

Problem Report Briefing



**FANS Interoperability Team Meeting
(FIT/22)**

Santiago, Chile, 3-4 March 2015

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Agenda

- Introduction
- PR Status Definitions
- PR Type Definitions
- Problem Report Metrics
- Updates on Pre-FIT/22 PRs
- Specific PRs for Discussion
 - Old Message Display PRs
 - “Ack-n-Toss” PRs
 - PRs Received Since FIT/21
- Summary of All South Pacific PRs Received Since FIT/21

Introduction

- PRs filed via ISPACG-CRA, NAT DLMA Problem Reporting website:
<http://www.ispacg-cra.com/>
 - Website hosted by Airways Corporation of New Zealand Limited
- Now used for:
 - CRA for South Pacific (ISPACG FIT)
 - CRA for North, Central, East Pacific (IPACG FIT)
 - DLMA for North Atlantic (NAT CNSG)
 - FIT-Asia for South China Sea, Bay of Bengal, Indian Ocean
- Continue to get new entities registered with website

Introduction

- **323** PRs received since FIT/21 (Feb 12, 2014 – Feb 12, 2015)
 - Last year reported **273** PRs received since FIT/20 (Feb 9, 2013 – Feb 11, 2014)
 - **49** PRs received in 2015 as of **26** Feb 2015
- De-identified PR file available on ISPACG/29 website
 - 2 files containing all PRs received 1 Jan 2012 thru 31 Dec 2013 and 1 Jan 2014 thru 19 Feb 2015

PR Status Definitions

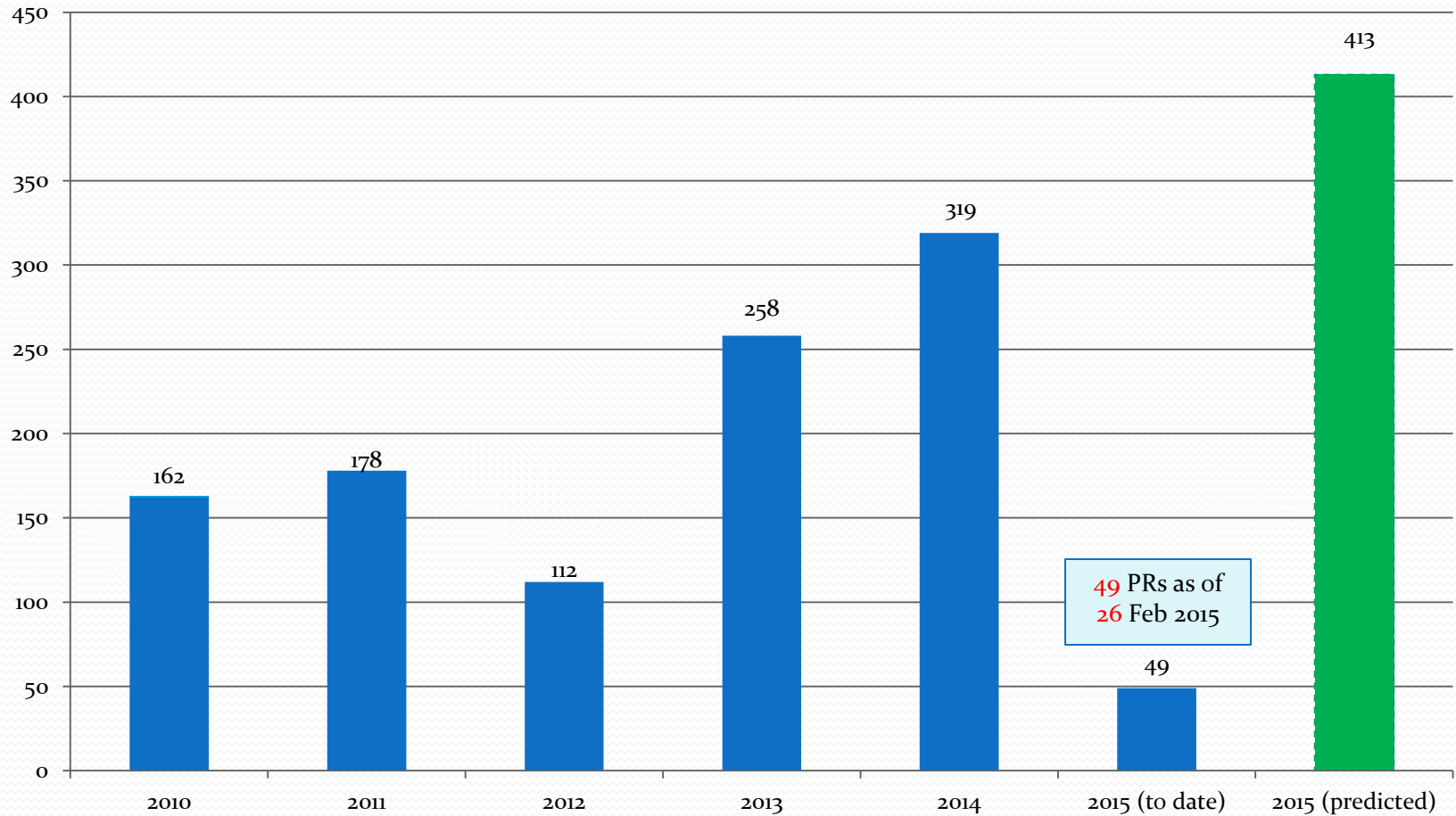
- **RAISED** - the PR has been filed by the originator but has not yet been processed by the CRA
- **ACTIVE** - CRA has processed the PR and allocated a CRA # and someone to investigate it. During this phase the PR is under investigation
- **OPEN** - The investigation is complete however some form of correction is required before it can be closed
- **CLOSED AS DUPLICATE** - Closed because problem is already covered under another PR
- **CLOSED** – Corrective action has been implemented or PR is a non-problem

PR Type Definitions

- Website choices: **AIR, GROUND, NETWORK, TBA**
- CRA tracking breaks out as:
 - **AIR – procedural** – Problem due to flight crew action
 - **AIR – technical** – Problem due to avionics fault
 - **GROUND** – Problem due to issue at ATSU
 - **NETWORK** – Problem at GES or in network
 - **Mult** - Problems occurred in more than one area
 - **None** - Problem was a non-problem
 - **TBA** – To Be Assigned – problem type not yet determined

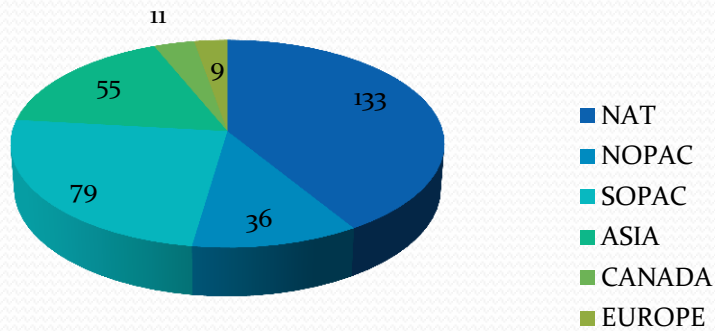
Problem Report Metrics

Growth in Number of PRs per Year

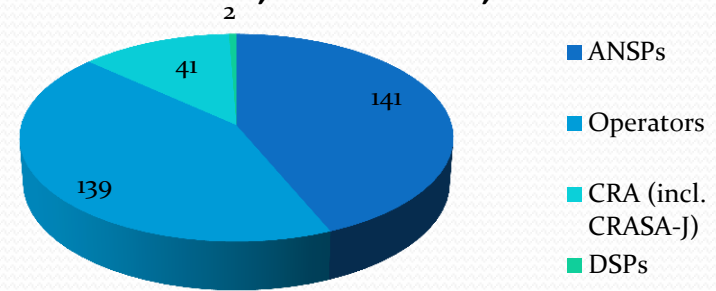


Problem Report Metrics

All Problem Reports by Region
Feb 12, 2014 - Feb 12, 2015



All Problem Reports by Agency Type
Feb 12, 2014 - Feb 12, 2015





Updates on Pre-FIT/22 PRs

PR-1145-SN - B777 unable to send CPDLC messages after Data Authority Transfer

Region: SOPAC

Status: OPEN

Type: AIR-t

- Problem occurs if a downlink is sent and the End Service uplink is initiated during a media transition or period of No Comm
- Fix confirmed in lab test of Block Point 17A software
- Block Point 17A available 4Q15

