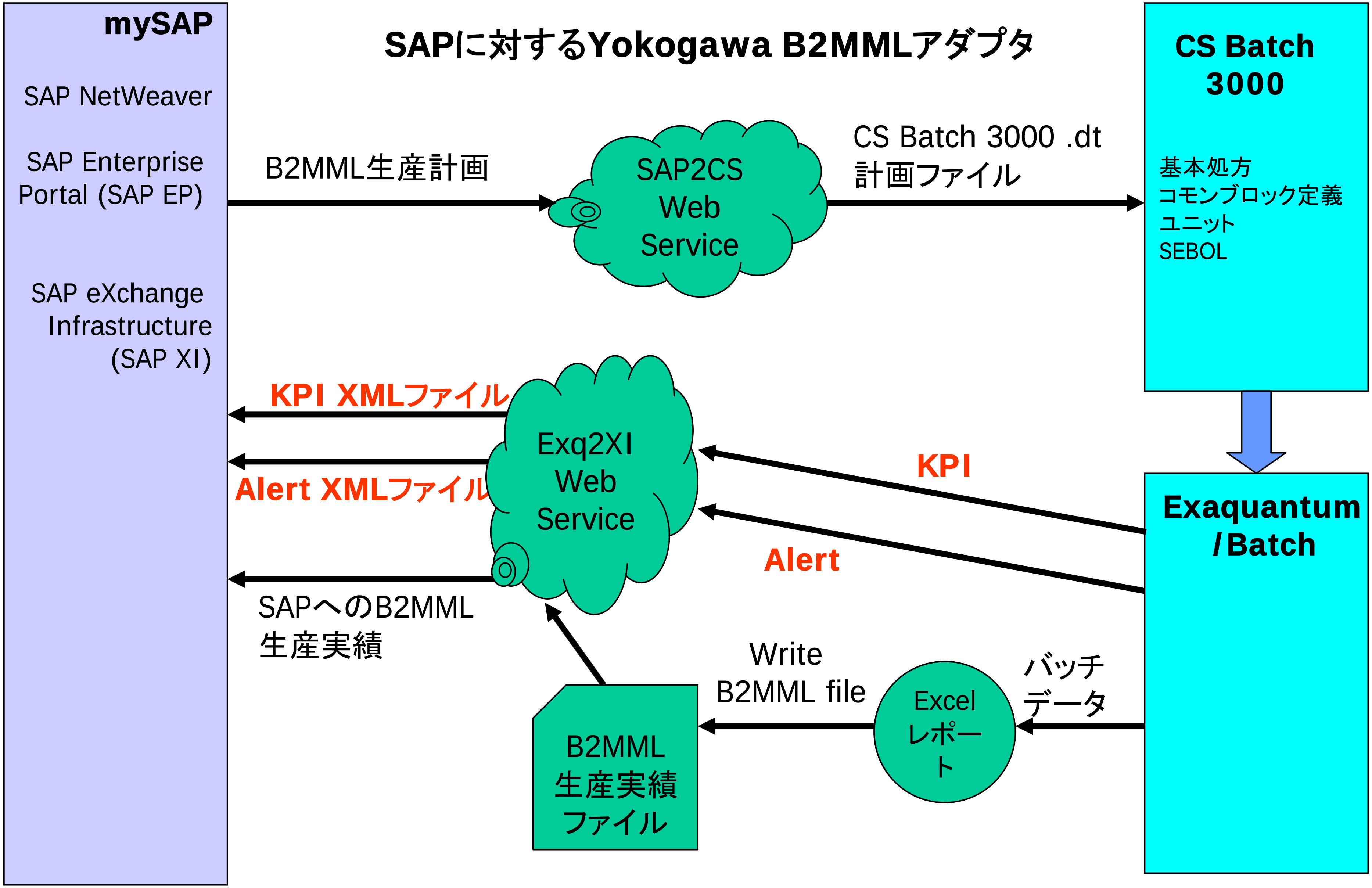
CENTUM CS3000 R3

統合生産制御システム

FCS
フィールド
コントローラ

※: SAP本社（ドイツ）で稼動

統合デモシステムのデータフロー



mySAP

SAP NetWeaver

SAP Enterprise Portal (SAP EP)

SAP eXchange Infrastructure (SAP XI)

SAPに対するYokogawa B2MMLアダプタ

B2MML生産計画

SAP2CS Web Service

CS Batch 3000 .dt 計画ファイル

CS Batch 3000

基本処方
コモンブロック定義
ユニット
SEBOL

KPI XMLファイル

Alert XMLファイル

Exq2XI Web Service

KPI

Alert

Exaquantum /Batch

SAPへのB2MML 生産実績

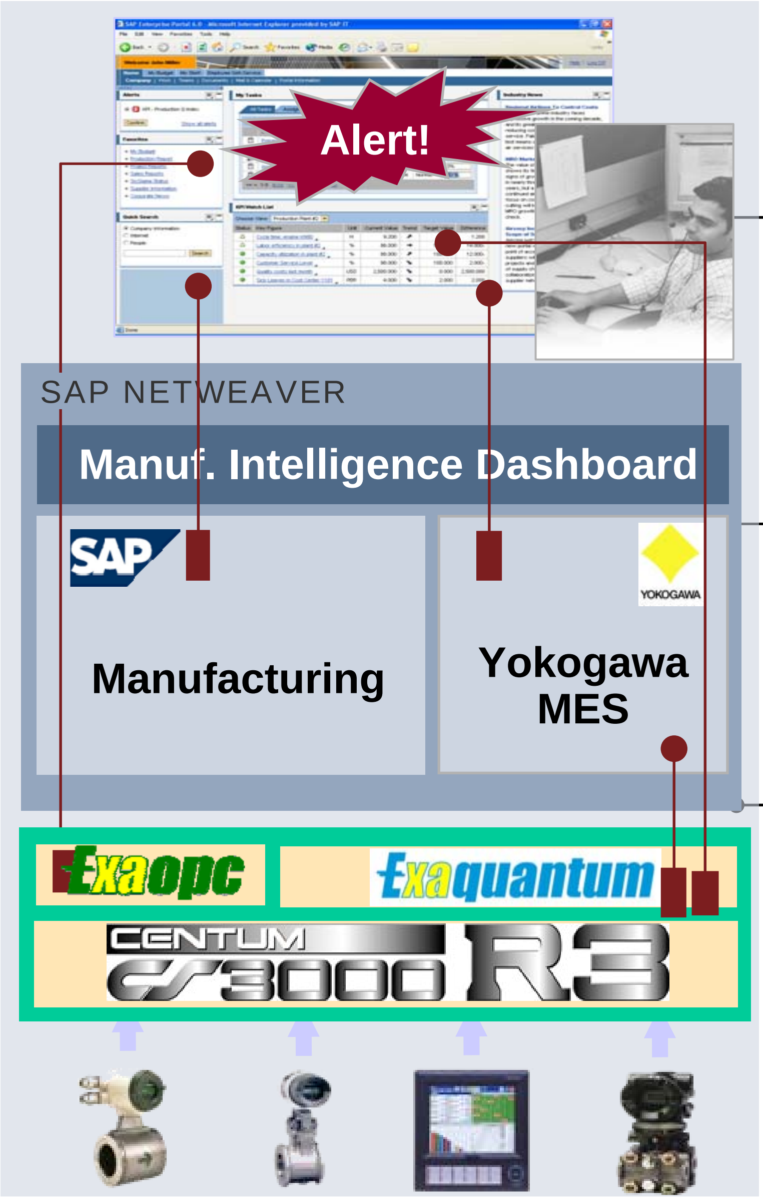
Write B2MML file

B2MML 生産実績 ファイル

Excel レポート

バッチ データ

SAP / Yokogawa適応型生産システム

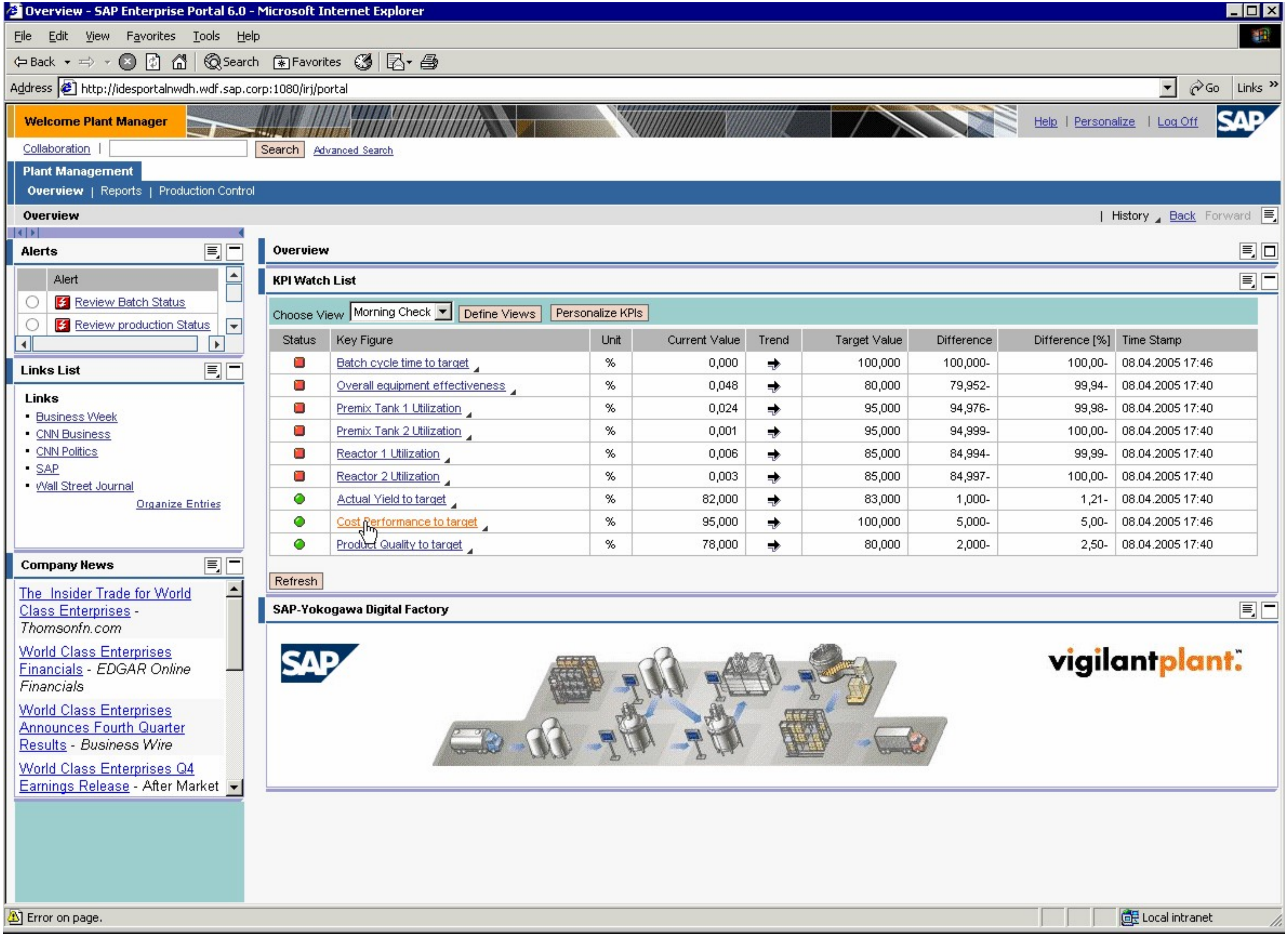

Alert!
SAP NETWEAVER
Manuf. Intelligence Dashboard
SAP
Manufacturing
YOKOGAWA
Yokogawa MES
Exaopc
Exaquantum
CENTUM CS3000 R3

製造業向けインテリジェンスダッシュボード：役割ベース／カスタマイズ可能なダッシュボード、アラート／KPIによる意思決定サポート(**mySAP ERP**の一部)

生産指示：生産計画／実行／品質／保守／環境保全（**mySAP ERP**）

生産統合：**SAP NetWeaver**プラットフォームを用いた**SAP**と**Yokogawa MES**アプリケーションの統合

オーバービュー（AlertとKPI表示）



Overview - SAP Enterprise Portal 6.0 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://idesportalnwdh.wdf.sap.corp:1080/irj/portal
Go Links

Welcome Plant Manager

Help | Personalize | Log Off
SAP
Collaboration | Search Advanced Search
Plant Management
Overview | Reports | Production Control

