



Cross Polar Work Group 5

CPWG 5
1 April 2008

Polar Route Activity By Month													
		American Origins and Destinations				Canadian Origins and Destinations				Grand Total	Flights Per Day	Growth	
		Outbound	Inbound	Total	Growth	Outbound	Inbound	Total	Growth				
2006	December	338	30	368		38	5	43			411	13.3	
2007	January	350	28	378		44	8	52			430	13.9	
	February	304	40	344		37	6	43			387	13.8	
	March	394	55	449		45	14	59			508	16.4	
	April	389	113	502		47	16	63			565	18.8	
	May	367	147	514		57	20	77			591	19.1	
	June	360	187	547		58	38	96			643	21.4	
	July	392	199	591		89	38	127			718	23.2	
	August	373	179	552		95	33	128			680	21.9	
	September	410	102	512		91	20	111			623	20.8	
	October	443	80	523		82	15	97			620	20.0	
	November	414	81	495		67	11	78			573	19.1	
	December	369	120	489	33%	76	8	84	95%		573	18.5	39%
										Total 2007	6,911		
2008	January	417	67	484	28%	98	8	106	104%		590	19.0	37%
	February	387	114	501	46%	95	17	112	160%		613	21.1	58%



ADS-B in Hudson Bay, North Eastern Canada and Southern Greenland

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1 April 2008**

Review of activity



- Previous Notifications and consultation
 - 2nd August 2007 - AIC 18/07
 - Segregate the airspace
- ATOCC Consultation 27th Nov 2007
 - “Don’t make it too easy”
 - “Don’t give us too much choice”
 - “Need to draw a line in the sand”
- Jan 22nd teleconference
 - Avionics eligibility
 - Three options for initial ATM implementation

Telecon Participants



Attendees:

Airlines

- Air Canada
- Air France
- Air Transat
- British Airways
- Continental
- Delta
- Emirates
- EVAir
- FedEx
- First Air
- Japan Airlines
- Jazz
- Lufthansa
- 14. Northwest
- 15. SAS
- 16. Singapore
- 17. United
- 18. Virgin
- 19. Westjet

Associations and manufacturers

1. Airbus
2. ATAC
3. Boeing
4. IATA

Avionics Eligibility

ADS-B airspace eligibility – Question from Jan 22nd telecon



- Question:** Would your company be able to operate in ADS-B segregated airspace with aircraft that had passed an eligibility process put forward by NAV CANADA?
- There are a number of assumptions that are included in this eligibility process which are:
 - The process will prove satisfactory avionics performance to meet all of NAV CANADA's safety mitigations required for application of a 5 nm enroute separation standard.
 - The process will not require amendments to Aircraft Flight Manuals or Pilot Operating Handbooks be completed prior to acceptance.
 - The process will have been accepted by the Canadian regulatory authority, Transport Canada.
 - When responding to this question please include your fleet makeup and plans for aircraft operations that would utilize this airspace.



- Transport Canada regulatory approval
 - Waiting response from submission requesting authority to authorize operations based on either:
 - AC21-45 (0)
 - TSO-C166 (all versions)
 - AMC 20-24 (Draft)
 - Expect notice of acceptance of AMC 20-24
- AMC 20-24 (draft) is the only published document which exactly matches our requirements
- ADS-B Functional compliance survey needed for two purposes
 - Improve accuracy of simulation exercises (current and forecast traffic scenarios)
 - Create database for potential future NAV CANADA managed eligibility process

Avionics compliance (2/3)



- AMC 20-24 is still in draft form, final publication due in May 2008 (optimistic)
- If the aircraft complies with AMC 20-24, it will meet our requirements
- Transport is in the process of reviewing our ADS-B HIRA
- They have reviewed our eligibility process, and commented favourably
- Transport is still considering the potential path to aircraft eligibility through a Canadian Advisory Circular recognizing AMC 20-24 as acceptable for Canadian compliance



- **Potential timeline:**
 - Wait for the final publication of AMC 20-24
 - Draft the Advisory Circular
 - Certify the Aircraft
 - Update the AFM

