Off-the-shelf Packaged Software Systems And Custom Software Analysis

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Who is MASS Group?

Mass Group produces and distributes high technology, open systems software products to industrial automation and manufacturing markets that require a high degree of reliability, quality assurance and automated enterprise class solutions.

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Industry Experience and Clients

MASS Group clients are among the FORTUNE 1000 manufacturing companies including:

Boeing, Applied Materials, Kingston Technology, Hewlett Packard, Southern California Edison, L.A. County Sanitation as well as other small and mid-size manufacturers.

Trends In Enterprise Software Systems

- ❑ Move Toward Applications Platforms With Open Extensible Architectures and Plug-in Components That Facilitate Communication Across The Enterprise

- ❑ Reduction In Systems Costs While Increasing Intelligence, Analysis, Interoperability and Performance

Packaged Software Systems vs. Custom Systems

Custom Software Functionality

❑ Custom Vertical Software – Highly Customizable Application Specific Solutions Provide Specific Tools, Reporting, and Compliance

Packaged Software Systems vs. Custom Systems Comparison

Packaged Systems	Custom Systems
Higher Initial Costs Must Acquire Packaged System	Lower Initial Costs
Lower Development Costs Many Features, Less System Configuration and Customization	Increased Development Costs Must Start From Scratch
Faster Project Implementation Decreased Development Time	Slower Project Implementation Time Increased Development Time
Increased Reliability Over the Product Lifecycle Periodic Upgrades, Patches, Maintenance	High Reliability Requires Increased In-house Development, System Maintenance, Upgrades, and Testing
Standard Data Exchange and Communications Technologies	May Not Fully Support Industry Standards Limiting Data Exchange and Communication With Other Enterprise Systems
Decreased Training Requirements	Requires Course Material and Extensive Knowledge of Proprietary Systems Functions

Benefits Of A Packaged System

- ❑ Acquisition and Development Costs
- ❑ Faster Project Implementation
- ❑ Increased Reliability Over the Product Lifecycle
- ❑ Standard Data Exchange and Communications Technologies
- ❑ Decreased Training Requirements

Acquisition and Development Costs

- ❑ Higher acquisition costs offset by reduced development costs
- ❑ Decreased time to market due to faster implementation can reduce costs and meet project timelines

Faster Project Implementation

❑ Less custom programming, less testing

❑ Experienced pool of software developers with hands-on real-world application development expertise

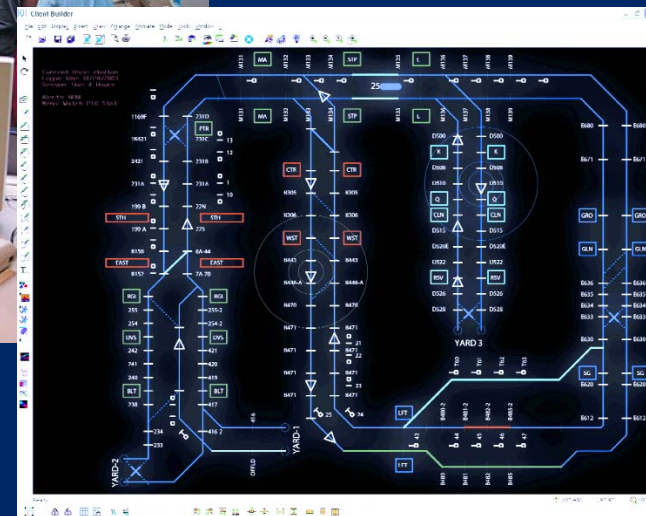## Increased Reliability Over the Product Lifecycle

- ❑ High Quality industry proven best of breed applications tested in hundreds of real-world installs across multiple industries
- ❑ Support Services
  - o Periodic incremental updates, patches and upgrades
  - o Technical support network, phone, onsite, email

Standard Data Exchange and Communications Technologies

❑ Improve engineering, production, quality control and supply chain management by interfacing with enterprise systems

❑ Provides collaborative engineering, web-based data, remote monitoring, data collection, supply chain visibility

