



NAV CANADA
CPWG 17
Samara, Russia
June 3-6, 2014

S E R V I N G A W O R L D I N M O T I O N



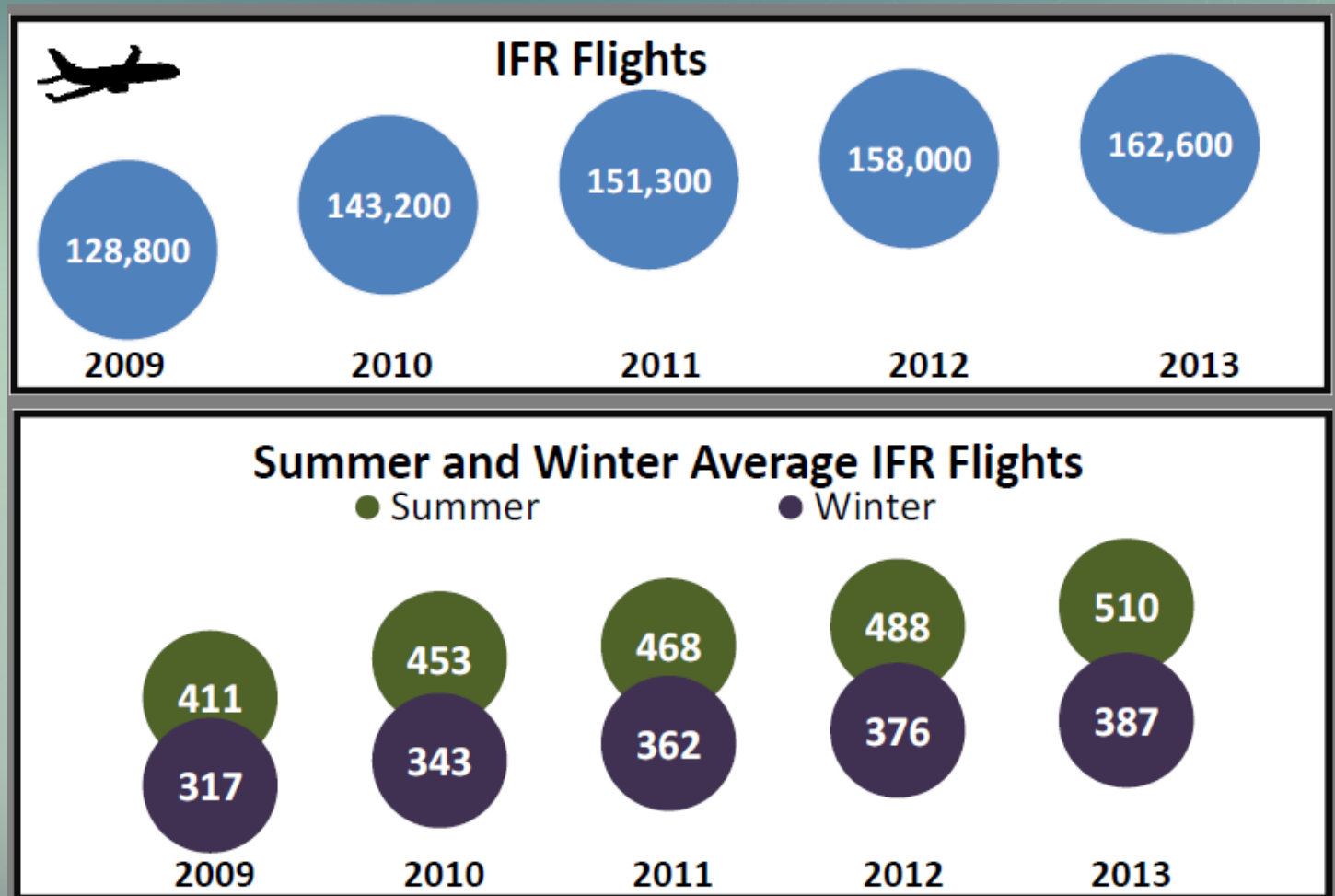
Key Polar Highlights

- Polar flights up 5.3%
- Overall Arctic High Traffic up 2.9%
- Expansion of User Preferred Routes
- Arctic Airspace changes
- AID-C Planning
- SAT ADS-B Support

