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This is definitely not RADAR country

But – if we can provide reliable Surveillance Services here, then we can provide them virtually

ANYWHERE...





*There's a very good reason why ALASKA has
always been on the cutting edge of Aviation
Innovation...*

Automatic Dependent Surveillance – Broadcast

“ADS-B”

“The most significant advancement in Air Traffic Control technology, since the introduction of RADAR, more than fifty years ago...”

Jane Garvey, FAA Administrator, 2001

“The United States is committed to an ADS-B – based National Airspace System. The transition will begin in 2008 and avionics equipage will be mandatory for all aircraft operating in Controlled Airspace by 2015.”

Marion Blakey, FAA Administrator, 2006

What is ADS-B ?

ADS-B is radically new technology that is redefining the paradigm of COMMUNICATIONS - NAVIGATION - SURVEILLANCE in Air Traffic Management today.

“ADS-B”

- Automatic** ✓ “Always ON” – No operator attention is required
- Dependent** ✓ It relies on very accurate GNSS position data
- Surveillance** ✓ Provides aircraft position, altitude, speed, heading , identification and other data
- Broadcast** ✓ It does not require interrogation, or triggering by other stations – data is broadcast to any aircraft or ground station equipped to receive the data link signal

INTERNATIONAL APPROVALS



ICAO

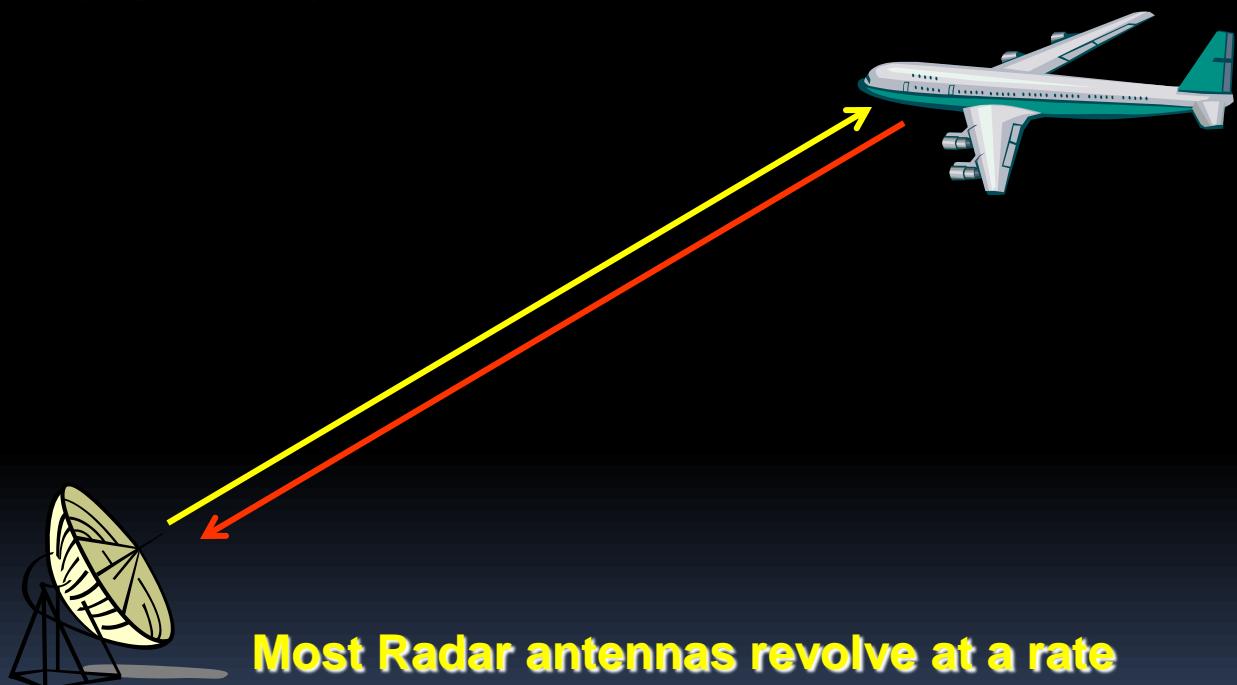


RTCA

CAAC

RADAR

Typically, surveillance radar sends a signal that causes the aircraft's transponder to reply and provide its position.



