

Technology Track: Automation/Control

Presented by:

Jerry Frank, Tridium

Peter Martin, Invensys

Mark Prowten, Lantronix

4:45 – 5:30 p.m.

Hondo Room

M2M Presentation

Presented by:

Jerry Frank

Tridium, Inc.

Project Sedona

- *Open Source implementation of the new IEC 61499 worldwide standard for Industrial – Process Measurement and Control Systems*

What is the IEC 61499 Standard?

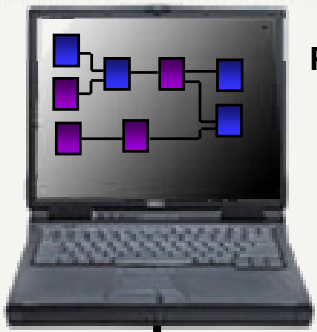
- *61499 defines an open architecture for the next generation of distributed systems for industrial automation and control.*
- *These systems will have software organized as sets of co-operating components, rather than as the integration of large custom built units of software.*
- *Commonly known at the device level as “1499 control engine”*

Why use an Open Source Strategy for Sedona project?

- *To achieve Open Architecture requirement of standardized interfaces and methodologies.*
- *To enable multi-vendor value-add capabilities.*
- *To foster development of systems with:*
 - Portability
 - Interoperability
 - Configurability

Sedona Open Source Consortium Partners

- *AMCC*
- *Aonix*
- *Beckhoff*
- *Digi*
- *IBM*
- *Honeywell*
- *Jennic*
- *Rockwell*
- *QNX*
- *University Vienna*