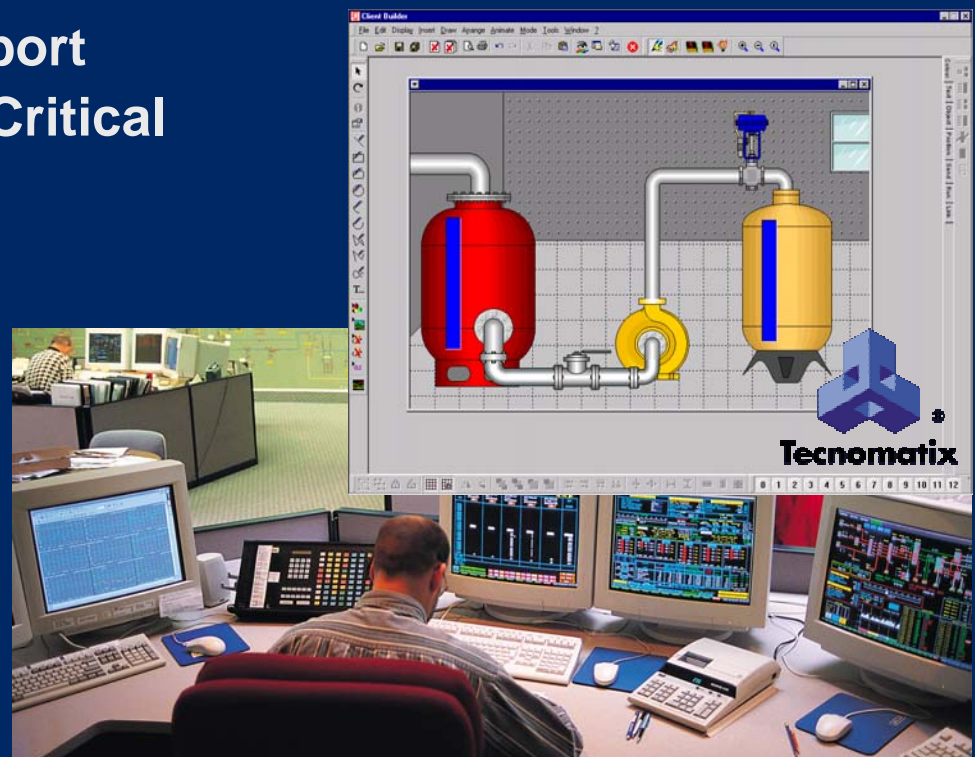## A Packaged System - FactoryLink SCADA/HMI

Supervisory Control and Data Acquisition/Human Machine Interface (SCADA/HMI) software for process knowledge and control.

A Packaged System - FactoryLink SCADA/HMI

Broad Range of Industrial Support

Can Be Used In Many Mission Critical Applications

- o **Aerospace**
- o **Automotive**
- o **Building Automation**
- o **Electronics Assembly**
- o **Electricity Generation, Transmission**
- o **Pharmaceuticals**
- o **Semiconductor**
- o **Transportation**

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A Packaged System - FactoryLink SCADA/HMI
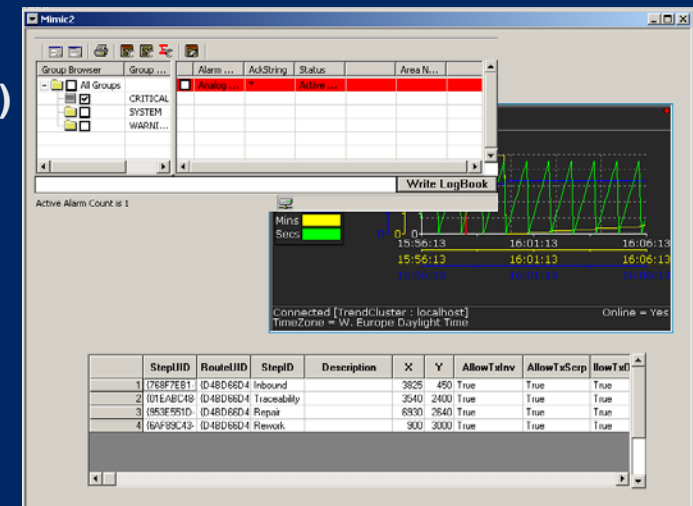### Standards Based Product For Data Exchange and Communication With Enterprise Systems