Most Radar antennas revolve at a rate Of ~5 RPM, therefore the time between Signal returns is ~ 12 sec. For an aircraft flying at 500 Kts, this means that the aircraft can move ~ 0.6 Nm between returns.

ADS-B

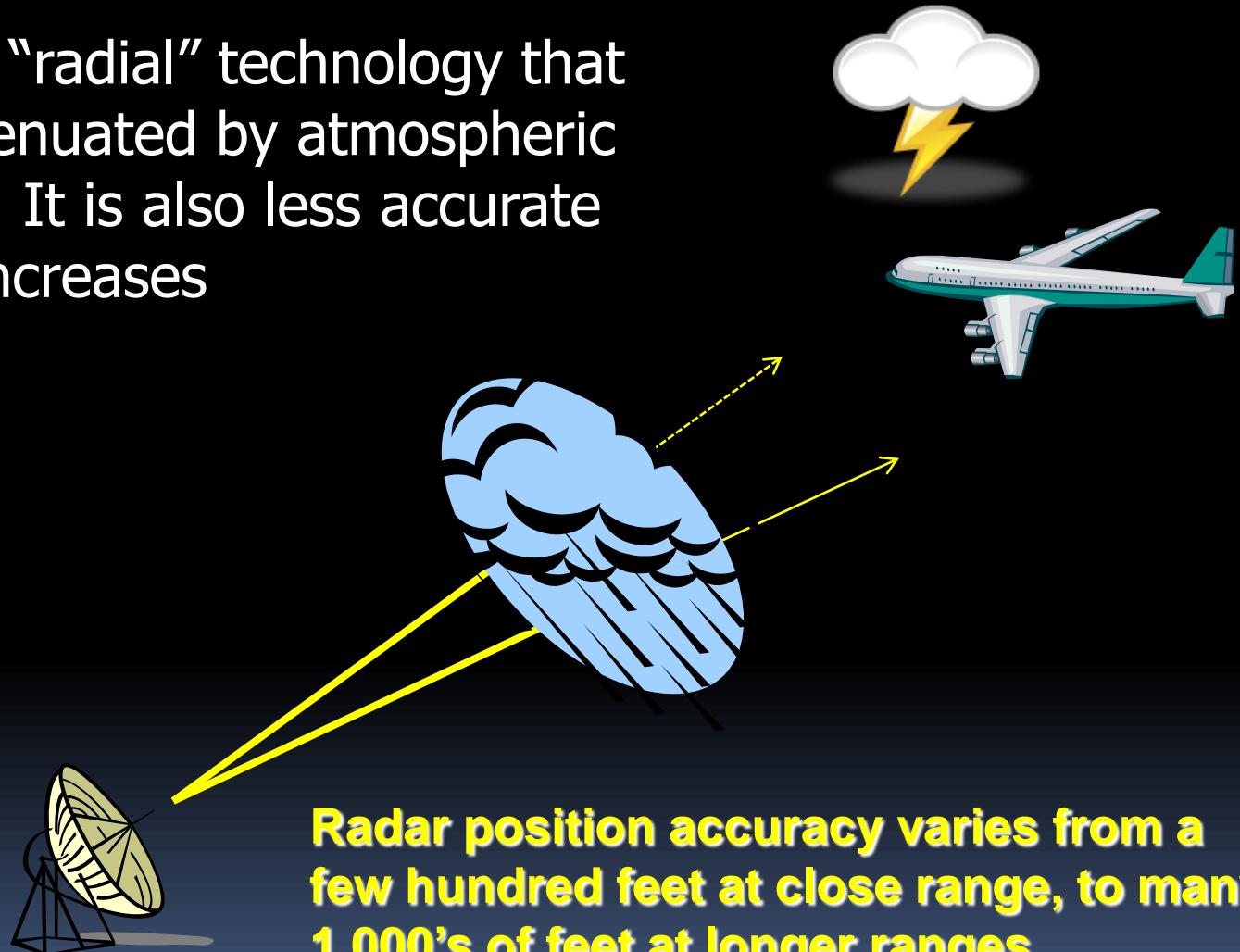
ADS-B transmits a position and “state” payload each second and requires no triggering, or interrogation from the ground station



For an aircraft flying at 500 Kts, this means that the aircraft moves only 0.13 Nm between returns.

