Edmonton FIR

7 Million Sq KM’s of airspace

600 employees

The facts and figures presented here were accurate as of Jan 2019.
ALL AIRSPACE, ALL FLIGHT LEVELS

Canadian Airspace
~2.5 million unique IFR flights/year
SPACE BASED ADS-B –
LIFTOFF!

- First launch of 10 Iridium NEXT satellites was Jan 14, 2017, from Vandenberg AFB, California
- Final launch (#8) took place January 11, 2019
- February 6: all 66 satellites in place!
IRIDIUM NEXT CONSTELLATION

- 6 planes of 11 active satellites (+ 9 on-orbit spares)
- Near-polar orbits
- 780 km altitude
- 100 min orbit period
- ADS-B payload on all satellites
- Data passed between satellites via crosslinks to the satellite currently over a ground station
- 6 spare satellites will remain on the ground
AIREON DATA FOR NAV CANADA
Global ADS-B Aircraft Surveillance
SURVEILLANCE PROGRESSION

Initial Focus
Procedural Airspace in Northern Canada and Gander OCA
EG ARCTIC HIGH SB ADS-B IMPLEMENTATION PLAN

Using a 4 phase approach to implementation:

• Phase 1: E-MTCD (Enhanced Medium Term Conflict Detection) – completed Summer 2018
• Phase 2: Implementation of Space Based ADS-B primarily in existing Surveillance airspace – completed March 25, 2019
• Phase 3: Implementation of Space Based ADS-B in the majority of airspace with VHF coverage – completed May 1, 2019
• Phase 4: Balance of non-VHF airspace, & ASEPS Standard: to be completed ~mid December, 2019
EG Arctic High SB ADS-B Implementation - Training

› We have 4 phases - why not all at once?
› The concept is to manage and mitigate safety risk to systems, procedures, & personnel, by first:

• 1) Enabling a new conflict prediction tool: E-MTCD;
• 2) Using Space Based ADS-B where we already use Ground Based ADS-B — a seamless transition for the Controllers;
• 3) Using ADS-B where we can talk to the aircraft via VHF;
• 4) Using ADS-B where we cannot talk directly the aircraft via VHF, and where there is also a new separation standard being implemented.
• A total of about 4 training days/Controller, with all Controllers previously rated for Procedural, SSR & Ground Based ADS-B.
PHASE 2: COMPLETED MARCH 25, 2019

› First in the World to use Space Based ADS-B on March 25, 2019.
› Provided some additional surveillance coverage.
› Evaluation of Aireon signal.
› Application in VHF airspace.
**PHASE 3: COMPLETED MAY 1, 2019**

- Provided new surveillance coverage to areas that previously had none.
PHASE 4: TO BE COMPLETED DECEMBER, 2019
4 MAJORS TECHNOLOGY

- Weather Products
- AMAN
- TBS
- OnTime
- A-CDM
- RECAT
- CSPO
- Performance Metrics
Starts planning the Arrival sequence much farther out from destination airport than the previous system

Resulting in

› Less tactical intervention
› Less Enroute holding
› Smooth and consistent flow of aircraft into Terminal airspace
› Enhanced controller situational awareness of the arrival flow

Fully Operational in Toronto

Installed in Vancouver and Montreal

Calgary January 2020 – RNP solution
RECAT

› Regulatory approval for Toronto Pearson complete
› Adaptation into ATC systems – April 2019
› Development of ATC Decision Support Tool – complete
› Deployment May 2019 Toronto. AIC submitted – publication date April 25th
› Next Sites – Vancouver, Montreal, Calgary – Fall 2019
AIRSPACE MANAGEMENT

2019 Enablers
› Space Based ADS-B
› Edmonton/Gander
› New separation standards
› SATCOM VOICE

2020 Enablers
› Space Based ADS-B all high level airspace
› ADS-B mandates
› Continue RPAS integration
› Commence Low Level analysis
ご清聴ありがとうございました。

Большое спасибо
Takk fyrir
Tusen takk
謝謝
정말 감사합니다
баярлалaa
Kiitos paljon
Mange tak
Thank you very much!
QUESTIONS ?