

Multi-ECU Over-the-Air Software Updates for Connected Vehicles



Increasing Dependency and Complexity

An increasing dependency on software, electronic control units (ECUs), and microprocessors to power modern vehicle systems and features—combined with the rising intricacy and complexity of managing software updates and data collection for millions of vehicles around the world—calls for an automotive grade combination of high performance telematics processors backed by a robust over-the-air (OTA) software and data management solution.

Efficient, Secure, Scalable Multi-ECU OTA Software Updates

Airbiquity® and STMicroelectronics (ST) joined forces to make this a reality by integrating Airbiquity's OTAmatic® software and data management offering into ST's Telemaco3P Evaluation Board (MTP) telematics processor serving as a primary ECU/OTA gateway for efficient, secure, and scalable multi-ECU software updates and data collection. This demonstration highlights the interoperability between Airbiquity's cloud-based service delivery capability and ST's on-board Telemaco3P MTP platform supporting multiple embedded ECUs for a variety of software update campaign scenarios, and automaker and automotive supplier OTA use cases.

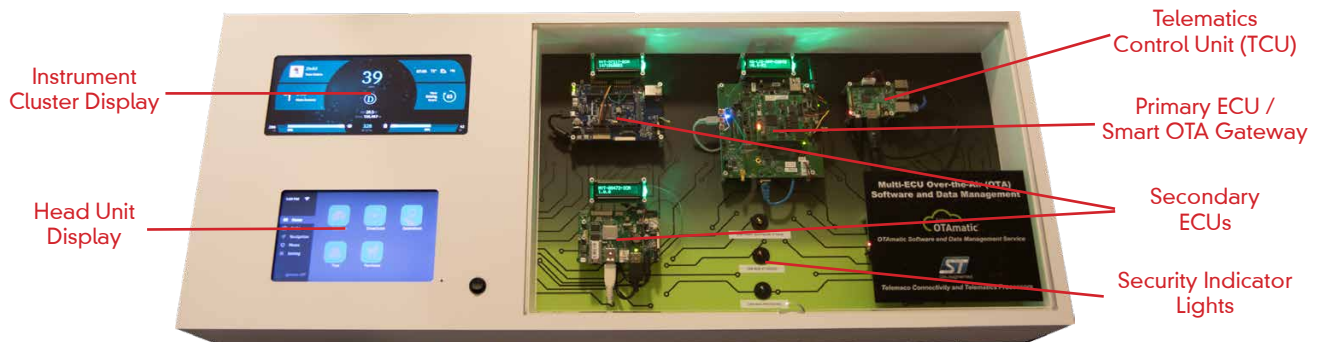


OTA Software and Data Management

Airbiquity OTAmatic securely orchestrates and automates connected vehicle software update and data management campaigns from the cloud. OTAmatic provides a sophisticated back-end service delivery management capability with highly refined vehicle and device targeting, discrete policy and privacy controls, customizable consumer communications, and solution deployment option flexibility. OTAmatic also features an edge analytics framework supporting upgradeable data analytics modules and enhanced multi-layer cybersecurity protection via integration of the compromise-resilient Uptane Security Framework.