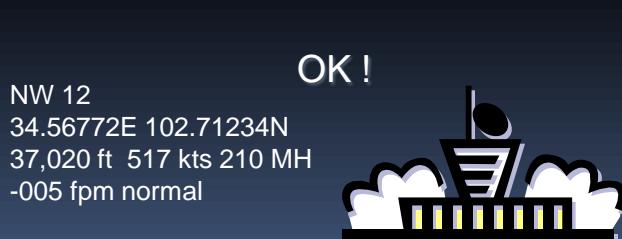
RADAR

Radar is a “radial” technology that can be attenuated by atmospheric conditions. It is also less accurate as range increases



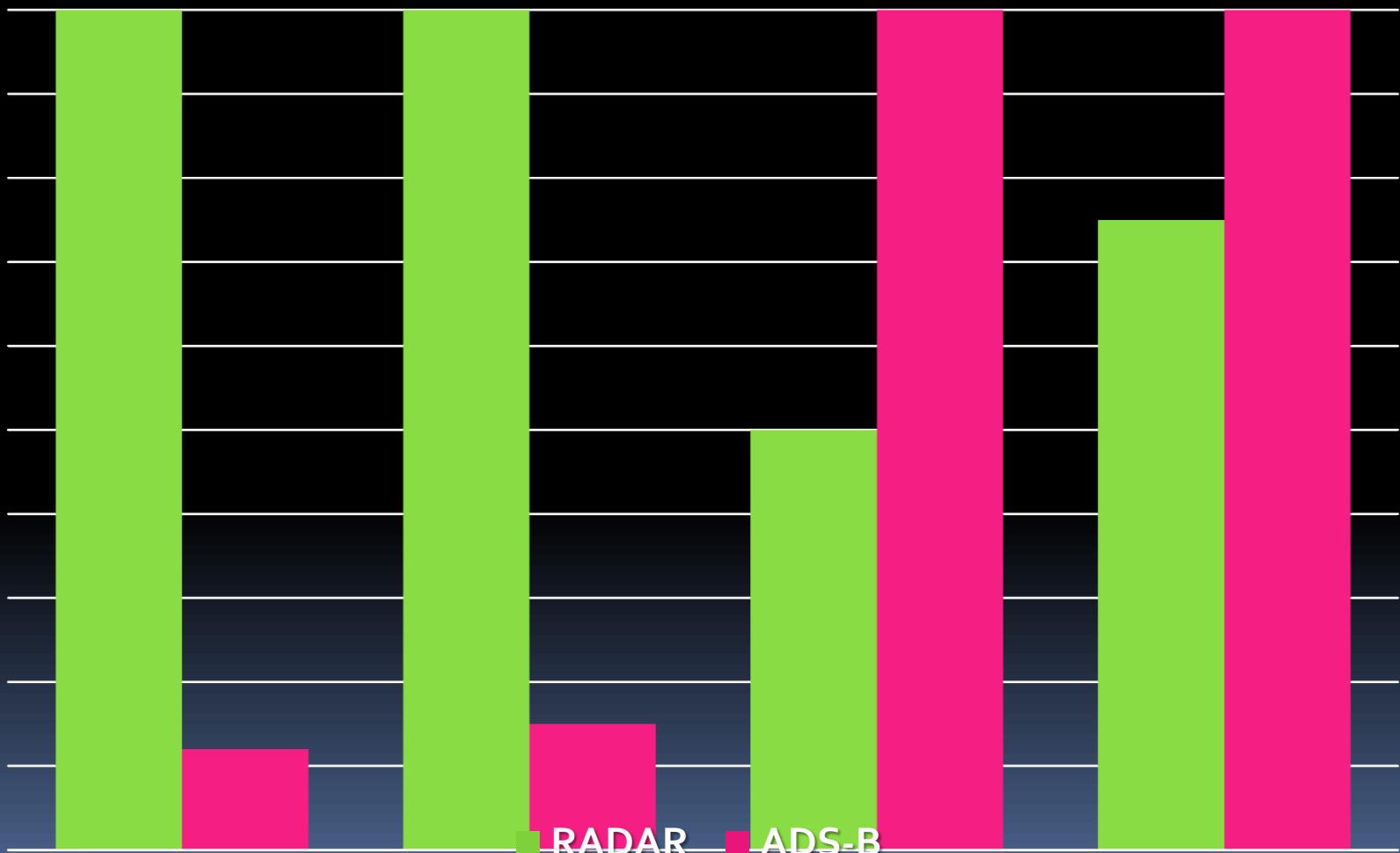
Accuracy & Reliability

ADS-B uses message “payloads” whose accuracy is binary (either 100% correct, or discarded), so the message integrity is the same at all ranges...