Overview

| History Back Forward

Alerts

	Alert
○	Review Batch Status
○	Review production Status

Links List

Links

- Business Week
- CNN Business
- CNN Politics
- SAP
- Wall Street Journal

Organize Entries

Company News

The Insider Trade for World Class Enterprises - *Thomsonfn.com*

World Class Enterprises Financials - *EDGAR Online Financials*

World Class Enterprises Announces Fourth Quarter Results - *Business Wire*

World Class Enterprises Q4 Earnings Release - After Market

Overview

KPI Watch List

Choose View: Morning Check

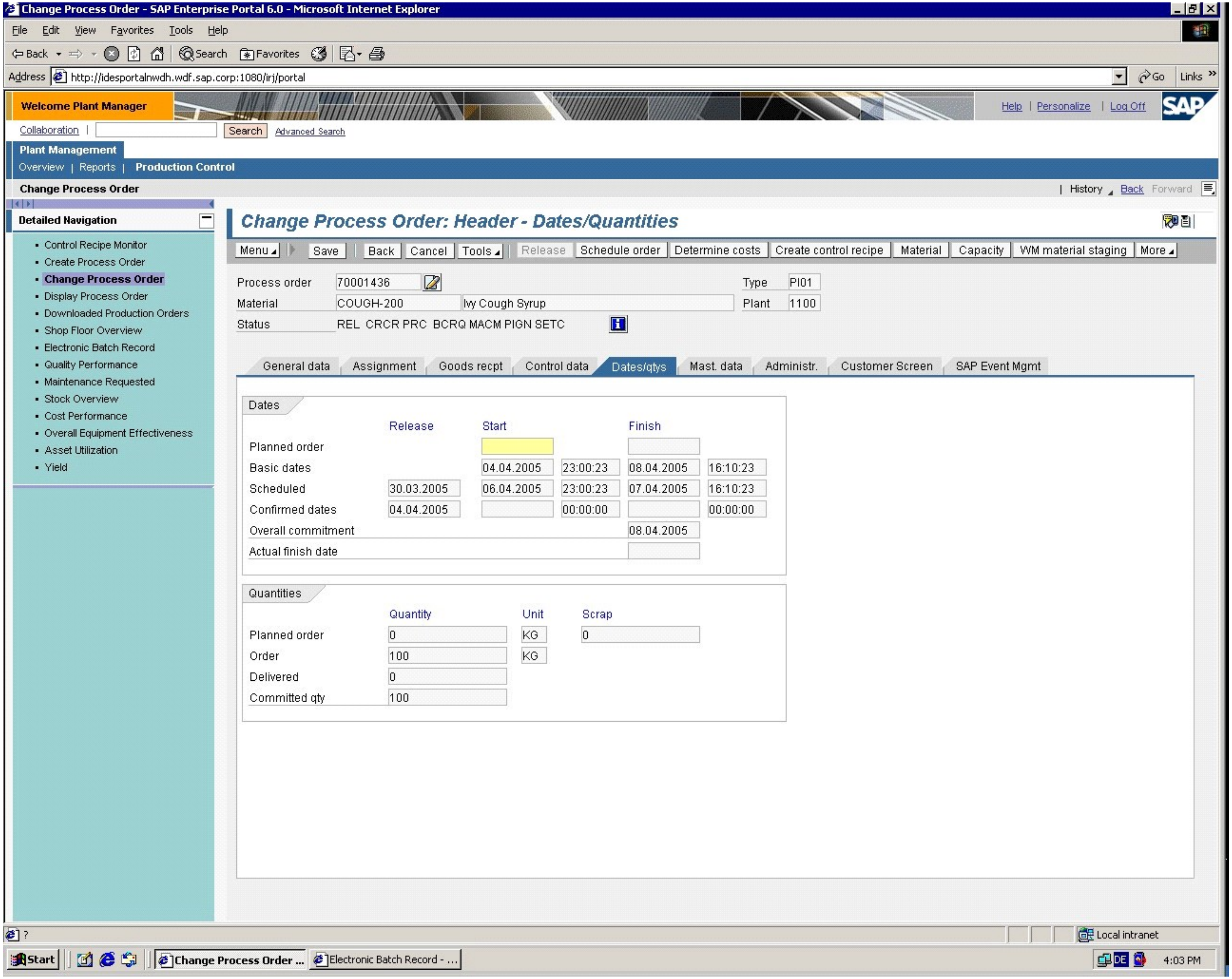
Define Views
Personalize KPIs

Status	Key Figure	Unit	Current Value	Trend	Target Value	Difference	Difference [%]	Time Stamp
🟥	Batch cycle time to target	%	0,000	→	100,000	100,000-	100,00-	08.04.2005 17:46
🟥	Overall equipment effectiveness	%	0,048	→	80,000	79,952-	99,94-	08.04.2005 17:40
🟥	Premix Tank 1 Utilization	%	0,024	→	95,000	94,976-	99,98-	08.04.2005 17:40
🟥	Premix Tank 2 Utilization	%	0,001	→	95,000	94,999-	100,00-	08.04.2005 17:40
🟥	Reactor 1 Utilization	%	0,006	→	85,000	84,994-	99,99-	08.04.2005 17:40
🟥	Reactor 2 Utilization	%	0,003	→	85,000	84,997-	100,00-	08.04.2005 17:40
🟢	Actual Yield to target	%	82,000	→	83,000	1,000-	1,21-	08.04.2005 17:40
🟢	Cost Performance to target	%	95,000	→	100,000	5,000-	5,00-	08.04.2005 17:46
🟢	Product Quality to target	%	78,000	→	80,000	2,000-	2,50-	08.04.2005 17:40

SAP-Yokogawa Digital Factory

SAP
vigilantplant.
Error on page.
Local intranet

オーダーの作成／変更


Change Process Order - SAP Enterprise Portal 6.0 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://idesportalnwdh.wdf.sap.corp:1080/irj/portal
Go Links
Welcome Plant Manager
Help | Personalize | Log Off
Collaboration | Search Advanced Search
Plant Management
Overview | Reports | Production Control
Change Process Order
History Back Forward
Detailed Navigation
Control Recipe Monitor
Create Process Order
Change Process Order
Display Process Order
Downloaded Production Orders
Shop Floor Overview
Electronic Batch Record
Quality Performance
Maintenance Requested
Stock Overview
Cost Performance
Overall Equipment Effectiveness
Asset Utilization
Yield
Menu Save Back Cancel Tools Release Schedule order Determine costs Create control recipe Material Capacity WM material staging More
General data Assignment Goods recpt Control data Dates/qtys Mast. data Administr. Customer Screen SAP Event Mgmt
Local intranet
Start Change Process Order ... Electronic Batch Record - ...
4:03 PM

Change Process Order: Header - Dates/Quantities

Process order 70001436
Type PI01
Material COUGH-200 Ivy Cough Syrup
Plant 1100
Status REL CRCR PRC BCRQ MACM PIGN SETC

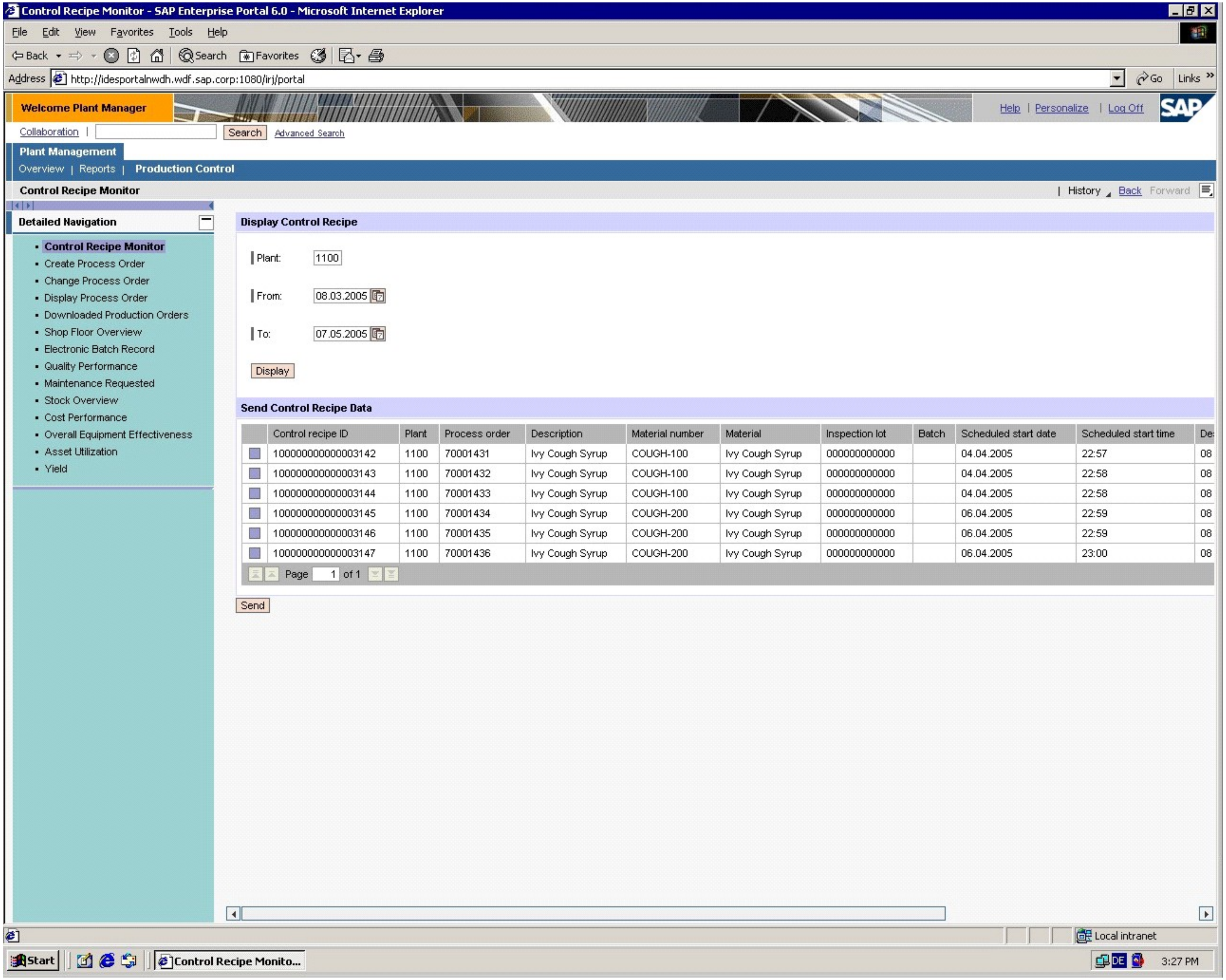
Dates

	Release	Start		Finish	
Planned order					
Basic dates		04.04.2005	23:00:23	08.04.2005	16:10:23
Scheduled	30.03.2005	06.04.2005	23:00:23	07.04.2005	16:10:23
Confirmed dates	04.04.2005		00:00:00		00:00:00
Overall commitment				08.04.2005	
Actual finish date					

Quantities

	Quantity	Unit	Scrap
Planned order	0	KG	0
Order	100	KG	
Delivered	0		
Committed qty	100		

実行処方のダウンロード


Control Recipe Monitor - SAP Enterprise Portal 6.0 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://idesportalnwdh.wdf.sap.corp:1080/irj/portal
Go Links
Welcome Plant Manager
Help | Personalize | Log Off
SAP
Collaboration | Search Advanced Search
Plant Management
Overview | Reports | Production Control
Control Recipe Monitor
History Back Forward
Detailed Navigation
Control Recipe Monitor
Create Process Order
Change Process Order
Display Process Order
Downloaded Production Orders
Shop Floor Overview
Electronic Batch Record
Quality Performance
Maintenance Requested
Stock Overview
Cost Performance
Overall Equipment Effectiveness
Asset Utilization
Yield
Display
Send
Local intranet
Start
Control Recipe Monito...
3:27 PM

