Problem Report Briefing

FANS Interoperability Team Meeting (FIT/24)

Honolulu HI, USA

7 March 2017

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Agenda

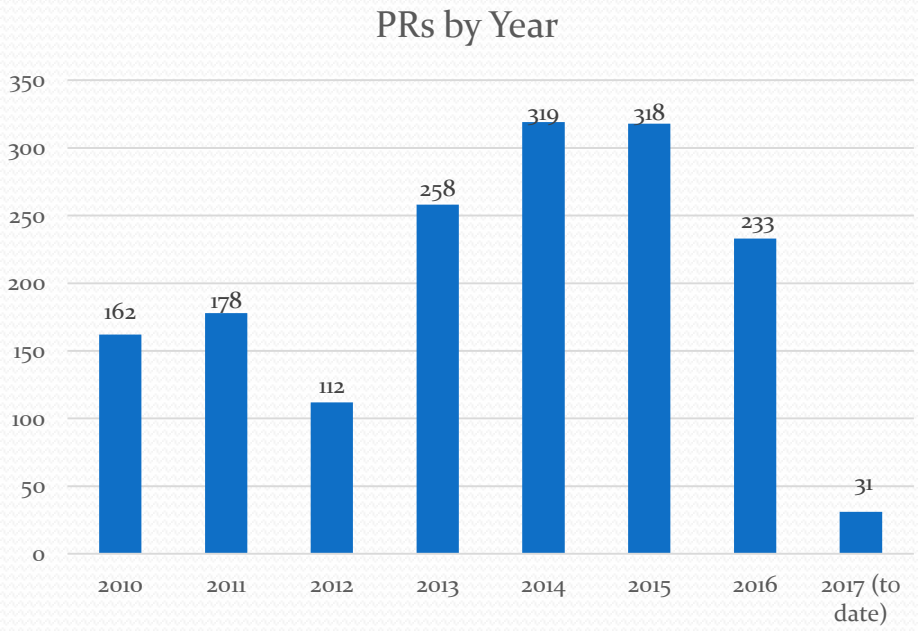
- Introduction
- PR Status Definitions
- PR Type Definitions
- Updates on old PRs
- Problem Report Metrics
- PRs Received Since FIT/23
- Summary of All ISPACG PRs Received Since FIT/23

Introduction

- PRs filed via ISPACG-CRA, NAT DLMA Problem Reporting website hosted by Airways Corporation of New Zealand Limited:
  - http://www.fans-cra.com ← NEW!
- Revamped website has up-to-date de-identified reports
  - De-identified reports are now available for all PRs from January 1, 2016 to present and all master PRs
  - Check them out on your smart phone!

Introduction

- **226** PRs received since FIT/23 (Feb 1, 2016 – Feb 14, 2017)
  - Last year reported 308 PRs received since FIT/22 (Feb 12, 2015 – Jan 31, 2016)
  - **31** PRs received in 2017 as of 1 March 2017
- Annual total plateaued in 2015 and decreased in 2016



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 – Fix Available** – Corrective action has been implemented and fix available for installation ← NEW!
- **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