- ❑ Microsoft Windows (2000, XP,….)
- ❑ Windows Terminal Services
- ❑ OPC (Client and Server)
- ❑ ActiveX
- ❑ ODBC
- ❑ Microsoft Visual Basic
- ❑ C++
- ❑ Microsoft SQL Server
- ❑ .NET

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Benefits of A Packaged System – FactoryLink
System provides standard features that are not available without extensive customization of a custom system
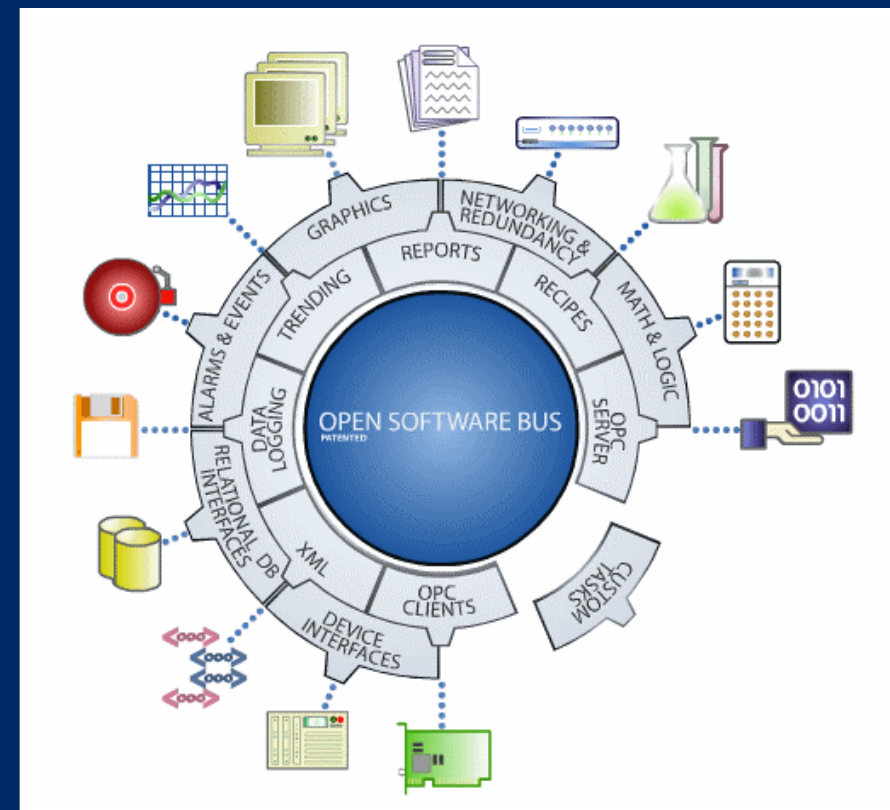
FactoryLink Functionality Overview