PR-1160-GS - Ocean21 Treats Optional Lat/Long as Separate Waypoint

Region: NOPAC

Status: CLOSED

Type: GROUND

- DARP request included optional lat/long on a fix
- ATC clearance included both the waypoint requested and a lat/long at that fix
 - So the following airway was not loadable (entry fix has to be a named waypoint)
- Fix was fielded in release T20 on 2014-07-08

PR-1405-GS - Messages not delivered on SATCOM

Region: NAT

Status: CLOSED

Type: AIR-t

- B788 flight crew reported difficulties in connecting with Gander
 - Duplicate PRs 1439-GS, 1483-GS, 1512-GS, etc.
- Issues have occurred with multiple operators
- At least two causes identified:
 - One cause (loss of Cat B VHF link may prevent determination of VHF NO COMM) duplicated in 787 avionics lab
 - Other cause is apparently SATCOM operational issues (e.g., improper registration of new aircraft with Inmarsat)
- Problem corrected in BP 2.5

PR-1480-SN - Unexpected latdev report - MD11

Region: SOPAC

Status: OPEN

Type: AIR-t

- Aircraft had been issued an amended route clearance
- Shortly afterwards, a lateral deviation event report was received, the timing of which would appear to be coincident with the loading of the route clearance
- LDE report did not appear to place the aircraft “off track”
- Problem has been corrected in the -922 FMC which will be certified 24 March 2015

Updates on Pre-FIT/22 PRs – Airbus

- Refer to Airbus Working Paper



Specific PRs for Discussion

PR-1823-SN - Old Message Display PRs

Region: NAT

Status: ACTIVE

Type: AIR-t

Background:

- 9 reports since Dec 2013 where a CPDLC message received during a previous flight was redisplayed on the next flight (Master PR - 1516-GS, several events reported via CRO)
 - Response prompts were displayed and in 2 events flight crews responded to redisplayed message
- 2 reports of the ATC LOG from the previous flight not clearing at flight complete or redisplaying on next flight
- Treating these as separate but likely related event categories
- All involved 767-300 with Pegasus '09 software
- All occurred on westbound flights out of Europe into the NAT
- All but the most recent event involved re-display of contact/frequency change messages
- A similar redisplay event occurred in 2003 and a fix was incorporated into Pegasus '09 S/W
 - No reports received for 10 years (!) after Pegasus 09 release
- **Note:** NAT event on 5 Dec 14 involving old altitude clearances received by 2 aircraft was different (network) problem. Refer to PRs 1770-MM, 1771-GS in this briefing

PR-1823-SN - Old Message Display PRs (cont'd)

Region: NAT

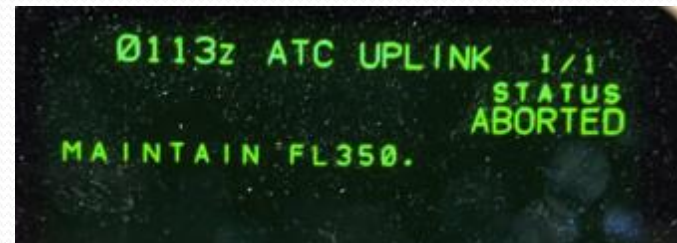
Status: ACTIVE

Type: AIR-t

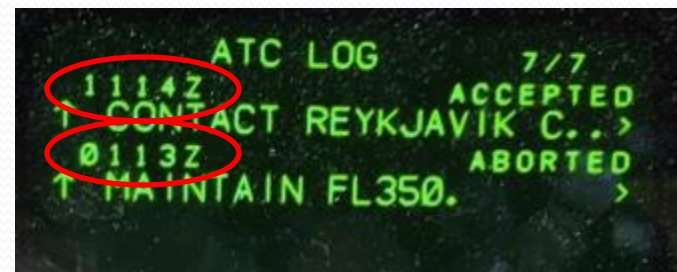
Latest event:

- Most recent event was reported by Isavia and involved redisplay of MAINTAIN FL350 (PR-1823-SN)
 - Believe this to be 2nd event category (log from previous flight not cleared or redisplayed)
 - Flight crew could not respond (message status was ABORTED)
- Event is currently being investigated by the ISAVIA Safety Occurrence Group

ATC UPLINK Page



ATC LOG Page



PR-1823-SN - Old Message Display PRs (cont'd)

Region: NAT

Status: ACTIVE

Type: AIR-t

Investigation Status:

- Boeing engineers have spent many hours analyzing message logs and attempting to reproduce problem in the lab
- Honeywell has analyzed BITE and conducted a software code analysis
- BITE data have contained no faults which correlate to this issue
- So far, no success identifying problem

Guidance to Operators:

- Boeing released a Fleet Team Digest (FTD) with the following guidance:
 - 1) During preflight, check the ATC log and manually clear any messages which may be present
 - 2) After landing, cycle the FMC circuit breaker to clear the memory- this has not been adopted by many airlines due to the increase in workload for the maintenance crew
 - 3) Check time stamps for all CPDLC messages