Display Control Recipe

Plant: 1100

From: 08.03.2005

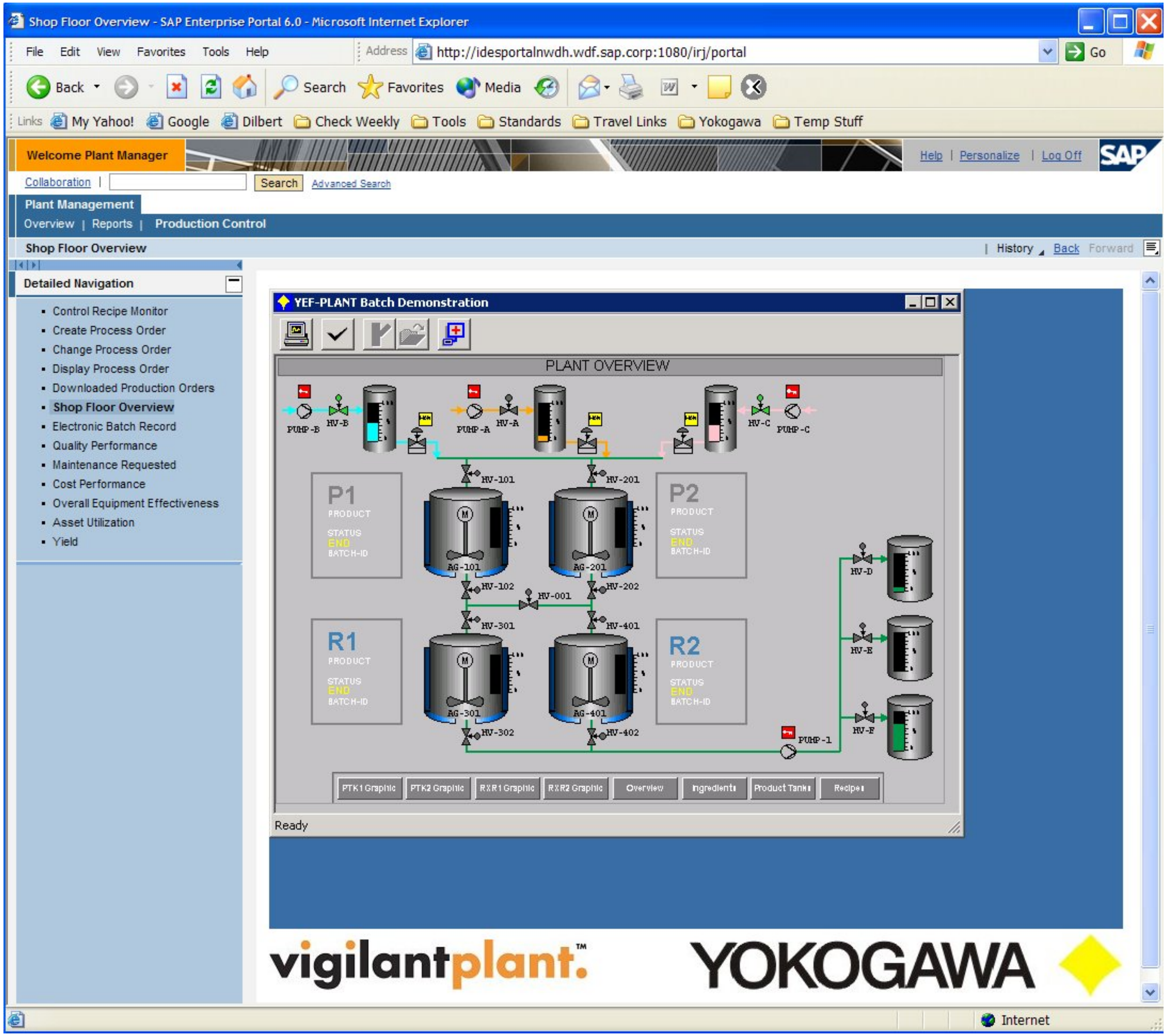
To: 07.05.2005

Send Control Recipe Data

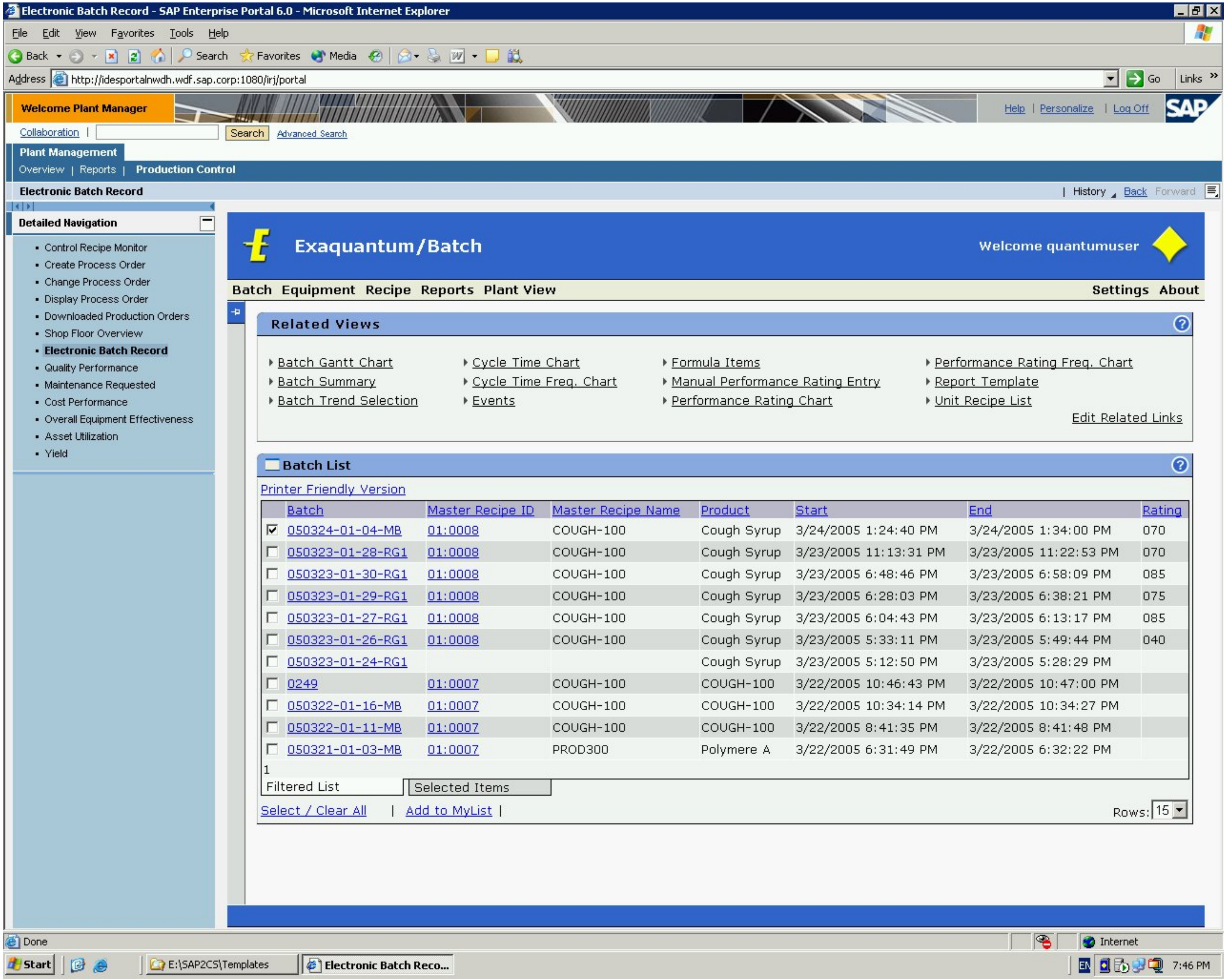
	Control recipe ID	Plant	Process order	Description	Material number	Material	Inspection lot	Batch	Scheduled start date	Scheduled start time	De
☐	100000000000003142	1100	70001431	Ivy Cough Syrup	COUGH-100	Ivy Cough Syrup	000000000000		04.04.2005	22:57	08
☐	100000000000003143	1100	70001432	Ivy Cough Syrup	COUGH-100	Ivy Cough Syrup	000000000000		04.04.2005	22:58	08
☐	100000000000003144	1100	70001433	Ivy Cough Syrup	COUGH-100	Ivy Cough Syrup	000000000000		04.04.2005	22:58	08
☐	100000000000003145	1100	70001434	Ivy Cough Syrup	COUGH-200	Ivy Cough Syrup	000000000000		06.04.2005	22:59	08
☐	100000000000003146	1100	70001435	Ivy Cough Syrup	COUGH-200	Ivy Cough Syrup	000000000000		06.04.2005	22:59	08
☐	100000000000003147	1100	70001436	Ivy Cough Syrup	COUGH-200	Ivy Cough Syrup	000000000000		06.04.2005	23:00	08

Page 1 of 1

生産制御システムのグラフィック表示


Shop Floor Overview - SAP Enterprise Portal 6.0 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://idesportalnwdh.wdf.sap.corp:1080/irj/portal
Go
Back Search Favorites Media
Links My Yahoo! Google Dilbert Check Weekly Tools Standards Travel Links Yokogawa Temp Stuff
Welcome Plant Manager
Help | Personalize | Log Off
SAP
Collaboration | Search Advanced Search
Plant Management
Overview | Reports | Production Control
Shop Floor Overview
History Back Forward
Detailed Navigation
Control Recipe Monitor
Create Process Order
Change Process Order
Display Process Order
Downloaded Production Orders
Shop Floor Overview
Electronic Batch Record
Quality Performance
Maintenance Requested
Cost Performance
Overall Equipment Effectiveness
Asset Utilization
Yield
YEF-PLANT Batch Demonstration
PLANT OVERVIEW
PUMP-B
HV-B
PUMP-A
HV-A
HV-C
PUMP-C
HV-101
HV-201
P1
PRODUCT
STATUS
END
BATCH-ID
P2
PRODUCT
STATUS
END
BATCH-ID
AG-101
AG-201
HV-102
HV-001
HV-202
HV-301
HV-401
R1
PRODUCT
STATUS
END
BATCH-ID
R2
PRODUCT
STATUS
END
BATCH-ID
AG-301
AG-401
HV-302
HV-402
PUMP-1
HV-D
HV-E
HV-F
PTK1 Graphic
PTK2 Graphic
RXR1 Graphic
RXR2 Graphic
Overview
Ingredients
Product Tanks
Recipes
Ready
vigilantplant.™
YOKOGAWA
Internet

バッチレポート表示


Electronic Batch Record - SAP Enterprise Portal 6.0 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://idesportalnwdh.wdf.sap.corp:1080/irj/portal
Go Links
Welcome Plant Manager
Help | Personalize | Log Off
Collaboration | Search Advanced Search
Plant Management
Overview | Reports | Production Control
Electronic Batch Record
History Back Forward
Done
Internet
Start E:\SAP2CS\Templates Electronic Batch Reco... 7:46 PM

Detailed Navigation

- Control Recipe Monitor
- Create Process Order
- Change Process Order
- Display Process Order
- Downloaded Production Orders
- Shop Floor Overview
- **Electronic Batch Record**
- Quality Performance
- Maintenance Requested
- Cost Performance
- Overall Equipment Effectiveness
- Asset Utilization
- Yield

Exaquantum/Batch Welcome quantumuser

Batch Equipment Recipe Reports Plant View Settings About

Related Views

- Batch Gantt Chart
- Batch Summary
- Batch Trend Selection
- Cycle Time Chart
- Cycle Time Freq. Chart
- Events
- Formula Items
- Manual Performance Rating Entry
- Performance Rating Chart
- Performance Rating Freq. Chart
- Report Template
- Unit Recipe List

Edit Related Links

Batch List

Printer Friendly Version

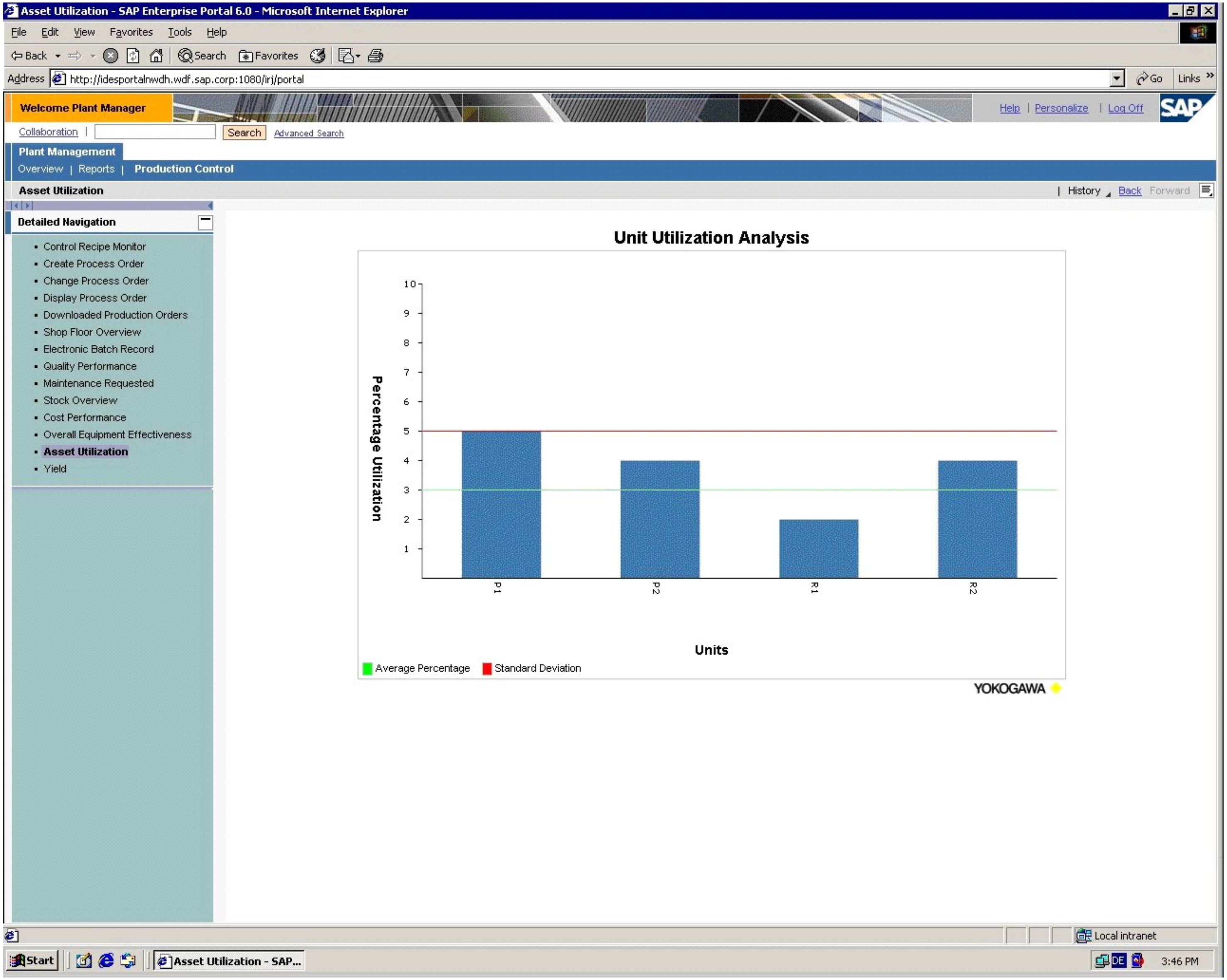
	Batch	Master Recipe ID	Master Recipe Name	Product	Start	End	Rating
☑	050324-01-04-MB	01:0008	COUGH-100	Cough Syrup	3/24/2005 1:24:40 PM	3/24/2005 1:34:00 PM	070
☐	050323-01-28-RG1	01:0008	COUGH-100	Cough Syrup	3/23/2005 11:13:31 PM	3/23/2005 11:22:53 PM	070
☐	050323-01-30-RG1	01:0008	COUGH-100	Cough Syrup	3/23/2005 6:48:46 PM	3/23/2005 6:58:09 PM	085
☐	050323-01-29-RG1	01:0008	COUGH-100	Cough Syrup	3/23/2005 6:28:03 PM	3/23/2005 6:38:21 PM	075
☐	050323-01-27-RG1	01:0008	COUGH-100	Cough Syrup	3/23/2005 6:04:43 PM	3/23/2005 6:13:17 PM	085
☐	050323-01-26-RG1	01:0008	COUGH-100	Cough Syrup	3/23/2005 5:33:11 PM	3/23/2005 5:49:44 PM	040
☐	050323-01-24-RG1			Cough Syrup	3/23/2005 5:12:50 PM	3/23/2005 5:28:29 PM	
☐	0249	01:0007	COUGH-100	COUGH-100	3/22/2005 10:46:43 PM	3/22/2005 10:47:00 PM	
☐	050322-01-16-MB	01:0007	COUGH-100	COUGH-100	3/22/2005 10:34:14 PM	3/22/2005 10:34:27 PM	
☐	050322-01-11-MB	01:0007	COUGH-100	COUGH-100	3/22/2005 8:41:35 PM	3/22/2005 8:41:48 PM	
☐	050321-01-03-MB	01:0007	PROD300	Polymere A	3/22/2005 6:31:49 PM	3/22/2005 6:32:22 PM	

1

Filtered List | Selected Items

Select / Clear All | Add to MyList | Rows: 15

KPI分析


Asset Utilization - SAP Enterprise Portal 6.0 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://idesportalnwdh.wdf.sap.corp:1080/irj/portal
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Help | Personalize | Log Off
SAP
Collaboration | Search Advanced Search
Plant Management
Overview | Reports | Production Control
Asset Utilization
| History Back Forward
Detailed Navigation
Control Recipe Monitor
Create Process Order
Change Process Order
Display Process Order
Downloaded Production Orders
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Electronic Batch Record
Quality Performance
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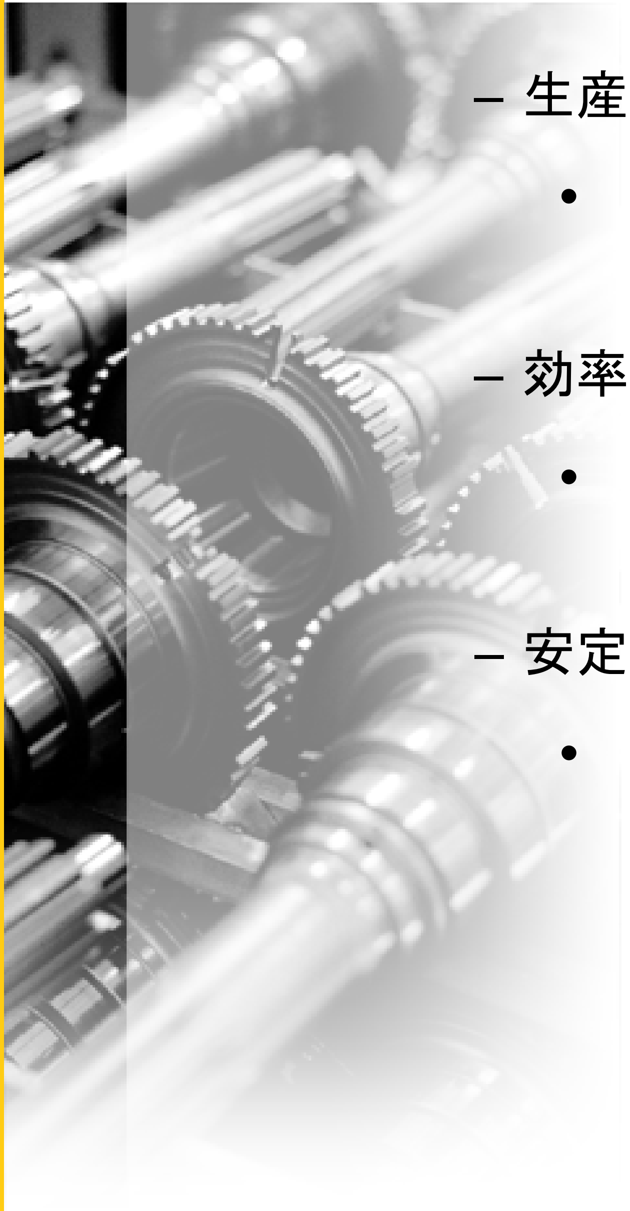
Stock Overview
Cost Performance
Overall Equipment Effectiveness
Asset Utilization
Yield
Unit Utilization Analysis
Percentage Utilization
10
9
8
7
6
5
4
3
2
1
P1
P2
R1
R2
Units
🟩 Average Percentage
🟥 Standard Deviation
YOKOGAWA
Local intranet
Start
Asset Utilization - SAP...
3:46 PM