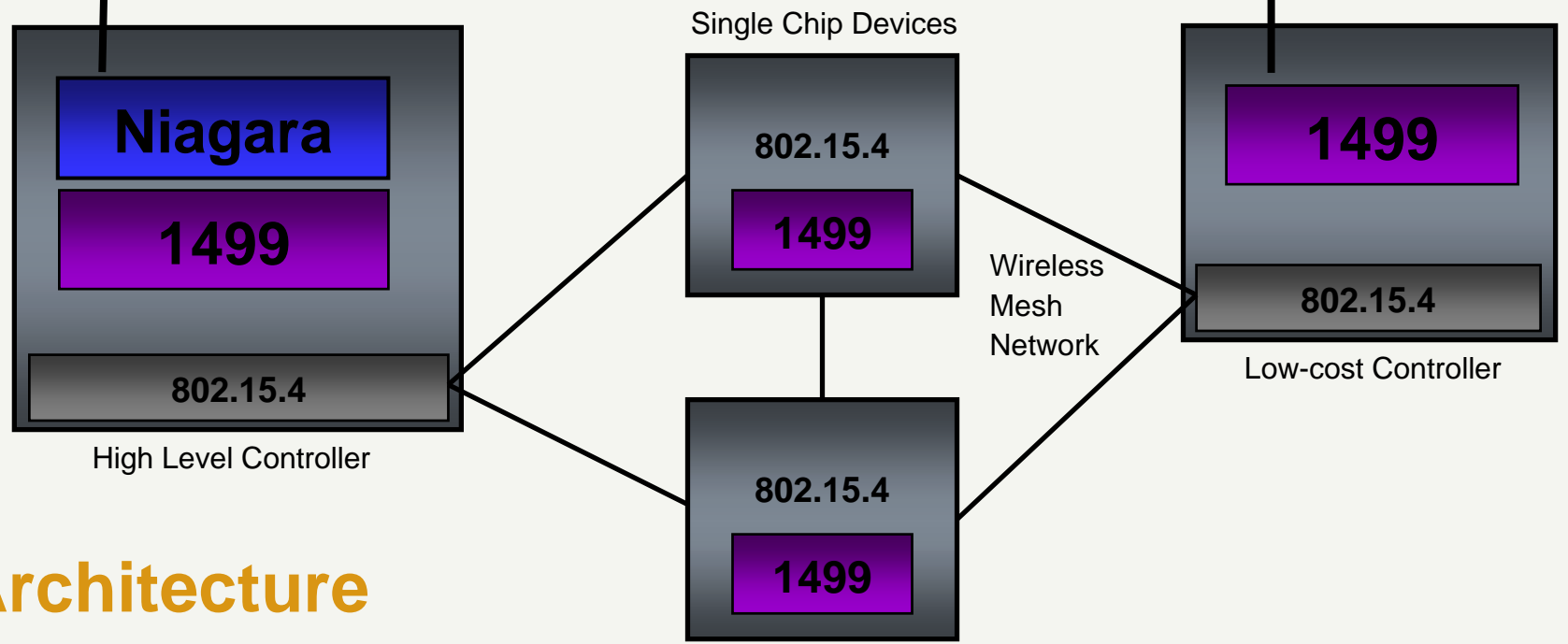
Programming Tool

- Component model
- Niagara objects
- 1499 objects



Application Server

- Windows
- IBM Linux
- Sun Solaris



Architecture

Sedona Project Goals

- *Prototype Open Source 1499 run-time engines and Niagara based programming tool for multiple platforms:*

- High Level embedded QNX industrial platform running both Niagara Framework and 1499 control engine
- Low-cost 32 bit processor with integrated Ethernet and RTOS running 1499 control engine
- Single chip processor and 804.15.4 wireless platform (no RTOS) running 1499 control engine

Summary