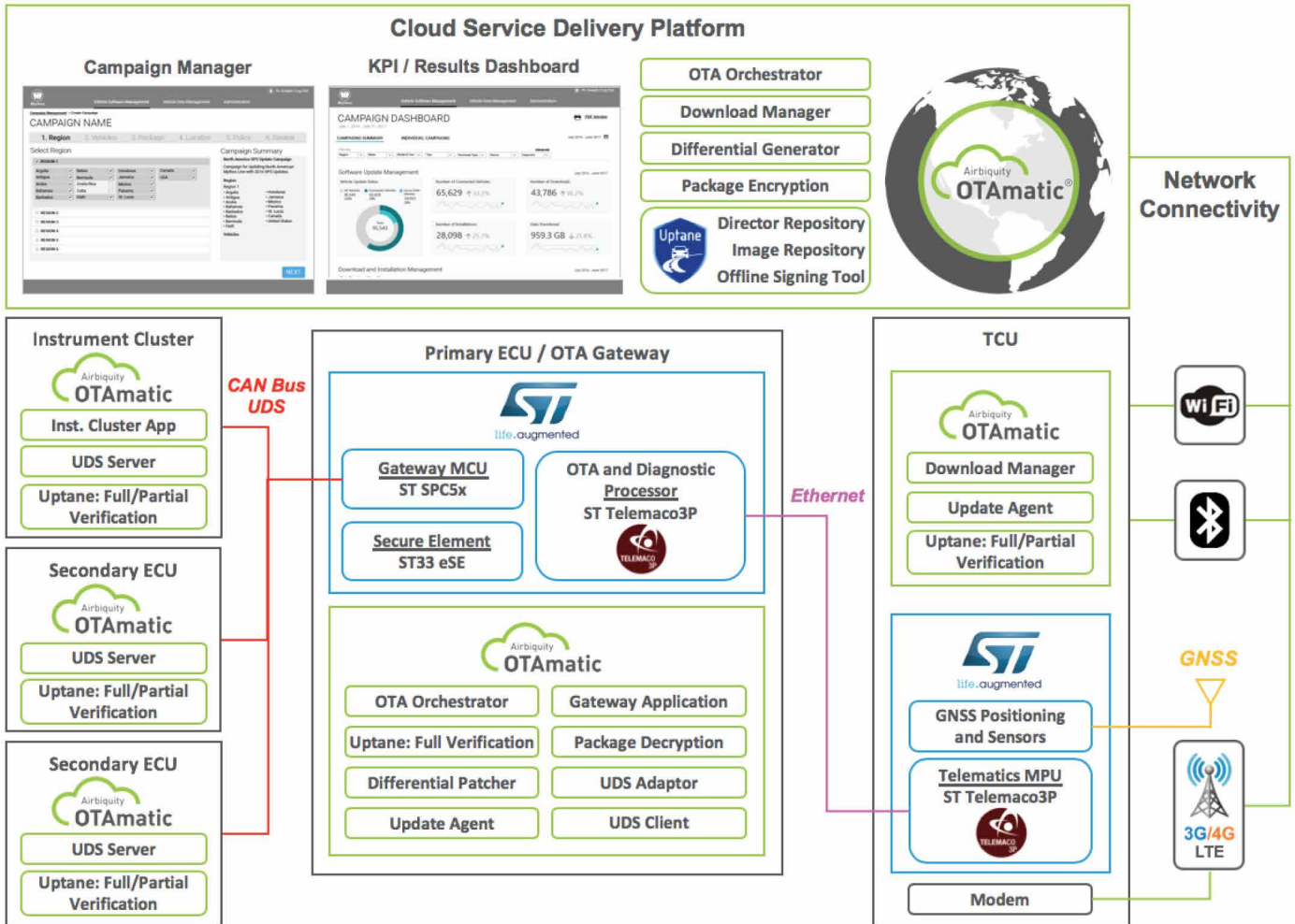
Telemaco Processors

ST Telemaco3P Processors provide strong security with eHSM, safety support, high bandwidth connectivity interfaces (ETH) and processing capability to handle wireless data management for automotive telematics. They can also control the in-vehicle CAN bus through an isolated Cortex-M3 subsystem running a dedicated real-time operating system. With flexible CPU core configurations, Telemaco3P processors allow implementation of scalable systems throughout the wide variety of vehicle connectivity applications requiring Linux and other Posix operating systems. Telemaco3P is also Automotive Grade 2 (-40/+105°C) qualified.



Airbiquity-ST Multi-ECU OTA Software Update Demonstration

Airbiquity-ST Multi-ECU OTA Software Update Solution — Functional View —



- Single and Multi-ECU Software Updates
 - Unified Diagnostic Services (UDS) Updates for Secondary and Legacy ECUs
- Multiple Software Update Installations
 - ECU Firmware and Applications
 - Instrument Cluster HMI and Head Unit System
- Advanced OTA Software Update Orchestration
 - Preconditions, Priorities and Dependencies
 - Fault and Error Detection, Recovery and Rollback
- Standard-Based Security Integration
 - PKI, PSK, and TLS 1.2
 - Uptane-Based Security Design
- ST Telemaco3P MTP Processor
 - Primary ECU/OTA Gateway Controlling CAN Bus
 - High Bandwidth Connectivity Interfaces (ETH)
 - Isolated Cortex-M3 Subsystem with Real-Time OS
 - High Performance Security with Embedded eHSM
- Customized Consumer Notifications
 - Head Unit and Smartphone Display HMI
- Back-End Service Management Portal
 - Step-by-Step Campaign Configuration Process
 - Separate Software and Data Management Tracks
- Comprehensive Campaign Reporting
 - Summary and Campaign Specific Results

For Additional Information



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Contact Your Local ST Representative
<http://www.st.com/salesoffices>