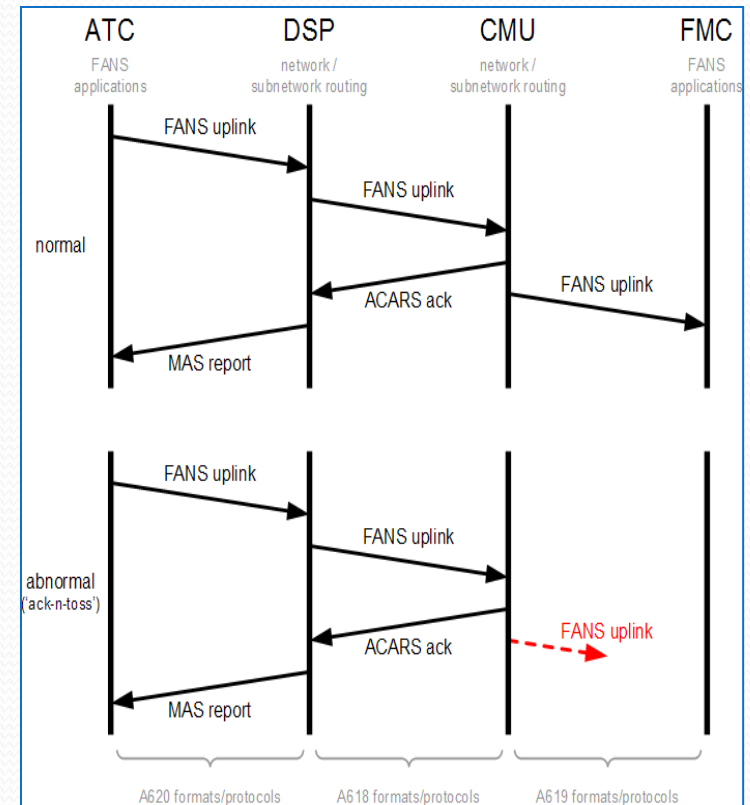
“Ack-n-Toss” PRs

Region: Mult

Status: ACTIVE

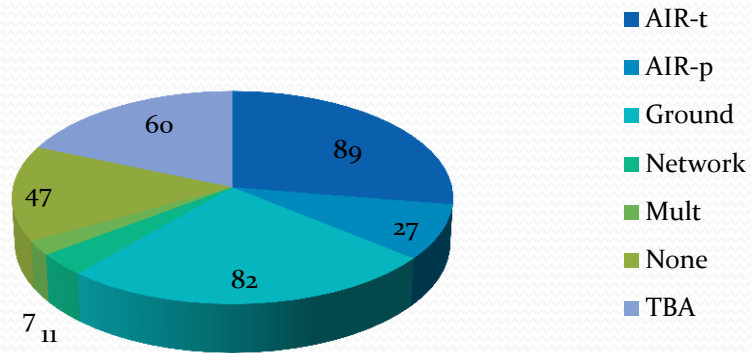
Type: AIR-t

- CRA has received many, many reports of avionics ack'ing receipt of uplinks, but uplinks not being delivered to FANS applications in FMC
 - Ref PRs 1198, 1313, 1522, 1684, 1753, 1769, 1802
 - Also several reports from FAA DCL trials
 - Reported events involve B767s, B744s, MD-11s
 - Common denominator is Rockwell-Collins CORE -012 CMU
- CRA working with Boeing, Honeywell, Rockwell-Collins, and a B744 operator
- **B744 operator requested Boeing solicit input/help from other affected operators**
 - If event suspected, please provide CVR datalink recording log to Boeing
 - **B744 operator has made crew procedure available**

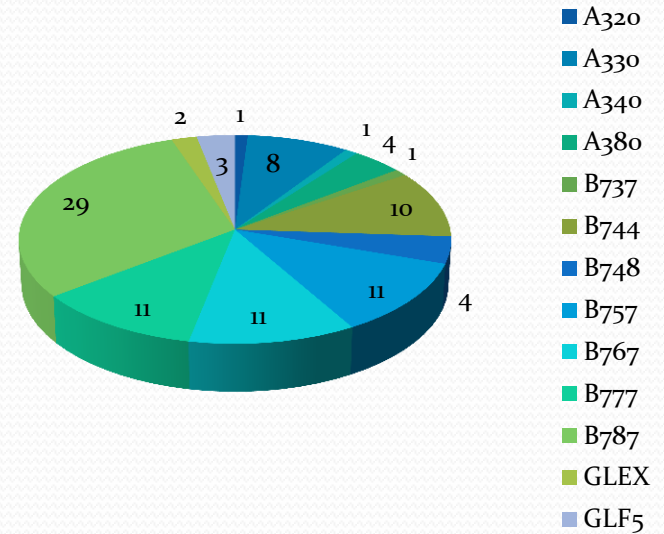


New PRs

All Problem Reports by Problem Type
Feb 12, 2014 - Feb 12, 2015



All "AIR-Technical" Problem Reports by Model
Feb 12, 2014 - Feb 12, 2015



PR-1533-SN - INACCURATE CPDLC LEVEL CHECK

Region: NAT

Status: OPEN

Type: AIR-t

- B77W sent LEVEL 350 only 1 minute after being cleared from FL330 to FL350
- ADS demand report revealed airplane was in climb at FL333
 - Not level at FL350 until 6 minutes later
- Issue appears to be related to a double button push when ACCEPTing the clearance uplink that sends the LEVEL report
 - Problem deferred from BP17A, fix target TBD

PR-1534-GS - Datalink Anomalies

Region: NOPAC

Status: CLOSED

Type: AIR-t

- B788 reported unable to send over SATCOM
 - After restart, transfer from RJJJ to KZAK failed, and had to logon manually
- Two issues
 - Inability to use SATCOM was a duplicate of PR 1405-GS
 - Problem corrected in BP 2.5
 - Transfer failure was avionics not responding to FN_CAD after a master switch
 - Problem corrected in BP 2.5

PR-1556-GS - Unable CPDLC

Region: NAT

Status: OPEN

Type: AIR-t

- B788 was unable to connect with Dakar (G000)
- Log shows multiple logons, all receiving an ACK indicating success
- Each time, a connect request (CR1) was sent
 - Network ack, but no application response
- SOPAC PRs 1626-GS and 1824-GS are duplicates
- Root cause determined by supplier
 - Fix targeted to BP3 software release (3Q15)

PR-1580-MM - Failed CPDLC transfer from YBBB to NZZO

Region: SOPAC

Status: CLOSED

Type: GROUND

- NZZO was shown as NEXT CENTRE
- ATC COMM was terminated by YBBB
- Manual logon to NZZO was required
- YBBB did not designate NZZO as NDA before performing AFN address forwarding to NZZO
- Eurocat fault identified and corrected August 2014

PR-1585-GS, B788 did not respond to ADS contract requests

Region: NAT

Status: OPEN

Type: AIR-t

- B788 did not respond to ADS contract requests, and made no ADS reports
- Two problems:
 1. At 0402z, airplane responded to CZQX cancel all and terminate with message containing CPDLC label, ADS disconnect IMI and previous CPDLC message
 - Under investigation by Honeywell
 2. ADS contract requests from BIRD received no response
 - Same as PR 1586-GS
 - Problem corrected in BP 2.5

PR-1604-SN ETA Change with FMS Active Route Manipulation

Region: SOPAC

Status: ACTIVE

Type: AIR-p

- NZZO received ADS waypoint change event reports from FA7X with no change in route data
 - ETA error on one, invalid altitude on one
- Free text company downlink indicates possible holding
- Assigned to Honeywell for investigation

PR-1628-GS - Downlink not acknowledged by CSP - B788

Region: SOPAC

Status: CLOSED

Type: AIR-t

- CPDLC uplink “PROCEED DIRECT TO TIMMI” was sent to aircraft
- Flight crew advised that their response was displayed as “SENDING”, rather than “SENT”
- CRA investigation found that aircraft was configured for INMARSAT Satcom, but customer was not registered/authorized for access to Inmarsat network
- AES has now commissioned with Inmarsat

PR-1640-BC - Unable to issue route clearance via CPDLC

Region: SOPAC

Status: CLOSED

Type: AIR-p

- Controller attempted to issue the following route clearance(80): CLEARED
Destination Airport: KLAX VESPA AVE FIM Arrival Procedure: ARRIVAL SADDE6
- The pilot reported, “WE REQUESTED DCT FIM WE RECEIVED ONLY “CLEARED ROUTE CLEARANCE”. NO ROUTING”
 - Clearance was later issued via ARINC AGM
- CRA confirmed this operator trains flight crews to load route clearances for review
- Flight crew forgot to execute this step