- ***The 1499 Sedona project will enable consortium to take advantage of several trends driving today's industrial environment:***

- Shift from centralized industrial control architectures to highly distributed systems of interoperable smart devices.
- Increasing deployment of heterogeneous industrial device solutions with devices supplied by a wide range of manufacturers.
- The re-useable and platform neutral C-code 1499 control engine can also be used as the foundation for non-industrial low cost control devices.

M2M Presentation

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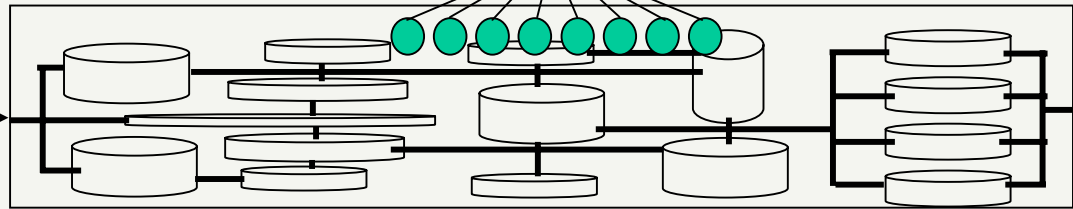
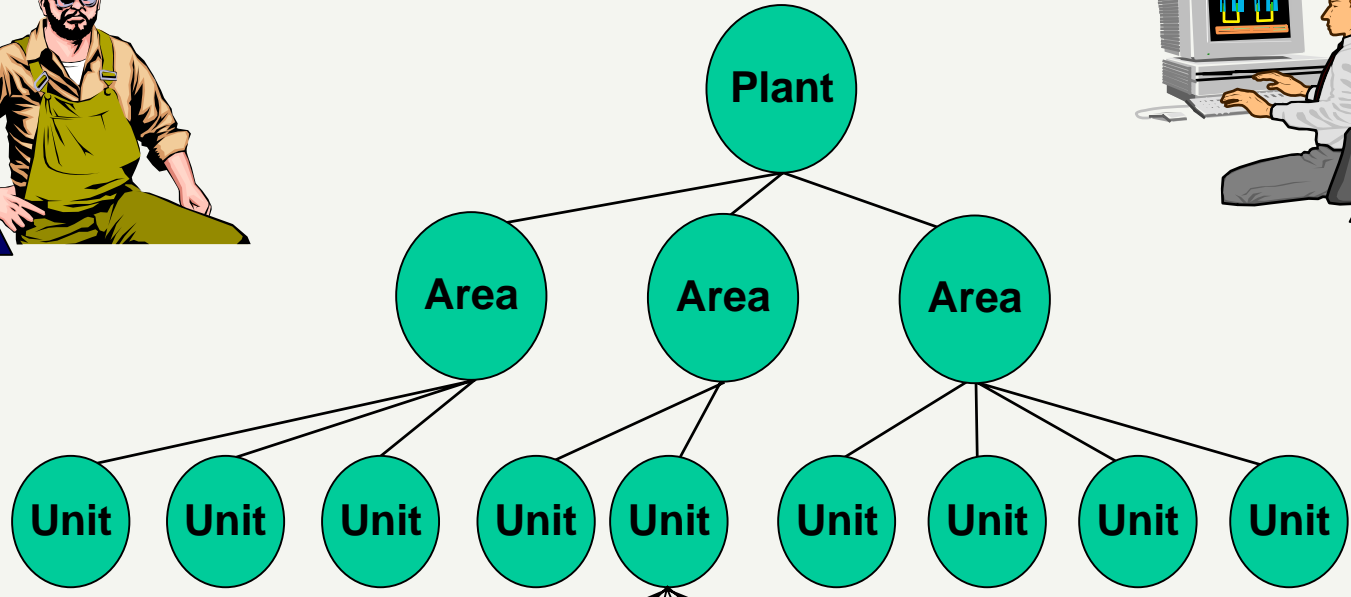
Peter G. Martin PhD

