

# Sierra Wireless AirVantage™ Platform

## A complete M2M cloud platform for M2M application development, deployment and operation.

AirVantage Platform is a secure, scalable cloud Platform as a Service (PaaS) for quickly building and maintaining wireless M2M applications. AirVantage Platform offers M2M Solution Providers accelerated development and reduced deployment and operational support costs to deploy and operate M2M applications. M2M Solution Providers using AirVantage Platform can:

- Differentiate your product by creating connected M2M services
- Create new revenue generating services
- Reduce the operational costs of existing services
- Improve the service level agreements of existing services
- Reduce the risks and improve the time-to-market of your M2M application deployment

For M2M application developers, AirVantage Platform has the M2M infrastructure and software development tools to quickly enable the development of M2M applications. The development tools support embedded, web user interface (UI) and mobile UI application development and are tightly integrated to the embedded ready agent and the web services provided by the AirVantage Services Platform. These tools allow the embedded application developer to leverage Ready Agent capabilities to focus on the embedded portion of the application and allow the UI developer to leverage the platform Web Services to create the M2M application.

For the operational support, the AirVantage Operating Portal offers a complete set of UIs that can be quickly augmented to meet specific management and control needs. The Operating Portal interfaces to the Mobile Network Operator interfaces, to offer a subscription management user interface that enables such operator services as device activation/deactivation and data limit management. The Operating Portal also supports mobile device management, which facilitates issuance of a new Access Point Name, remotely running an AT command, or collecting device log information. With minimal integration into the embedded asset (the connected machine), control and monitoring of each asset enables remote support and maintenance of the M2M application.



### KEY OPERATIONAL BENEFITS:

- Quickly and easily connect and manage wireless devices and assets
- Quickly deploy a large fleet of M2M-connected assets
- Reduce operations support effort and costs
- Ensure high service availability with scalable and secure M2M infrastructure
- Reduce deployment costs and time with a cloud-hosted M2M application platform

### KEY DEVELOPMENT BENEFITS:

- Immediately start M2M application development
- Build powerful M2M applications using AirVantage Web Services
- Develop embedded, web, and mobile applications with integrated Eclipse™-based development tools
- Eliminate operations and support application development
- Leverage component-based embedded development tools or native C, Java and LUA development

# Sierra Wireless

## AirVantage™ Platform

## AirVantage Platform Overview

The AirVantage Platform includes several components to allow M2M Solution Providers to design, develop, deploy, manage and operate a fleet of wirelessly connected assets. The core of the AirVantage Platform is a scalable and secure M2M infrastructure services oriented architecture (SOA) platform, with a powerful M2M Web Services interface from which the Operating Portal is deployed.

**AirVantage™ Operating Portal:** set of Software as a Service (SaaS) applications supporting deployment, operations and support tasks

**AirVantage™ Ready Agent:** each wireless device or wirelessly attached asset requires a small agent to support server messaging, asset data collection, logging, development tools and Operating Portal functions.

**AirVantage™ Developer Suite:** comprehensive set of application development tools that interface with the Ready Agent and the Web Services API to enable graphical embedded application development, defining the data model to closely align with web application development for desktops and gadget development for phones

### AIRVANTAGE SERVICES PLATFORM

The Services Platform is the M2M infrastructure core of AirVantage. It is a set of M2M Web Services hosted at secure North American and European data centers. Each data center offers a fully redundant, scalable system to support large M2M application deployments, allowing the application to increase its size without adding direct infrastructure cost to your operation. Each fully redundant data center supports complete failover capabilities and are security, performance and usage monitored 24 hours a day, 7 days a week. Access to AirVantage Web Services is through an authenticated and secure internet connection and can be provided over a VPN connection. The Services Platform also hosts the Operating Portal applications such that operational staff can deploy and operate a fleet of M2M assets.

### AIRVANTAGE OPERATING PORTAL

The Operating Portal makes all administrative and management functions available through a web interface to manage subscriptions, devices and assets.

Subscription Management provides a direct link with the Mobile Network Operator's device activation interfaces to support all subscription life cycle management requirements, and offers an airtime consumption management control interface. No matter where in the world your application is deployed, the devices can be activated.

Device Management offers a rich interface to manage each wireless device. Operations support staff use the secure interfaces to proactively manage network connectivity, device connection and configuration settings. Support staff are able to issue AT commands or OMA-DM commands directly to each device or to a group of devices. Device Management also supports firmware over-the-air upgrade campaign management.

An asset is the equipment connected to your application over a wireless network. Asset Management requires some integration to the assets computing or control system and supports event data collection, data logging, data search and processing, as well as sending remote commands, such as asset reset. Asset integration creates server side Web Services to enable access to the asset data to create powerful M2M applications. Asset Management is used to perform nearly any action, from moving a security camera to remotely resetting a circuit breaker on a utility grid.



