



GateSync™

Extending Airline Enterprise Boundaries



THE AIRPLANE IS THE NETWORK

ENVISION A NEW, INTELLIGENT BREED OF WIRELESS SERVICES WHERE ...

- Your fleet-based content, computing devices and data become globally accessible, enabling smarter applications
- Each airplane becomes a connected and intelligent node on your global enterprise airline data network
- Real-time access to data and airplane/tarmac devices streamlines flight dispatch and arrival processes
- You now have the ability to transfer content to/from airplane for each individual flight segment — at each ground interval
- You enjoy crucial applications to proactively monitor and manage airplane on-board systems and processes
- You enjoy service provider assurances for content up/downloading (capable of bulk IFE, flight-critical or time-critical information) — all while providing the airline enterprise with real-time status to each airplane and flight segment
- A robust network platform enables innovative applications to enhance the passenger onboard experience
- You have an application platform to realize new revenue streams from enhanced media advertising services

Extending Airline Enterprise Boundaries with GateSync™

CURRENT GENERATION OF WIRELESS CONNECTIVITY IS COSTLY, UNPREDICTABLE AND LACKS GLOBAL DEPLOYMENT ASSURANCES

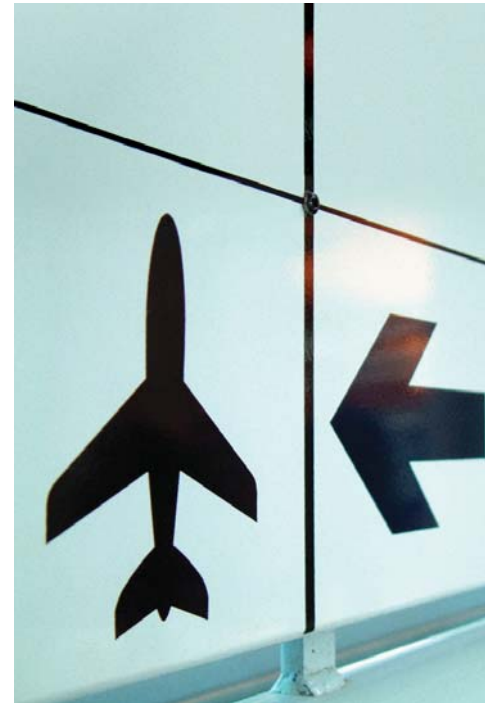
Many of the current ground-based wireless network solutions lack the predictability and performance that airlines require for next-generation airplanes. The networks that many wireless service providers use are hampered by interference from competing users, applications and networks. In addition, the airline mission dictates a model for global network operations — which leaves many solutions coming up short due to incompatibilities, configuration and regulatory issues, among others.

The net result of this:

- a) Wireless network solutions capable of loading <100MB each ground interval, when the mission for new e-Enabled and existing advanced airplanes requires several gigabytes per airplane per turn
- b) Unscalable solutions that do not support the vision of flight-specific content loading, for thousands of flight operations per day
- c) Reactive operational and maintenance processes
- d) This convoluted “sneaker-net” approach is costly, time consuming and logistically complex, with only a best-effort commitment — a methodology deemed insufficient to support large e-Enabled fleets.

Most airplane data-loading methods are currently a labyrinth of manual and networked processes that are divided among airline, airport and other trading partner personnel.

Until GateSync™.



WHAT'S THE PROBLEM? AND, WHY IS GATESYNC THE SOLUTION?

The need for airplane ground-based connectivity is no longer optional, and the connectivity issues are not specific to any of the underlying technologies. Current solutions based on Wi-Fi and cellular networks are capable of offering very high throughput — but unfortunately, most of these solutions have performance issues specific to each individual airport, associated infrastructure (i.e., building and aircraft operating area layouts), time-of-day/year, service(s) being requested and network operator priorities — among others. All of these issues are largely out of the airlines' control.

The GateSync solution is founded on an entirely different premise: a **"network of networks"** approach that fuses multiple network technologies like 4G/WiMAX, Wi-Fi and GSM, at the airplane level, with the ability to sense which network (and specific configuration of that network) is optimal for a given application and service.