ADS-B is just as accurate at 150 Nm as it is at 15 Nm!

**ADS-B is: LESS EXPENSIVE, MORE ACCURATE
and MORE RELIABLE than RADAR!**



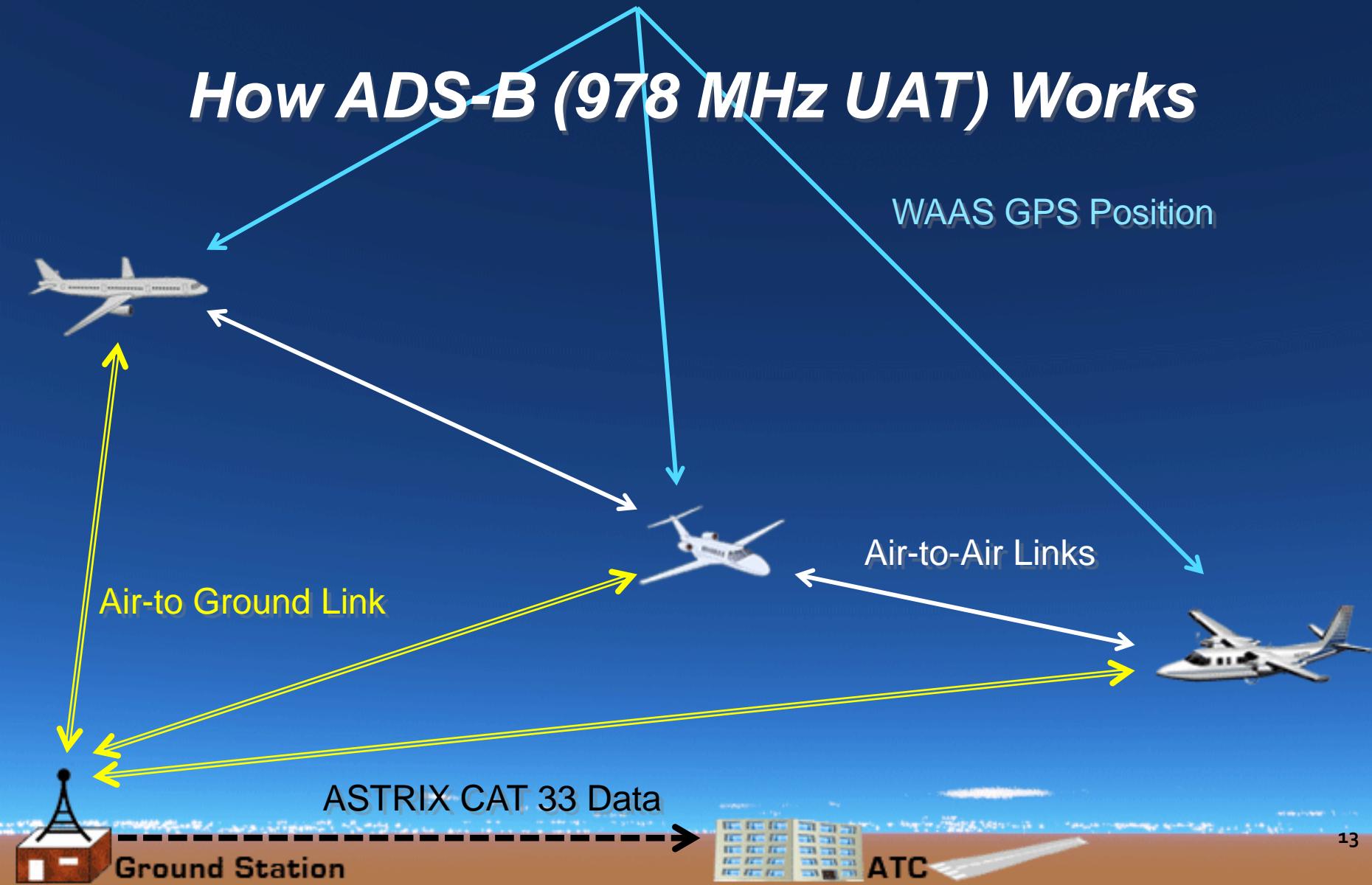
ADS-B ***Link Augmentation*** ***System***