PR-1645-RP - No CPDLC downlinks from 747-8

Region: SOPAC

Status: OPEN

Type: AIR-t

- CPDLC connection established with WAAF and subsequently with YBBB
- All AFN and ADS uplinks and downlinks and all CPDLC uplinks worked correctly
- No responses to CPDLC uplinks received by ATC
- Suspect issue with glare shield response buttons on aircraft

PR-1646-SN - Unable to Logon to KZAK

Region: SOPAC

Status: OPEN

Type: GROUND

- All logon attempts received FAK4
- Oakland Center reported they had 2 FPLs for flight
 - System will not allow logon with 2 FPLs in system
- Developing plan to add capability to allow logon when there is more than 1 FPL but enhancement is years away

PR-1650-GS - ADS-C position reports with improperly encoded next and next+1 waypoints

Region: SOPAC

Status: CLOSED

Type: AIR-t

- All pilot-defined waypoints with a longitude of 180° (both lat/long fixes, and longitude reporting points) were encoded as S180W180 (default value)
- Original report documented in PR 1083-GS and briefed at FIT/19
- Some operators were slow to update corrected software (787 BP 2) as release involved a number of other systems, and entailed significant airplane down-time
- Oakland Center reported in July 2014 “we have not seen any position reports from B787s with improperly encoded next and next+1 waypoints”

PR-1669-MM - Missing CPDLC uplink response

Region: SOPAC

Status: OPEN

Type: MULT

- A flight crew reported the following:
 - REQST CLB F360 SENT AT 2243Z.
 - NO RESPONSE.
 - AT 2248Z RECVD MSG CHK AND RESPOND TO OPEN CPDLC MS G.
 - THERE WERE NO OPN MSG.
- SITA sent a MAS failure / NOT LOGGED ON intercept to YBBB for the first climb clearance
- Failure indication does not appear to have been communicated to controller and/or automation
- CRA/DLMA has encountered increasing number of similar PRs
- In NAT CNSG/10 WP/08 DLMA posed question whether ATS units should have the capability (automated and/or manual) to resend failed uplinks

PR-1685-SN Incorrect Aircraft address included in B777 logons

Region: SOPAC

Status: OPEN

Type: AIR-t

- ATS unit reported that 777 aircraft include incorrect ICAO 24-bit aircraft addresses in AFN contact messages
 - Address encoding is reversed
 - Addresses generally have not been used for flight plan correlation
- Fixed for in-production 777s which have AIMS-2 avionics and BP17 software
- Will be fixed for newer in-service 777s with AIMS-2 avionics and retrofit BP17.1 software
 - Expected to become available in 4Q 2014
- Will not be fixed for older in-service 777s which have original AIMS-1 avionics

PR-1690-SN - No CPDLC End Service by NFFF – numerous

Region: SOPAC

Status: OPEN

Type: GROUND

- Over a relatively short period, a number of aircraft were not disconnected by NFFF
- Problem affected a number of different aircraft types in different locations
- Problem occurs when there is an open CPDLC dialogue, which prevents the CPDLC connection from automatically disconnecting
- Instructions issued to NFFF controllers to reinforce procedures
- Originator reports situation has improved, but problem still occurs

PR-1691-SN - CPDLC problem with B772

Region: SOPAC

Status: CLOSED

Type: AIR-t

- Several CPDLC uplinks were sent to aircraft and no flight crew response was received
- After several minutes, flight crew sent a free text message indicating they were unable to clear an uplink message from the display
- Later, CPDLC operation returned to normal
- Believe this to be a known (non FIT) PR with title, “Unable to Cancel ATC Message Block on Upper EICAS”
 - PR was corrected in BP 17

PR-1734-SN - CR1 failed because we were CDA - B77W a.k.a. When Automation Goes Bad

Region: SOPAC

Status: OPEN

Type: mult

- YBBB initially unable to establish CPDLC connection, NFFF still had active connection
- Flight crew instructed to disconnect CPDLC and to logon to YBBB
- YBBB's attempts to establish CPDLC connection were rejected because YBBB was the CDA
- Log review revealed the following:
 - Problem started with failure of NFFF to send NDA=YBBB prior to initiating AFN Contact Advisory
 - During the next hour both centers **bombarded** the airplane with uplinks, including:
 - AFN Contact Advisories (i.e., alternating attempts to transfer aircraft)
 - Numerous CPDLC CR1s – 7 from NANCDYA, 12 from BNECAYA
 - Numerous ADS-C contract requests
 - In the end, CPDLC connection established with YBBB
 - Avionics treated subsequent CR1 attempts from YBBB as attempts to establish the inactive connection (avionics were confused at this point)
- Confirmed in lab test that avionics respond correctly to “normal” receipt of duplicate CR1 (reply with CC1)
- Moral of the story: Always send NDA prior to initiating AFN Contact Advisory

PR-1736-SN - CPDLC position report contained incorrect 'DESCENDING' message element - GLEX

Region: SOPAC

Status: OPEN

Type: AIR-p

- A CPDLC position report received contained an incorrect "DESCENDING to 441"
- Avionics supplier suspects crew training issue
- CRA quandary:
 - PRs involving biz jets are notoriously difficult to resolve
 - CRA has no way to provide feedback to biz jet flight crews
 - Manufacturers rarely attend meetings like ISPACG and don't understand "responsibility" to investigate PRs and provide feedback
 - **How do we engage the biz jet manufacturers?**

PR-1739-SN - Error messages when loading route clearances - MD11

Region: SOPAC

Status: OPEN

Type: AIR-t

- Controller uplinked “AT ISTEM PROCEED DIRECT TO SHARK”
- Flight crew reported receiving the following two scratchpad messages:
 - DATABASE ACCESS ERROR
 - UNABLE TO UPDATE F-PLN
- Problem has been duplicated in Boeing lab
- Loading UM77 messages on flights that include Course to an Altitude (CA) leg as the missed approach final leg will cause this anomaly on the MD-11 model
 - Many approaches in Australia have this leg type for the final missed approach leg
- Problem can also occur with UM79
- Boeing to release IOP for this issue

PR-1755-RP - Loaded route did not match ATC uplink

Region: SOPAC

Status: ACTIVE

Type: AIR-t

- Flight crew requested a Tailored Arrival and were subsequently cleared for the Pacific 2 TA
- Uplinked route displayed correctly on MFD
- When LOAD FMC was selected, part of an old route was loaded
- Operator provided photos
- Boeing has been unable to reproduce the problem in the lab

PR-1756-GS - Datalink lost

Region: SOPAC

Status: CLOSED

Type: NETWORK

- ATC DATALINK LOST for approximately 1 hour
- Crew carried out three comm re-starts without restoring the link
- ATC Datalink returned to normal with no further crew action
- SITA identified a bug in software released in mid October
 - Not all uplinks were affected
- Problem was corrected soon after identification

PR-1760-GS - B789 issues with satcom

Region: SOPAC

Status: OPEN

Type: AIR-t

- Aircraft logged on OK and CPDLC and ADS-C established on departure (VHF)
- Transition to SATCOM had issues:
 - Several uplinks received UP INTERCEPT –AIRCRAFT NOT LOGGED ON
 - First and only ADS-C report via SATCOM sent at 1929:32 and received at 1946:39
- Result of known B787 issue with loss of SATCOM
- Problem duplicated in the Boeing lab and expected to be fixed in Blockpoint 3