GateSync deployment options offer the airline choices for dedicated/private wireless infrastructure where the mission dictates high-throughput, as well as options for coupling with local wireless carriers and/or existing airport wireless infrastructures. The net result is powerful: a **globally deployable wireless network solution that operates to airline priorities and is capable of very high-throughput — guaranteed anytime, anywhere.**

GATESYNC: A NEXT GENERATION WIRELESS SERVICE OFFERING "A-TO-Z" INTEGRATION

The novel, and patented, GateSync solution combines Proximetry's AirSync/GS software, Thales' Enhanced Terminal Wireless LAN unit (eTWLU) hardware, and CSC's global network infrastructure and industry-leading service management capabilities. The result is a seamless electronic bridge linking airplanes with their airlines' enterprise network — regardless of airport location

around the world. Most importantly, through the ecosystem of GateSync partners, the solution is integrated and extensible to flight-side systems/devices in addition to providing external interfaces to content providers or airline trading partners — with an architecture that yields a seamless approach for airplane content uploads/downloads — anytime, anywhere.

The GateSync solution offers:

- **A reliable, secure, private global network** leveraged to extend the airlines' own enterprise network and potentially eliminating dependencies on existing resources found at most airports. Managed end-to-end by CSC, GateSync builds on an integrated application-aware communications infrastructure. Unlike other network services, the GateSync solution and its underlying software couple global content, data management and hierarchical content caching to an intelligent, business rules-driven wireless network fabric.

- **Real-time monitoring of flight-side network devices and content loads.** This allows airlines, OEMs and maintenance service providers to more readily deliver/access content that enables more sophisticated applications and prognostic techniques — all in an effort to proactively address potential failures and system breakdowns before they become costly problems.
- **Access to onboard transactional data for statistical and supply-chain planning purposes.** This provides a menu of new services and revenue streams to enhance the passenger experience, such as broader, richer

and personalized entertainment choices. Includes the ability to introduce flight-specific or even seat-targeted promotional applications.

- **Near-real time access to passenger feedback,** flight crew reports and usage data associated with in-flight services. This capability provides invaluable feedback for improving the airline experience and furnishes data on consumer behavior. Access to this information gives airlines the ability to make rapid and incremental changes to the customer product, as well as target potential additional revenue opportunities.



THE GATESYNC SOLUTION IS ADAPTABLE TO THE CRITICALITY OF THE DATA, THE STATE/PHASE OF OPERATION OF THE AIRPLANE, AND THE REQUIRED SECURITY LEVELS OF THE INFORMATION.