SAP-Yokogawa統合ソリューションのユーザメリット



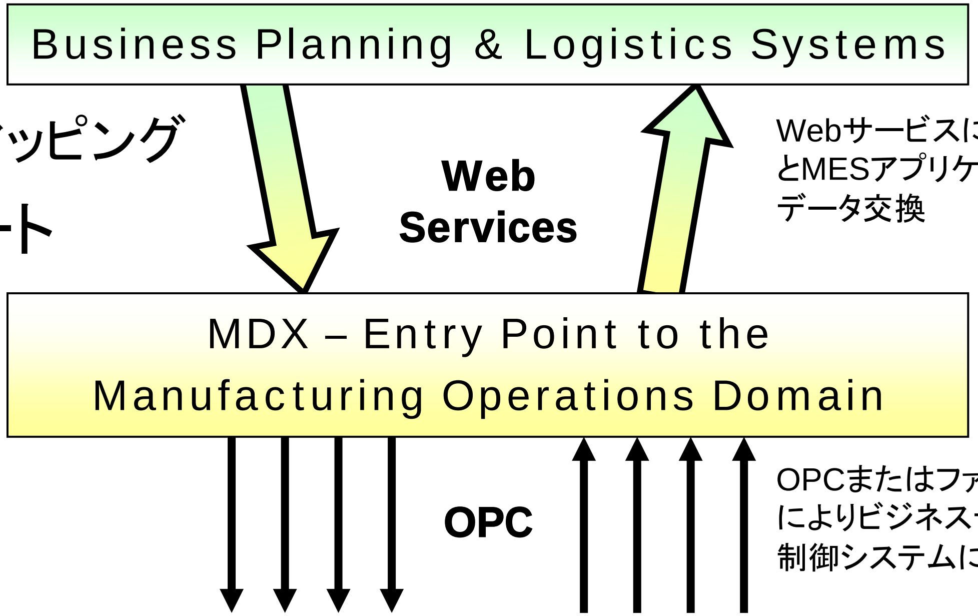
- 生産品質向上
  - CS Batch 3000で検出された生産品質の偏差は、SAP EP上でリアルタイムに生産管理、表示される。
- 効率改善
  - プラント管理者へ報告されるバッチサイクルタイム等のKPIは効率改善の指標を示す。
- 安定･安全操業
  - プラント/生産管理者は、1スクリーン上で関連のある全ての生産現場情報をドリルダウンしながら確認する事ができる。これは、例外を事前に検知し、事故や高額な処置の未然防止に繋がる。

B2MMLインタフェイスツール
MDX
Manufacturing Data Exchange

MDX
Manufacturing Data eXchange

MDXの位置付け

- MESとERP統合のプラットフォーム
  - Webサービス
  - 拡張性
  - OPC準拠システムとのマッピング
- 各種情報交換のサポート
  - SAPアラート及びKPI通知
  - ISA-95/B2MML
    - 生産計画
    - 生産実績



Business Planning & Logistics Systems

Web Services

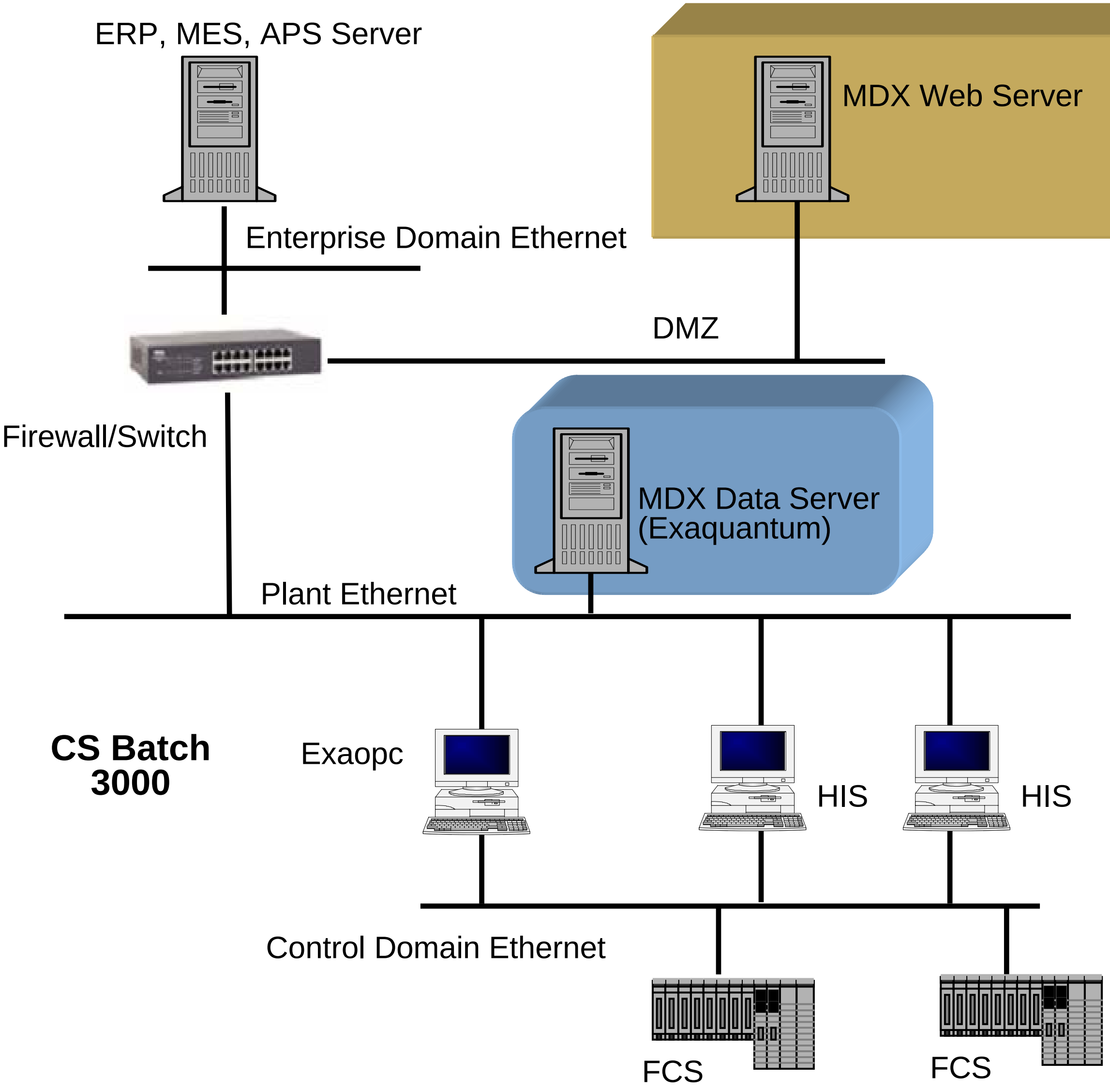
MDX – Entry Point to the Manufacturing Operations Domain

OPC

WebサービスによるERPとMESアプリケーションのデータ交換

OPCまたはファイル交換によりビジネスデータを制御システムに展開

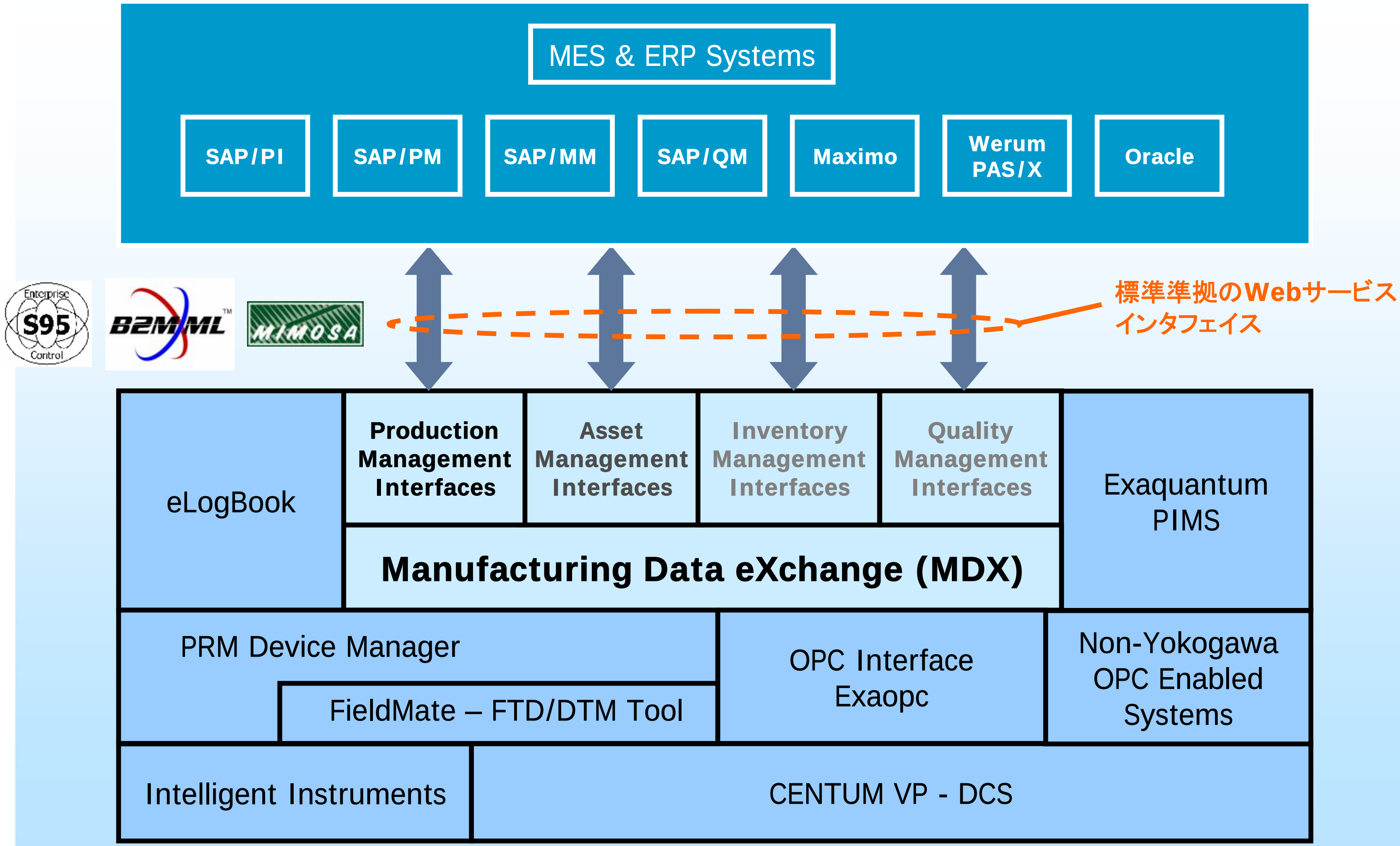
ハードウェア構成


ERP, MES, APS Server
MDX Web Server
Enterprise Domain Ethernet
DMZ
Firewall/Switch
MDX Data Server (Exaquantum)
Plant Ethernet
CS Batch 3000
Exaopc
HIS
HIS
Control Domain Ethernet
FCS
FCS

MDX WebサーバとMDX Dataサーバの分離を推奨

- WebサーバをDMZに設置
- Dataサーバは非公開

Manufacturing Data eXchange (MDX)のインタフェイス



MES & ERP Systems

SAP/PI | SAP/PM | SAP/MM | SAP/QM | Maximo | Werum PAS/X | Oracle

標準準拠のWebサービスインタフェイス

Production Management Interfaces

Asset Management Interfaces

Inventory Management Interfaces

Quality Management Interfaces

eLogBook

Manufacturing Data eXchange (MDX)