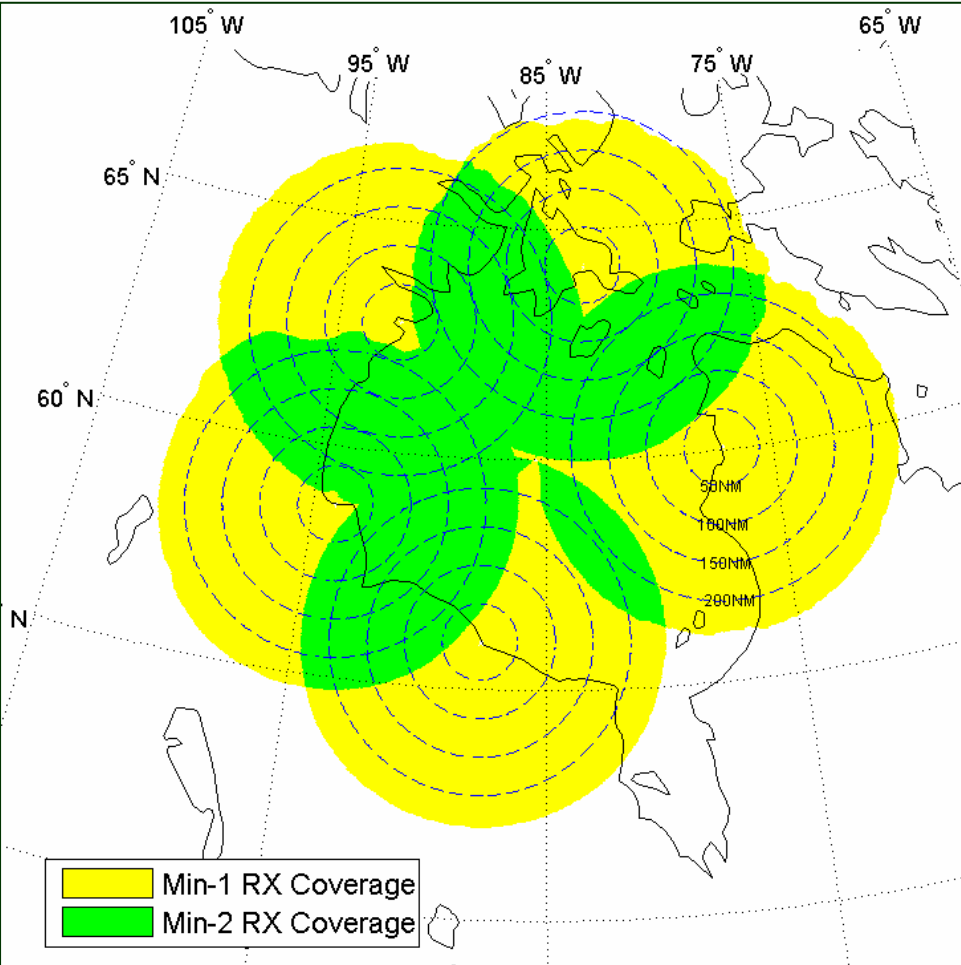