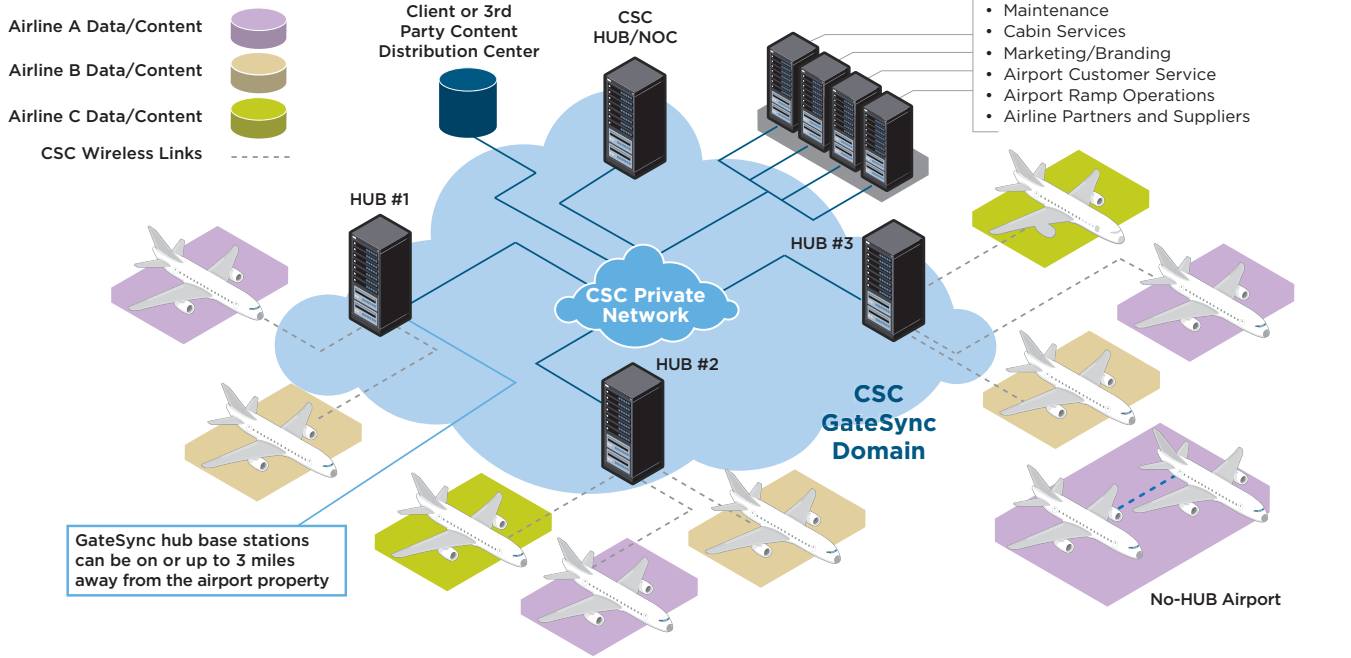
REPRESENTATIVE REQUIREMENTS FOR CABIN CONNECTIVITY				
Application	Characteristics	Frequency	Direction	Recipient
Monthly IFE Media	100GB - 200 GB (Trickle Charge)	New Content Each Month	↑	Aircraft
Daily News	300 - 500 Mbytes	2 - 3 Uploads Per Day	↑	Aircraft
“Near Live” TV Programming	0.5 - 1 Gbyte	Every Three Days to Daily	↑	Aircraft
Passenger Preferences and Frequent Flyer DB	100 Mbytes	Weekly to Daily as Required	↓	Marketing
Targeted Advertising	100 - 300 Mbytes	Daily to Per Flight Segment	↑	Aircraft
Passenger Manifest	0.100 Mbytes	Per Flight Segment	↓	Aircraft
Passenger IFE Usage Data, Surveys	10 - 50 Mbytes	Daily to Per Flight Segment	↓	Marketing, Customer Service
Aircraft Health Data/Prognostics	1 Gbyte	Weekly to Daily	↓	Maintenance/Vehicle
Dispatch and Navigation	100 Mbytes	Per Flight Segment	↑	Aircraft
Crew Logs	100 Mbytes	Per Flight Segment	↓	Maintenance/Vehicle