Exaquantum PIMS

PRM Device Manager

FieldMate – FTD/DTM Tool

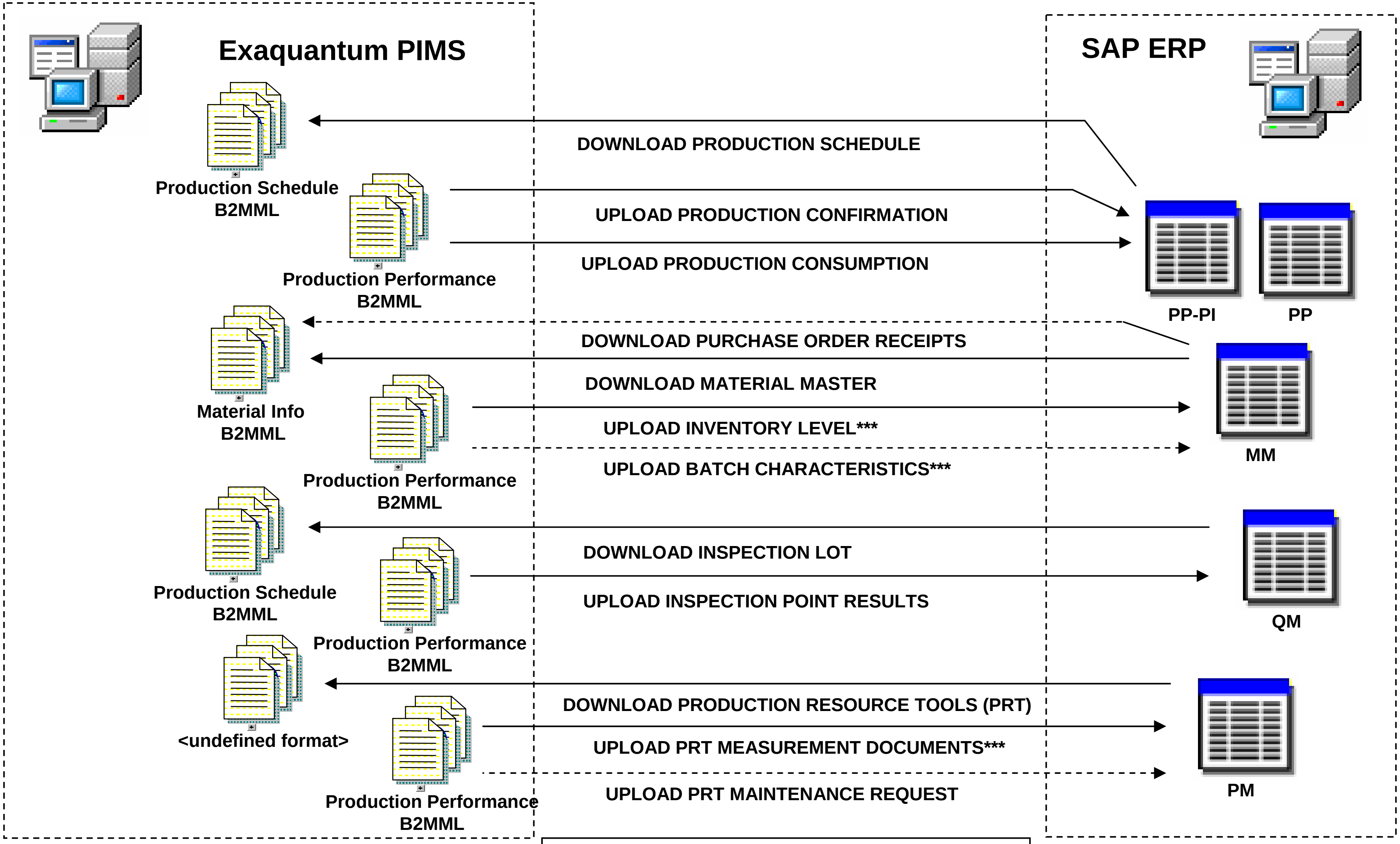
OPC Interface Exaopc

Non-Yokogawa OPC Enabled Systems

Intelligent Instruments

CENTUM VP - DCS

基本インタフェイスの概要



Exaquantum PIMS

SAP ERP

Production Schedule B2MML ← **DOWNLOAD PRODUCTION SCHEDULE** ← **PP-PI**

Production Performance B2MML → **UPLOAD PRODUCTION CONFIRMATION** → **PP-PI**

Production Performance B2MML → **UPLOAD PRODUCTION CONSUMPTION** → **PP-PI**

PP

Material Info B2MML ← - - **DOWNLOAD PURCHASE ORDER RECEIPTS** - - ← **MM**

Material Info B2MML ← **DOWNLOAD MATERIAL MASTER** ← **MM**

Production Performance B2MML → **UPLOAD INVENTORY LEVEL***** → **MM**

Production Performance B2MML - - → **UPLOAD BATCH CHARACTERISTICS***** - - → **MM**

Production Schedule B2MML ← **DOWNLOAD INSPECTION LOT** ← **QM**

Production Performance B2MML → **UPLOAD INSPECTION POINT RESULTS** → **QM**

<undefined format> ← **DOWNLOAD PRODUCTION RESOURCE TOOLS (PRT)** ← **PM**

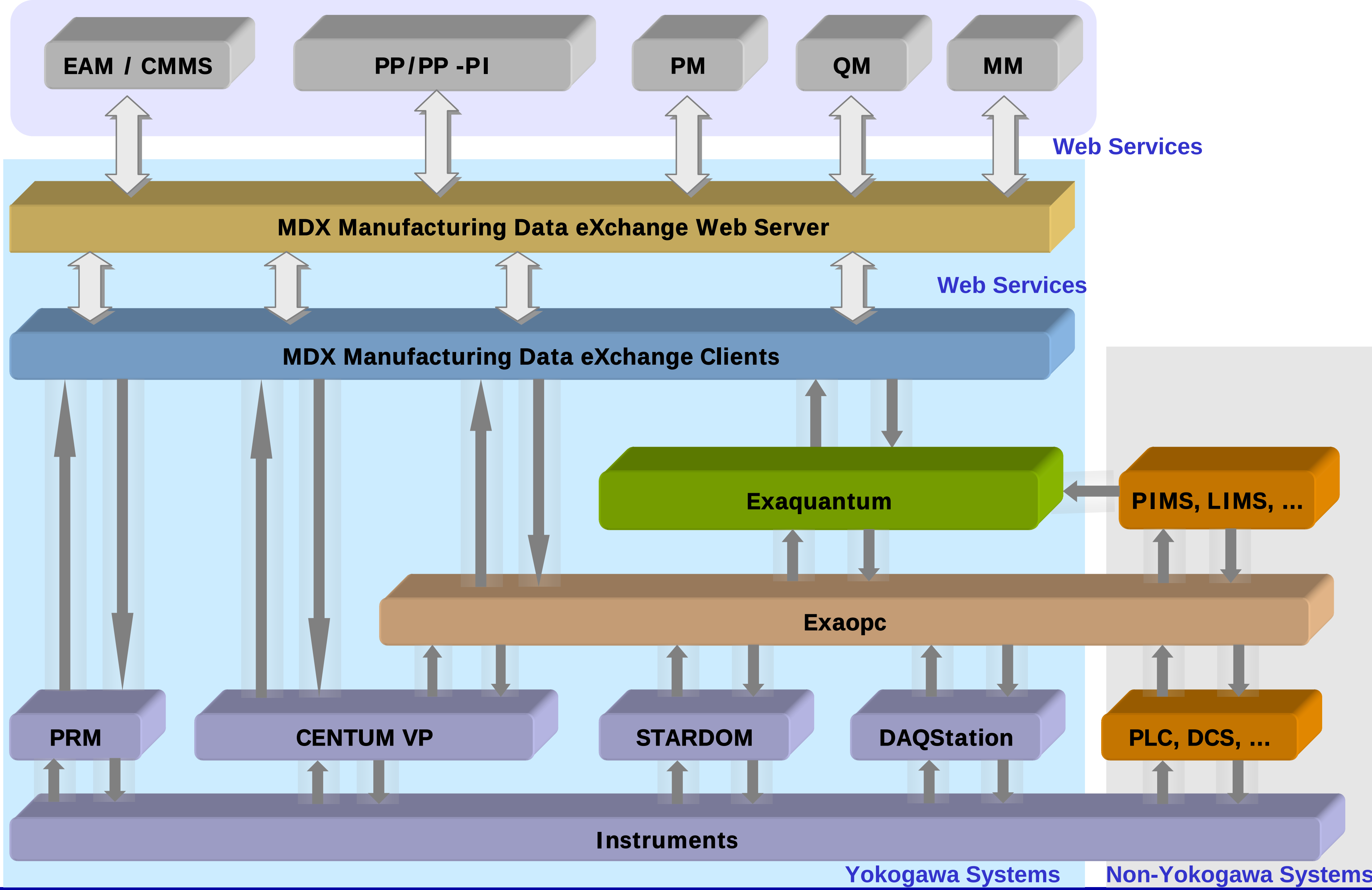
Production Performance B2MML → **UPLOAD PRT MEASUREMENT DOCUMENTS***** → **PM**

Production Performance B2MML - - → **UPLOAD PRT MAINTENANCE REQUEST** - - → **PM**

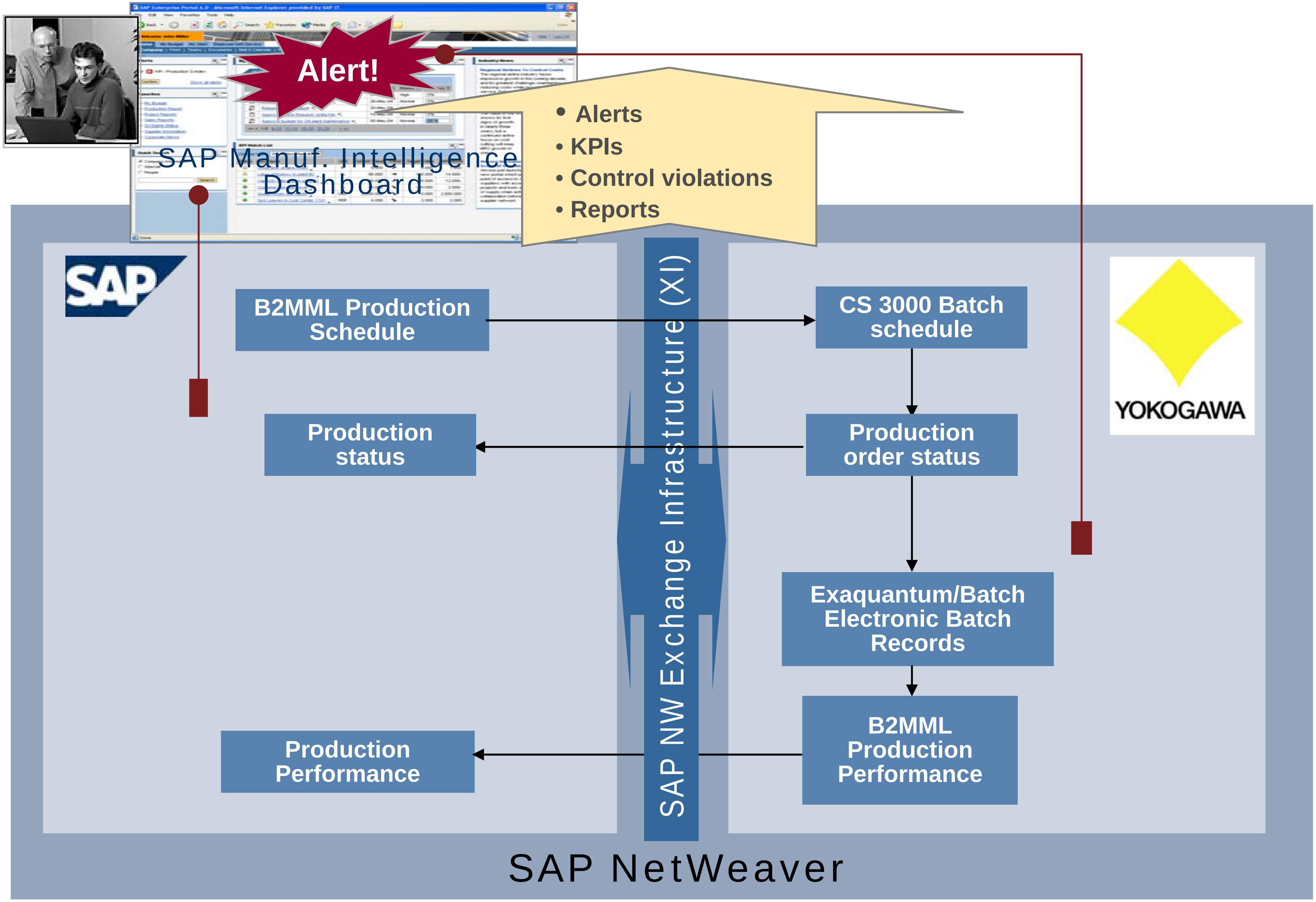
- - - - -► Potentially Want to include
*** Includes Assumptions that could have impact

MDXのアーキテクチャー

A Yokogawa Commitment to Industry
vigilance®


EAM / CMMS
PP/PP -PI
PM
QM
MM
Web Services
MDX Manufacturing Data eXchange Web Server
Web Services
MDX Manufacturing Data eXchange Clients
Exaquantum
PIMS, LIMS, ...
Exaopc
PRM
CENTUM VP
STARDOM
DAQStation
PLC, DCS, ...
Instruments
Yokogawa Systems
Non-Yokogawa Systems

SAPとバッチ生産管理システムとのデータフロー例



Alert!

SAP Manuf. Intelligence Dashboard

- Alerts
- KPIs
- Control violations
- Reports

B2MML Production Schedule → CS 3000 Batch schedule

CS 3000 Batch schedule → Production order status

Production order status → Production status

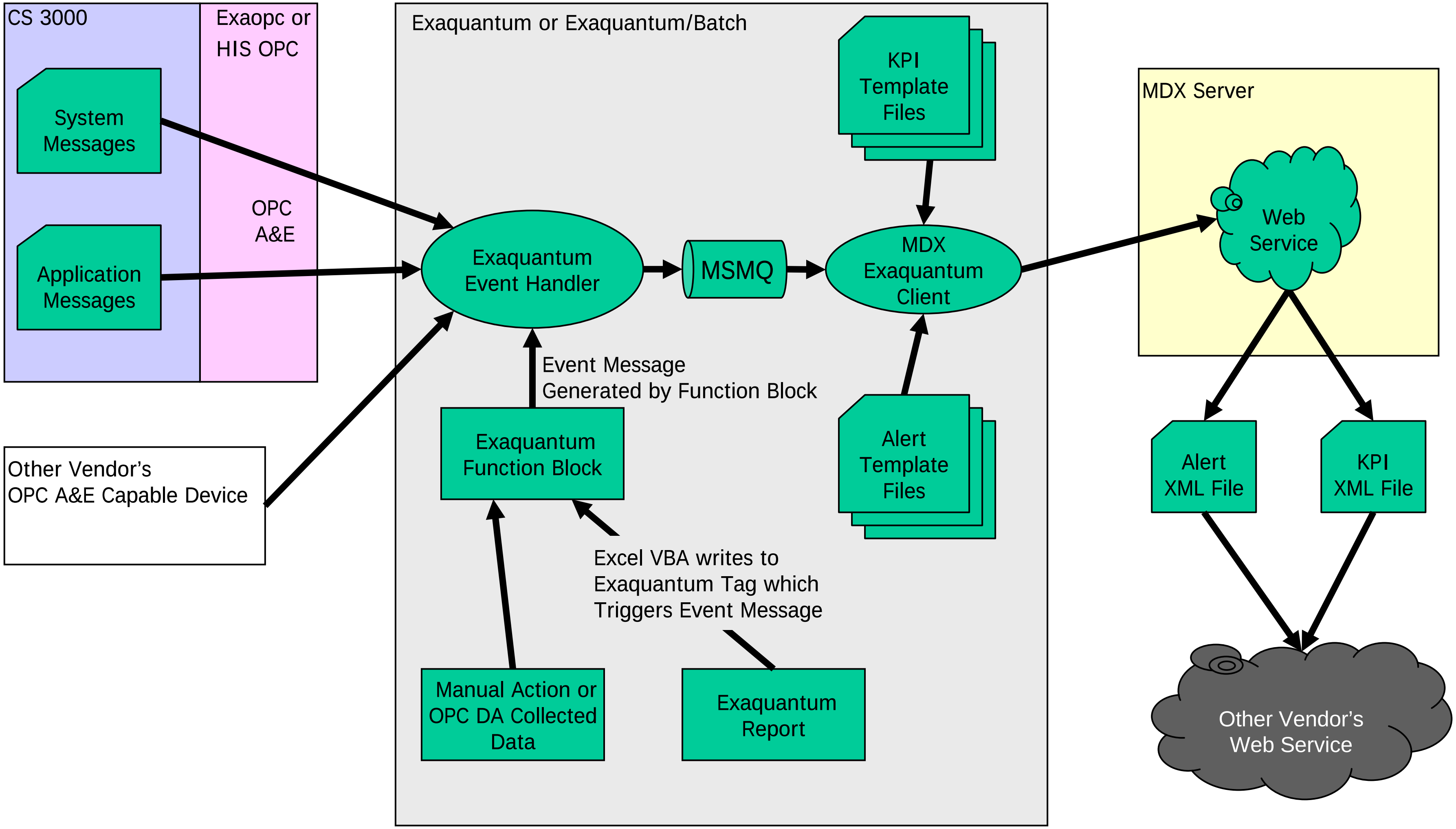
Production order status → Exaquantum/Batch Electronic Batch Records

