

## **AUTOMATIC DEPENDENT SURVEILLANCE - BROADCAST (ADS-B)**

- ADS-B provides radar-like surveillance of equipped aircraft using satellites, onboard aircraft avionics and ground infrastructure to relay aircraft identification, position and altitude to Air Traffic Controllers (ATC).
- ADS-B brings significant safety and efficiency benefits, enabling ATC to offer equipped aircraft more flexible, fuel-saving routes and earlier climbs through airspace previously managed using only procedural air traffic control.
- ADS-B ground equipment consists of an antenna, receiver and target processor, as well as telecommunications links to send information back to ATC. ADS-B ground equipment costs significantly less to install and maintain than radar installations. It is also more durable than radar in colder climates.

### **NAV CANADA ADS-B Coverage**

- ADS-B surveillance currently covers an airspace of over 4,000,000 square kilometres (sq kms). A total of 15 ADS-B ground stations were installed in Ontario, Quebec, Manitoba, Newfoundland and Labrador, Nunavut and Greenland to support ADS-B coverage in domestic and international airspace managed by NAV CANADA.
- January 2009: NAV CANADA began ADS-B surveillance in 850,000 sq kms of airspace over Hudson Bay. Five ADS-B ground stations (Fort Severn, Ont.; Churchill, Man.; Rankin Inlet, Nunavut; Coral Harbour, Nunavut; and Puvirnituq, Que.) had been installed to support the surveillance. Total benefits for Hudson Bay projected to 2020: \$288 million in fuel savings and a reduction in GHG emissions of 778,000 metric tons.
- November 2010. Six ground stations in the northeast (Hopedale, N.L.; Saglek, N.L.; Brevoort, Nunavut; Cape Dyer, Nunavut; Dewar Lakes, Nunavut; and Hall Beach, Nunavut) provided 1,980,000 sq kms of surveillance for a net gain of 1,920,000 sq kms (60,000 sq kms overlapped with the existing Hudson Bay coverage).
- March 2012: Four ground stations in Greenland (Fredrikshab, Simiutaq, Fredriksdal and Prins Christian Sund) added another 1,320,000 sq kms of ADS-B surveillance over the North Atlantic.
- Total benefits for the northeast and oceanic airspace projected to 2020: \$91 million in fuel savings and a reduction in GHG emissions of 239,000 metric tons.
- Total benefits for the Hudson Bay, northeast and oceanic airspace projected to 2020: \$379 million and a reduction in GHG emissions of 1,017,000 million metric tons.