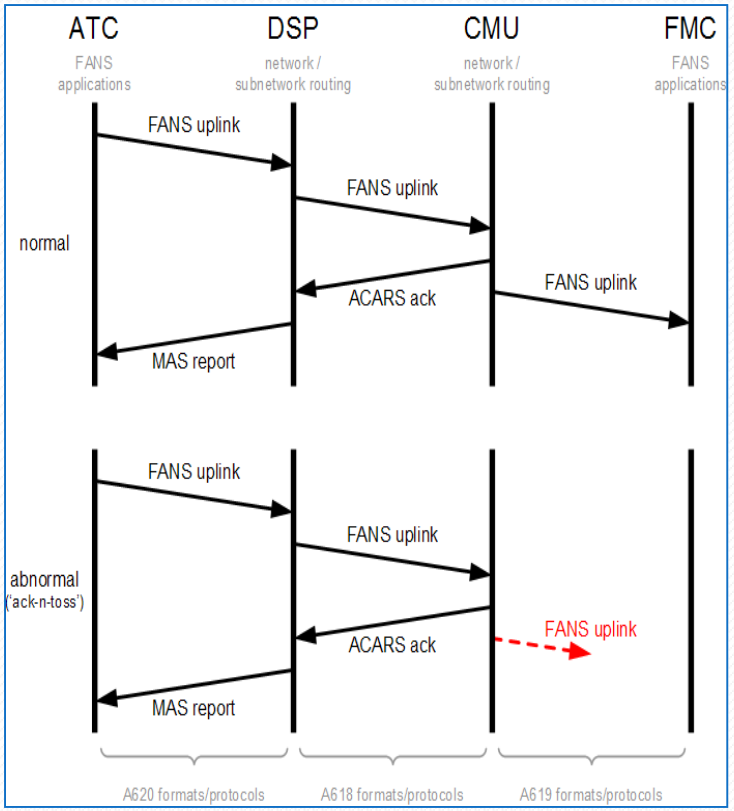
PR Type Definitions

- 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 (not clear if procedural or technical)
  - **GROUND – procedural** – Problem due to controller action← NEW!
  - **GROUND – technical** – Problem due to ground automation fault← NEW!
  - **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

Updates on Old PRs

Ack-n-Toss Issues Affecting Boeing Aircraft

- Three behaviors found in DSP log reviews are <u>symptomatic</u> of ack-n-toss:
  1. FMC/FMF responds to CR1 with DR1 after successful logon (CMU ack'd FN_AK)
  2. Flight crew does not respond to uplink
  3. Connection fails to transfer or terminate
- Boeing has received several FANS PRs and DCL OPRs where aircraft exhibit above behavior



Ack-n-Toss Issue Affecting Boeing Aircraft (cont'd)

- Master PR 1198 - "Ack-n-toss" with Rockwell Collins CMU-900 core -012 software
  - Can occur when operating on Satcom or HF (unlikely on VHF)
  - Affects B737, B747, B757, B767, MD-11
  - Occurrences since 2016 briefing: 2174-RP, 2196-SN, 2255-MM, 2288-SN, 2305-SN, 2306-SN, 2342-MM, 2366-MM
  - RCI has root-caused CMU problem; corrected S/W awaiting cert opportunity
- Boeing has not yet found root cause of B737, B747, B757, B767, MD-11 VHF ack-n-toss events
  - Primarily affects DCL operations
  - Unclear whether the CMU or FMC is "at fault" in these events
  - Investigation and testing continue

Ack-n-Toss Issue Affecting Boeing Aircraft (cont'd)

- Master PR 1358 - 777 ack-n-toss
  - Honeywell fielded fix with AIMS-2 Block Points 16/17.1/17A
- Master PR 1999 - 777 false-positive duplicate UBI ack-n-toss
  - Root cause identified and requirements added to ARINC 618-8
  - Target 777 block point currently TBD
  - Note: 787 "fix" incorporated in BPv4 (see PR 2311-MM)
- Boeing has not yet found root cause of remaining B777 events, but has eliminated some suspected scenarios
  - 2359-SN documents only confirmed occurrence since 2016 briefing
  - Unclear whether DCMF or FDCF is "at fault" in these events
  - Investigation and testing continue

“Spewing” B777s

- Master PR 1215 - 777 sends many duplicate WILCOs or other FANS downlinks with different ACARS MSNs
  - Characterized by aircraft transmitting multiple copies of a downlink (from tens to thousands of times)
  - First reported in Dec, 2012
  - Occurrences since 2016 briefing: 2203-SN, 2262-SN, 2310-SN, 2325-SN, 2341-SN, plus many DCL OPRs
- High priority to root cause and correct at next opportunity
- Per January meeting with Honeywell software and systems experts, we have a theory as to when and in which region of code the problem may have been introduced
  - Investigation and testing continue

B777s Holding onto Old Active Center

- Master PR 2130 - 777 persistently sends DR1s with dM64 containing the designation of a previous CDA
  - Occurrences since 2016 briefing: 2183-MM, 2194-MM, 2324-MH, 2370-MH, 2379-MH, plus many DCL OPRs
  - Three scenarios have been identified:
    1. Flight crew executes Datalink Master Reset while there is an active CPDLC connection
       - This scenario has been reproduced in the lab
    2. Airplane does not respond to End Service with DR1, ATC LOGON/STATUS screen clears (flight crew cannot terminate connection), but connection persists
       - This scenario has <u>not</u> been reproduced and is under investigation
    3. Airplane does not respond to CR1 (no CC1)
       - This scenario has <u>not</u> been reproduced and is under investigation