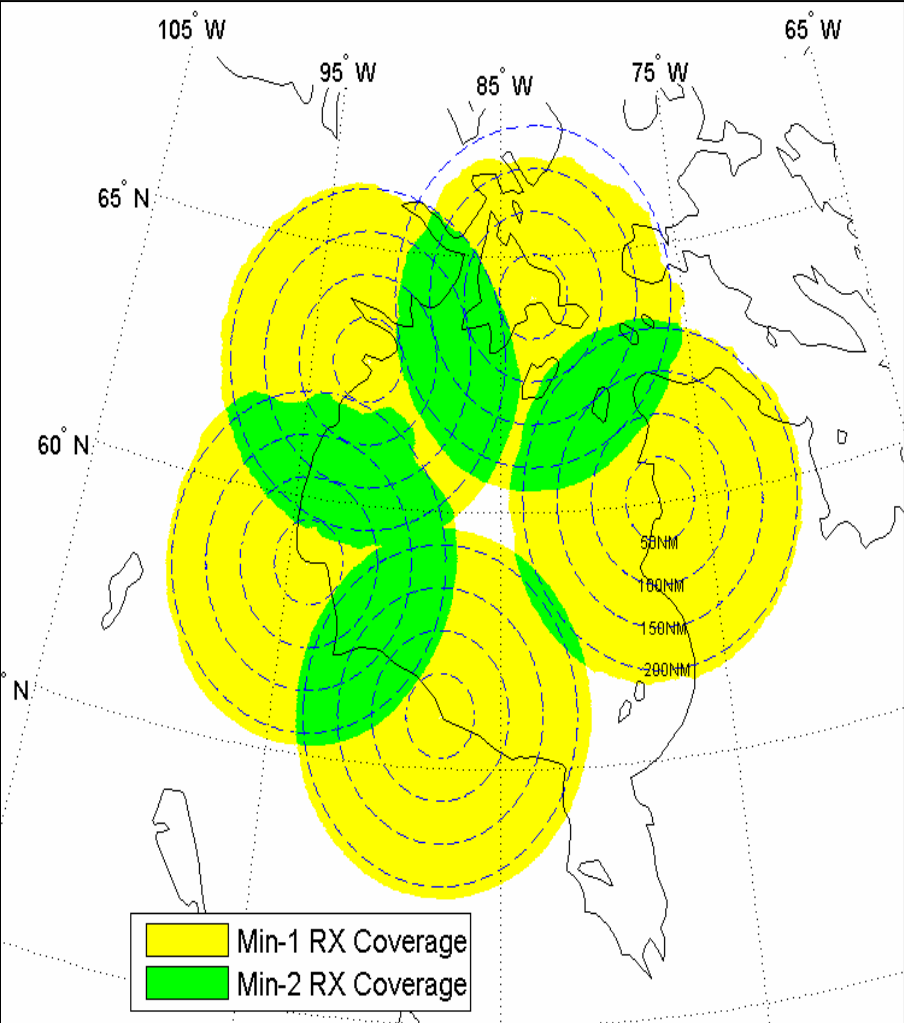
ATM Airspace Options