ADS-B Technologies
HD2-R 1680x1080

GPS Constellation

How ADS-B (978 MHz UAT) Works



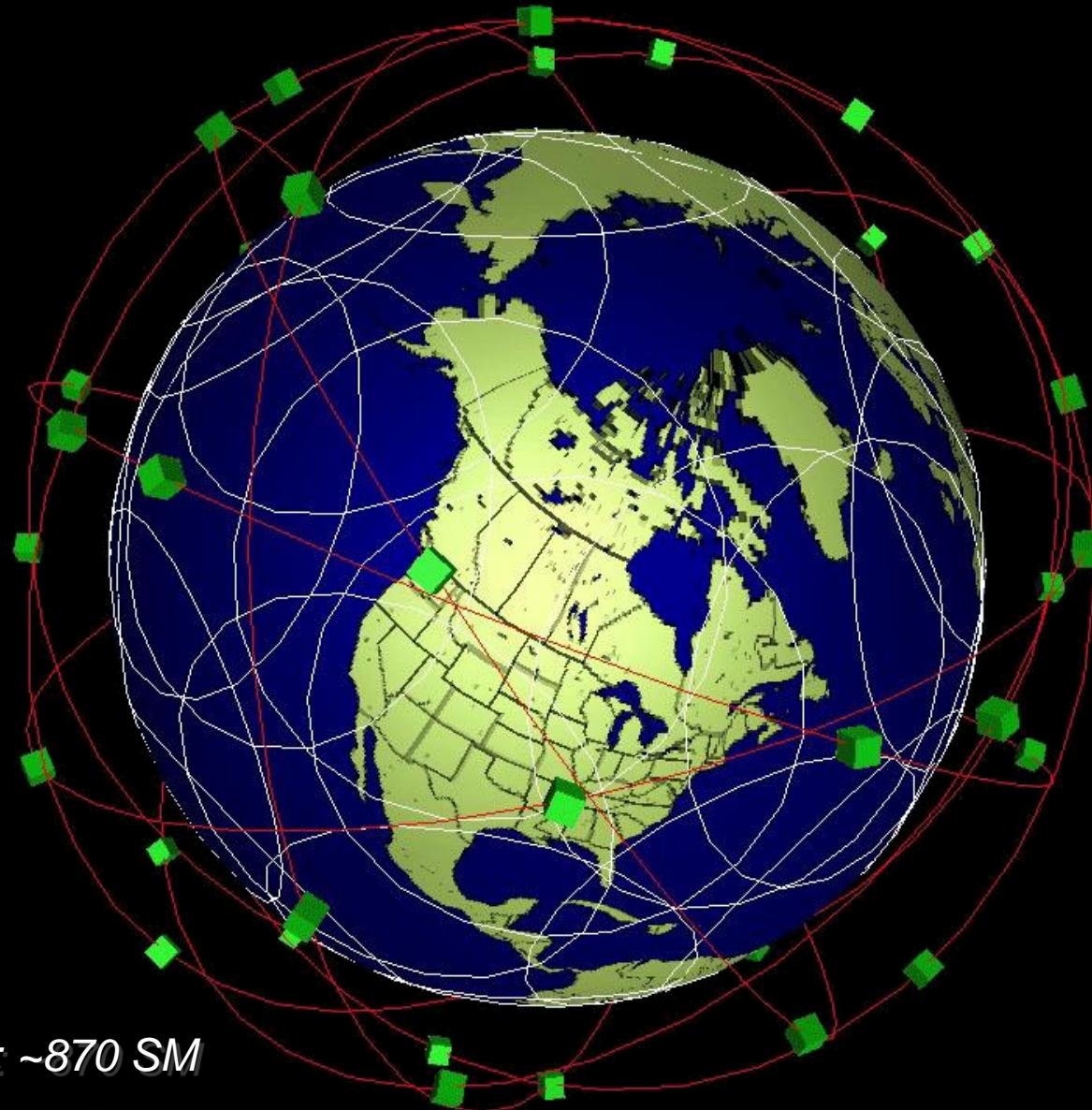
ALAS ~~Scans over Europe:~~
this problem ~~is~~ **SIGHT...**