PR-1762-GS - Loss of data link, lengthy delays - B788

Region: SOPAC

Status: CLOSED

Type: AIR-t

- Route clearance was issued by CPDLC and no response was received
- Expected ADS-C waypoint report was not received
- When the aircraft was contacted on HF, position report indicated aircraft was tracking in accordance with uplinked route clearance
- AT 1831 WILCO was received which was sent at 1814
- No response to other CPDLC uplinks
- Continual ADS-C “failures”
- Avionics problem identified and corrected in BP2.5

1770-MM - Unexpected Clearance #1

1771-GS - Unexpected Clearance #2

Region: NAT

Status: **CLOSED**

Type: NETWORK

- 1770-MM
 - Controller reported receiving an UNABLE response for a Clearance that was not sent by the controller
 - Clearance pilot reported receiving was identical to an Uplink that had been sent to aircraft 5 days earlier
- 1771-GS
 - Controller reported receiving an UNABLE response for a Clearance that was not sent by the controller.
 - Clearance pilot reported receiving was identical to an Uplink that had been sent to the aircraft 12 days earlier
- Problems resulted from an emergency secure IPSEC VPN connection SITA put in place to restore SITA Iridium Service impacted by severe flooding in Tempe, Arizona
- Connection encountered an undetected degradation which resulted in reported retransmission of uplinks
- Connection has been disabled

PR-1798-GS - Failure to Report

Region: SOPAC

Status: OPEN

Type: AIR-t

- Flight crew reported armed LEVEL AT ALT report did not send
- LEVEL AT ALT trigger logic uses vertical speed signal that is not suitably filtered
- The system has been modified to use an appropriately filtered signal
- Fix will be available in 787 BP 3 software

PR-1825-SN - Spurious CPDLC messages - B772

Region: SOPAC

Status: ACTIVE

Type: AIR-t

- Flight crew contacted ATC via CPDLC and reported "2 instances of a spurious level sent"
 - ATC had not received any such message from the aircraft
- Flight crew also advised that receiving unexpected "communications termination message"
- Operator provided the following when asked if a crew report had been filed:
 - Spurious armed level reports sent appeared on centre EICAS screen with no crew input or other interventions
 - An ATC comms terminated also received
 - ATC messages reviewed and no record of these in history
- Review of comm log indicated avionics reset had occurred
- Honeywell engineer has reproduced "similar results" in lab
- Investigation continues

PR-1843-GS - CPA media asymmetry, Iridium down, HF up

Region: NAT

Status: **CLOSED**

Type: NETWORK

- Isavia reported an issue with several B777s operated by one airline
- Instead of using medium on which downlink message had just been received (Iridium), CSP tried on numerous occasions to deliver messages via HF
- ARINC reviewed logs for problem flights and noted a media mismatch between Avionics (downlinks) and uplink preferences
- ARINC default for uplinks is VHF, Inmarsat (SATCOM), HF DL, Iridium (SATCOM).
- ARINC has changed uplink preferences for this operator to VHF, Inmarsat (SATCOM), Iridium(SATCOM), HF DL

PR-1850-GS - B788 unable to load CPDLC route clearance(s)

Region: SOPAC

Status: OPEN

Type: AIR-t

- Flight crew advised they were unable to load uplinked clearances
- Problem (previously) duplicated in Boeing lab
- 787 (and 747-8) treat Non-Directional Beacons (NDB) as nav aids, rather than fixnames
 - Uplinks which reference an NDB as a fixname will not be loadable
- Problem affects:
 - [position] parameter, e.g., um74 (PROCEED DIRECT TO [position])
 - “to” parameter in um79 (CLEARED TO [position] VIA [routeclearance])
 - Does NOT affect [routeinformation] parameter
 - Does affect holds, speed/altitude constraints etc. in [routeinformationadditional] parameter
- Problem will be addressed in a future block point

New Airbus PRs

- Refer to Airbus Working Paper



This presentation is dedicated to our friend, mentor, leader, and wielder of the “FANS Implementation Tool”, Dave Allen.
We will miss him.



Questions?



South Pacific PRs

CRA number	Status	Type	Title	Findings
1513-SN	CLOSED	AIR-t	ADS-C periodic report not received - GLF5	A/C lost VHF about the time of the issue, so I suspect it was trying VHF and it took it a while to fail the media and switch to using SATCOM.
1514-SN	OPEN	AIR-t	Loss of CPDLC, ADS-C - A332	This problem was the result of a known satcom failure with one Satcom manufacturer (Rockwell-Collins). Satcom dropped off in flight and got back few minutes later. The problem will be corrected at the next opportunity.
1515-SN	OPEN	AIR-t	Unable to load UM80 - A332	Per Airbus analysis, the load failed as SHARK was a duplicate waypoint that could not be resolved by the avionics. The flight crew would have been notified by the avionics of the need to resolve the duplicate waypoint.
1522-SN	OPEN	AIR-t	No response to Climb Clearance	The uplinks were delivered to the airplane (ack received from the CMU) but were apparently not delivered to the FMC. There have been several similar events reported involving B763s, B744s, and MD11s. Boeing is working with the CMU supplier and the affected operators to determine the source of the problem.
1528-SN	CLOSED	None	CPDLC downlink received before it was sent - A332	The problem was reported too late to acquire logs for review.
1535-SN	CLOSED AS DUPLICATE	None	CPDLC downlink received before it was sent - A332/KZAK	Closed as a duplicate of 1587
1536-SN	ACTIVE	TBA	CPDLC downlink received before it was sent - C17	Operator investigation in progress
1537-SN	CLOSED	AIR-t	CPDLC downlink received before it was sent - GLF5	Event occurred too long prior to receipt of the report to get logs for investigation

CRA number	Status	Type	Title	Findings
1540-SN	OPEN	GROUND	Unable to establish CPDLC - A388	<p>The pilot sent a logon to YBBB at 03:32:15. YBBB acknowledged and established a CPDLC connection with the airplane (CC1 received at 03:32:17). I assume something occurred on the airplane (possible avionics reset?) because the flight crew sent another logon to YBBB at 03:33:44. YBBB acknowledged the logon, but did not send a new connect request. The airplane consequently ignored the first Position Report request.</p> <p>At 03:35:06, the pilot sent a logon to YMMM. YMMM acknowledged the logon and established a CPDLC connect (CC1 received at 03:35:09). The airplane consequently ignored the second position report request from YBBB.</p> <p>DO-258A recommends that, "upon receipt of an AFN Contact (FN_CON) message while a CPDLC connection appears to already exist with the aircraft, the ATS Provider system should assume that a failure recovery has occurred in the aircraft CPDLC application". Assigned to Air Services to consider for a future enhancement to their ground automation.</p>
1580-MM	CLOSED	GROUND	Failed CPDLC transfer from YBBB to NZZO	Air Services confirmed that this software fault was corrected August 2014.
1582-MM	ACTIVE	GROUND	Failed CPDLC transfer from YBBB to NZZO	NZZO appears to have sent its CPDLC connection request too late. PR assigned to NZZO to assess further.

