Audi EC4P: Manufacturing Reimagined at the Edge

Built on VMware Cloud Foundation, Audi's Edge Cloud for 4 Production (EC4P) modernizes factory operations with a centralized, software defined edge platform for automation, AI and industrial control.

Key Statistics

~100 Robots synchronized at 1 ms cycle time - real time deterministic control

Thousands of industrial PCs eliminated

Several hundred vehicle bodies manufactured daily - a unique industry milestone

TÜV Certified independently verified for industrial safety and compliance

Challenges

Traditional Manufacturing Infrastructure Challenges

- Fragmented factory infrastructure
- Thousands of industrial PCs
- High maintenance and downtime
- Siloed OT systems
- Difficult lifecycle management
- Slow deployment of new capabilities
- Inconsistent security and standardization

The Transformation

Edge Cloud for 4 Production (EC4P)

Virtual PLCs (vPLCs)
Replace distributed hardware controls

Factory applications
Virtualized and centrally managed

Robotics & industrial automation
~100 robots at millisecond precision

AI & analytics
Foundation for AI driven manufacturing

Edge Cloud for 4 Productions (EC4P)
Powered by VMware Cloud Foundation

From Complex & Fragmented to Unified & Intelligent

Traditional Factory IT		VCF EDGE With EC4P
Thousand of Industrial PC's	→	Centralized software defined platform
Manual site by site Operations	→	Centralized lifecycle management
Siloed IT infrastructure	→	Unified IT + OT Platform
Hardware bound automation	→	Virtualized industrial control

Outcomes

Operational Outcomes

- Real-time deterministic operations
- Millisecond latency for robotics
- Consolidated infrastructure platform
- Unified VM, container, AI operations
- Improved operational resilience
- Reduced local hardware footprint
- IT/OT convergence
- Foundation for AI-driven manufacturing

Measured Business Value

- 1,000+ industrial PCs eliminated
- Lower operational costs
- Reduced maintenance complexity
- Faster rollout of new capabilities
- Improved IT security
- Increased production stability
- Centralized lifecycle management
- Greater scalability across factories

Why This Matters?

Reduce Cost
Eliminate hardware sprawl and reduce operational overhead.

Increase Agility
Deploy new factory applications and automation faster.

Enable AI Innovation
Create the foundation for AI-driven manufacturing and automation.

Scale Operations
Operate distributed manufacturing sites with a consistent cloud operating model.

Improve Resilience
Deliver highly available operations for mission-critical OT environments.

Key Takeaways

EC4P demonstrates that VCF Edge can run real-time industrial automation workloads at production scale while enabling centralized cloud-like operations across manufacturing environments

Operate factories with the simplicity of the cloud at the edge

A unified platform for automation, AI, and edge operations

To Learn more visit VMware Cloud Foundation Edge

Download the Full ARC Advisory Group White Paper

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