Invensys Process Systems



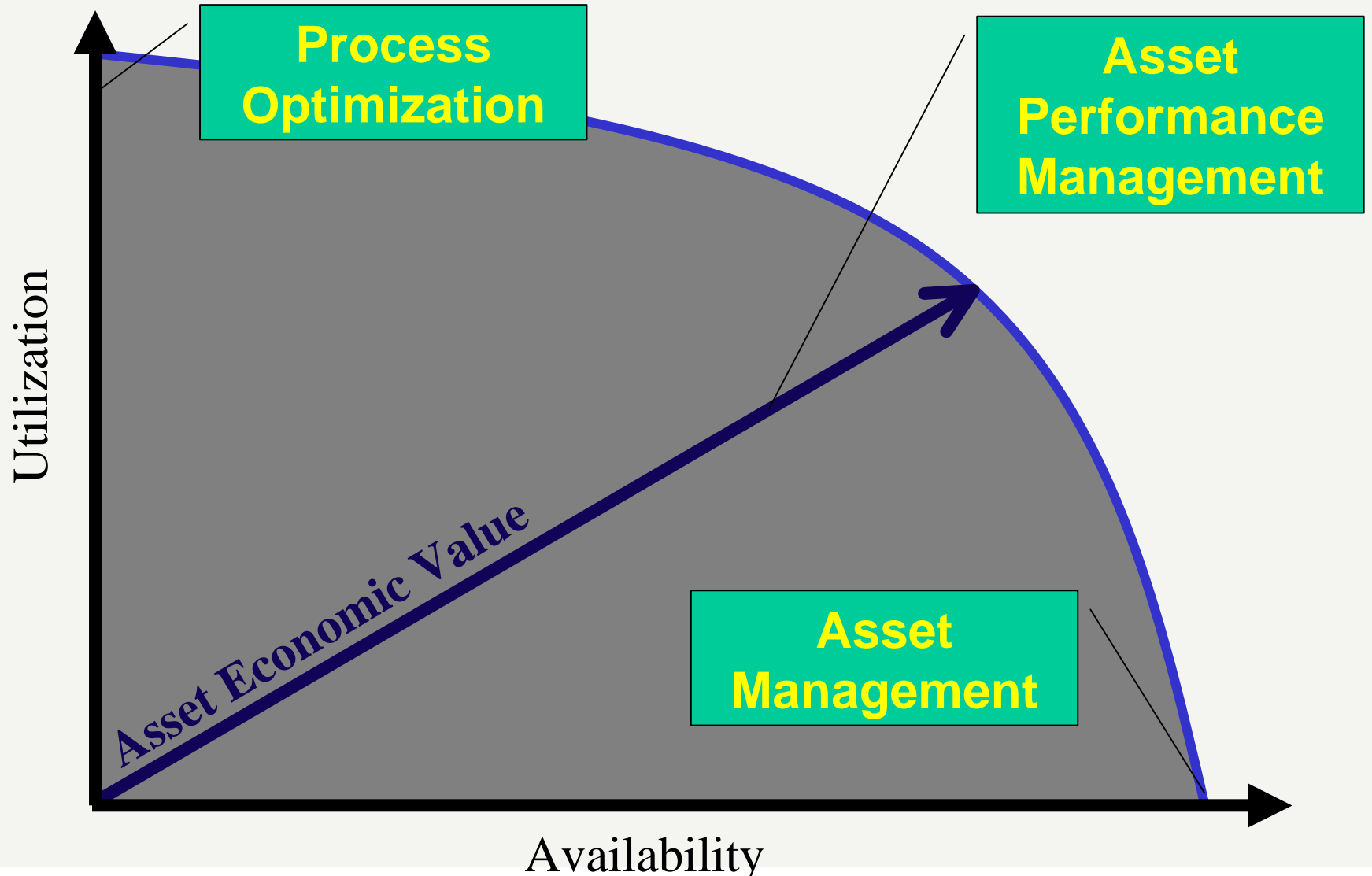
Maximize Availability

Maximize Utilization



Maintenance

Operations



- Provide low cost information access
 - Plant floor information access
 - Enterprise information access
- Provide high-productivity environment
 - Application building and reuse
 - Knowledge sustainability engine
 - Control strategy building and reuse