Exaquantum/Batch Electronic Batch Records → B2MML Production Performance

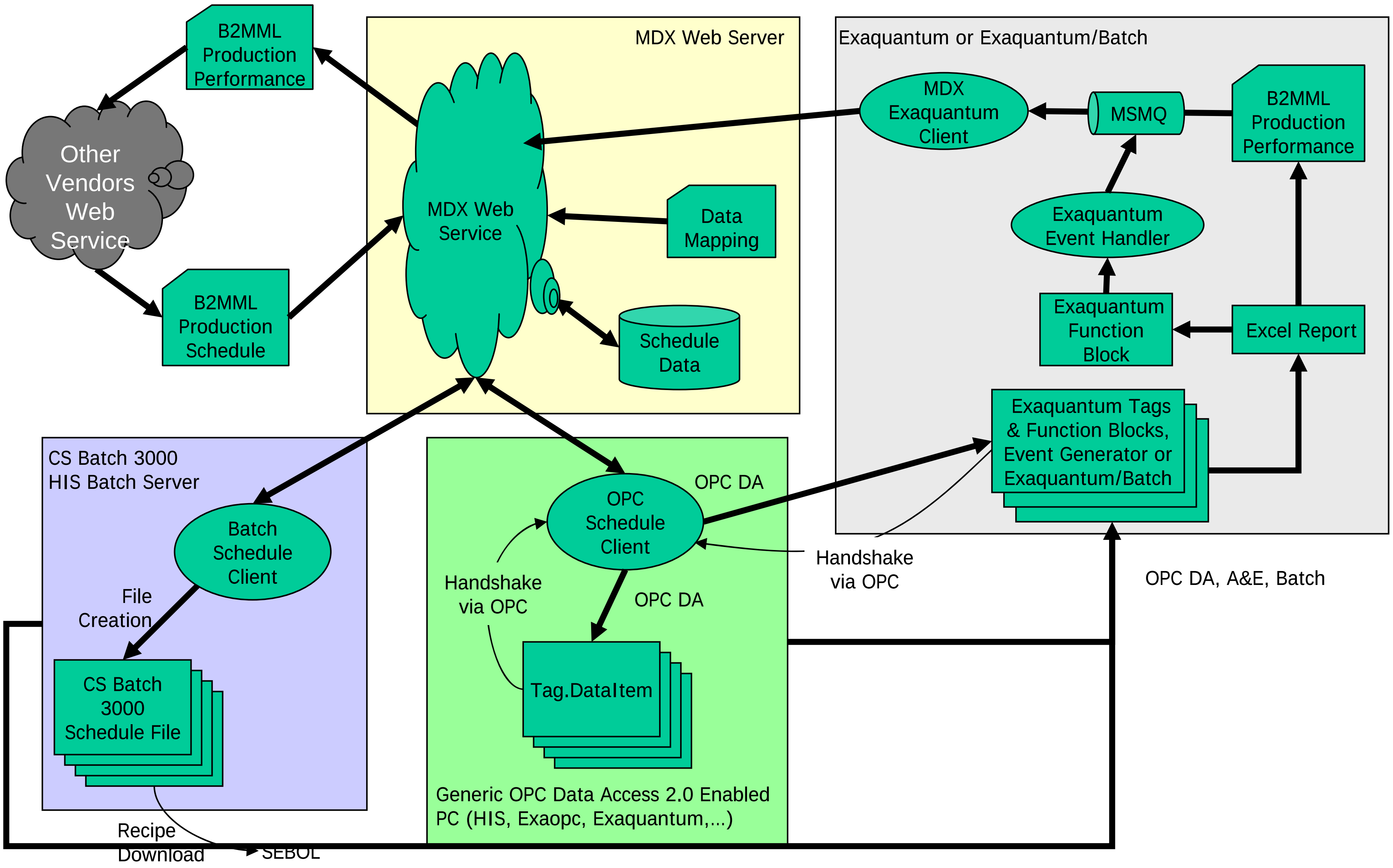
B2MML Production Performance → Production Performance

SAP NetWeaver

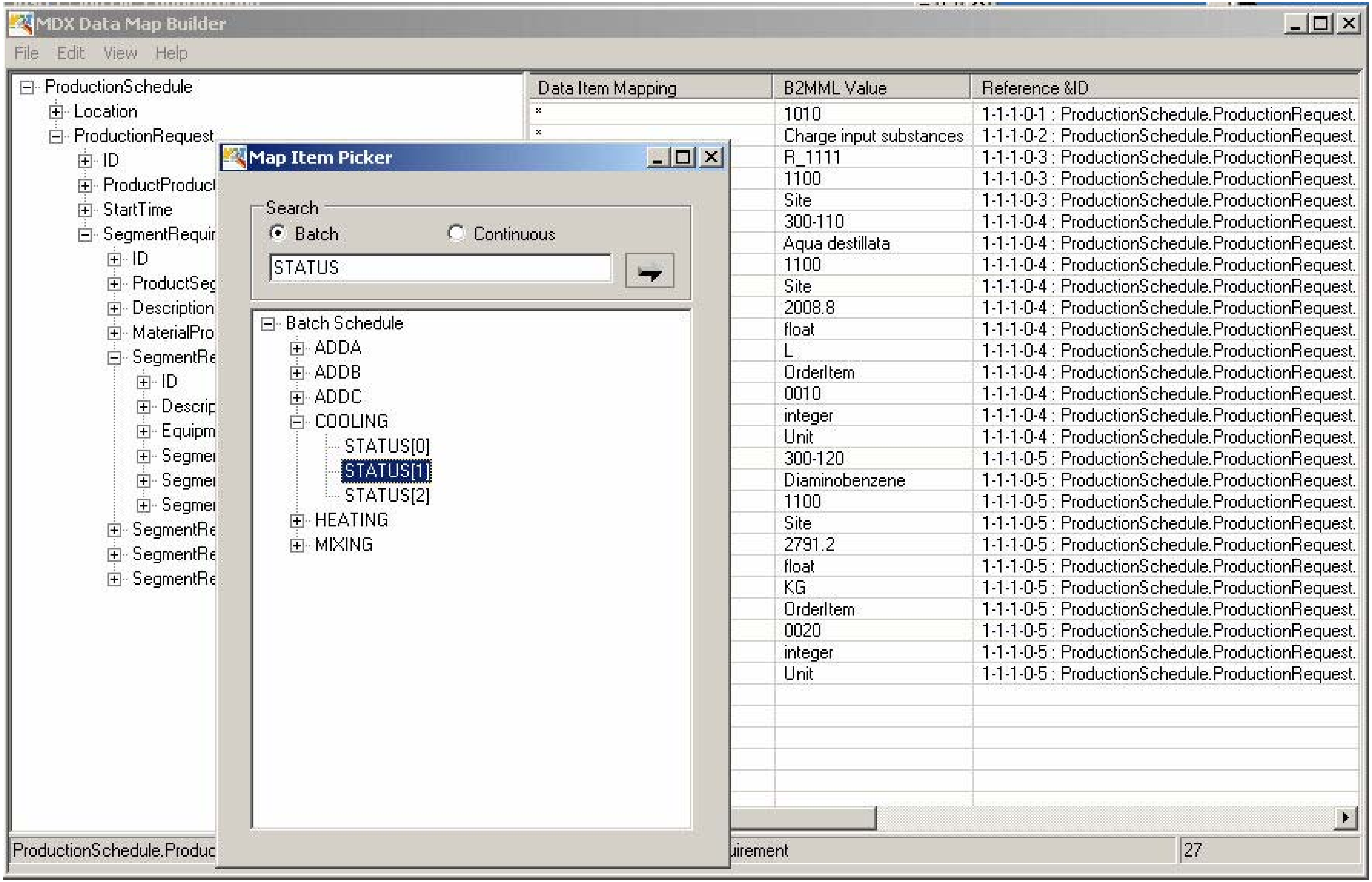
MDXメッセージ通知のデータフロー


CS 3000
Exaopc or HIS OPC
System Messages
Application Messages
OPC A&E
Other Vendor's OPC A&E Capable Device
Exaquantum or Exaquantum/Batch
KPI Template Files
Exaquantum Event Handler
MSMQ
MDX Exaquantum Client
Event Message Generated by Function Block
Exaquantum Function Block
Alert Template Files
Excel VBA writes to Exaquantum Tag which Triggers Event Message
Manual Action or OPC DA Collected Data
Exaquantum Report
MDX Server
Web Service
Alert XML File
KPI XML File
Other Vendor's Web Service

MDX計画受信・実績送信のデーターフロー


B2MML Production Performance
Other Vendors Web Service
B2MML Production Schedule
MDX Web Server
MDX Web Service
Data Mapping
Schedule Data
Exaquantum or Exaquantum/Batch
MDX Exaquantum Client
MSMQ
B2MML Production Performance
Exaquantum Event Handler
Exaquantum Function Block
Excel Report
Exaquantum Tags & Function Blocks, Event Generator or Exaquantum/Batch
Handshake via OPC
OPC DA, A&E, Batch
CS Batch 3000 HIS Batch Server
Batch Schedule Client
File Creation
CS Batch 3000 Schedule File
Recipe Download
SEBOL
OPC DA
OPC Schedule Client
Handshake via OPC
OPC DA
Tag.DataItem
Generic OPC Data Access 2.0 Enabled PC (HIS, Exaopc, Exaquantum,...)

MDXによるバッチデータのマッピング


MDX Data Map Builder
File
Edit
View
Help
ProductionSchedule
Location
ProductionRequest
ID
ProductProduct
StartTime
SegmentRequir
ID
ProductSeg
Description
MaterialPro
SegmentRe
ID
Descrip
Equipm
Segmer
Segmer
Segmer
SegmentRe
SegmentRe
SegmentRe
Map Item Picker
Search
Batch Schedule
ADDA
ADDB
ADDC
COOLING
STATUS[0]
STATUS[1]
STATUS[2]
HEATING
MIXING

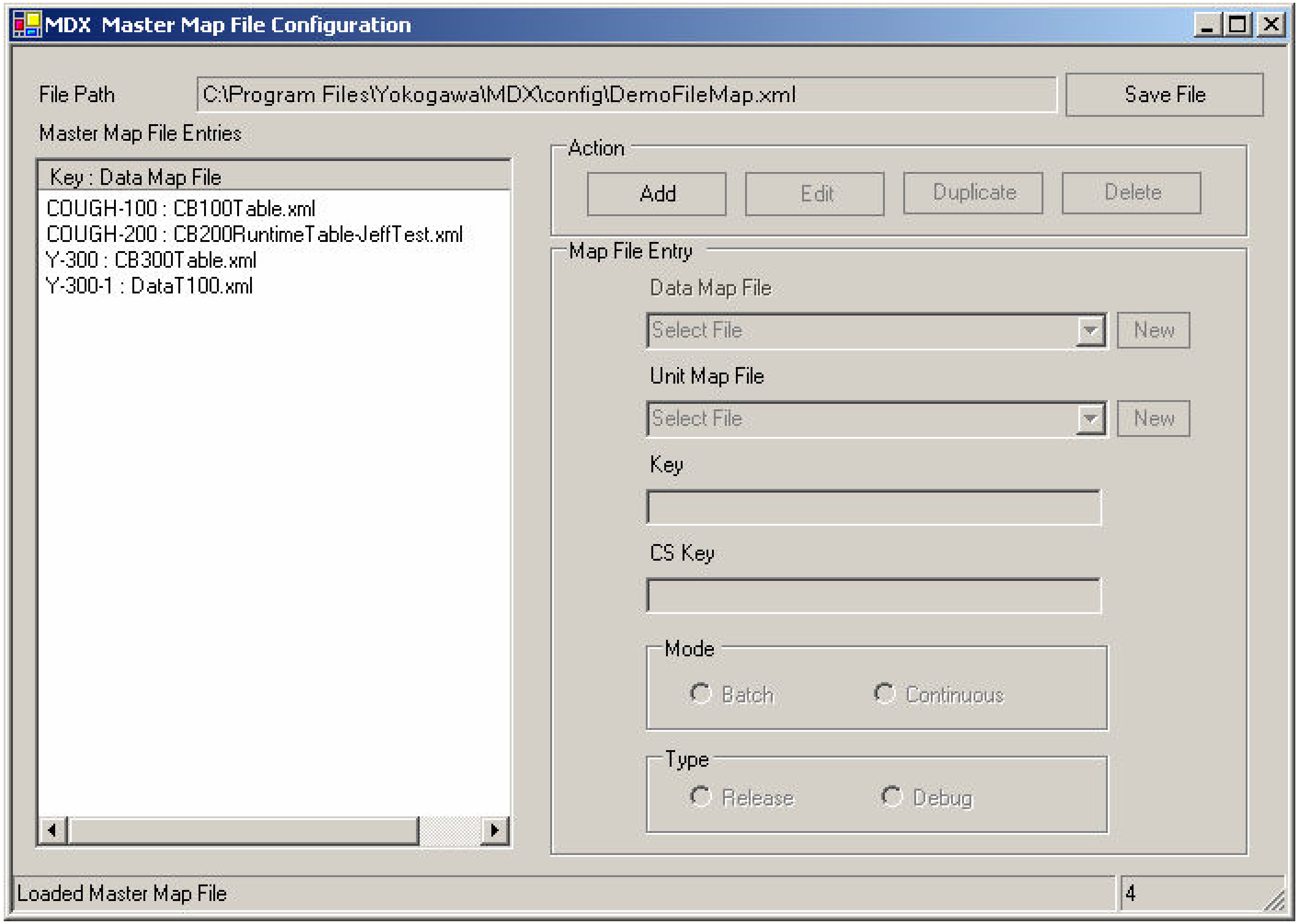
Search: ● Batch ○ Continuous

STATUS

Data Item Mapping	B2MML Value	Reference &ID
*	1010	1-1-1-0-1 : ProductionSchedule.ProductionRequest.
*	Charge input substances	1-1-1-0-2 : ProductionSchedule.ProductionRequest.
	R_1111	1-1-1-0-3 : ProductionSchedule.ProductionRequest.
	1100	1-1-1-0-3 : ProductionSchedule.ProductionRequest.
	Site	1-1-1-0-3 : ProductionSchedule.ProductionRequest.
	300-110	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	Aqua destillata	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	1100	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	Site	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	2008.8	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	float	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	L	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	OrderItem	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	0010	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	integer	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	Unit	1-1-1-0-4 : ProductionSchedule.ProductionRequest.
	300-120	1-1-1-0-5 : ProductionSchedule.ProductionRequest.
	Diaminobenzene	1-1-1-0-5 : ProductionSchedule.ProductionRequest.
	1100	1-1-1-0-5 : ProductionSchedule.ProductionRequest.
	Site	1-1-1-0-5 : ProductionSchedule.ProductionRequest.
	2791.2	1-1-1-0-5 : ProductionSchedule.ProductionRequest.
	float	1-1-1-0-5 : ProductionSchedule.ProductionRequest.
	KG	1-1-1-0-5 : ProductionSchedule.ProductionRequest.
	OrderItem	1-1-1-0-5 : ProductionSchedule.ProductionRequest.
	0020	1-1-1-0-5 : ProductionSchedule.ProductionRequest.
	integer	1-1-1-0-5 : ProductionSchedule.ProductionRequest.
	Unit	1-1-1-0-5 : ProductionSchedule.ProductionRequest.