CRA number	Status	Type	Title	Findings
1594-SN	CLOSED	AIR-t	Loss of CPDLC - A333	This airplane had a flakey satcom. The airplane seemed to have suffered a satcom failure as indicated by a media advisory message at 14:36 indicating loss of satcom. Melbourne's End Service at 15:12 and Brisbane's pos report request both received the dreaded "UP INTERCEPT NO STATION TO" response. It somehow got better between 18:40, when I see a media advisory message indicating there's no satcom, and 18:45 when a media advisory proclaims satcom is available. Satcom was lost again at 18:53.
1602-SN	ACTIVE	AIR-t	DR1 did not contain ERROR [commandedTermination]	A reset of the FANS application occurred with two pending uplinks which were then not answered. The scenario was played in lab but the problem was not reproduced.
1603-DK	ACTIVE	GROUND	Unable to establish CPDLC - Not next data authority	The NDA uplink from NANCDYA came 20 minutes after the expected logon. Nadi didn't designate YBBB as the NDA. PR assigned to NFFF to investigate further.
1604-SN	ACTIVE	AIR-p	ETA change with FMS active route manipulation	Aircraft involved was a FA7X. Honeywell investigation in progress.
1620-SN	OPEN	AIR-t	Low FOM in ADS-C reports from A320	Low FOM is due to the fact the aircraft time reference was not GPS synchronized (timestamp was in the future). When the aircraft time reference is not GPS synchronized, the FOM is downgraded. Aircraft documentation has been updated to underline the need for a GPS time synchronization. The airline was also informed that they need to synchronize the clock with the GPS (maintenance).
1621-SN	CLOSED AS DUPLICATE	GROUND	Loss of CPDLC - A388	Closed as a duplicate of 1540-SN.

CRA number	Status	Type	Title	Findings
1622-SN	ACTIVE	TBA	Loss of ADS-C - A332	Airbus investigation in progress.
1623-SN	ACTIVE	TBA	Loss of ADS-C - A332	Airbus investigation in progress.
1624-SN	ACTIVE	TBA	CPDLC not available - A332	Airbus investigation in progress.
1625-SN	CLOSED	TBA	CPDLC not received - A332	<p>The ground traces analyses do not show any communication issue. There is always at least one available communication mean. Furthermore, air/ground exchanges do not show any message sent from the ground and not received on board, or sent by the board and not received on ground.</p> <p>As a consequence, the CPDLC messages in question have not been sent to the aircraft; so this issue seems to be linked to an ATC centre application issue or to a communication issue in the ground to ground exchanges. The PR description contained insufficient information to determine if there was a ground station problem. This PR was closed at the request of the originator.</p>
1626-GS	CLOSED AS DUPLICATE	AIR-t	Unable to establish CPDLC - B788	<p>Reviewing the ARINC log, the airplane was responding on ADS, but apparently ignoring CPDLC connect requests (CR1). Network acknowledgements were sent (resulting in Message Assurance Success – MAS-S), but no application level (CC1) downlinks.</p> <p>This is a duplicate of PR 1556-GS.</p>
1627-SN	ACTIVE	TBA	Loss of ADS-C - A332	Airbus investigation in progress.
1628-GS	CLOSED	AIR-t	Downlink not acknowledged by CSP - B788	Inmarsat has confirmed that the airplane involved was not authorized on the system. As of September 2014, the AES had been commissioned with Inmarsat.

CRA number	Status	Type	Title	Findings
1640-BC	CLOSED	AIR-p	Unable to issue route clearance via CPDLC	The CRA confirmed with the operator that they do train their crews to select LOAD when they see the CLEARED ROUTE CLEARANCE uplink message. This procedure is included in their training material and this crew just forgot that piece of the procedure.
1644-SN	CLOSED	AIR-t	Unexpected uplink message received - Request for ACARS logs	<p>Around the occurrence timeframe no AOC message logged in the traces. There is no new AOC flight plan sent.</p> <p>However an uplink message "CROSS ATMAP AT OR BEFORE 15:57" sent by YBBB can be considered as a flight plan change. This uplink has been reemitted several times on different media.</p> <p>Because this message is duplicated by the network it is displayed twice to the pilot. This is confirmed by the fact that the pilot answers Wilco to both occurrences. The second response was answered by an 'ERROR' message from the ground. This display may have disturbed the pilot who wanted to confirm if the status on the CROSS message.</p> <p>FANS A+B standard available Q1 2015 prevents duplicate message delivery.</p>
1645-RP	OPEN	AIR-t	No CPDLC downlinks from B748	The data indicates that while the aircraft was established in ATC COMM with WAAF and subsequently with YBBB, no responses to CPDLC uplinks were downlinked. However, all AFN logon and ADS downlinks did work correctly as did all ATC uplinks. At this time, this looks to be an aircraft issue (suspect glareshield buttons on aircraft not responding correctly). Boeing will monitor for any future reports of a similar event.

CRA number	Status	Type	Title	Findings
1646-SN	OPEN	GROUND	Unable to Logon to KZAK	All logon attempts received FAK4, which typically means the receiving center did not have a flight plan on file for the aircraft. Oakland Center reported the following: "We actually had 2 FPLs and our system will not allow a logon when we have two FPLs. We are developing a plan to add the capability to allow a logon when we have more than 1 FPL but the enhancement is years away". This PR will remain open pending the enhancement.
1650-GS	CLOSED	AIR-t	ADS-C position reports with improperly encoded next and next+1 waypoints	The software containing the fix is in 787 CMF BP2 (or later). This release is installed as a blockpoint with a number of other systems, and entails significant airplane down-time. Operators may therefore have been waiting to combine this with other maintenance actions. One operator's 787 fleet were all at the latest standard by 12 June. Another operator has begun the update process for their airplanes. Oakland Center reported the following, "As of July 8, 2014, it appears that all the referenced aircraft in 1650-GS have been updated. Since then, we have not seen any position reports from B787s with improperly encoded next and next+1 waypoints".
1652-SN	CLOSED AS DUPLICATE	GROUND	No CPDLC downlinks from A333	Closed as a duplicate of PR 1540-SN.
1653-SN	CLOSED AS DUPLICATE	mult	No CPDLC downlinks from A333	There were several issues at play with this problem. In the end, this was closed as a duplicate of PR-1540-SN.

CRA number	Status	Type	Title	Findings
1657-GS	OPEN	AIR-t	Loss of CPDLC, ADS-C - B788	Boeing confirmed with Inmarsat that this airplane has not logged on since September 2013. Airline was contacted to take remedial action.
1658-SN	ACTIVE	TBA	Multiple data link issues with C130	Aircraft operator investigation in progress.
1661-SN	CLOSED	GROUND	ADS Congestion	At the time Christchurch attempted to establish a connection, the airplane already had 5: AKLDUNZ,OAKODYA, BNECAYA, NANCDYA, AKLCDYA. I looked backward through the log to see if the airplane had acked and tossed a "cancel all and terminate", but found none. It looks like Oakland, Brisbane, and Nadi all left their ADS contracts running.
1667-MM	OPEN	GROUND	Invalid CPDLC Uplinks	Message log analysis corroborates flight crew report that NZZO sent two invalid CPDLC uplinks. NZZO confirmed erroneous uplink and have been unable to reproduce in their lab.
1669-MM	OPEN	mult	Missing CPDLC uplink response	Message log analysis indicates that SITA sent a MAS failure / NOT LOGGED ON intercept to YBBB for the first climb clearance (the one that the flight crew did not receive), but that indication does not appear to have been communicated to the YBBB controller and/or automation since one (or both) considered the clearance to be open/pending. The CRA/DLMA would note that it has encountered an increasing number of similar PRs. In NAT CNSG/10 WP/08 concerning PRs 1344-MM, 1511-MM, 1517-MM, and 1523-MM, for example, the DLMA posed the question whether ATS units should have the capability (automated and/or manual) to resend failed uplinks.

