



The OSGi Service Platform in Industrial Environments

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10.22.03



Agenda

- **Where the OSGi technology will be used first**
- **Problems solved by the OSGi Service Platform**
- **The future of the OSGi standard in industrial markets**



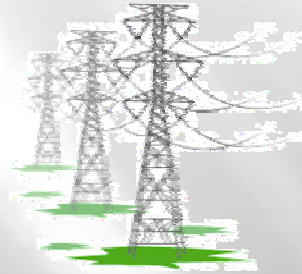


Industrial Applications

Asset tracking
Automated parking systems
Automotive manufacture
Avionics and engine control
Car washes
Chemicals processing
Clean room air handlers/scrubbers
Cluster tools
Compressor/decompressor stations
Drilling rigs
Electro-pneumatic braking
Emergency power generation
Emissions monitoring and testing
Equipment monitoring
Exhaust analysis
Fermentation control
Fire/gas leak detection
Food processing
Fusion Laser Control
Gas delivery systems



Gas pipelines and tank farms
Gas station automation
Harvester/combine equipment
IC manufacturing
ID systems
Injection molding
LCD display manufacture
Livestock management
Mass flow control/gas panels
Mass spectrometers
Material tracking and handling
Medical instruments
Metals processing
Milk processing
Oil wells
Oxidation furnaces
Package marking
Paint booths
Pallet-tracking systems
Parts pull systems

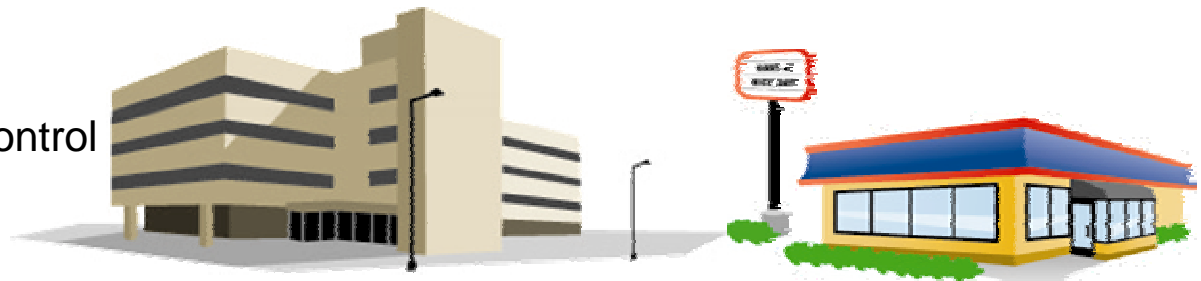


PCB manufacture
Petrochemicals
Pollution monitoring and control
Power generation and distribution
Printing machinery
Pulp and paper manufacturing
Remote monitoring
Shock absorber testing
Special deposition equipment
Textile dyeing and manufacturing
Toxic gas monitoring
Toxic site monitoring and remediation
Underwater exploration vehicles
Vacuum gauges
Vacuum systems
Vehicle systems
Wafer cassette tracking
Wafer inspection
Water/wastewater treatment
Wet stations



Building Automation

- Not usually considered industrial, but certainly Building Automation is not the home, telematics or mobile phone market
- Small buildings
 - Light commercial building automation configuration system
 - Typically a one-box, no-PC environment, with many different applications
 - Configuration
 - Monitor and control
 - Data logging
 - Scheduling
 - Remote trouble reporting usually via POTS (rarely GSM or broadband)
- Large buildings
 - Floor management panels for both control and visualization





Transportation

- Steel wheeled (trains)
 - Passenger train car “in car” systems are an integrated environment with many different technologies employed
 - Lighting
 - Door control
 - Signage
 - Fire safety and suppression
 - Heating, ventilation and air conditioning
 - Surveillance
- Rubber wheeled (buses, trucks)
 - Integrated communication, navigation, datalogging platforms
 - Regulatory compliance systems





Myths and Reality

- Myth
 - Industrial systems are often single vendor, so OSGi is not valuable
- Reality
 - Even with a single vendor, initial and final integration is a significant development cost
- Example
 - Hardware and software from a single vendor is created by multiple groups within the company, located in different building, cities or countries.
 - The OSGi Service Platform ensures a consistent architecture and interfaces and reduces the specification burden



