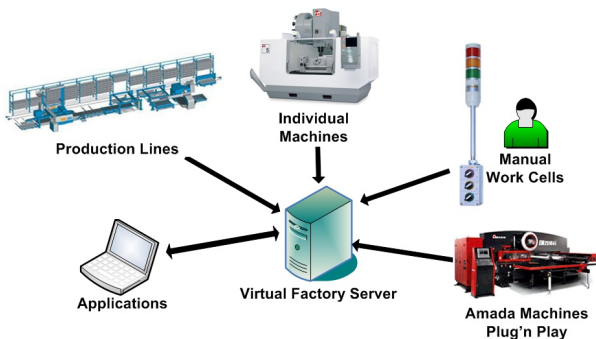# Virtual Factory® Specifications

Data Connections

• OPC Standard connection to over 500 PLC's, Touch Panels, Controls, and other devices. Device connections with our OPC Client includes devices from the following companies and many more:

•ABB	•Allan-Bradley
•GE Fanuc	•Omron
•Siemens	•Advantech
•Mitsubishi	•Beckhoff
•Modicon	•Yokogawa
•Wonderware	•National Instruments
• Honeywell	• Motorola
• DataForth	• Toshiba
• Rockwell	• Emerson

• Direct interface to Advantech Adam 6050 device for capturing signals, such as Andon stack light switch boxes
• Amada Machine Controls (AMNC) Direct Plug'n Play
• Ethernet-based Web Cameras
• Ethernet-based PC applications (using Application Programming Interface and SOAP interface)

Protocols

• Modbus	• DeviceNet	• Fieldbus
• Ethernet/IP	• ControlNet	
• SNMP	• Profibus	

Production Lines — Individual Machines — Manual Work Cells — Applications — Virtual Factory Server — Amada Machines Plug'n Play
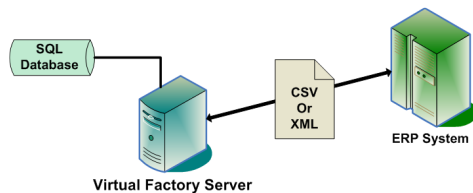
Database Logging

• MySQL 5.0 relational database; other SQL databases as required

ERP/MRP Interface

• XML or CSV files to specification

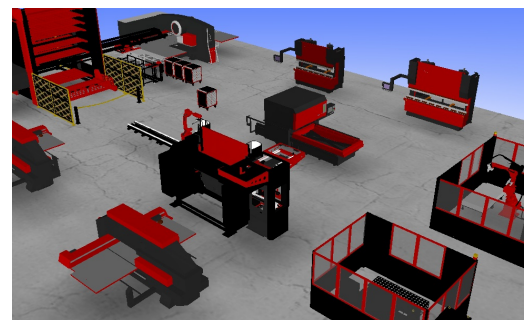SQL Database — Virtual Factory Server — CSV Or XML — ERP System

Andon Status Panels

• Large Screen Plasma or LCD displays with automatic scrolling capability (includes no-scrolling area when needed)
• Internet Explorer browser-based with drill down links to reports
• Customizable cell layouts, cell content and cell characteristics (font, color, blinking)
• Formula-based cell content.   For example, If Machine A is Down, then this cell blinks Red and the cell message is "Machine A Down."   Multiple formulas for the same cell are prioritized; first TRUE value "wins."

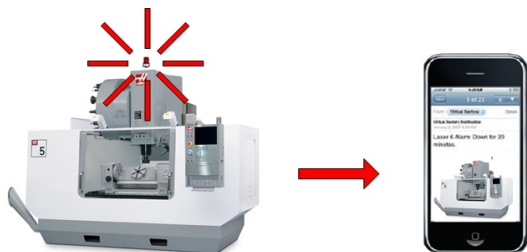| Name	Planned	Actual	Eff%	Def%
ALPHA Line1	318	241	76	4
ALPHA Line2	523	397	76	7
BETA Line1 24:30	512	143	28	5
GAMMA Line1	369	314	85	11
GAMMA Line2	271	213	79	9
DELTA Line1	0	0	100	0
DELTA Line2	0	0	100	0
DELTA Line3	0	0	100	0
MACHINING Line1	303	198	65	7
MACHINING Line2	540	342	63	15
MACHINING Line3	540	389	72	13
FINE MACHINING Line1	226	203	90	0
FINE MACHINING Line2	197	190	96	0
T MACHINING Line1	89	60	67	0
T MACHINING Line2	89	80	90	0
T MACHINING Line3	85	73	86	0
T MACHINING Line4	107	85	79	0
TSUB MACHINING Line1 18:40	61	57	93	0
TSUB MACHINING Line2	61	51	84	0
TSUB MACHINING Line3	187	185	99	0

3D Factory Layout Status Panels

• Rotate, Pan, and Zoom to navigate through factory
• Machines are selectable to drill down for detailed reports
• Machines are color-coded to represent machine status
• Import Machine Models from Google Sketchup
• Import Machine Models from CAD systems
• Machine Animation is optional

Event Definition and Subscription

• Customizable Event Definitions such as "If Machine B is down for 5 minutes"
• Users can subscribe to any event based upon calendar and hours of the day
• Users can be notified of event via cell phone or pager text message or email (may include video leading up to the event as an attachment)

Applications Programming Interface

• Library of functions to send and receive data between third party application and Virtual Factory server
• C++   • C#   • Visual Basic   • Java
• SOAP interface

RealTRAK®

• Optional RFID support module, which can plug into Virtual Factory®
• Tracks Passive RFID tags passing through "gate"
• Tracks WIFI devices locations
• Tracks Active RFID tags locations
• Vendor Neutral (Alien, Aeroscout, many others)
• Event notification based upon tracked asset locations
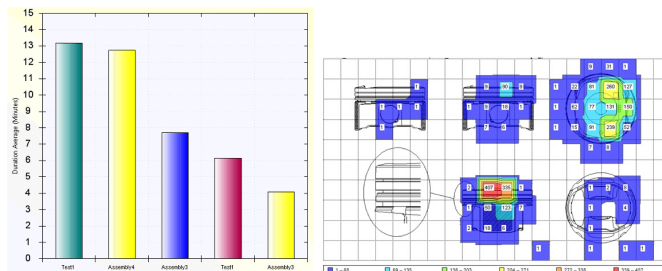• Customizable business logic solutions

Portable Device Andons

• iPhone-based with manual scrolling
• 3D Factory with color-coded machines to show status

Data Analysis and Reporting

• Analysis and Web-based reporting across a variety of dimensions, such as calendar days, shifts, production lines, individual work cells. Drill down from one level of report to lower levels for more detail.
•Pareto of Issues Reports, Work Cell Reports, State Reports across all cells
• Response Time Reports, Resolution Time Reports, Efficiency Reports, Scrap Count and Reason Reports.
• Export report data to CSV files for Excel or other third-party graphics packages

Virtual Factory Server Host Computer

• One of the following: Microsoft® Windows XP Professional, Microsoft Vista™ Vista Business or Ultimate, Microsoft Windows Server 2003, or Microsoft Windows Server 2008
• Microsoft® IIS and Microsoft®.NET 2.0