- Provide platform for business improvement
 - Asset Performance Management
 - Extending closed-loop control to business
 - Any solutions can be implemented cost effectively
- Provide enterprise visibility
 - Make plant visible to business and business visible to plant

Priorities

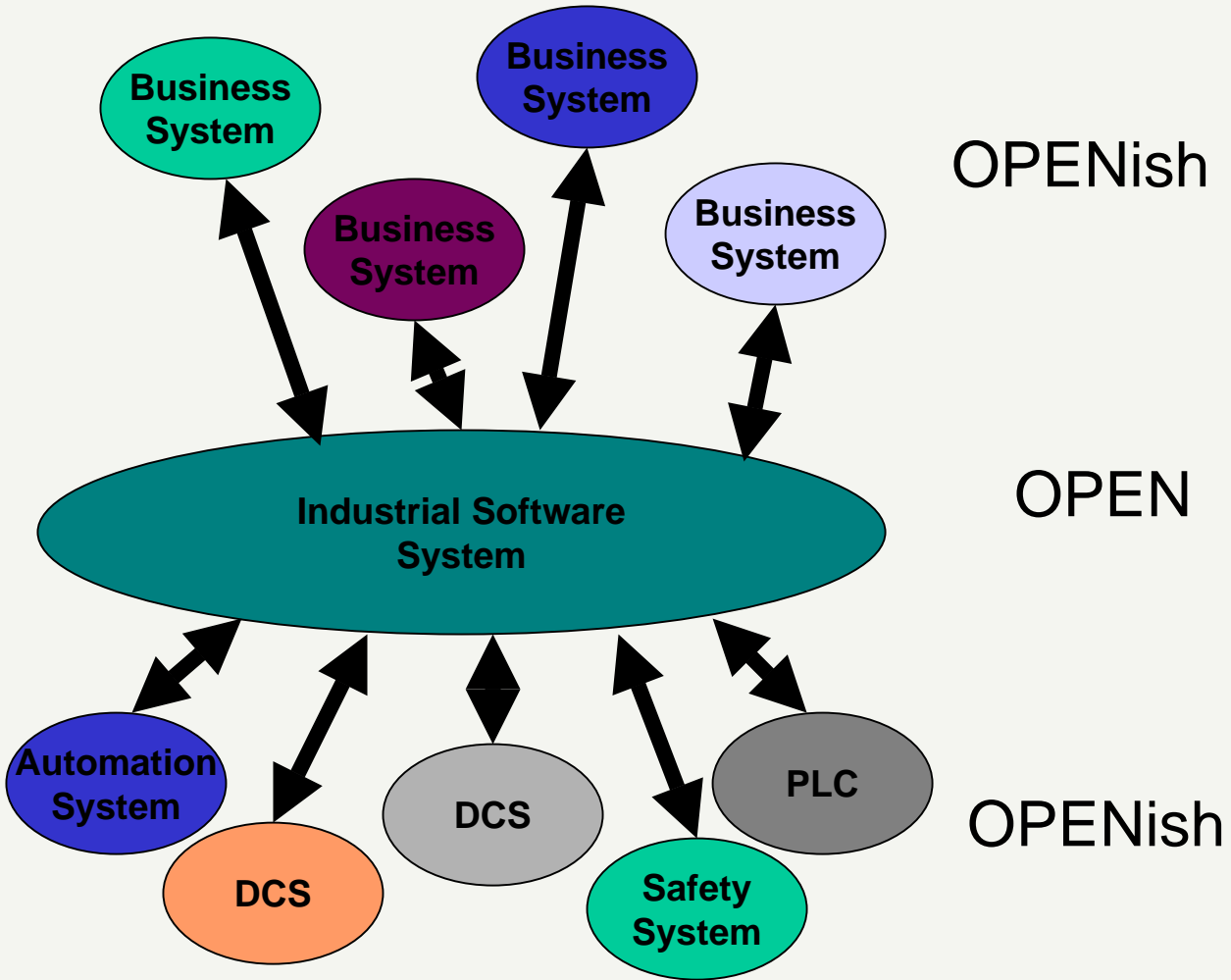
- 1. Data Security
- 2. Business Security
- 3. Openness