Expected coverage (250 watt transponder)

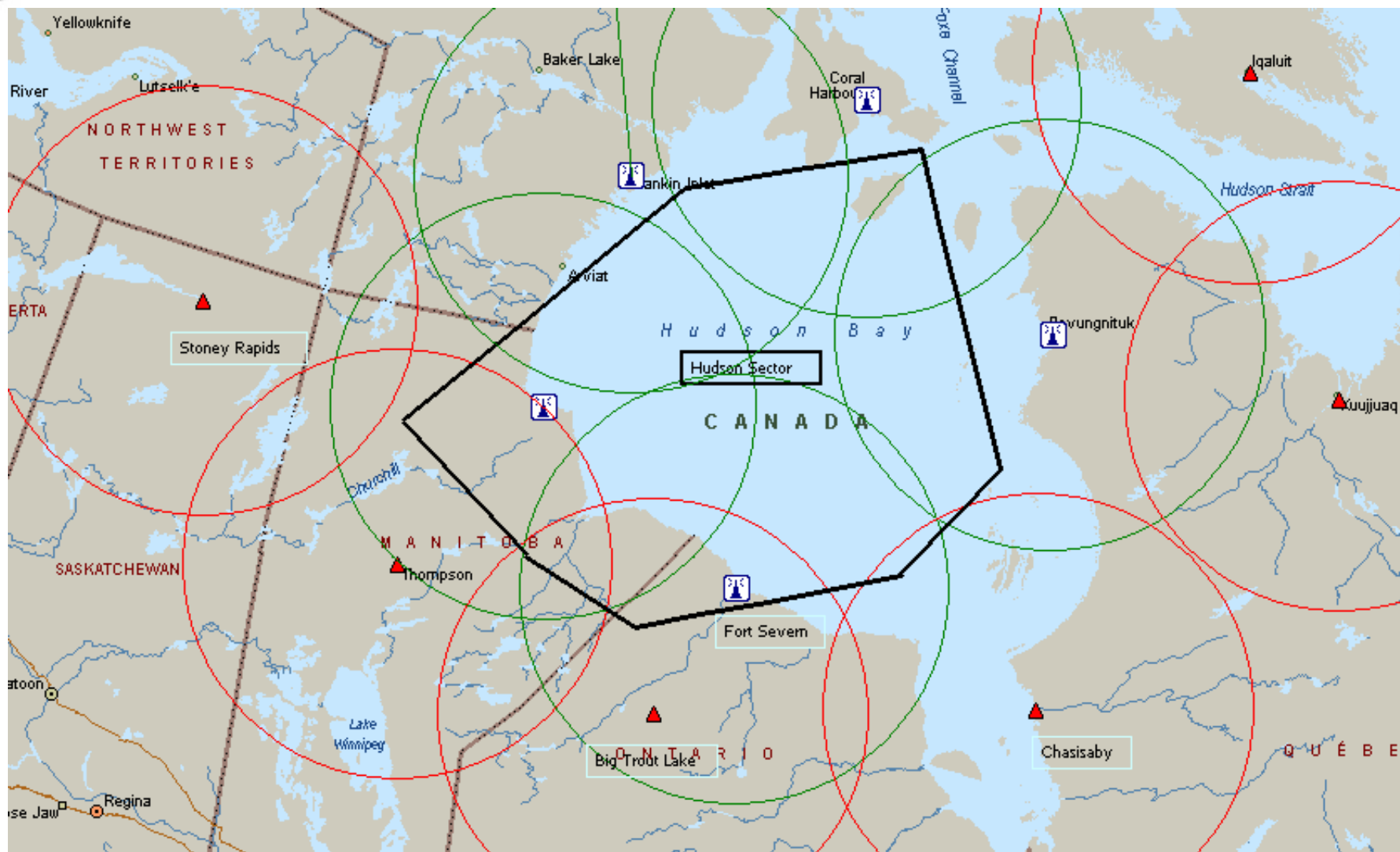


FL290

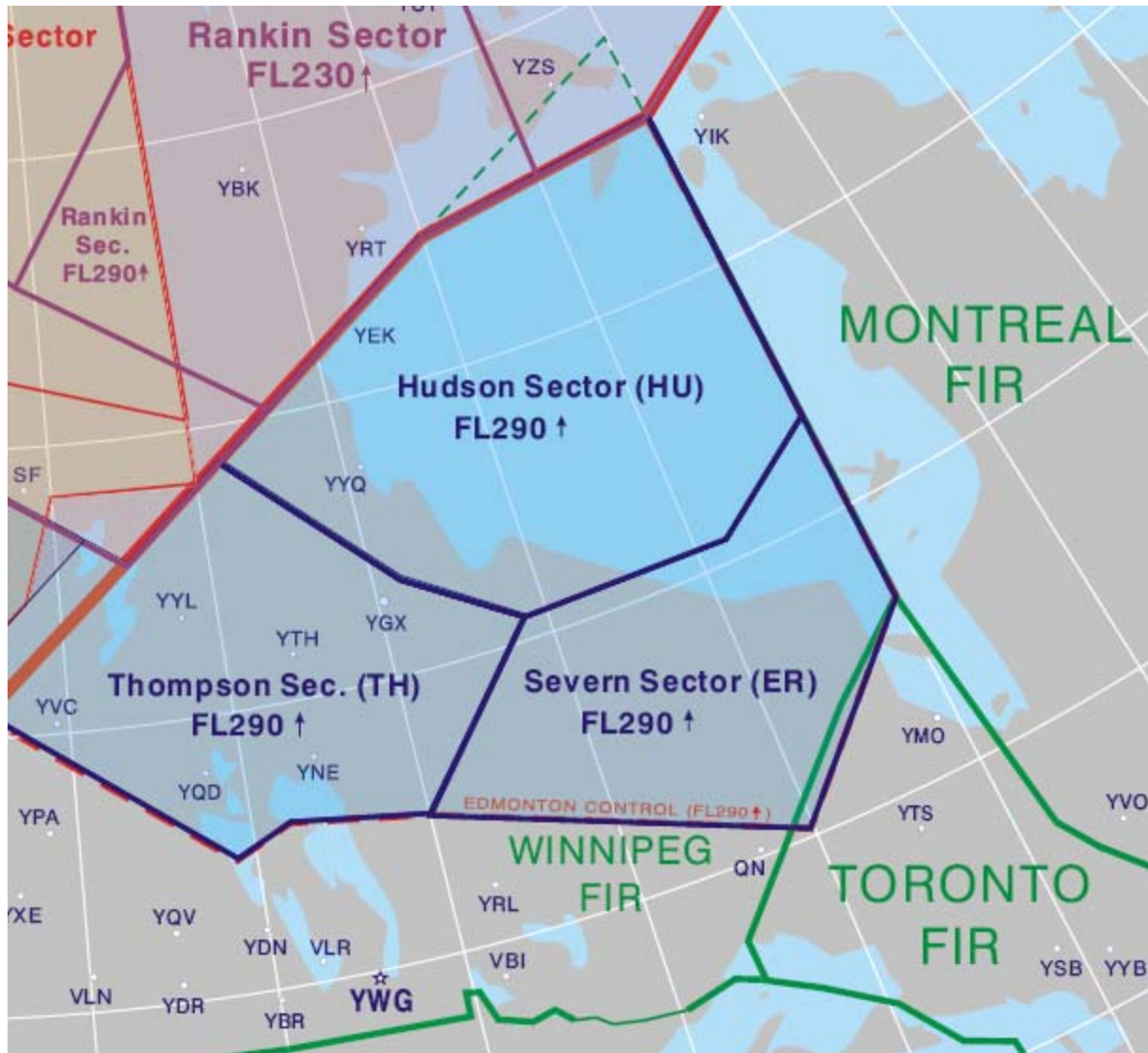
FL350



Notional coverage at FL290 superimposed on Hudson Sector



Hudson sector



ADS-B airspace Jan 22nd

Teleconference options



- **Option 1** – Polar Traffic focus – Segregated ADS-B airspace from FL290 to FL340 from 1700z to 2300z.
- **Option 2** – Westbound NAT Traffic focus – Segregated ADS-B airspace from FL360 to FL380 during the westbound flow. Structured airspace leaves FL350 open for westbound flights.
- **Option 3** – Entire Hudson Sector only - Segregated ADS-B airspace from FL310 to FL380 during all time periods.
- Teleconference response preferences
 - # 1 – 27%
 - # 2 – 64%
 - # 3 – 9%

Additional simulations – Focus on Hudson Sector



- Traffic in the Hudson Sector of the Bay is dominated by the NAT
 - NAT ~ 86%
 - Polar ~ 10%
 - Domestic ~ 3%
 - Pacific ~ 1%

ADS-B airspace Mar 4th

Teleconference options



- **Revised options all consider segregation only in the Hudson Sector**
- **Option 2 revised to FL350 and above**
- **Option 1** – Polar Traffic focus – Segregated ADS-B airspace from FL290 to FL340 from 1700z to 2300z in the Hudson Sector
- **Option 2** – Westbound NAT Traffic focus – Segregated ADS-B airspace from FL350 and above in the Hudson Sector
- **Option 3** – Entire Hudson Sector segregated ADS-B airspace from FL310 to FL380 during all time periods

Next Steps



- Operational approval
 - Transport Canada response to NAV CANADA's requests
 - Individual State acceptance of eligibility
 - OEMs certification processes, i.e. SBs, AFM amendments, etc
- ATS proposals for implementation
 - Response to current options
 - Any technical or operational restrictions
 - Completion of Functional Compliance Survey
- Official notifications to customers
 - AIC date in early May provided responses received in a timely manner

Telecon highlights – Next consultation



Next telecon will be held on April 8th at 10:00 EDT (1500 UTC).

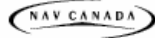
Call in details to follow.