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

Region: ISPACG Status: Open - Fix Available Type: Air - Technical

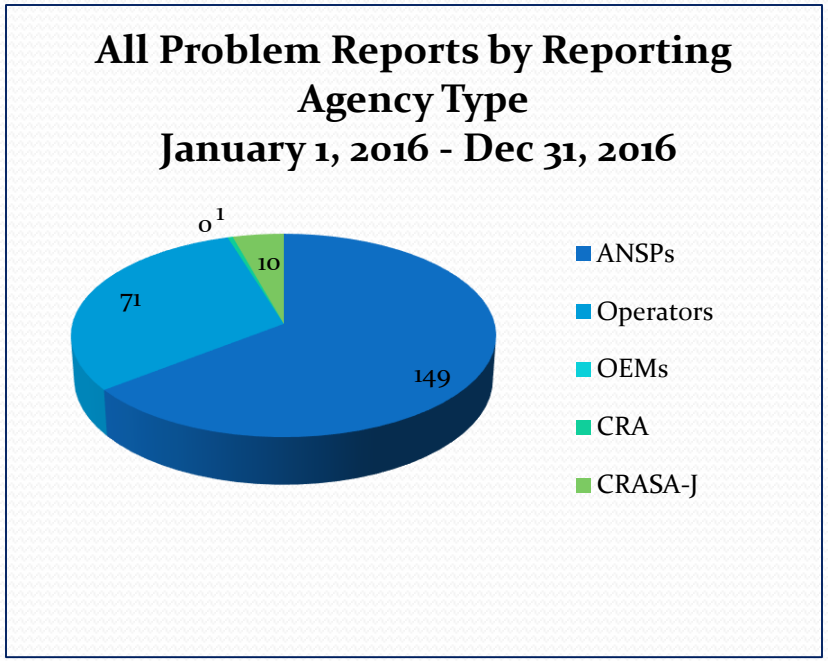
- Description:
  - Flight crew were unable to send CPDLC messages after Data Authority transfer
- Analysis results:
  - The problem occurred if a CPDLC downlink and the EOS messages were both sent during a media transition or period of No Comm
  - **Problem was corrected in 777 AIMS2 BPv17A**