NAV CANADA

SERVING A WORLD IN MOTION

Arctic High Traffic



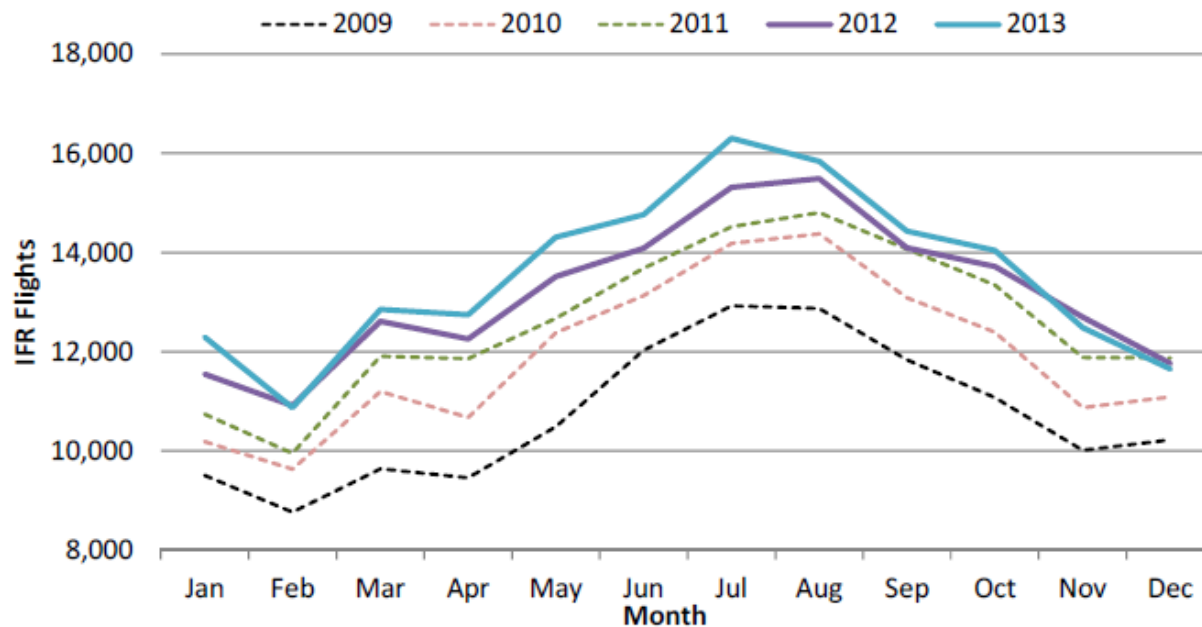
NAV CANADA

SERVING A WORLD IN MOTION

Arctic High Traffic

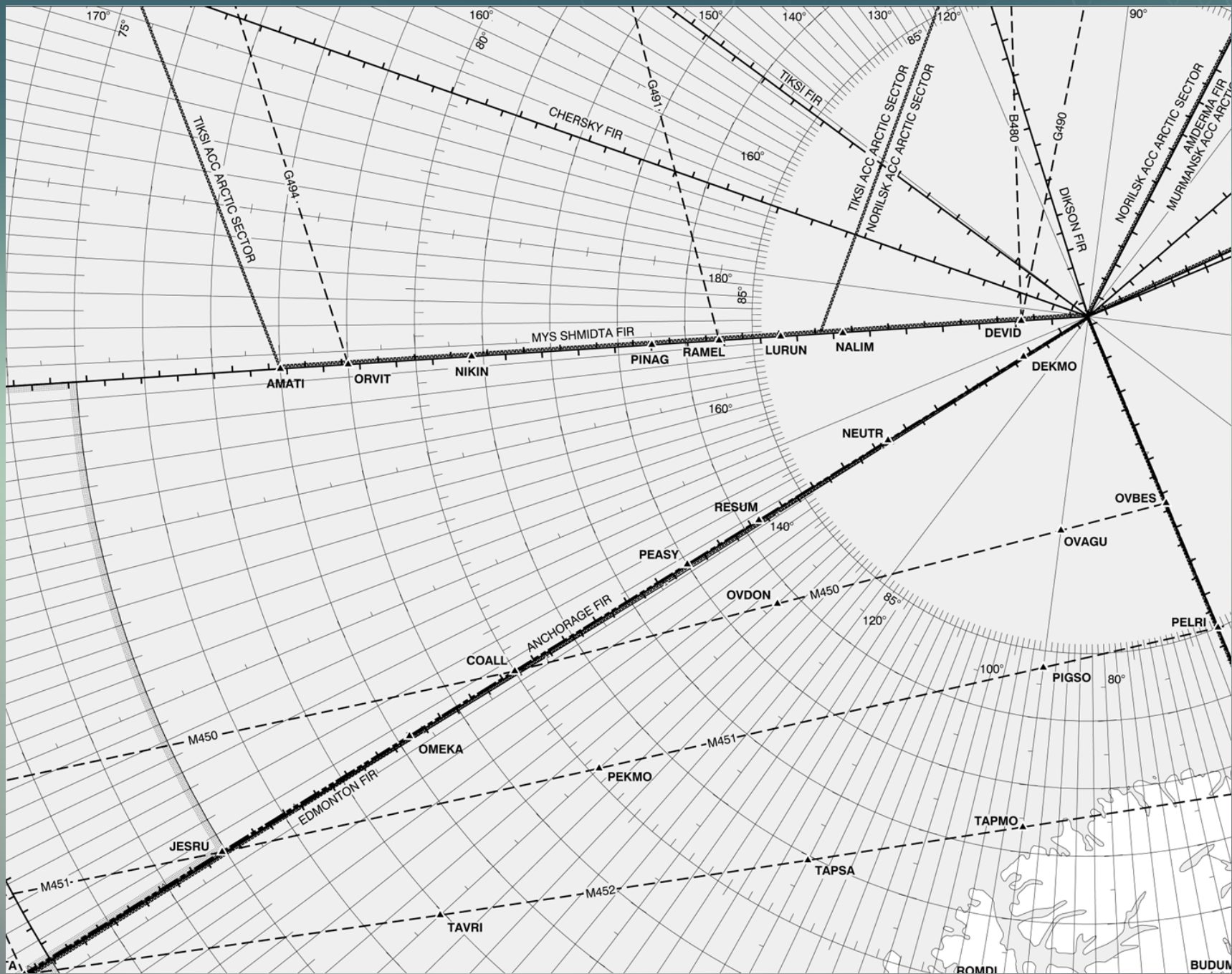


IFR Flights 5 Year Comparison



Customer Support

- Continued expansion of Customer Preferred Routing
 - In depth route planning
 - Route Efficiencies
 - Delta, United, American, Nippon Cargo, Cathay
- Efficiency at ANC and Russian entry points
- Reach out to remaining customers