- ❑ **Supervisory control and data acquisition (SCADA)**
- ❑ **Human Machine Interface (HMI)**
- ❑ **Alarms and Events**
- ❑ **Real-time and Historical Trending**
- ❑ **Statistical Process Control**
- ❑ **Historical Data Logging**
- ❑ **Operator Event Log**
- ❑ **Reporting**
- ❑ **Scripting**
- ❑ **Interfaces to PLCs, RTUs, and other control equipment using OPC or device-specific protocols. Interfaces to over 600 devices**
- ❑ **Interfaces to business systems using XML or database interfaces**
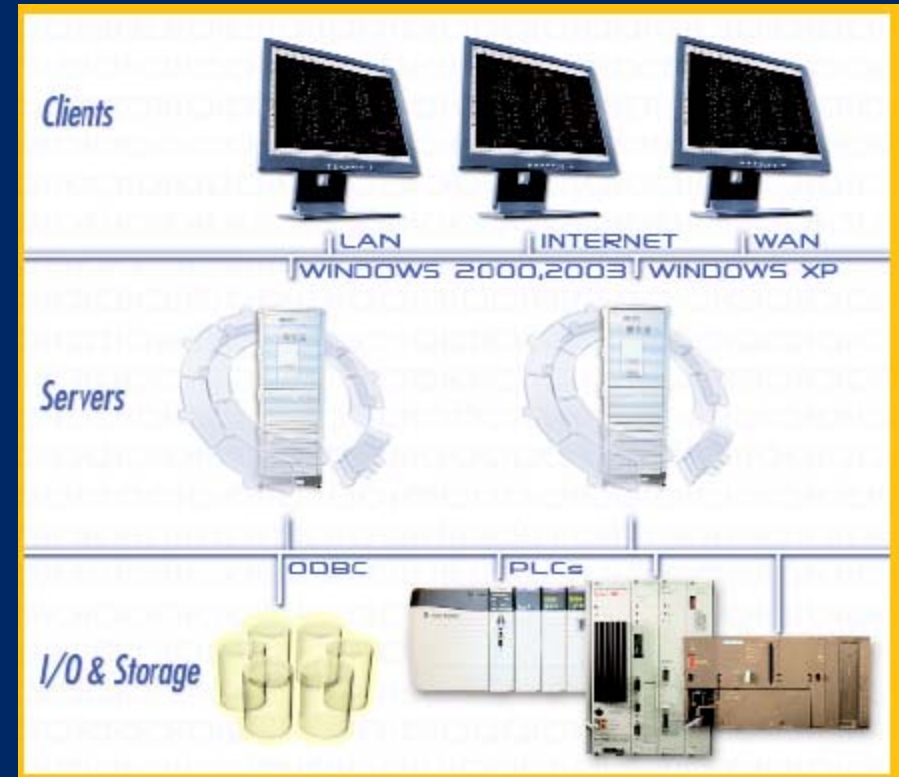
Standard Systems - Open Software Bus

❑ FactoryLink supplies a standard framework that can be used to build vertical applications in a large variety of industries.

❑ The Patented Open Software Bus provides a global, real-time database.

❑ All tasks (programs) have access to all real-time data.

Standard Data Exchange and Communications Technologies

FactoryLink .NET Client

- ❑ The FactoryLink .NET client supports access from the client to the server application across any TCP/IP connection, such as public Internet, LAN, or WAN.

- ❑ Client Builder uses Microsoft's new .Net services to communicate through firewalls using Web Services, HTTP, and SOAP.
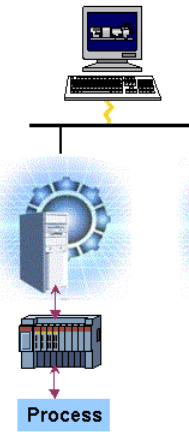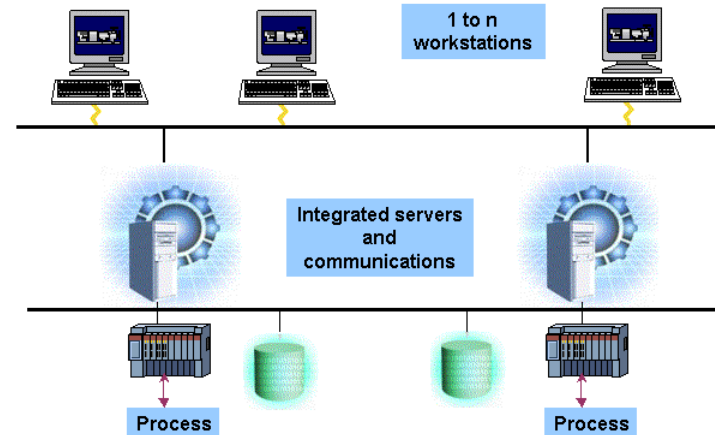
Topologies – A Scalable Solution