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## AIRVANTAGE READY AGENT

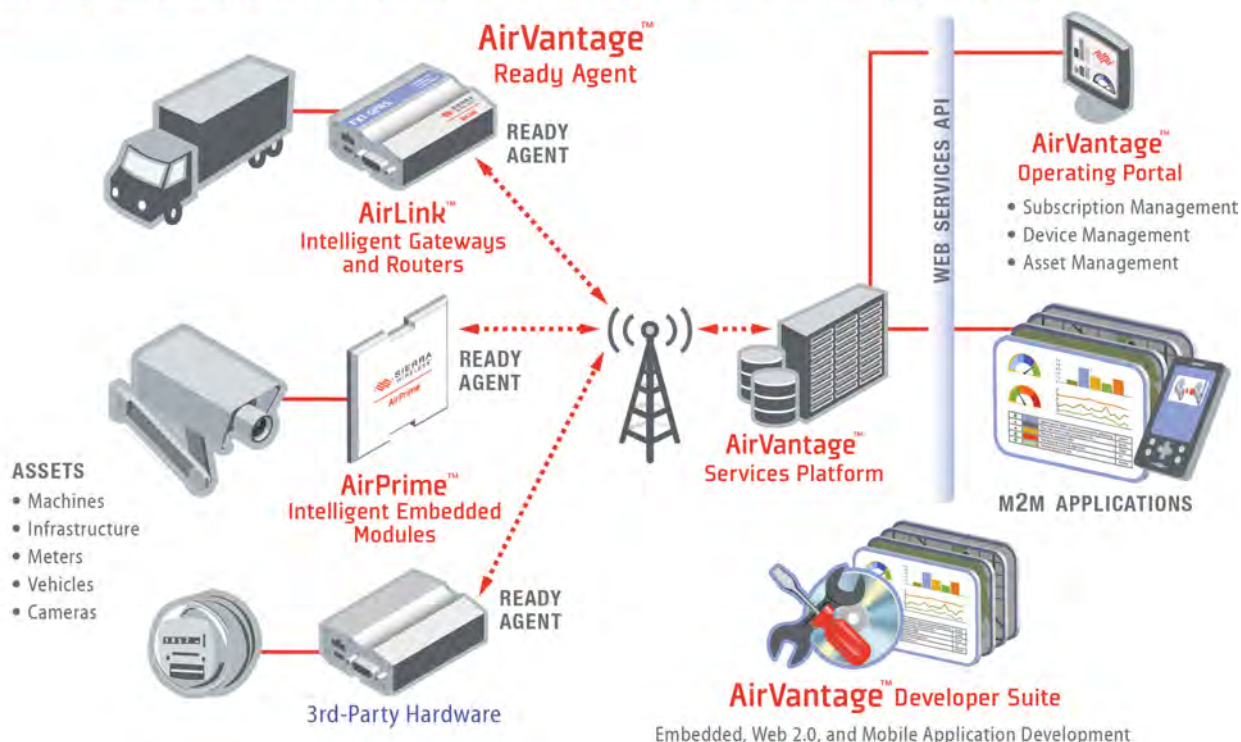
Ready Agent is an open, embedded agent that enables embedded applications to connect to the Services Platform. With the Services Platform, Ready Agent creates a robust wireless client-server infrastructure to bring complex M2M applications to the market quickly and reliably. Ready Agent includes the Operating Portal clients to manage subscriptions, devices and assets, and is therefore tightly coupled to those applications in order to operate and support the M2M application. The Ready Agent is instrumental in supporting software updates, managing network configuration parameters, collecting asset data and controlling assets.

Ready Agent lets you rapidly connect a wide range of devices to the AirVantage Platform and may be pre-integrated into the mobile broadband device or integrated with the embedded application processor. The Developer Suite is tightly integrated with Ready Agent to support embedded application development and the retrieval of information for development, including debug logs.

## AIRVANTAGE DEVELOPER SUITE

Developer Suite is an Eclipse™-based toolset supporting embedded development and application development. The Embedded Developer Studio is tightly integrated with the Ready Agent. Embedded application development can be in C, C++, Java or LUA or the developer can use the component-based graphical development tools to create an integrated application without detailed knowledge of the embedded system. The Application Developer Studio is integrated with the Services Platform web services APIs and the Operating Portal, supporting web UI, mobile UI and Google gadget development.

## Complete Solution to Build and Operate M2M Applications



# Sierra Wireless AirVantage™ Platform

## AirVantage Platform Specifications

### SERVICES PLATFORM

#### Development benefits

- Quickly build powerful M2M applications using Web Services APIs
- Significantly improve time to market
- Eliminate M2M client-server infrastructure development
- Eliminate operations and support application development
- Reduce application development effort and time

#### Operations + support benefits

- Simplify M2M device deployment efforts
- Reduce site visits and control data usage costs
- Reduce operational support effort

#### Platform security + reliability

- Secured and monitored 24/7/365 with alarms, cameras, proximity and biometric man-trap access points
- Tier III configured redundant UPS and backup generation systems

### OPERATING PORTAL

#### Subscription Management

- Direct and secure link to Mobile Network Operator's activation infrastructure
- Subscription lifecycle management
- Billing plan selection, management and data usage alerts

#### Device Management

- Wireless device configuration and network profile setup
- Direct device control using AT or OMA-DM commands
- Firmware over-the-air campaign management
- Differential updates to significantly reduce data consumption of each update

#### Asset Management

- Asset data available from the Services Platform web services APIs
- Embedded application software over-the-air campaign management
- Asset data collection, logging, search and event management
- Two-way data exchange, including asset control commands

### READY AGENT

- Multi-bearer wireless and wired communications support and management
- Integrated support for Subscription, Device and Asset Management
- Device firmware and asset application updates
- Secure and efficient data exchange protocol
- AirPrime™ integration included in Open AT devices or Linux SDK support
- AirLink integration included with Fastrack and GL series or Linux SDK support
- Third party integration capable with a highly portable Linux compatible Ready Agent SDK



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### DEVELOPER SUITE

- Based on the open source Eclipse™ tools development platform

#### Embedded development tools

- Based on existing embedded Eclipse IDEs
- Integrated Ready Agent C, C++, Java or LUA APIs for application development
- Optional component-based, graphical modeling development environment
- Automatic embedded application update

#### M2M application development tools

- Web and mobile application development tools
- Google gadget generation tools
- Operating Portal graphical configuration tools