Arctic High Sector Changes

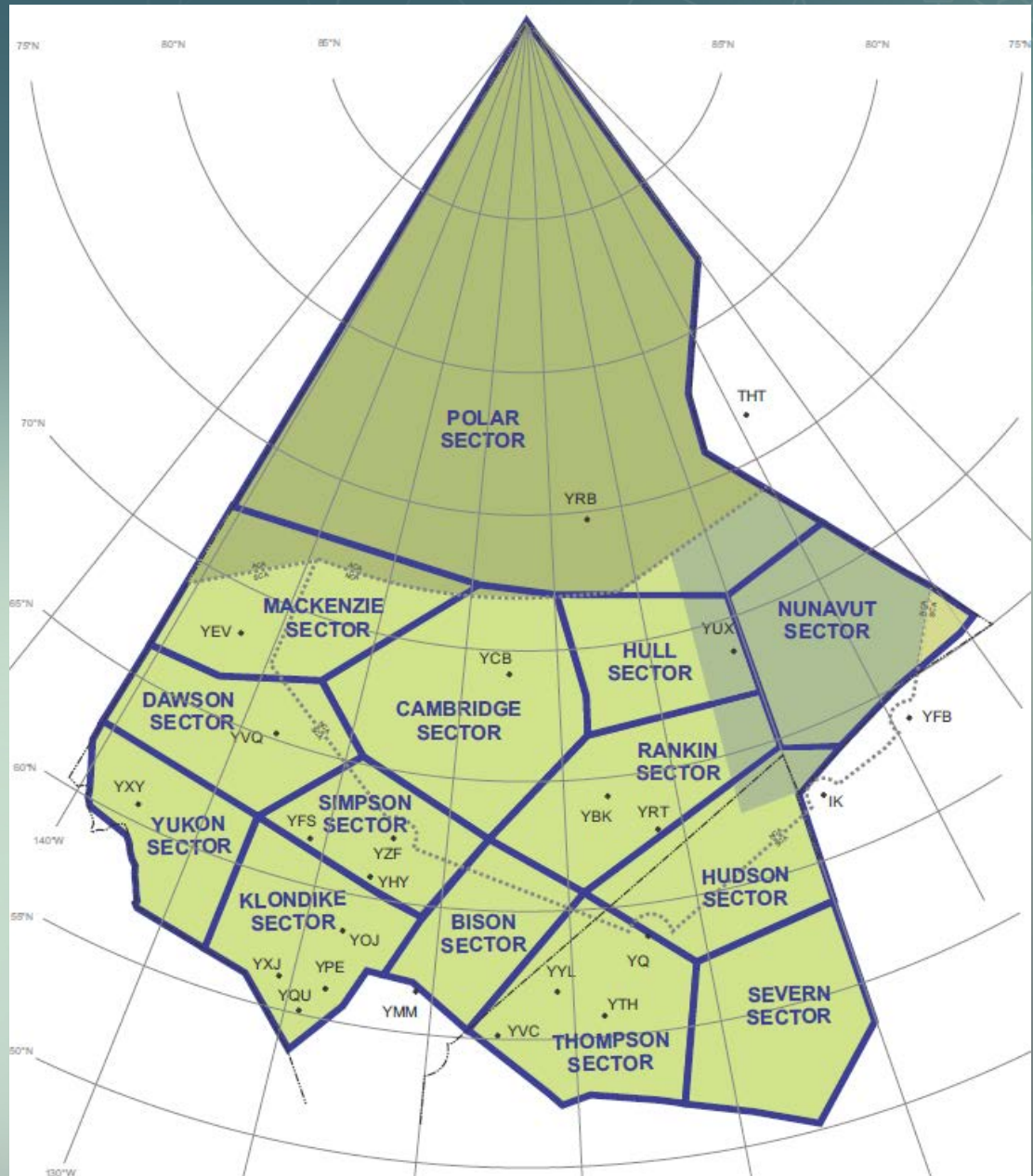
- Changes went into effect April 2014
- Aligns sectors with User Preferred Routes
- Reduces need to split off sectors in quiet traffic
- Better coordination procedures
- Efficient use of existing frequencies
- Add to overall efficiency of the airspace