If you were not e-mailed an invitation for this telecon please e-mail Jeff Cochrane

cochraj@navcanada.ca

Pages

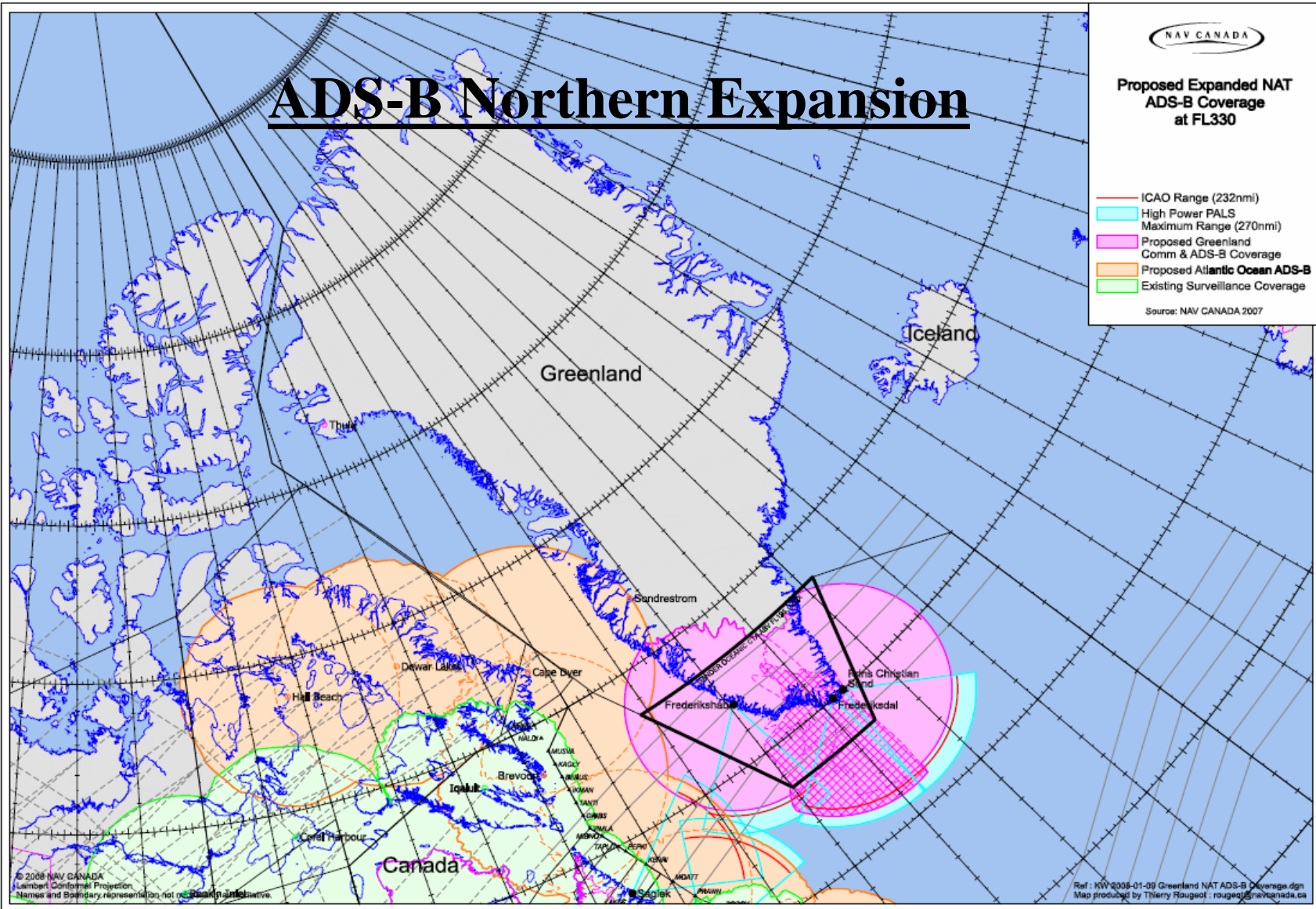
ADS-B Northern Expansion



Proposed Expanded NAT
ADS-B Coverage
at FL330

- ICAO Range (232nm)
- High Power PALS
Maximum Range (270nm)
- Proposed Greenland
Comm & ADS-B Coverage
- Proposed Atlantic Ocean ADS-B
- Existing Surveillance Coverage

Source: NAV CANADA 2007



Attachments

Comments