

# AT&T Inflight Connectivity Services

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Everything we're doing at AT&T is about accelerating this future to mobilize a world that works for people.

Randall Stephenson, 2014

”



# Connectivity Technology Options

AT&T plans include support for two in-flight connectivity technologies, providing flexibility to address the distinct requirements of specific fleets.

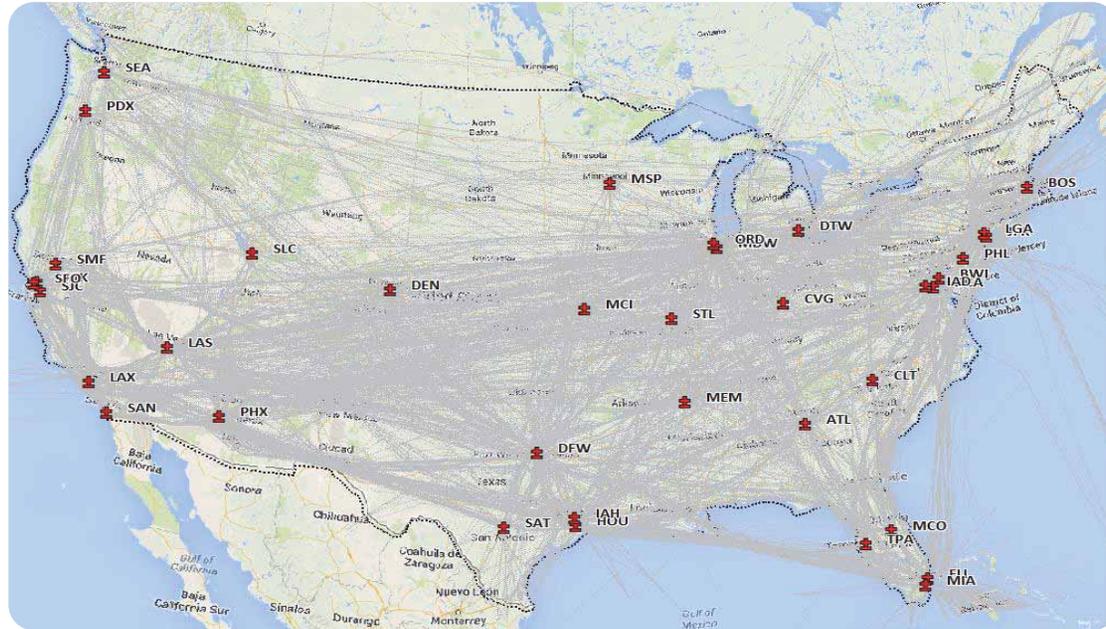


| Technology          | Legacy ATG                             | Advanced ATG                           | ATG/Satellite Hybrid     | Satellite  |
|---------------------|--|--|--------------------------|--|
| Maximum Speed*      | up to <10Mbps / plane                  | up to 30Mbps / plane                   | ATG & Satellite          | up to 50-70Mbps / plane<br>Depends on technology |
| Latency             | ↓                                      | ↓                                      | ●                        | ↑  |
| Planned Reliability | ↑                                      | ↑                                      | ↑                        | ●  |
| Cost                | ↓                                      | ↓                                      | ↑                        | ↑  |
| Ease of Evolution   | ↓                                      | ↑                                      | ●                        | ↓  |
| Availability        | >10k Feet<br>Potential for below 10kft | >10k Feet<br>Potential for below 10kft | Gate-to-gate             | Gate-to-gate                                     |
| Applicable Fleet    | Domestic                               | Domestic                               | International / Domestic | International / Domestic                         |

- Maximum theoretical download speeds (for satellites, maximum speeds also depend on concentration of aircraft)