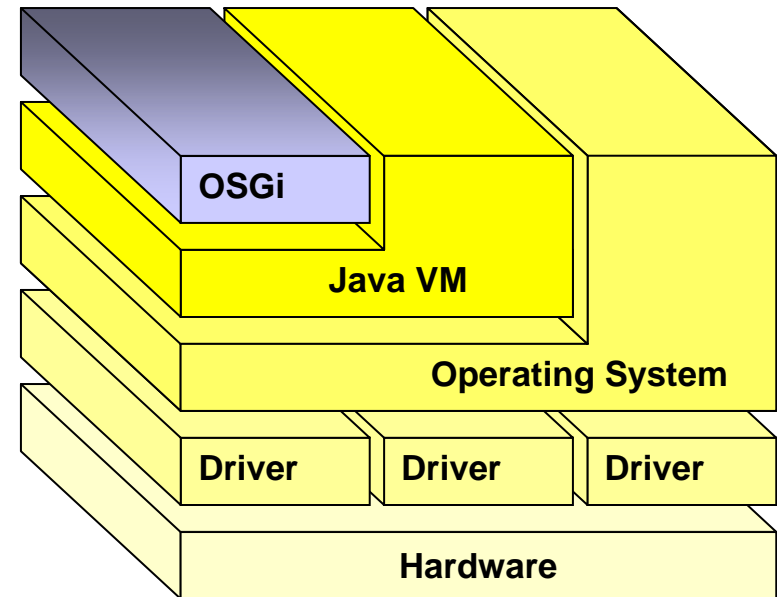
Myths and Reality

- Myth
 - The “O” in OSGi makes it unsuitable for industrial control, because manufacturer can’t control access
- Reality
 - Implementers are free to set their own policies—including fully closed systems
- Example
 - train car integrator specifies device access software interfaces that subcontractors and suppliers must conform to, which eases integration
- Fact
 - “open” standards make great platforms for “closed” systems, as most of the advantages remain as compared to proprietary systems



OSGi Value to Industrial Control Vendors

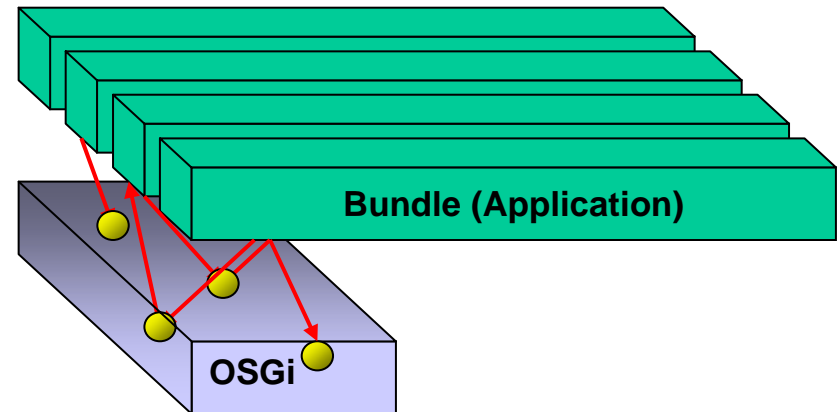
- Stable, modular, future-proof execution environment
- Integrates “islands of automation”
 - Frequent requirement is integration with legacy systems that span decades
- Reduction of porting cost
 - Scaling up/down with processor or platform
 - Over time, as one is forced to change platforms or processors





OSGi Value to Industrial Control Vendors

- Ability to update individual software components without stopping services or rebooting
 - Monitoring
 - Control
 - Data logging
 - Scheduling
 - Trending
- Optional centralized scalable management
 - “Remote” management is often a technician with a laptop connected locally





What Will It Take?

- Marketing/PR by member companies directed at industrial control system providers
- Recruitment, by member companies, of new OSGi members in the industrial control vendor segment
- OSGi related speaking engagements at industrial control conferences
- Leadership by industrial controls suppliers
 - Early adopters
 - Published business cases
- Pilot projects that demonstrate the value proposition to decision makers



Questions?