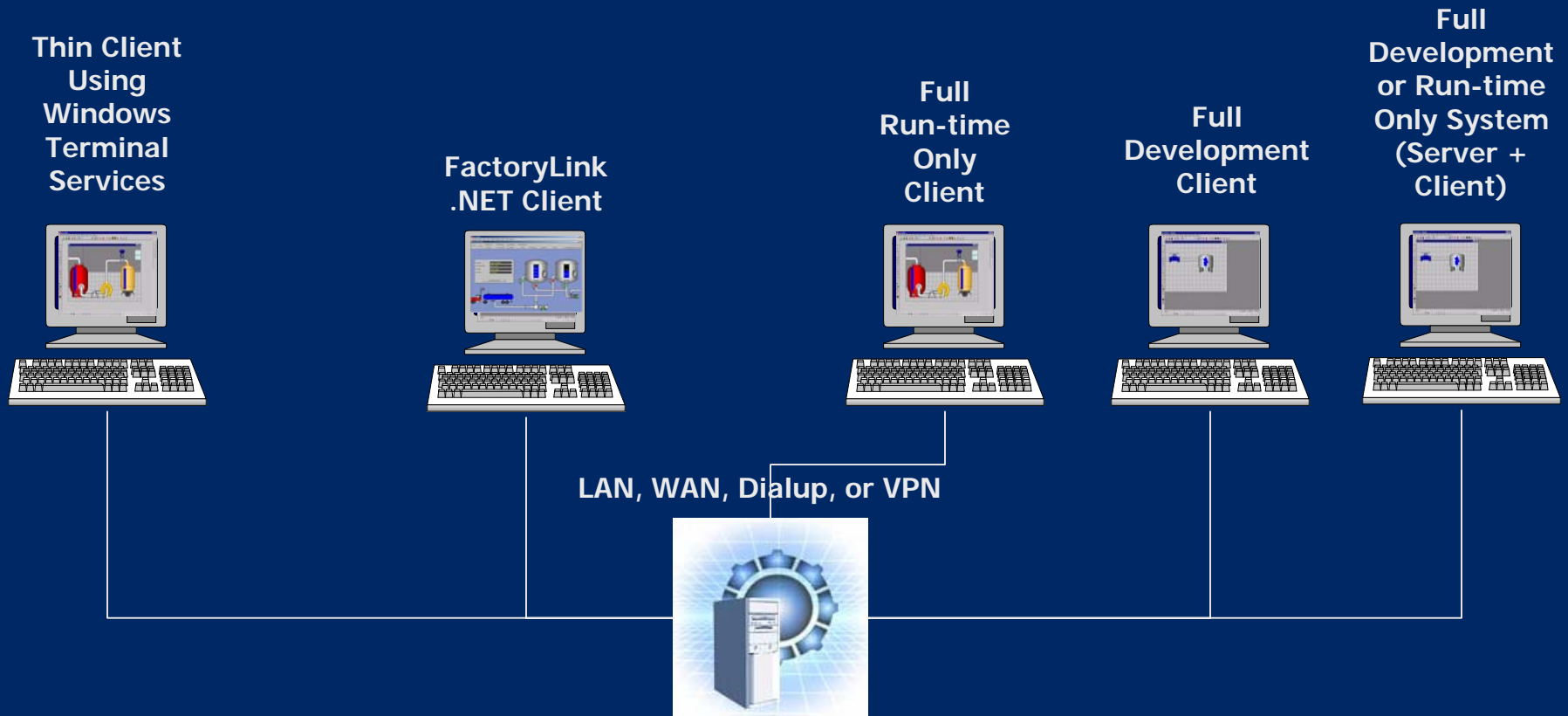**Single Station**

Multi-Station

Distributed Architecture

Redundant Systems

1 to n workstations

Integrated servers and communications

Process

Process

Process

Rich or Thin Clients

Thin Client ———————————————————————————————————▶ Rich Clients

**Thin Client
Using
Windows
Terminal
Services**

**FactoryLink
.NET Client**

**Full
Run-time
Only
Client**

**Full
Development
Client**

**Full
Development
or Run-time
Only System
(Server +
Client)**

LAN, WAN, Dialup, or VPN
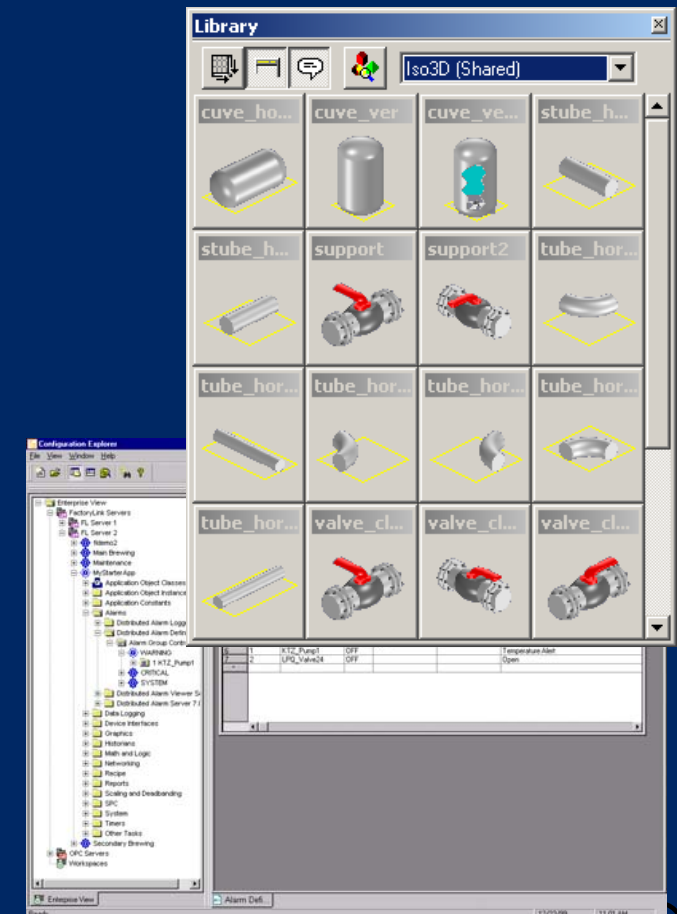
Object Oriented Configuration Tools Extend Systems Functionality

- ❑ Client Builder
- ❑ Configuration Explorer
  - o Both are object oriented
  - o Children inherit from parent
  - o Re-usable objects
  - o Build your own without special APIs

Standard Device Interfaces - OPC

❑ OPC technology eliminates expensive custom interfaces and drivers while improving information exchange at various levels of the enterprise that use different solutions, platforms

❑ Reduces costs, faster development and promotes increased operating efficiency.

Standard Device Interfaces - OPC

OPC Benefits

❑ Eliminate custom interfaces and drivers

❑ Write one software component instead of multiple drivers

❑ Create re-usable modules

❑ Communicate data locally over the enterprise network

❑ Communicate data remotely over the internet

Standard Device Interfaces - OPC

❑ OPC specifications support interoperability amongst different computing platforms and the technology is proven in hundreds of plants and thousands of applications.

❑ Standards such as XML and SOAP are being utilized in support of data transfer over the Internet.

Standard Device Interfaces - OPC

❑ FactoryLink includes an enhanced OPC Client (ODX) that eliminates the need to purchase a proprietary Device Interface in many systems. This feature reduces the cost of the software and ensures the use of a standard protocol, making the system easier to maintain and upgrade.

Benefits Of A Packaged System - FactoryLink

- ❑ Runs on Standard Operating Systems Windows,
- ❑ Supports Multiple Standard Industrial Functions
- ❑ Universal Support for Devices via OPC
- ❑ Standardized Data interchange using XML or ODBC

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Benefits Of A Packaged System - FactoryLink

- ❑ Powerful – Best of Breed, Feature Rich Solution For Horizontal or Vertical Industries
- ❑ Open – Standards Based For Data Exchange With Enterprise Systems
- ❑ Scalable – Framework Can Grow To Meet New Industries Challenges By Adding, Components, Plug-ins

Thank You!

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