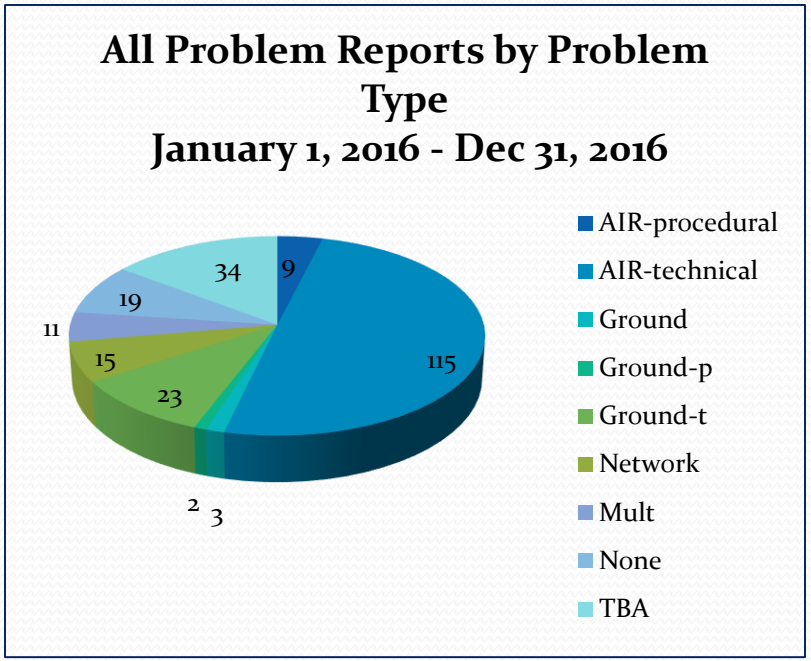
PR 1898-MM - Loss of ADS-C by a B789

Region: ISPACG Status: Open - Fix Available Type: AIR - Technical

- Description:
  - An ATSU did not receive responses to two ADS-C contract requests.
  - While ADS-C was eventually restored, it appears that for approximately 15 minutes that ADS-C was not available.
  - PR-2140 and new PRs-2161 -2184, -2191 are related
- Analysis results:
  - An issue with queuing of messages between the router and the applications was identified
  - Cause uplinks to be missed and/or downlinks to be repeated after around 10 minutes
  - Subsequent downlinks were delayed behind the repeated downlink
  - **Problem was corrected in 787 BPv3 and BPv4**
    - BPv3 improved inter-partition interface
    - BPv4 made additional improvements to inter-partition interface and specifically addressed PR-1898

Problem Report Metrics





PRs Received Since FIT/23

PR 2186-RP - Protocol Error Received 1 minute after FN_CAD (B744)

Region: NAT Status: Open - Fix Available Type: AIR - Technical

- Description:
  - An ATSU reported a large number of automatic transfers failing with a reason code of 1
  - These all occurred with B744 aircraft
- Analysis results:
  - This is a known issue with BP3.0 of the NG FMC when installed on a 747-400 aircraft
  - **Problem was corrected in NGFMS BP3.1**

PR 2197-RP - Unrequested ADS-C intent information received from aircraft (B77W)

Region: ISPACG Status: Active Type: AIR - Technical

- Description:
  - A controller reported that the ADS-C position symbol displayed for one aircraft ‘froze’ on the controllers screen.
  - A subsequent ADS-C report (as a result of a Demand Contract Request) allowed the track to extrapolate normally.
  - Investigation indicated that ADS-C Intent Groups were being received from the aircraft despite these groups not being requested in ADS Contracts.
  - PR 2307 describes similar behavior
- Analysis results:
  - The aircraft had an ADS connection with CTR1 which included aircraft intent data.
  - CTR1 disconnected and CTR2 started an ADS contract with the aircraft which did not include aircraft intent data.
  - The aircraft then started downlinking the ADS reports it had with CTR1 to CTR2.
  - This issue is under investigation.

PR 2199-SN - Aircraft Type F2TH responds to CR1 with a DR1 + DM64 NO UNIT

Region: NAT Status: Open Type: MULTIPLE

- Description:
  - An aircraft tried to log on six times before a successful log-on was established in the seventh attempt
  - Each CR1 was responded to with a DR1 + DM64 no Unit.(SP SP SP SP)
  - See also PR 2258 and numerous DCL OPRs
- Analysis results:
  - The first six (unsuccessful) AFN acknowledgement messages had the network acknowledgement for the corresponding AFN Contact (aka logon) message embedded in the uplink.
  - Honeywell EPIC FMCs do not correctly handle an AFN acknowledgement with an embedded network ack; result is failure to establish CPDLC connection.
  - Honeywell confirmed problem has been corrected in the EPIC software “mainline”, but corrected software has not been made available to all GA aircraft equipped with Honeywell EPIC avionics.

PR 2200-MM - Incorrect time in the predicted route group - B788

Region: IPACG Status: Open - Fix Available Type: AIR - Technical

- Description:
  - The time in the predicted route group incorrectly showed 04:33:04.
  - The controller issued a demand and the subsequent report showed the correct time.
- Analysis results:
  - This was determined to be a problem in the way that the FMS communicates with the ADS application, to indicate that the ETA prediction is not available.
  - **Problem was corrected in 787 BPv4**

PR 2205-MM - Multiple CPDLC disconnections from B788

Region: ISPACG Status: Open Type: AIR - Technical

- Description:
  - Multiple CPDLC connections were established then lost.
- Analysis results:
  - This problem was the result of the infamous “Gordo” problem and has been reproduced in the lab.
  - Problem is related to use of the “direct-to-with-abeam points” function.
  - This problem will be fixed in a future 787 FMF software release.