Globalstar Constellation

How ALAS Works



Globalstar Constellation

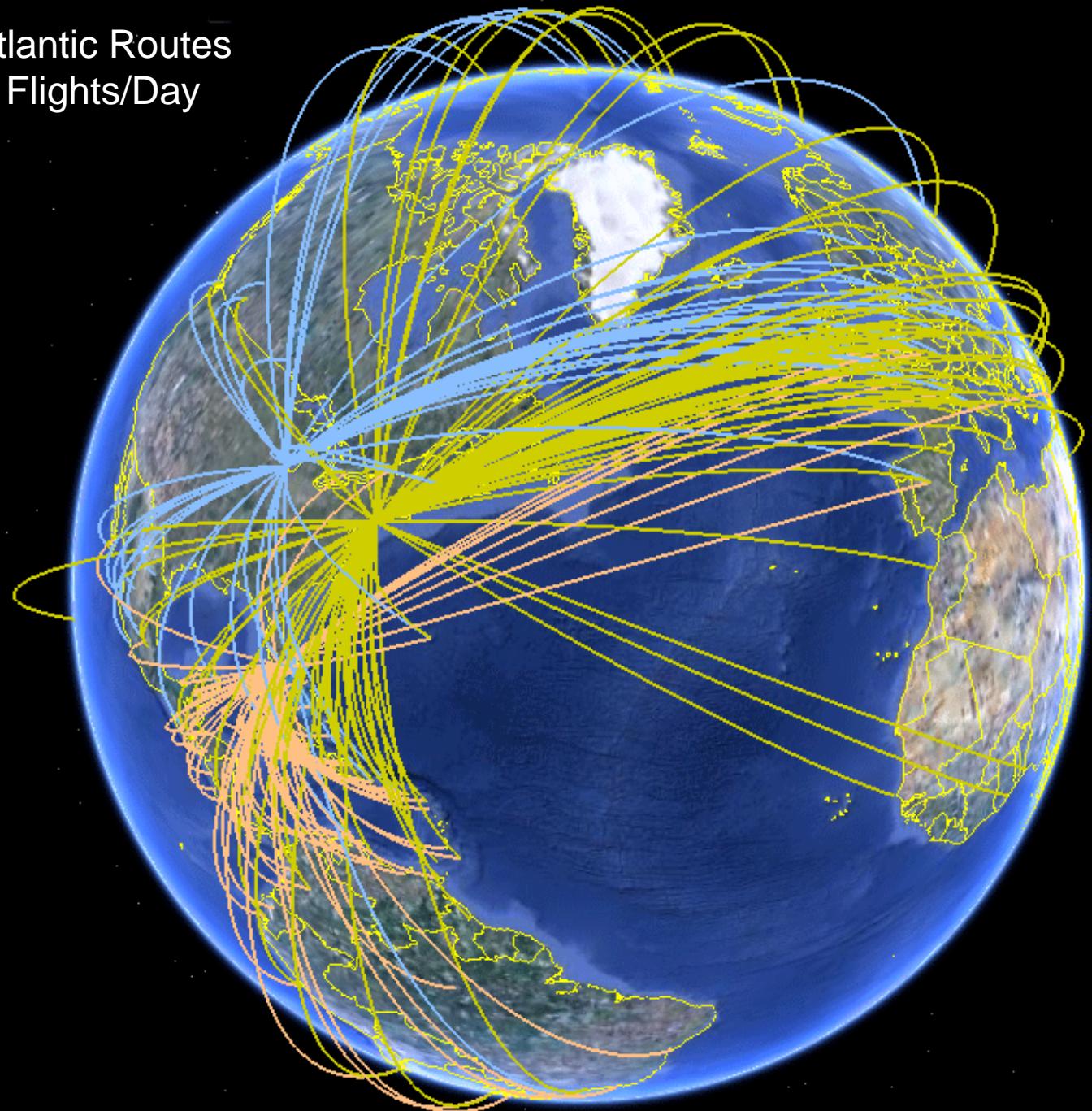


~48 Satellites

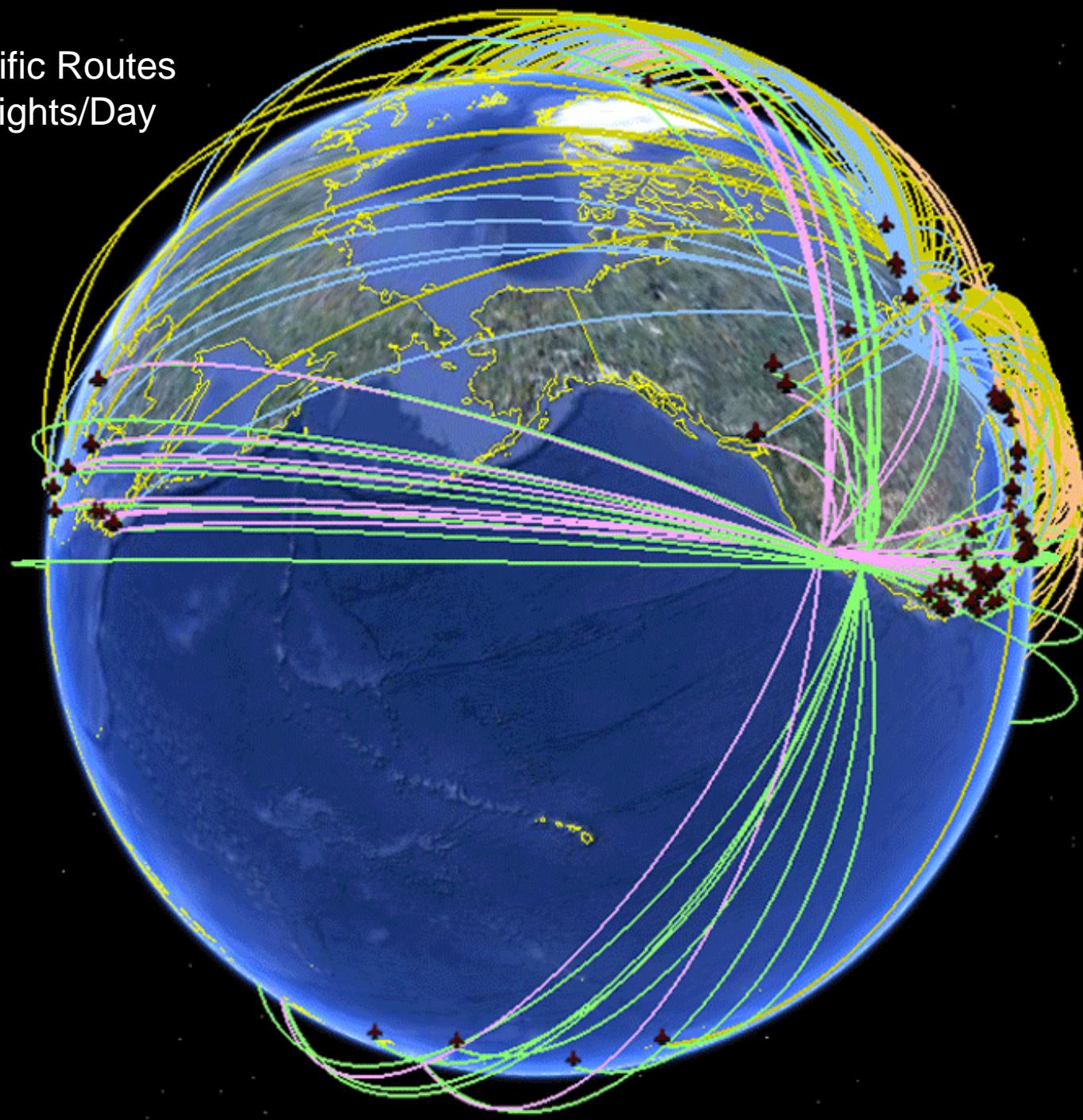
Mean Altitude: ~870 SM

Coverage is ~1,350 nm radius (@100' AGL)

Major Atlantic Routes
1,400 + Flights/Day



Major Pacific Routes
1,200 + Flights/Day



Major South American
Routes, 1,200 + Flights/Day



Major African Routes
800 + Flights/Day

Major Advantages

- DIRECT ROUTING
 - 5% - 10% less time in the air = less fuel burned!
 - Less ATC “foot print” by reducing number of ground stations
- MORE EFFICIENT CLIMB AND APPROACH
 - Single throttle settings burn 3%-5% less fuel
- BETTER FLOW CONTROL
 - Less holding and fewer takeoff and approach delays mean less engine time on the ground and less fuel burned in the air resulting in an additional 3%-5% fuel savings

Major Advantages

BOTTOM LINE:

- 10%-15% greater efficiency
- > 14MT less carbon in the atmosphere each year!

Questions?





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