ProductionSchedule.Produc uirement 27

MDXによるバッチレシピのマッピング


MDX Master Map File Configuration
Save File
Master Map File Entries
Action
Add
Edit
Duplicate
Delete
Map File Entry
Data Map File
Select File
New
Unit Map File
Select File
New
Key
CS Key
Mode
○ Batch
○ Continuous
Type
○ Release
○ Debug

File Path: C:\Program Files\Yokogawa\MDX\config\DemoFileMap.xml

Key : Data Map File
COUGH-100 : CB100Table.xml
COUGH-200 : CB200RuntimeTable-JeffTest.xml
Y-300 : CB300Table.xml
Y-300-1 : DataT100.xml

Loaded Master Map File | 4

IMC 2007での
設備管理システムとの連携デモ

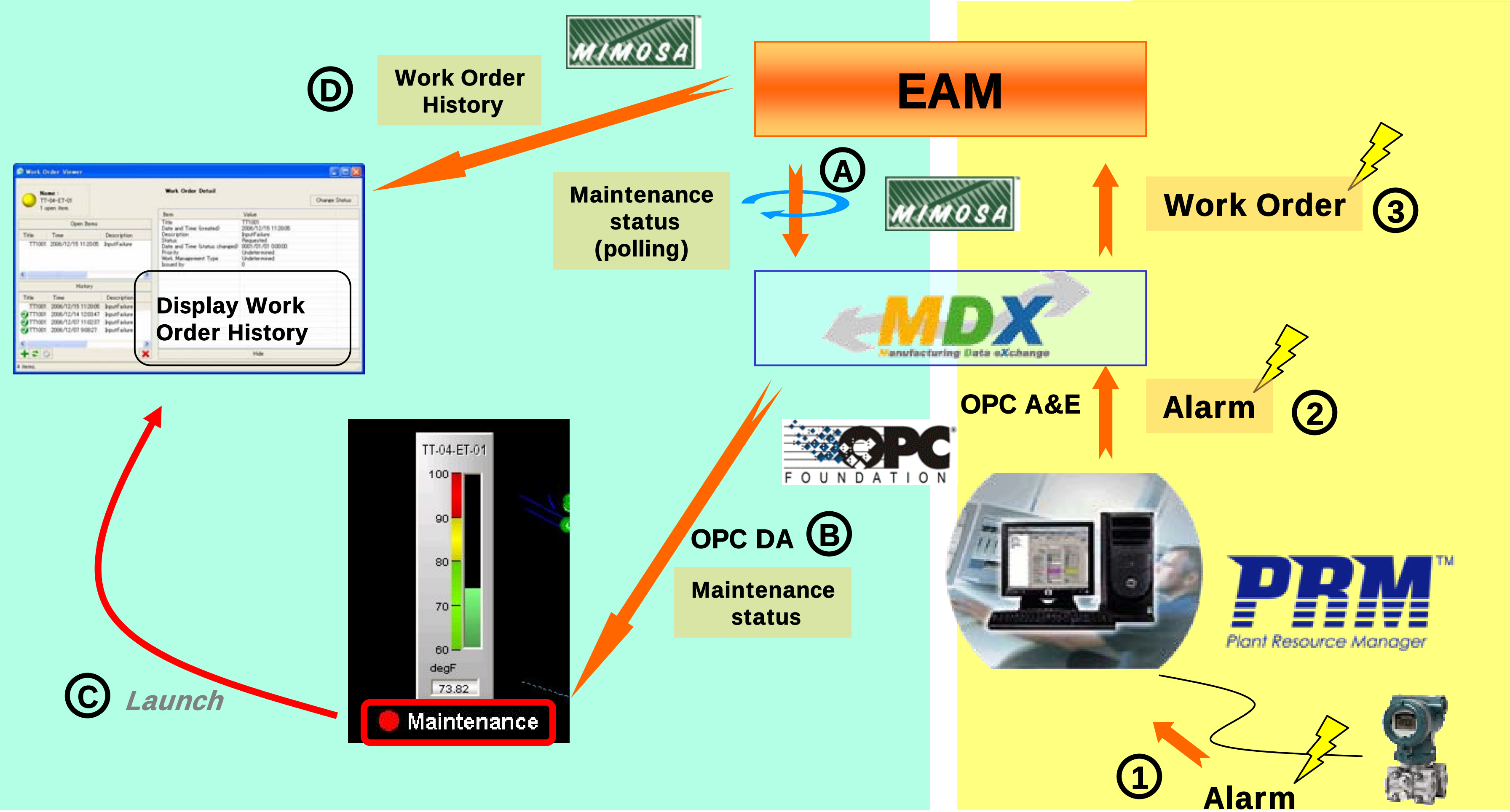
IMC 2007（アメリカ・デイトナビーチ）

IMC2007
Manufacturing and Process Reliability

国際保全会議

IMC 2007デモシナリオ

- DCSのHMI上に機器が保守中であることを表示し、必要に応じて保守作業の進捗が確認できる。（A～D）
- 機器の故障を検知して保守作業依頼を自動的に設備保全管理システムに送る。（1～3）



Work Order Viewer

Name : TT-04-ET-01
1 open item

Work Order Detail

Item	Value
Title	TT1001
Date and Time (created)	2006/12/15 11:20:05
Description	InputFailure
Status	Requested
Date and Time (status changed)	0001/01/01 0:00:00
Priority	Undetermined
Work Management Type	Undetermined
Issued by	0

Open Items

Title	Time	Description
TT1001	2006/12/15 11:20:05	InputFailure

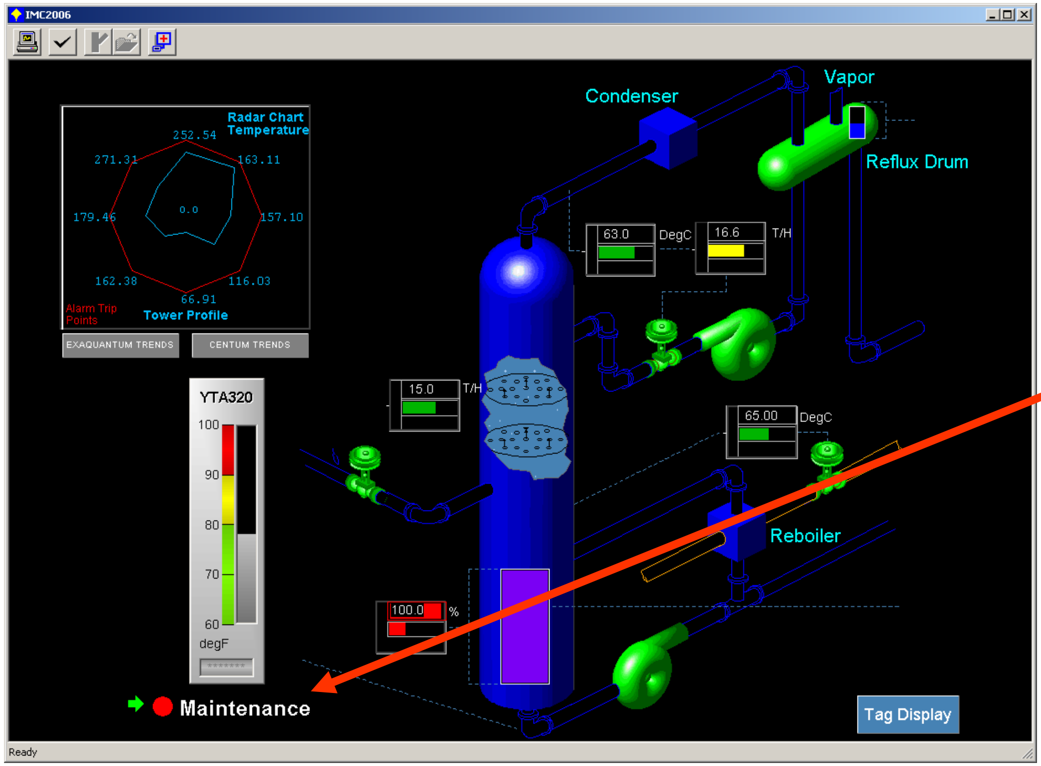
History

Title	Time	Description
TT1001	2006/12/15 11:20:05	InputFailure
TT1001	2006/12/14 12:03:47	InputFailure
TT1001	2006/12/07 11:02:37	InputFailure
TT1001	2006/12/07 9:08:27	InputFailure

4 items

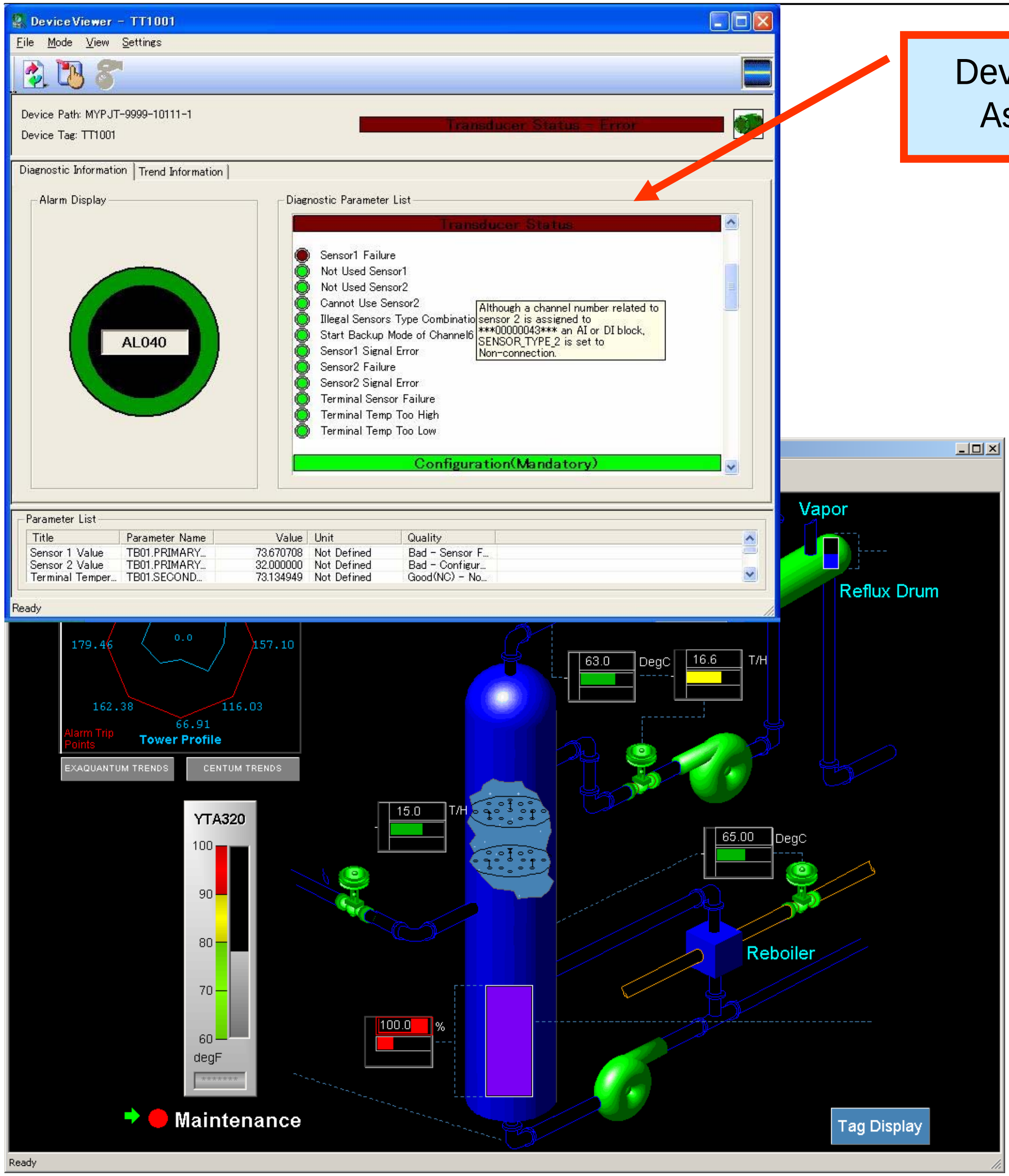
Change Status
Hide
Ⓓ
Work Order History
MIMOSA
EAM
Ⓐ
Maintenance status (polling)
MIMOSA
Work Order
③
Display Work Order History
MDX
Manufacturing Data eXchange
OPC A&E
Alarm
②
OPC FOUNDATION
TT-04-ET-01
100
90
80
70
60
degF
73.82
Maintenance
OPC DA Ⓑ
Maintenance status
PRM™
Plant Resource Manager
Ⓒ Launch
①
Alarm

DCS HMIへの保守作業状態の表示


IMC2006
Radar Chart
Temperature
252.54
271.31
163.11
179.46
0.0
157.10
162.38
116.03
66.91
Alarm Trip Points
Tower Profile
EXAQUANTUM TRENDS
CENTUM TRENDS
YTA320
100
90
80
70
60
degF
Maintenance
Condenser
Vapor
Reflux Drum
63.0
DegC
16.6
T/H
15.0
T/H
65.00
DegC
Reboiler
100.0
%
Tag Display
Ready

DCS Graphic with
Maintenance Work Order Status

機器管理システムによる機器状態の確認


Device Viewer - TT1001
File Mode View Settings
Transducer Status - Error
Diagnostic Information | Trend Information
Alarm Display
AL040
Diagnostic Parameter List
Transducer Status
Configuration(Mandatory)
Ready
Vapor
Reflux Drum
179.46
0.0
157.10
162.38
116.03
66.91
Alarm Trip Points
Tower Profile
EXAQUANTUM TRENDS
CENTUM TRENDS
63.0 DegC
16.6 T/H
15.0 T/H
65.00 DegC
Reboiler
100.0 %
YTA320
100
90
80
70
60
degF
Maintenance
Tag Display
Ready

Device Path: MYPJT-9999-10111-1
Device Tag: TT1001

- 🟥 Sensor1 Failure
- 🟩 Not Used Sensor1
- 🟩 Not Used Sensor2
- 🟩 Cannot Use Sensor2
- 🟩 Illegal Sensors Type Combinatio
- 🟩 Start Backup Mode of Channel6
- 🟩 Sensor1 Signal Error
- 🟩 Sensor2 Failure
- 🟩 Sensor2 Signal Error
- 🟩 Terminal Sensor Failure
- 🟩 Terminal Temp Too High
- 🟩 Terminal Temp Too Low

Although a channel number related to sensor 2 is assigned to ***00000043*** an AI or DI block, SENSOR_TYPE_2 is set to Non-connection.