Arctic High Specialty

New Sectors April 25

No training required

Small boundary tweaks

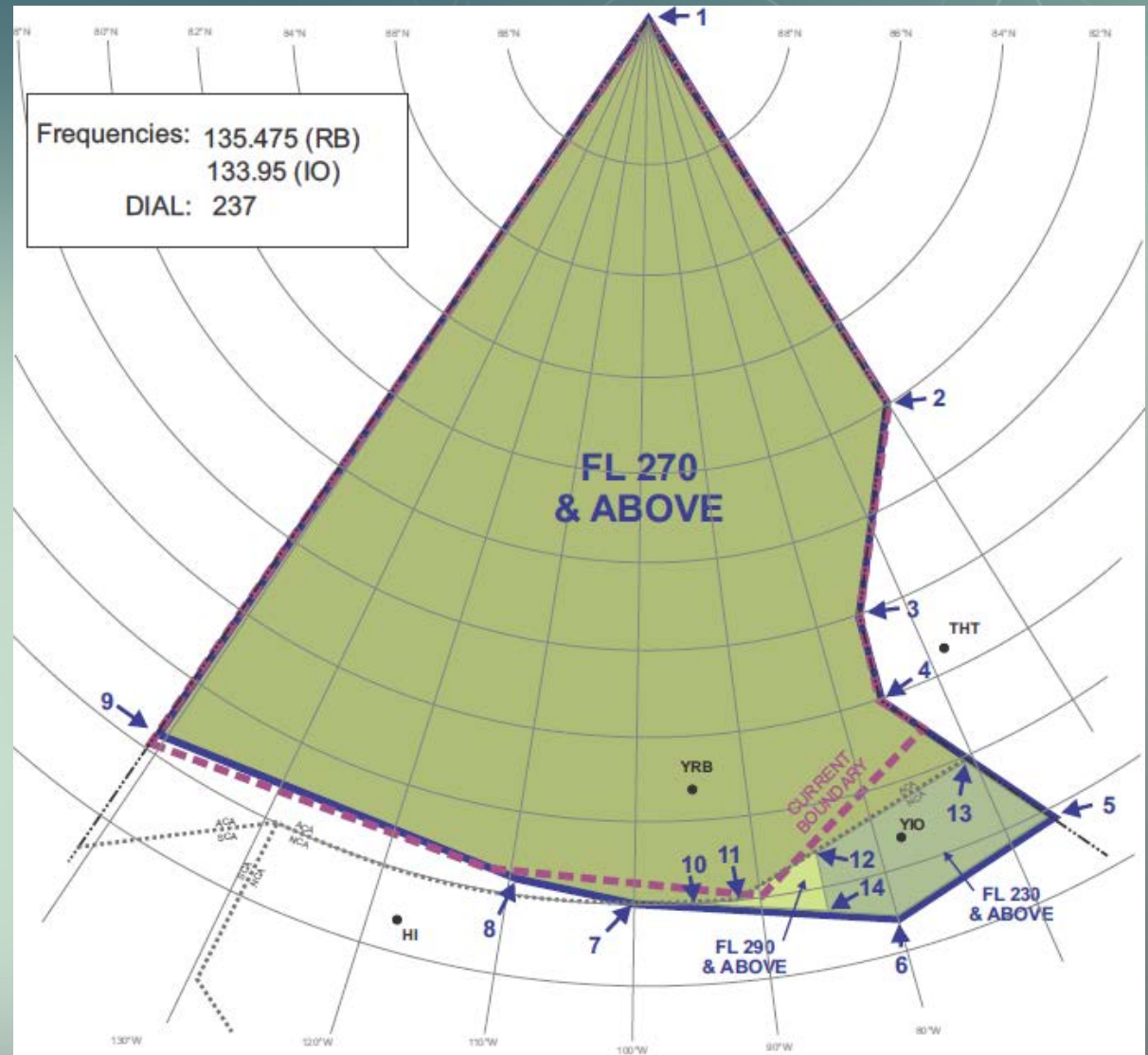


Polar Sector

Small piece added

Less coordination

More consistent
traffic flows



AID-C Implementation

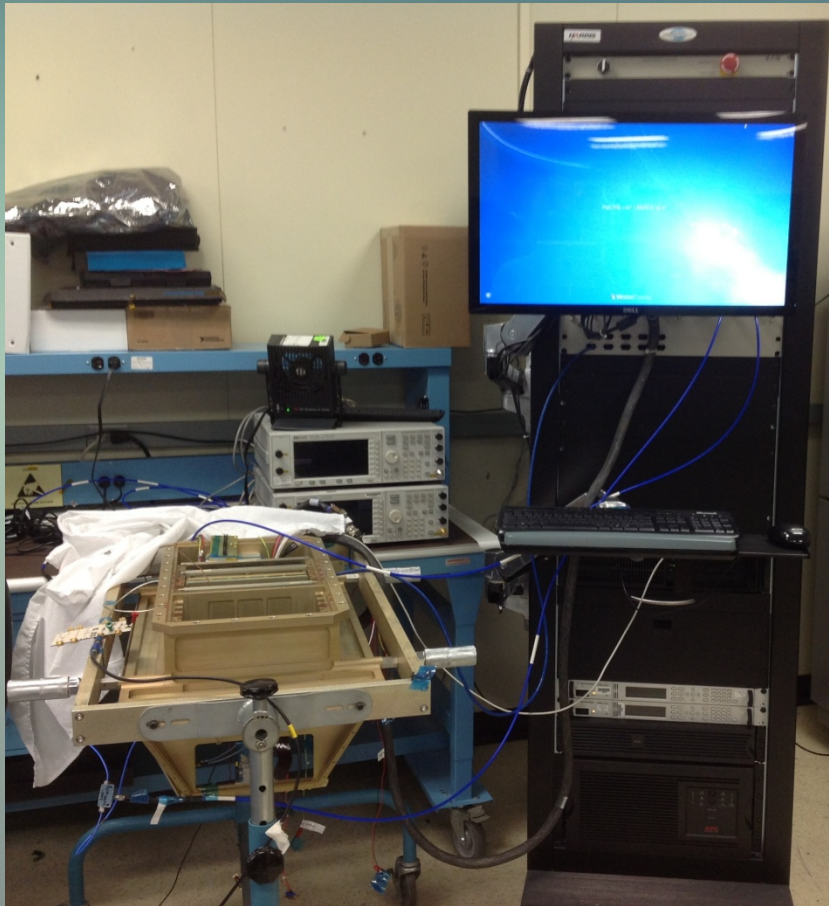
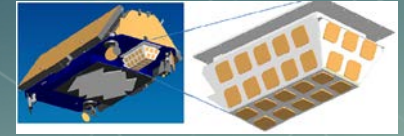
- Conformance reporting to be added to CAATS fall 2014
- Compliment current CADS reporting
- Report altitude and lateral deviations
- Added safety
- Review of efficiency gains
- Develop strategy for Lateral and Longitudinal
- Goal of RNP 4