GATESYNC — A TURN-KEY SERVICE THAT DELIVERS IMPROVED P&L

Feature	Benefits
<ul style="list-style-type: none"> Seamless integration with airline, airframe, content provider and other trading partner systems. 	<ul style="list-style-type: none"> Comprehensive, and automated, information delivery to/from the airlines' most crucial asset — more timely information, enabling better customer service.
<ul style="list-style-type: none"> Network selection and bandwidth allocation when and where most needed 	<ul style="list-style-type: none"> Applications that perform better. More efficient mechanisms to transport large amounts of data, regardless of network load
<ul style="list-style-type: none"> Global coverage 	<ul style="list-style-type: none"> Networked airplanes at airports — anytime, anywhere
<ul style="list-style-type: none"> Independent, intelligent data relay between airplanes. Patented airplane-to-airplane mode enables standalone operations and auto-matic updates 	<ul style="list-style-type: none"> Coverage at airports where there are no GateSync hubs
<ul style="list-style-type: none"> Dynamically configurable based on pre-assigned airline business rules and real-time events. Globally deployable communications network selection according to airline priorities and cost constraints. 	<ul style="list-style-type: none"> Tailored to the specific operating needs of each airline. Significant savings by eliminating duplicative or siloed network solutions and network subscriptions. An “evergreen” network platform, providing airline with flexibility and control.
<ul style="list-style-type: none"> Highly secure infrastructure and application-specific network service 	<ul style="list-style-type: none"> A network designed to deal with sensitive and flight-critical data —with an emphasis on airline proprietary data as well as addressing regulatory and entertainment industry concerns surrounding protected content.
<ul style="list-style-type: none"> Enabling richer applications for airplane system and engine health monitoring — self-tuning networks that allocate bandwidth during adverse maintenance events 	<ul style="list-style-type: none"> Network intelligence ensures timely delivery of maintenance information — flexibility to move information between airplane assets maximizes dispatch options
<ul style="list-style-type: none"> Sophisticated, on-board, standards-based multi-mode transceiver (Wi-Fi, WiMAX and GSM) 	<ul style="list-style-type: none"> Flexible, redundant, highly integrated and efficient data communications links — enables unified wireless business case. Provides industry's broadest range of global operating scenarios and network options.
<ul style="list-style-type: none"> Quality of Service (QoS) assurances and service level guarantees 	<ul style="list-style-type: none"> Predictable network costs and application performance. Lower total cost of ownership through network independence and private/public network options
<ul style="list-style-type: none"> GateSync system is entirely automatic 	<ul style="list-style-type: none"> No involvement from airplane crew or maintenance personnel required



GATESYNC™ AIRLINE AND AIRPORT APPLICATIONS



Two airplanes of the same airline are parked at adjacent gates, are connected to the same wireless base station, and have similar departure times. Both airplanes are in the process of downloading content from the GateSync network. However, halfway through this process, due to operational constraints (boarding delays, etc.), the departure time of the second airplane is updated and is now a dramatically later departure than that of the first airplane. The GateSync tracking logic sees this shift and dynamically adjusts priorities of each data set and adjusts the network performance to place the priorities of the first airplane over the second, by shifting bandwidth in favor of the first airplane and to free up other available bandwidth to other airplanes at the same hub.

INTELLIGENCE = INSIGHT; INSIGHT = VALUE

GateSync uses unique, and patented, core technology enabling a more robust breadth of network services based on intelligent wireless link selection and management capabilities.

Intelligence ensures the efficient management of wireless resources — resource parameters such as protocols, frequencies, power levels and traffic priorities — all in an effort to dynamically optimize bandwidth for specified, airline-defined operational scenarios, and scaled to meet the demands of global operating hubs.

One of GateSync's more novel concepts is the airplane's ability to authenticate with other "company" resources (adjacent airplane or vehicles) autonomously forming a mesh network. Through this type of

network meshing or relay, airplanes can engage in content cross-loading in the absence of a host network. In these cases, an airplane serves as the virtual hub for other airplanes requiring content updates. This GateSync relay mode also plays a crucial role at major network sites because airplanes with excellent network conditions can relay connectivity and content to airplanes with poor network environments. Through this mechanism, GateSync networks will provide better aggregate performance and make more efficient use of the wireless spectrum.

GATESYNC MAKES GOOD BUSINESS SENSE

CSC has the requisite ground infrastructure.

CSC is leveraging its existing global private network. No deployment costs to users. Tested. Proven.

CSC manages secure networks for mission-critical operations, including battlefield environments, financial industry, medical records fields, intelligence agencies, manufacturing and aviation companies, among others. CSC is the industry benchmark for data and network security.

CSC HAS THE GLOBAL EXPERIENCE AND ENDURING RESOURCES TO DELIVER ON PROMISES MADE.



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About CSC

The mission of CSC is to be a global leader in providing technology-enabled business solutions and services.

With the broadest range of capabilities, CSC offers clients the solutions they need to manage complexity, focus on core businesses, collaborate with partners and clients, and improve operations.

CSC makes a special point of understanding its clients and provides experts with real-world experience to work with them. CSC is vendor-independent, delivering solutions that best meet each client's unique requirements.

For 50 years, clients in industries and governments worldwide have trusted CSC with their business process and information systems outsourcing, systems integration and consulting needs.

The company trades on the New York Stock Exchange under the symbol "CSC."

www.csc.com

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