PR 2215-MM - Address forwarding failed with MD-11

Region: ISPACG Status: Closed Type: NETWORK

- Description:
  - An ATSU attempted to perform AFN address forwarding to Manila.
  - The AFN Complete Message indicated that the aircraft's attempt to logon to Manila failed due to reason code 1 - Protocol Error.
- Analysis results:
  - ARINC's 4-7 character address mapping for Manila was incorrect
  - **This problem has been corrected**

PR 2249-SN - No position/altitude information in ADS-C report (G280)

Region: NAT Status: Open Type: MULTIPLE

- Description:
  - An ATSU reported receiving invalid present position data in an ADS-C report from a G280:

    ADS Downlink Message

    Basic,S180-0.0,W180-0.0,-131072,0: 0.0,NO TCAS,0,NOT REDUNDANT

- Analysis results:
  - Gulfstream and Rockwell-Collins report there are no known problems that would result in position or altitude not being included in the basic group
  - Per the industry standards, default values are transmitted when computed data are unavailable

PR 2256-SH - Not Current Data Authority - unsuccessful transfer from NFFF

Region: ISPACG Status: Closed Type: GROUND - Technical

- Description:
  - Transfer from NFFF to YBBB did not complete prior to the affected flight crossing the boundary.
  - YBBB indicated this is a semi-regular problem for this flight.
  - PR 2377-MM documents a similar occurrence
- Analysis results:
  - The transfer did not occur because NFFF delayed sending the End Service message for 37 minutes.
  - This PR was assigned to NFFF for further investigation.

PR 2264-MM - SATCOM issues with B788

Region: ISPACG Status: Closed As Duplicate Type: AIR - Technical

- Description:
  - Starting on July 1st and continuing through July 3rd numerous SATCOM issues.- were observed with one aircraft.
- Analysis results:
  - The lack of a SATCOM connection was caused by a timing issue in the ACARS avionics that resulted in the avionics declaring SATCOM to have failed after IRS alignment.
  - Boeing provided a mitigation procedure to 787 operators.
  - **Problem was corrected in 787 BPv3**

PR 2278-MM - 787 unable to uplink wind data while enroute for DARP operation

Region: ISPACG Status: Closed As Duplicate Type: AIR - Technical

- Description:
  - Dispatch was able to re-plan our flight plan, re-release our flight, and send a copy of the new release to the cockpit printer. But we were unable to uplink the new FPF in the inactive route. We believe this was related to a problem we had "Up-linking winds" while we were on the ground.
- Analysis results:
  - This problem was caused by the "FMF cessation" issue
  - **Problem was corrected in 787 FMF BPv3**

PR 2283-SN - DM40 with an illegal enumeration value (B772)

Region: NAT Status: Open Type: AIR - Technical

- Description:
  - An ATSU reported receiving a CPDLC message from a B777 that they were unable to decode.
- Analysis results:
  - An engineer at Honeywell was able to reproduced the problem in the Honeywell lab and reported that it is the 777 version of the infamous "GORDO" problem (ref PR 2205)
  - Target 777 block point currently TBD

PR 2292-SN - Unable to logon (B77W)

Region: NAT Status: Open Type: AIR - Technical

- Description:
  - The following was reported by a flight crew:
  - "When we got on the aeroplane in LHR there was an "ATC Comm Terminated" message on the centre MFD which seemed strange to me as that should have occurred over Ireland on the way in. A bit like Auzzie where the Comm terminated occurs on blox. After we were airborne and could not get a logon prompt I asked Scottish to check with Shanwick to see if the previous flight was still logged on, (as has happened to me ex Auz). They said no".
- Analysis results:
  - Boeing confirmed this is a known problem.
  - Target 777 block point currently TBD

PR 2302-SN - Error in a DM40 Message (G550)

Region: NAT Status: Open Type: AIR - Technical

- Description:
  - BIRD received a downlink CPDLC message from a GL5T which the ground automation was unable to decode.
  - This is similar to the B777 and B787 “GORDO” problem.
- Analysis results:
  - Honeywell provided the following feedback, "The inclusion of a minuteslatlon value of 600 in the DM40 is due to an FMS software bug (the latitude of waypoint CZI in the NavDB is N43-59-59.02, which the FMS incorrectly rounds to N43-60-00 for downlink).
  - Since there is not yet a date for the next G550 FMS upgrade, **a recommended interim solution would be to update the ground system to handle this by converting either up or down one second in value (to N43-59-59, or to N44-00-00)**".
  - The CRA anticipates that the proposed interim solution is not a viable option for most (if not all) ground stations.