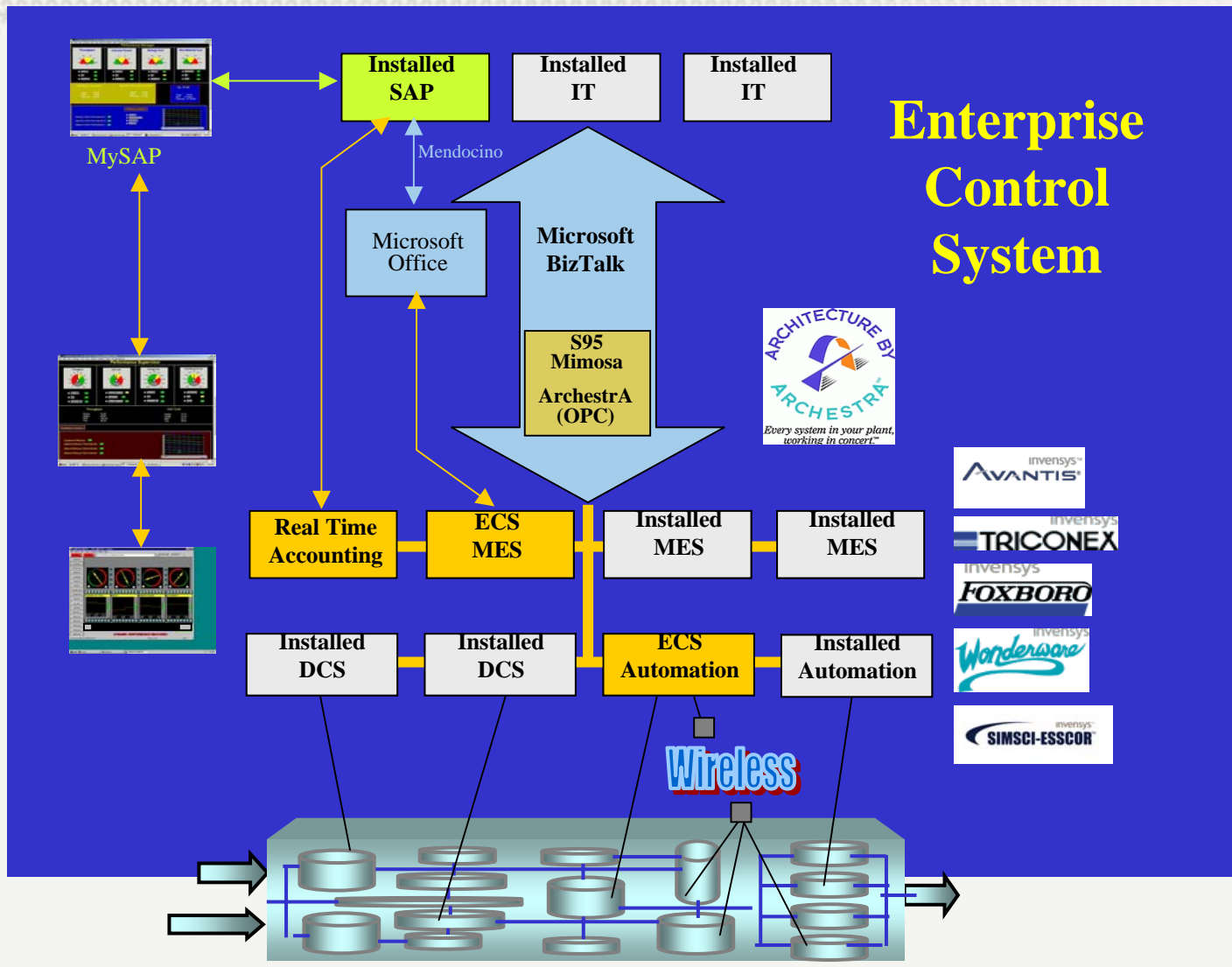
Priorities

- 1. Openness
- 2. Connectivity
- 3. Functionality

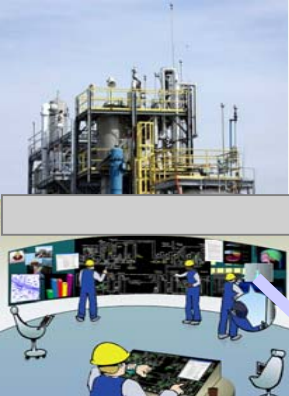
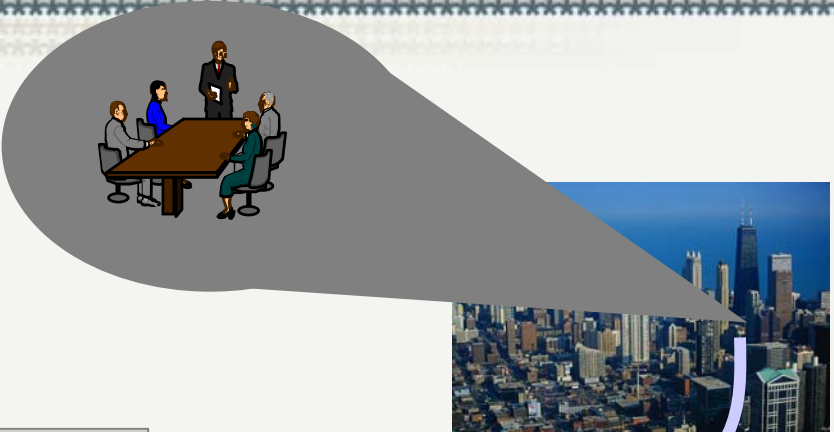
Priorities