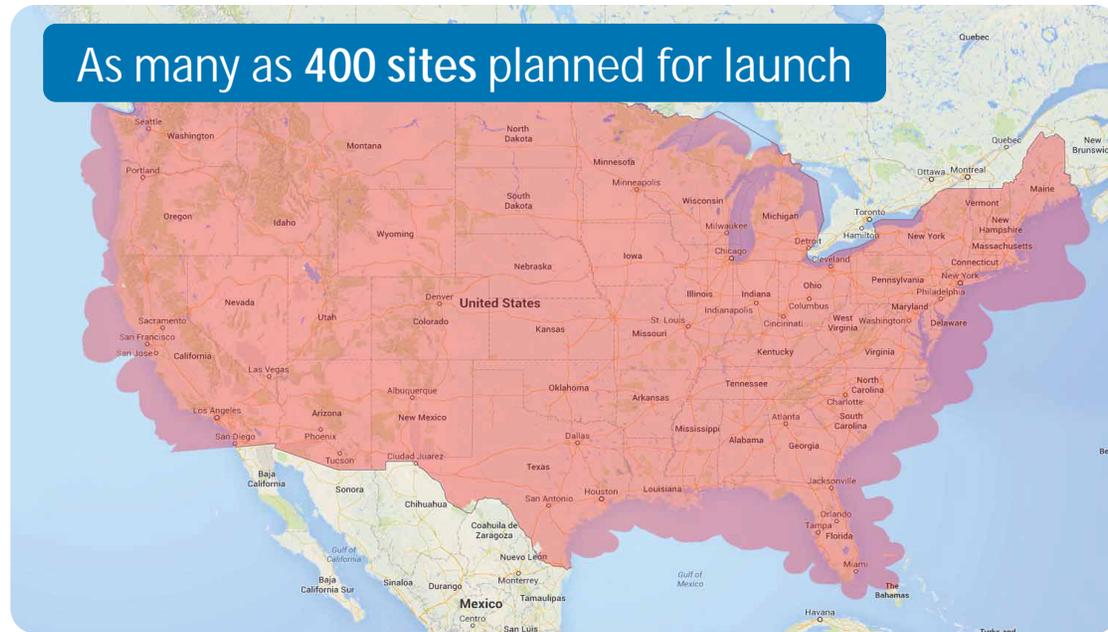
# Anchor Airports and Flight Routes



- AT&T completed detailed traffic mapping and planning process
- Planned network deployment is designed to address critical aircraft routes and corridors



# AT&T Build Plan - Initial Launch



- LTE based technology
- Access to more than 60,000 existing sites – Quick and easy capacity enhancements

*\* Map displays a high-level approximation of wireless coverage. There are gaps in coverage that are not shown by this high-level approximation. Actual coverage may differ from map graphics and may be affected by terrain, weather, foliage, and other factors. AT&T does not guarantee coverage.*



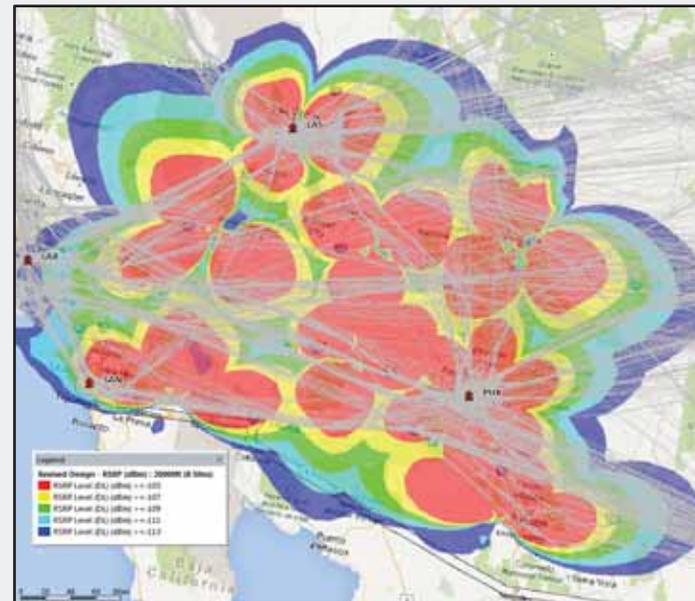
# Phoenix AZ Trial Design

## Design Characteristics

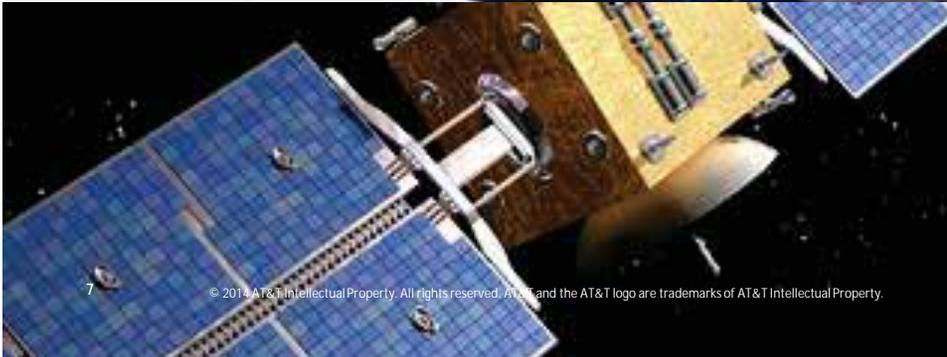
- Three major airports
- Sites with AT&T equipment and Ethernet

## Tested Elements

- Inter-site distance
- Three and six sector configurations
- ALU and Ericsson core networks
- Border RF control
- Multiple aircraft in a single sector
- Site acquisition/construction vendors
- Integration optimization techniques



# AT&T In-flight Connectivity Plans



## AT&T ATG USA

*Fast and cost-efficient, low latency*

- LTE-based solution with enhancements to conventional LTE implementation
- Advanced aircraft-optimized Wi-Fi
- Brought to you by the Nation's most reliable 4G LTE Network

## Premium Speeds

*(Up to 30 Mbps dedicated to ATG)*

- Relying on enhanced LTE technology flight tested with jet aircraft
- Utilize AT&T's broad network of cell sites to provide coverage

## Future Evolution Plans

- Possible integration of complementary satellite connectivity to serve intercontinental flights
- Continuous evaluation of new network management developments
- Densification of network

Notes: Reliability claim based on third party data regarding nationwide carriers' 4G LTE. Maximum theoretical download speeds are used.



# Passenger Experience



- Email
- Internet
- Messaging
- VPN



- Movies
- TV
- Videos & Games



- Social Media Sites



- Ebooks
- Digital Publications
- Podcasts



# Potential Airline Services Include:



## Cockpit Services

*Connectivity improves flight operations*



## Maintenance Operations

*Flight data analytics*



## Crew Services

*Enable onboard real-time transactions*



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