CRA number	Status	Type	Title	Findings
1678-GS	CLOSED	NETWORK	Loss of CPDLC, ADS-C - B788	CRA analysis in progress
1679-MM	CLOSED	AIR-t	Unable to establish CPDLC & ADS-C - B744	ACARS message log analysis revealed that the CMU rejected all FMC (label H1 / sublabel MD) uplinks -- both FANS and AOC -- with Q5 downlinks. This behavior may occur when the FMC cannot accept an uplink from the CMU. The CRA advised the aircraft operator to have its maintenance department investigate apparent problems with aircraft's ARINC 429 wiring between its CMU and FMCs.
1680-MM	OPEN	TBA	Unexplained CPDLC disconnection - B772	Analysis of the ACARS message log substantiates the PR description. The DSP received a CPDLC DR1 containing dM62 ERROR commanded Termination from the aircraft, which normally indicates that the flight crew manually terminated CPDLC. No instruction from YBBB (or from WAAF for several hours prior) to terminate CPDLC is present in the log, however. The CRA has requested additional ACARS message logs in order to search for an earlier instruction to terminate CPDLC. The CRA found no earlier instruction to terminate CPDLC in the additional ACARS message logs covering the period since the aircraft apparently last cycled avionics power.
1685-SN	OPEN	AIR-t	Incorrect Aircraft address included in B777 logons	This problem has been corrected for in-production 777s which have AIMS-2 avionics and BP17 software. The problem has been corrected for newer in-service 777s with AIMS-2 avionics and retrofit BP17.1 software. No correction is planned for older in-service 777s with AIMS-1 avionics.

CRA number	Status	Type	Title	Findings
1687-SN	CLOSED	AIR-t	Aircraft reported being 'bombaraded with CPDLC messages' - B77L	Operator reported their "ground system had error set up", which has since been corrected.
1689-GS	CLOSED AS DUPLICATE	AIR-t	Loss of datalink	CRA investigation in progress
1690-SN	OPEN	GROUND	No CPDLC End Service by NFFF - numerous	The following explanation was received from AFL, "The problem is because CPDLC dialogue was left open much earlier during the phase of the aircrafts flight in our airspace ... Instructions to close CPDLC dialogue have been issued to the operational floor to ensure the problem does not recur".
1691-SN	CLOSED	AIR-t	CPDLC problem with B772	It is suspected that a known avionics issue was the cause of this problem. The avionics issue was fixed in 777 AIMS-2 block point 17.
1692-SN	ACTIVE	TBA	Please - someone tell me why this RC didnt work...	Airbus investigation in progress.
1698-RP	CLOSED	None	Loss of ADS-C for C130	Permission was not recieved to order audit logs. No data analysis could be conducted.
1704-SN	ACTIVE	TBA	No Load function available for route clearance uplink - A332	Airbus investigation in progress
1730-MM	ACTIVE	GROUND	Failed CPDLC transfer from YBBB to NZZO	The CPDLC transfer failed because NZZO did not establish a CPDLC connection as the NDA before YBBB terminated its CPDLC connection as the CDA, even though YBBB performed AFN address forwarding to NZZO. This PR is assigned to ACNZ to investigate further.

CRA number	Status	Type	Title	Findings
1733-GS	CLOSED	AIR-t	ADS-C report not received, failed Address forwarding - B789	The airplane was encountering a known problem with SATCOM up until just before 1630z. There was a system master switch at 1627z (probably initiated by the flight crew), after which comm via SATCOM operated normally. That explains why the ADS report was not sent. The AFN contact advisory at 1652z appears to have been delivered but not responded to, as were several earlier ones at 1640z, 1643z, 1646z and 1649z. A slightly later one at 1655z was successful. It's hard to be sure exactly what the airplane saw, as with MTSAt message delivery, the SITA ground logs don't contain the air/ground messages. The only difference seems to be that when the one at 1655z was received, CMF had just downlinked a DR1 for the active connection. The logon at around 1657 was a manual logon, initiated by the crew. At that time, the forwarding to Auckland had not completed, and the crew would have seen no connection existing at that time. There is a known issue with being unable to respond to AFN messages in some cases after a master switch occurred (as happened at 1627z). This is fixed in BP2.5, a Service Bulletin for which has now been released.

CRA number	Status	Type	Title	Findings
1734-SN	OPEN	mult	CR1 failed because we were CDA - B77W	<p>Problem started with failure of NFFF to send NDA=YBBB prior to initiating AFN Contact Advisory. During the next hour both centers bombarded the airplane with uplinks, including:</p> <ul style="list-style-type: none"> - AFN Contact Advisories (i.e., alternating attempts to transfer aircraft) - Numerous CPDLC CR1s – 7 from NANCDYA, 12 from BNECAYA - Numerous ADS-C contract requests <p>In the end, a CPDLC connection was established with YBBB.</p> <p>Avionics treated subsequent CR1 attempts from YBBB as attempts to establish the inactive connection (avionics were confused at this point).</p> <p>Confirmed in lab test that avionics respond correctly to “normal” receipt of duplicate CR1 (reply with CC1).</p> <p>Honeywell engineers are attempting to duplicate condition under which the avionics will treat CR1 from the active connection as an attempt to establish an inactive connection.</p>
1735-SN	ACTIVE	NETWORK	ARINC Direct customer issue logging on to NTTT CPDLC	This problem was likely the result of the airplane not being correctly configured in SITA's system.
1736-SN	OPEN	AIR-p	CPDLC position report contained incorrect 'DESCENDING' message element - GLEX	Honeywell believes this to be a crew training issue.

CRA number	Status	Type	Title	Findings
1737-DK	CLOSED	AIR-p	Unable to send WILCO - C17	An examination of the ATC messages between the aircraft and Brisbane indicated that there was nothing amiss with the messages themselves. The C-17 design is such that the ACCEPT prompt doesn't appear unless the flight crew first loads the uplink into the Provisional flight plan for review. Once the ATC UPLINK page is redisplayed after viewing the loaded uplink, the ACCEPT prompt is enabled. It is believed that the flight crew never loaded the uplink, thus the ACCEPT prompt never appeared. PR attributed to operator error.
1738-SN	CLOSED	None	Unable to establish Active CPDLC connection - GLF5	Closed without investigation. CRA did not receive response from operator with authorization to request logs.
1739-SN	OPEN	AIR-t	Error messages when loading route clearances - MD11	Problem has been duplicated in the Boeing lab. Loading UM77 messages on flights that include Course to an Altitude (CA) leg as the missed approach final leg will cause this anomaly on the MD-11 model. Many approaches in Australia have this leg type for the final missed approach leg. Problem can also occur with UM79.

CRA number	Status	Type	Title	Findings
1741-DK	CLOSED	AIR-p	Incorrect acft clock setting - caused a number of data link issues - C17	An examination of the ATC messages between the aircraft and Brisbane indicated that at first there was about a 10 minute difference between the airplane's time and the ARINC message timestamp. At approximately 0308z the flight crew sent a CPDLC freetext message saying "we reset acft clock." After that, the data link system started working much better as the ARINC and aircraft timestamps were synchronized. The avionics software on the C-17 allows the flight crew to override the GPS time. We submit that the flight crew, for an unspecified reason, overrode the GPS time with a manual time entry that was off by about 10 minutes. As noted above, when they subsequently reset the aircraft clock again, all worked well. An avionics block upgrade exists that addresses this scenario such that a manual aircraft time entry will automatically revert back to GPS time if GPS time is valid.
1743-AG	CLOSED	AIR-t	Datalink problems with B752	Oakland Center provided the following information, "This issue continued to occur through Oct-19 at which point the airline was contacted directly. They replaced the SATCOM antennae and so far we haven't observed any recent issues with this airframe".
1745-SN	CLOSED	NETWORK	Avionics failed to show pilot CPDLC session was active	This problem was the result of the airplane not being correctly configured in SITA's system.
1755-RP	ACTIVE	AIR-t	Loaded route did not match ATC uplink	Boeing investigation in progress. So far they have been unable to reproduce the reported behavior in the Boeing lab.