- 1. Safety
- 2. Security
- 3. Environment
- 4. Openness





Consistent, Contextualized, and Actionable Enterprise Information



Plant
Collaboration
Wall



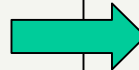
Business
Collaboration
Wall



From Automation System

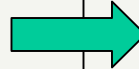
To M2M

Limited and Expensive Plant Floor Connectivity



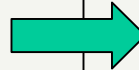
Open Plant Floor System

Limited and Expensive Enterprise Connectivity



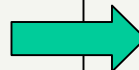
Open Enterprise System

Asset Utilization Focus



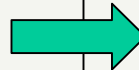
Asset Performance Management Focus

Process Control



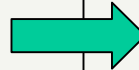
Process through Business Control

Process Data Management



Enterprise Information Management

Isolated Views of Business



Collaborative Business View

Thank You

M2M Presentation

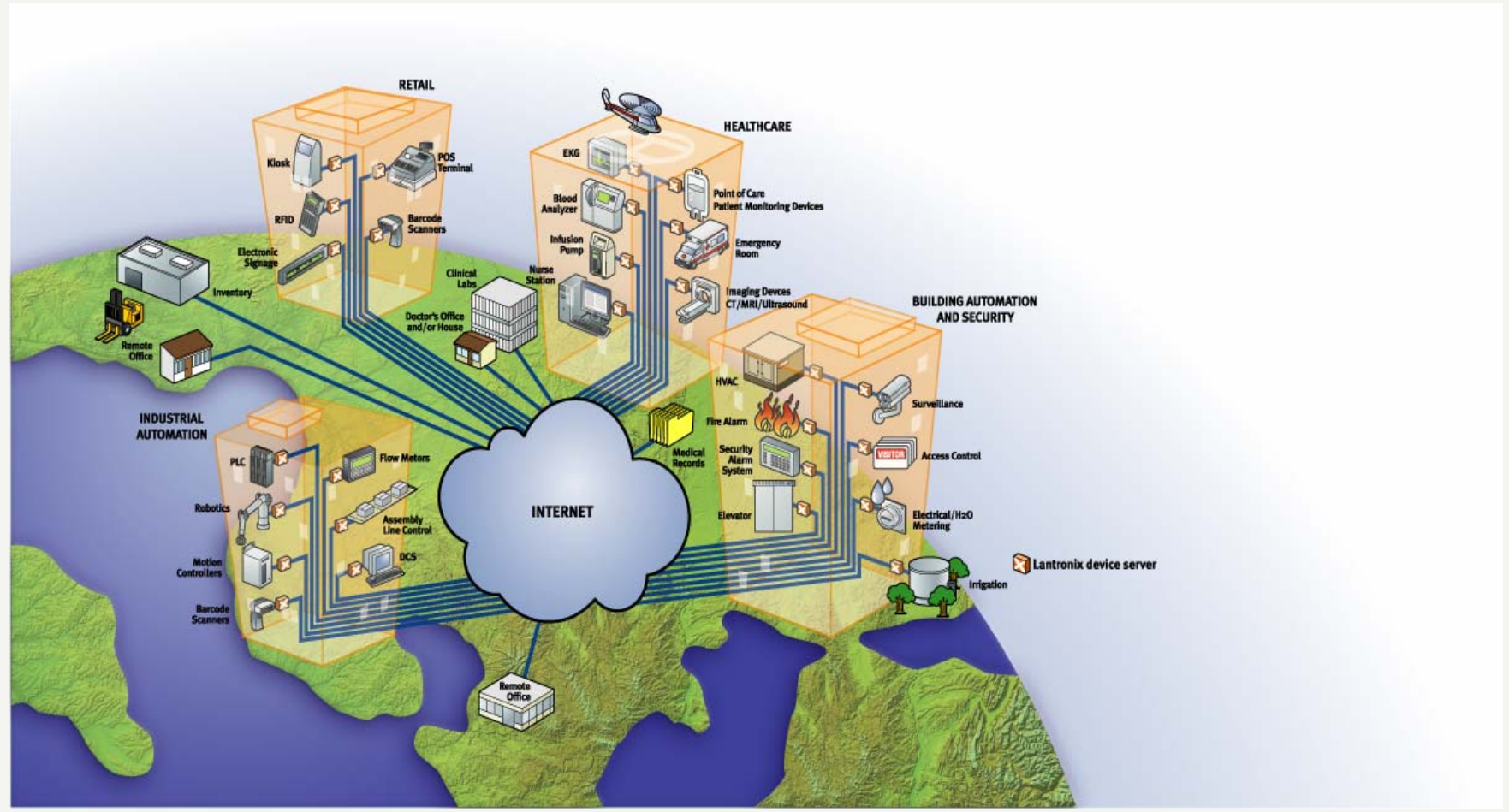
Presented by:

Mark J. Prowten



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Integrating existing equipment and devices using M2M technology raises many questions, some things to consider are:

What problem are you trying to solve; reduce costs, optimize operations, reduce service time and expense, create new revenue streams?

How do we get access to the many different devices and machines; Ethernet, Cellular, WiFi, other wireless (900Mhz, ZigBee, proprietary) ,

Do all the devices communicate the same or require different protocols; ModBus, Ethernet/IP, Bacnet, ASCII, other proprietary protocol?

Things to consider continued:

Is the information sensitive and need to be protected? If so, to what level?

Does the backend system require data in a specific format?

With more devices on the network how are we going to manage them?

Are different management methods required for each of the different connectivity types; Ethernet, WiFi, Cellular, etc?.

With all the added information is more storage capacity required?



Thank You