ADVISORY WIRE

You. First.

REFERENCE NO:	AW700-34-0516, Rev 01	INFORMATION TYPE:	Maintenance Operational
ATA:	34-55	EFFECTIVITY:	Global Express / XRS (9002 - 9312, 9314 - 9380, 9384 - 9429) Global 5000 (9127 to 9383, 9389 to 9400, 9404 to 9431 and 9998)
SUBJECT:	**Space Based Augmentation System (SBAS) Global Navigation Satellite Sensor Unit (GNSSU) failure in flight**		

1. REFERENCES:

1.1. Honeywell Service Information Letter (SIL) D201502000082R002 – Space Based Augmentation System (SBAS) Global Navigation Satellite Sensor Unit (GNSSU) MKII, PN HG2021GD04, PN HG2021GD05, PN HG2021GD06, PN HG2021GD07, Global Positioning System (GPS)-SBAS Landing System Sensor Unit (GLSSU), PN HG2021KB01, and PN HG2021KB02, dated 31 May 2016

(http://cic.bombardier.com) in Technical Library > Service Bulletins > By Vendor > Honeywell

1.2. Service Bulletin (SB) 700-34-054 / 700-1A11-34-028, Modification – Global Positioning System (GPS) – Introduction of SBAS with LPV Approach Capability, released Dec 21, 2012 or later revision

http://cic.bombardier.com in Technical Library > Service Bulletins > Global

1.3. Service Bulletin (SB) 700-34-062 / 700-1A11-34-036, Modification – Dependent Position Determining – Introduction of Automatic Dependent Surveillance – Broadcast Out Capability (ADS-B Out), released July 05, 2013 or later revision

http://cic.bombardier.com in Technical Library > Service Bulletins > Global

2. INTRODUCTION:

This Advisory Wire (AW) revision 1 provides an update to operators regarding the software issue affecting the Space Based Augmentation System (SBAS) Global Navigation Satellite Sensor Unit (GNSSU). The revision 2 of Honeywell SIL (Ref. 1.1) describes the availability of the permanent solution. This software anomaly may result in a Global Positioning System (GPS) failure in flight on aircraft post Service Bulletin reference 1.2 or 1.3.

3. DESCRIPTION:

Some operators have recently reported to Bombardier and Honeywell that they observed either single or dual loss of GPS signal in flight that has resulted in a Flight Management System (FMS) message GPS FAILED followed by other cascading effects associated with the GNSSU failure (i.e. CAS messages GND PROX FAIL, ADS-B FAIL). These failures were only observed after installation of the SBAS GNSSU (Ref. 1.2 or 1.3). The majorities of these events were observed in the Greenland / Iceland vicinity at cruise altitude and were observed with the GPS in either NAVIGATION mode (SBAS Off) or DIFFERENTIAL mode (SBAS On).

Following investigation, the SBAS GNSSU manufacturer identified a software anomaly that has been observed when the aircraft was located north of 47 degrees latitude or under specific conditions that exist within the SBAS network.

The probability of encountering this software anomaly is small and it is not possible for the operator to predict when the SBAS GNSSU is under these exact conditions. In general, these events occur more frequently when the aircraft is close to the edge (see white lines) of the SBAB coverage regions (Ref. Figure 1).

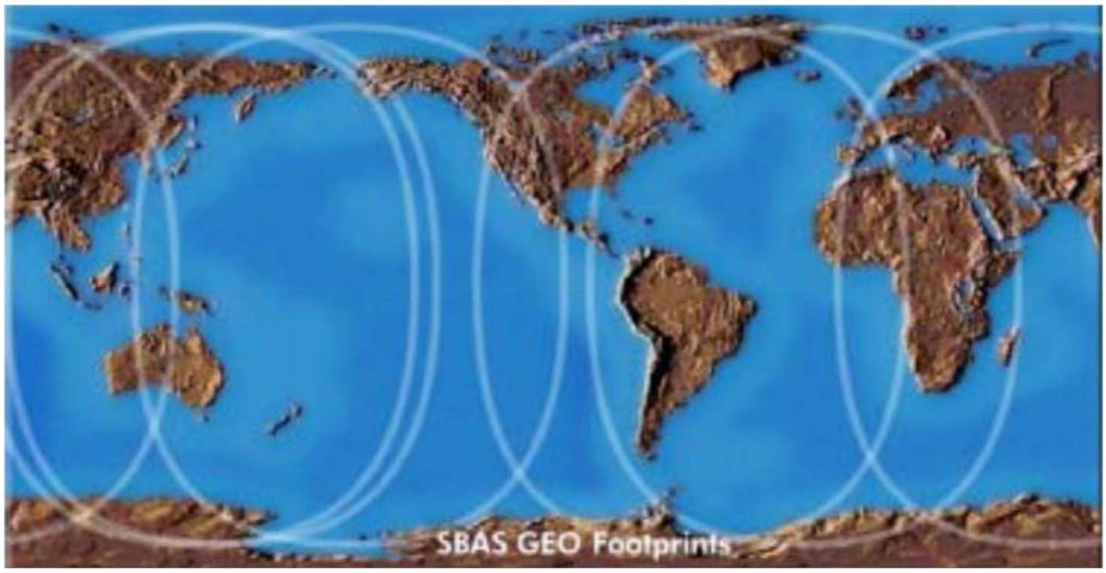

Figure 1- SBAS Satellite Coverage Map

4. ACTION:

Operators should be familiar with the condition, work around and solution detailed in the Honeywell SIL (Ref. 1.1).

Although cycling circuit breakers is not a standard practice recommended by Bombardier, cycling power to the affected GNSSU via the EMS CDU (Under System: NAV and Circuit breakers: GPS 1 / GPS 2) will correct this condition and is the only way to recover when this situation occurs in flight.

The SBAS GNSSU MOD 4 (Ref. 1.1) is deployed Free Of Charge (FOC) on an attrition basis when performed with other repairs. As well as on new SBAS GNSSUs and those returned for repair.

Customers who choose to have the MOD 4 incorporated into airworthy units should contact the Honeywell Aerospace Contact Team for more information.

Should you have any queries pertaining to this Advisory Wire (AW), please contact your Bombardier Field Service Representative (FSR) or the Customer Response Center (CRC).