Aireon ADS-B System Benefits

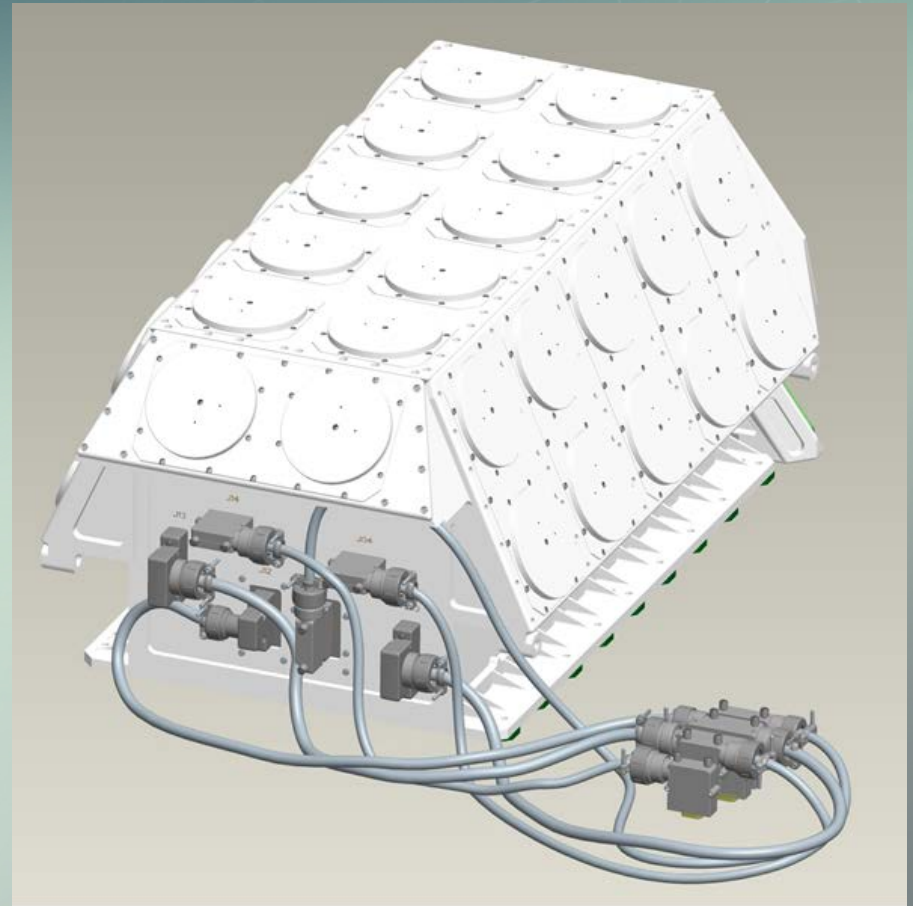
Safety

- ADS-B provides near real time aircraft surveillance
- Improves situational awareness, conflict detection and reaction/resolution
- Aircraft would have more flexibility in emergency situations
- Provides surveillance source separate from the communications (CPDLC) network sources
- More complete and accurate reporting of aviation occurrences, allowing better management of safety risk and better support of the Safety Management System

Hosted Payload

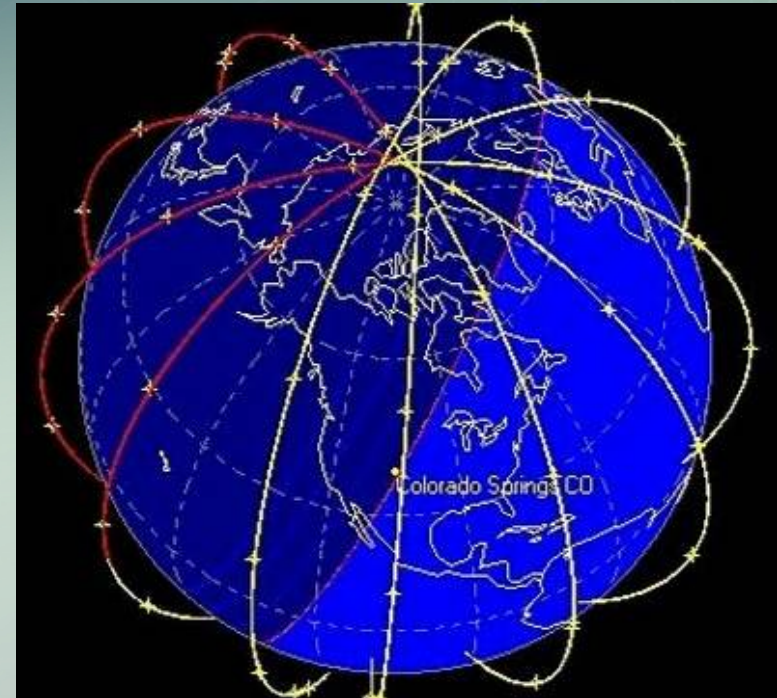


Inverted Hosted Payload



Orbit Characteristics

- 6 orbital planes of 11 satellites
- Near-polar orbit at 780 km altitude
- Orbit period ~ 100 minutes
- Ground speed $\sim 24,000$ km/h
- An aircraft will be in view of a given satellite for no more than 9 minutes



Stakeholder Collaboration

**NAV
CANADA**

IAA

ENAV

NAVIAIR

**NAV
Portugal**

NATS

FAA

IATA

Collaboration Progress

- Presentation to IATA representatives on CONOPS, Technical Review, Regulatory Roadmap and Collision Risk Modelling in Washington.(Feb 5, 2014)
- NAT Surveillance Corridor – A joint effort between NAV CANADA and ISAVIA to develop ATS surveillance procedures appropriate for NAT operations.
- Meeting with IAA (Irish Aviation Authority) to discuss CONOPS, Technical Review, Regulatory Roadmap and Collision Risk Modelling.(Feb 17, 2014)
- Meeting with FAA to discuss CONOPS and Business Case reviews.(Feb 19, 2014)