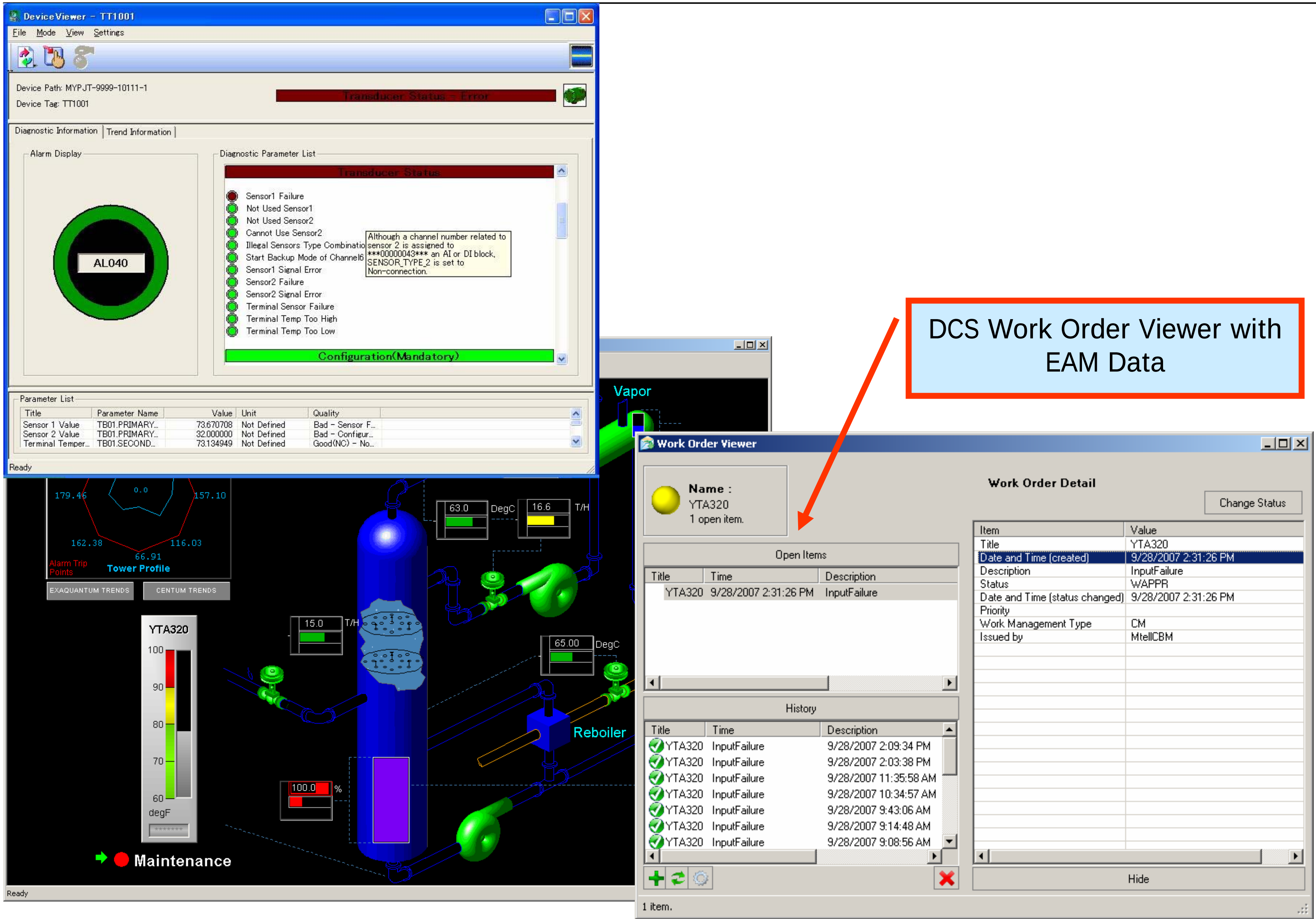
Parameter List

Title	Parameter Name	Value	Unit	Quality
Sensor 1 Value	TB01.PRIMARY...	73.670708	Not Defined	Bad - Sensor F...
Sensor 2 Value	TB01.PRIMARY...	32.000000	Not Defined	Bad - Configur...
Terminal Temper...	TB01.SECOND...	73.134949	Not Defined	Good(NC) - No...

Device Manager
Asset Viewer

設備保全管理システム側の保守履歴データ表示

DCS Work Order Viewer with EAM Data


Device Viewer - TT1001
File Mode View Settings
Transducer Status - Error
Diagnostic Information
Trend Information
Alarm Display
AL040
Diagnostic Parameter List
Transducer Status
Configuration(Mandatory)
Parameter List
Ready
Vapor
179.46
0.0
157.10
162.38
116.03
66.91
Alarm Trip Points
Tower Profile
EXAQUANTUM TRENDS
CENTUM TRENDS
63.0
DegC
16.6
T/H
15.0
T/H
65.00
DegC
100.0
%
Reboiler
YTA320
100
90
80
70
60
degF
Maintenance
Ready
Work Order Viewer
Open Items
History
Work Order Detail
Change Status
Hide
1 item.

Device Path: MYPJT-9999-10111-1
Device Tag: TT1001

- Sensor1 Failure
- Not Used Sensor1
- Not Used Sensor2
- Cannot Use Sensor2
- Illegal Sensors Type Combinatio
- Start Backup Mode of Channel6
- Sensor1 Signal Error
- Sensor2 Failure
- Sensor2 Signal Error
- Terminal Sensor Failure
- Terminal Temp Too High
- Terminal Temp Too Low

Although a channel number related to sensor 2 is assigned to ***00000043*** an AI or DI block, SENSOR_TYPE_2 is set to Non-connection.

Title	Parameter Name	Value	Unit	Quality
Sensor 1 Value	TB01.PRIMARY...	73.670708	Not Defined	Bad - Sensor F...
Sensor 2 Value	TB01.PRIMARY...	32.000000	Not Defined	Bad - Configur...
Terminal Temper...	TB01.SECOND...	73.134949	Not Defined	Good(NC) - No...

Name :
YTA320
1 open item.

Open Items

Title	Time	Description
YTA320	9/28/2007 2:31:26 PM	InputFailure

History

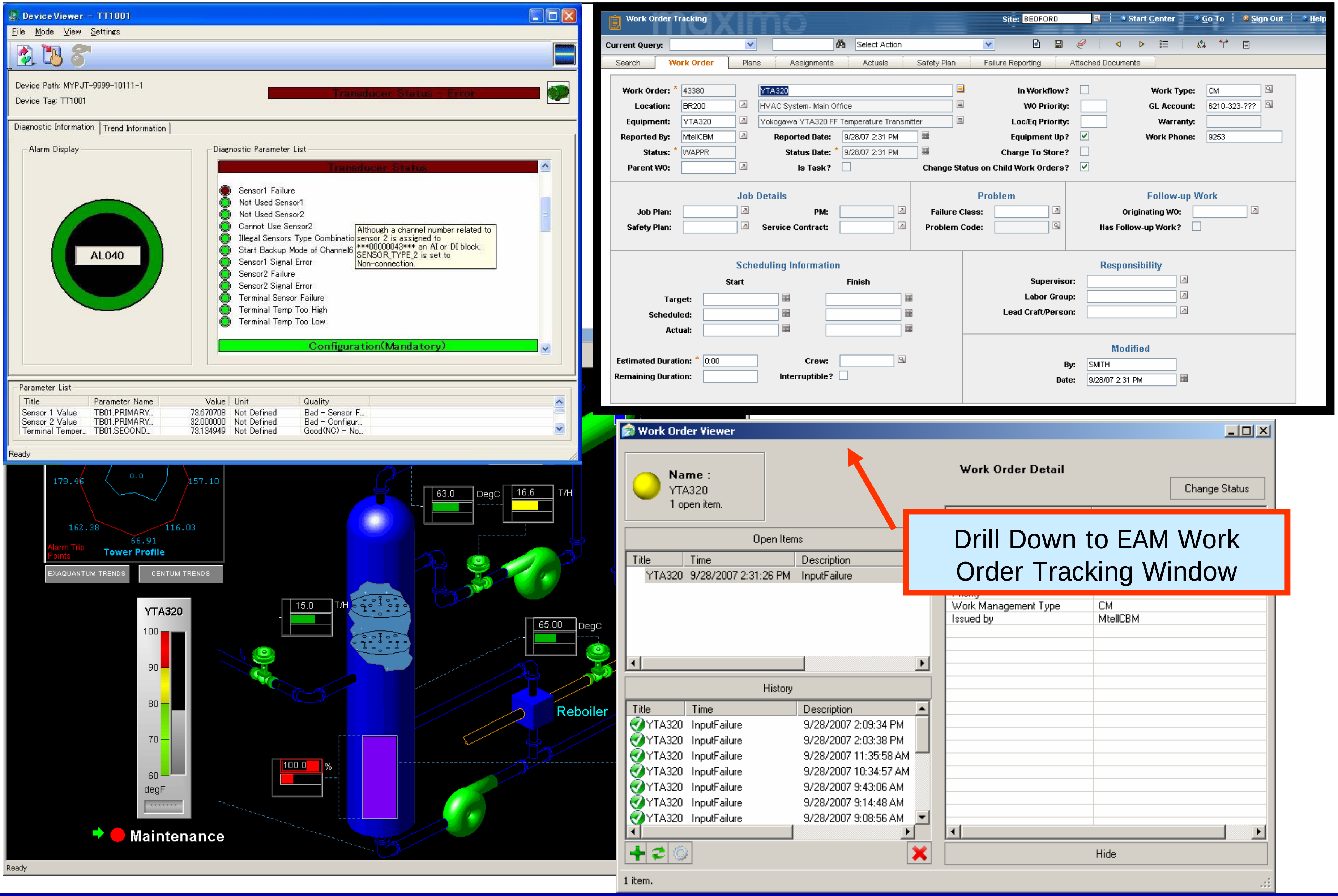
Title	Time	Description
✓ YTA320	InputFailure	9/28/2007 2:09:34 PM
✓ YTA320	InputFailure	9/28/2007 2:03:38 PM
✓ YTA320	InputFailure	9/28/2007 11:35:58 AM
✓ YTA320	InputFailure	9/28/2007 10:34:57 AM
✓ YTA320	InputFailure	9/28/2007 9:43:06 AM
✓ YTA320	InputFailure	9/28/2007 9:14:48 AM
✓ YTA320	InputFailure	9/28/2007 9:08:56 AM

Work Order Detail

Item	Value
Title	YTA320
Date and Time (created)	9/28/2007 2:31:26 PM
Description	InputFailure
Status	WAPPR
Date and Time (status changed)	9/28/2007 2:31:26 PM
Priority	
Work Management Type	CM
Issued by	MtellCBM

設備保全管理システムの保守作業詳細画面呼び出し

A Yokogawa Commitment to Industry vigilance®



Drill Down to EAM Work Order Tracking Window

Device Viewer – TT1001

File Mode View Settings

Device Path: MYPJT-9999-10111-1
Device Tag: TT1001

Transducer Status – Error

Diagnostic Information | Trend Information

Alarm Display: AL040

Diagnostic Parameter List – Transducer Status

- Sensor1 Failure
- Not Used Sensor1
- Not Used Sensor2
- Cannot Use Sensor2
- Illegal Sensors Type Combination
- Start Backup Mode of Channel6
- Sensor1 Signal Error
- Sensor2 Failure
- Sensor2 Signal Error
- Terminal Sensor Failure
- Terminal Temp Too High
- Terminal Temp Too Low

Although a channel number related to sensor 2 is assigned to ***00000043*** an AI or DI block, SENSOR_TYPE_2 is set to Non-connection.

Configuration(Mandatory)

Parameter List

Title	Parameter Name	Value	Unit	Quality
Sensor 1 Value	TB01.PRIMARY...	73.670708	Not Defined	Bad – Sensor F...
Sensor 2 Value	TB01.PRIMARY...	32.000000	Not Defined	Bad – Configur...
Terminal Temper...	TB01.SECOND...	73.134949	Not Defined	Good(NC) – No...

Ready

Work Order Tracking (maximo)

Site: BEDFORD | Start Center | Go To | Sign Out | Help

Current Query: | Select Action

Search | Work Order | Plans | Assignments | Actuals | Safety Plan | Failure Reporting | Attached Documents

Work Order: 43380 YTA320
Location: BR200 HVAC System- Main Office
Equipment: YTA320 Yokogawa YTA320 FF Temperature Transmitter
Reported By: MtellCBM
Reported Date: 9/28/07 2:31 PM
Status: WAPPR
Status Date: 9/28/07 2:31 PM
Parent WO:
Is Task? ☐
In Workflow? ☐
WO Priority:
Loc/Eq Priority:
Equipment Up? ☑
Charge To Store? ☐
Change Status on Child Work Orders? ☑
Work Type: CM
GL Account: 6210-323-???
Warranty:
Work Phone: 9253

Job Details — Job Plan: / PM: / Safety Plan: / Service Contract:

Problem — Failure Class: / Problem Code:

Follow-up Work — Originating WO: / Has Follow-up Work? ☐

Scheduling Information — Start / Finish — Target: / Scheduled: / Actual:

Responsibility — Supervisor: / Labor Group: / Lead Craft/Person:

Estimated Duration: 0:00
Crew:
Remaining Duration:
Interruptible? ☐

Modified — By: SMITH — Date: 9/28/07 2:31 PM

Work Order Viewer

Name : YTA320
1 open item.

Work Order Detail | Change Status

Open Items

Title	Time	Description
YTA320	9/28/2007 2:31:26 PM	InputFailure

Work Management Type	CM
Issued by	MtellCBM

History

Title	Time	Description
YTA320	InputFailure	9/28/2007 2:09:34 PM
YTA320	InputFailure	9/28/2007 2:03:38 PM
YTA320	InputFailure	9/28/2007 11:35:58 AM
YTA320	InputFailure	9/28/2007 10:34:57 AM
YTA320	InputFailure	9/28/2007 9:43:06 AM
YTA320	InputFailure	9/28/2007 9:14:48 AM
YTA320	InputFailure	9/28/2007 9:08:56 AM

Hide

1 item.

ご清聴ありがとうございました

A Yokogawa Commitment to Industry
vigilance™

Commitment means building the future to last