CRA number	Status	Type	Title	Findings
1756-GS	CLOSED	NETWORK	Datalink lost	Per SITA, "We cutover to a new software release as the result of our planned early Oct 16, 2014 maintenance action. A software bug was ultimately identified in that release and was corrected later Oct 16. Steps towards taking corrective action were immediately taken after detecting the problem. Not all ULs were affected. ULs that were not successful over the first SITA media attempted resulted in the 248 error due to the software bug. When there were multiple messages in queue for a given aircraft such that by the time a given message was next in line to be attempted, the 241 error occurred if the message was deemed too old by that point in time due to the software bug".
1760-GS	OPEN	AIR-t	B789 issues with satcom	The problem was the result of known B787 issue with loss of SATCOM. The problem has been duplicated in the Boeing lab and is expected to be fixed in Blockpoint 3.
1761-SN	OPEN	AIR-t	Loss of data link - A388	The airplane appeared to have been having some major issues with its satcom link. It was unclear whether the avionics were the problem or some other component of the A-G pathway. The satcom link transitioned between POR1 and IOR2 4 times. As a result 3 uplinks from YBBB (CONFIRM ADS-C ARMED and 2 pos report requests) were delayed several minutes in the network and were finally uplinked to the airplane after the flight crew had disconnected CPDLC. Once the airplane achieved a stable satcom connection, there were several messages in the satcom queue and the time required to transmit all those messages temporarily caused uplink delays.

CRA number	Status	Type	Title	Findings
1762-GS	CLOSED	AIR-t	Loss of data link, lengthy delays - B788	The WILCO response for the route uplink was issued at 18:14:16. However due to a known issue with the avionics software, for which a fix is incorporated in the Blockpoint 2.5 release, the message remained in the queue to be sent for over 10 minutes. The Service Bulletin for the BP2.5 software was released on 1/23/2015.
1773-AG	ACTIVE	TBA	B772 VHF-SATCOM transition issue	CRA investigation in progress
1793-DN	CLOSED	None	Unable to Send	PR was received to late to procure logs.
1795-GS	CLOSED	None	Unable to Send	This relates to sending messages from the airplane's Flight Management System (FMS) to the airline ground system. As such it is NOT an ATC Datalink issue.
1798-GS	OPEN	AIR-t	Failure to Report	This is a known issue, and results from determining that the airplane is level by using a vertical speed signal that is not suitably filtered. The system has been modified to use an appropriately filtered signal, and this fix will be available in the Blockpoint 3 software release at the end of 2015/early 2016. This PR is being left OPEN until the software is released.
1801-SN	CLOSED AS DUPLICATE	AIR-t	No CPDLC downlinks - MD11	Closed as a duplicate of 1198-MM. This problem is getting ever increasing attention as similar issues have occurred with B763s and B744s. It has been observed that sometimes the CMU on the aircraft will acknowledge receipt of an uplink, but the uplink is not transferred to the FMC.

CRA number	Status	Type	Title	Findings
1803-GS	ACTIVE	AIR-t	Intermittent then failed CPDLC & ADS-C - B789	The SITA log shows the following: 2038z Logged on to Brisbane and established CPDLC 2038z Sent position report 2039z Last ADS report 2055z Free text uplink "CONFIRM ADS ARMED" (no response) 2056z End-service (no response) 2121z RESTART 2132z Logon to Brisbane (timed at 2057z, and no response to CPDLC connect request, but possibly that's expected, as it would have timed out 25 minutes earlier) 2132z Repeat of the 2038z position report 2132z Disconnect request to Brisbane (response to 2056z end-service?) 2132z ADS report to Brisbane that is 49 minutes old. Clearly, this is an avionics problem that caused messages to be held and not transmitted prior to the restart at 2121z, and after the restart (resulting in a master switch for CMF), and another 10-minute wait, old messages, including one previously sent, were then transmitted. This will be investigated by Honeywell.
1813-AG	ACTIVE	TBA	Could Not Log On	CRA investigation in progress
1820-RP	ACTIVE	TBA	Not Sending Reports	CRA investigation in progress
1824-GS	CLOSED AS DUPLICATE	AIR-t	Unable to establish CPDLC - B788	This is a repeat of the problem described in FIT PR 1556-GS. There are multiple logons, CPDLC connect requests and ADS-C contract requests. All received the correct response, except the CPDLC connect requests, which received no response at all. This issue is partially addressed in 787 Blockpoint 2.5, and completely resolved in Blockpoint 3 (end 2015). Closed as a duplicate of PR 1556-GS.

CRA number	Status	Type	Title	Findings
1825-SN	ACTIVE	AIR-t	Spurious CPDLC messages - B772	Boeing and Honeywell investigation in progress. Honeywell reported that they were able to reproduce a similar result in the lab.
1827-SN	ACTIVE	AIR-t	No WILCO to uplink	CRA analysis confirmed no wilco in the SITA log. There was one Message Sequence Number (MSN) missing (J36A) between the level request and level report and wondered if the WILCO may have been sent on HF. I confirmed there was no WILCO in the ARINC log, either. SITA confirmed the WILCO was not received at the GES. Assigned to Airbus for investigation.
1832-SN	ACTIVE	AIR-p	DARP reroute without ATC clearance	The "DARP" occurred while the airplane was under Santiago control. There is no indication that ATC was contacted via datalink to approve the reroute. Assigned to the operator to consult with the flight crew involved.
1848-SN	CLOSED	TBA	Unable to establish CPDLC with A388	Airbus investigation in progress.
1849-RP	ACTIVE	TBA	Unable to establish CPDLC or ADSC with B744	CRA investigation in progress.

CRA number	Status	Type	Title	Findings
1850-GS	OPEN	AIR-t	B788 unable to load CPDLC route clearance(s)	<p>This seems to be the first in-service report of an issue we noted recently in the Boeing lab.</p> <p>Unlike other models, the 787 (and 747-8) treat Non-Directional Beacons (NDB) as nav aids, rather than as fixnames. So, an uplink which references an NDB as a fixname will not be loadable, as the NDB in question will not be found in the database.</p> <p>In this case, the uplink was: 4,,08:34:39 0(79) : Cleared To [pos] Via [routeclr] pos(fix): WOL route info(): 1 (pub): HOOKS S34 21.0 E151 8.0 WOL would have been the Wollongong NDB.</p> <p>There is an open problem report for this (actually two, one for the Communication Management Function, which hosts the CPDLC application, and one for the Flight Management Function, which loads the uplinks and creates the route downlinks).</p>
1851-SN	CLOSED	AIR-p	Request - did A333 logon to YBBB or get Address Forwarded by WAAF	<p>Log analysis confirmed the flight crew manually logged on. Per closed per originator's recommendation. Originator to follow up with operator.</p>