Additional Stakeholders

Transport Canada

- Regular coordination meetings on ICAO working papers
- Good cooperation on numerous initiatives, particularly frequency spectrum issue

Cross Polar Working Group

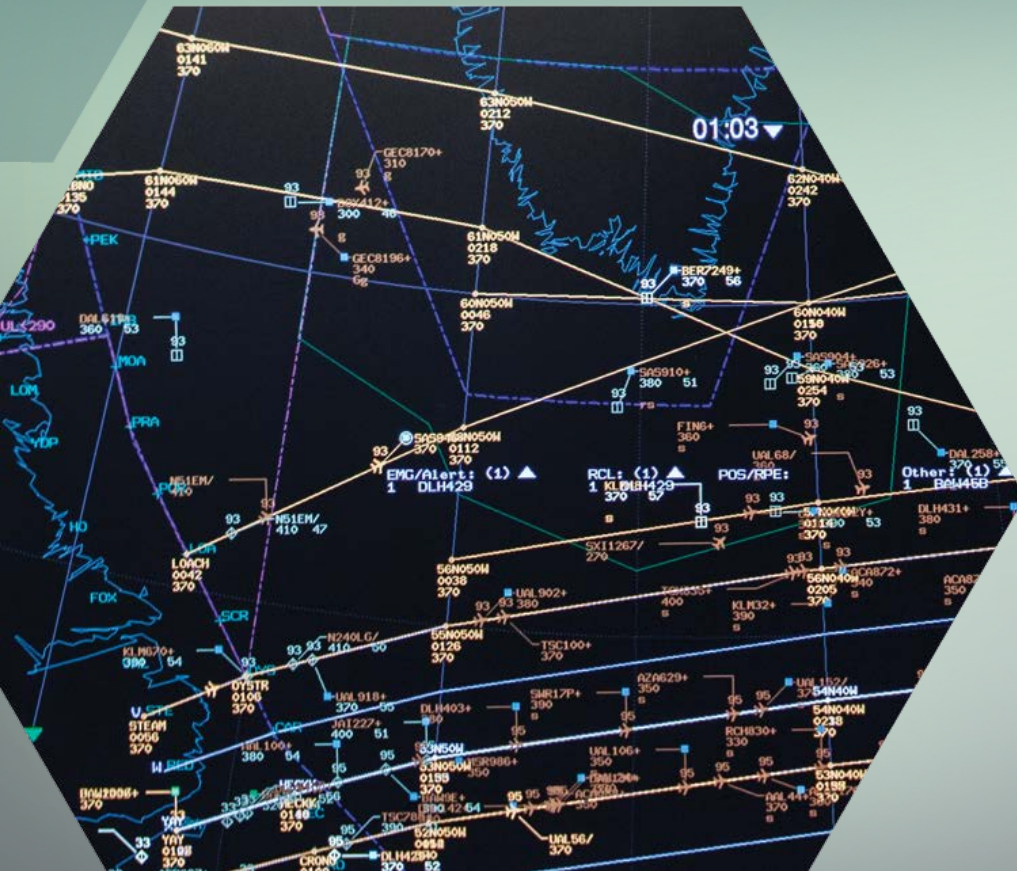
- Presentation made on the Space Based ADS-B initiative with positive feedback from participants

ADS-B 4G meeting in Ottawa February 2014

- Presentation on concept positively received

Initial Application in the NAT

- Late 2017: application of 15 NM longitudinal separation (with RLatSM) between surveillance-identified aircraft operating on the NAT OTS.
- Early 2018: 15 NM longitudinal separation expanded to aircraft operating off the NAT OTS.



Future Procedure Changes in the NAT

- Mid 2018: allowing surveillance identified aircraft to operate on all tracks which do not intersect (still RLatSM).
- Late 2018: use of ATS surveillance to maintain 15 NM lateral separation between the tracks of surveillance-identified aircraft operating on non-intersecting tracks;
- Early 2019: application of 15 NM separation between surveillance-identified aircraft



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