PR 2311-MM - No ADS-C disconnect received after MAS S on disconnect request (B788)

Region: ISPACG Status: Closed Type: MULTIPLE

- Description:
  - ATC received no operational response to an ADS terminate contract request, although MAS S was received.
  - The airplane continued to send periodic reports for the remainder of the flight.
- Analysis results:
  - The airplane ignored the ADS-C terminate request due to a shortcoming in the ACARS protocol (see “Ack-n-Toss Issue Affecting Boeing” slides)
  - **Requirements added to ARINC 618-8**
  - **“Fix” incorporated in 787 BPv4**

PR 2313-SN - CPDLC Problem 20160918 (B738)

Region: ISPACG Status: Open Type: AIR - Technical

- Description:
  - Pilot Narrative: Each step during the early part of the flight seemed routine. Logged on successfully to domestic center. Received our clearance.
  - Logged onto "Oceanic" and on first check in on HF, was told CPDLC Data received. We realized that something was amiss after sending an altitude change request, receiving nothing in return to the affirmative or negative. We sent this request twice, first on "request altitude" and then "when can we expect".
- Analysis results:
  - The flight crew logged onto KSEA, received and ROGER'd their departure clearance, and then logged on to KZAK before KSEA had terminated the connection.
  - KZAK established ADS contracts but received a DR1 indicating KSEA as the active connection, as expected.
  - KSEA sent an END SERVICE and the FMC replied with a normal disconnect.
  - There were no AFN or CPDLC messages from the airplane during the time period that the flight crew reported sending the altitude requests
  - Unclear what happened on the flight deck; UI should not have been "enabled" without a CPDLC connection

PR 2320-SN - GLF6 omits FN_COMP

Region: NAT Status: Active Type: AIR - Technical

- Description:
  - Aircraft was given a contact advisory (FN_CAD) to log on to EGGX. The flight acknowledged receipt of the advisory (FN_RESP). No indication of the success/failure of the transfer (FN_COMP) was received by BIRD.
  - In fact the flight was successful in its logon to EGGX.
  - The omission of FN_COMP is a regular (if uncommon) occurrence which also seems to affect some other types (notably the B787).
- Analysis results:
  - Honeywell investigation in progress.

PR 2328-MM - Logon difficulties (B789)

Region: ISPACG Status: Open Type: AIR - Technical

- Description:
  - SLOW TO LOGON. MSG NO ACCEPT RECD. NO AUTO TFR TO KZAK.NO LOGOFF AT PGUM ADIZ. NO FURTHER CPDLC WITH KZAK.
  - FAILED TO LOGON TO YBBB. AFTER 3 ATTEMPTS SUCCESSFULLY LOGGED ON INDICATD BUT YBBB ADVISED WE WERE NOT.
- Analysis results:
  - This PR occurred due to a fault in CMF software related to CPDLC connection management.
  - This problem will be fixed in CMF BPV5.

PR 2331-SN - Consecutive ADS reports received with reported position 00N000W (C17)

Region: ISPACG Status: Open Type: AIR - Technical

- Description:
  - First received the Lateral Deviation Event Report with Pos = 000000N0000000W followed shortly by the Waypoint Change Event Report with Pos = 000000N0000000W
  - The next Waypoint Change Event Report appeared correct
  - At the time the PR was filed, problem had happened 30 times in 2016
- Analysis results:
  - When the Mission Computer is recovering from a software exception, the present position is momentarily set to N0-0.0,E0-0.0, which causes a large cross track error. If there was an uplink event for lateral deviation request, say 3 NM, prior to a software hiccup, as soon as the MC recovers, an ADS-C report would be downlinked immediately when it detects large lateral deviation and the position of N0-0.0,E0-0.0 would be encoded.

PR 2348-MM - LOGON FAILURE (B773)

Region: ISPACG Status: Closed Type: AIR - Technical

- Description:
  - AFTER I REACHED CRUISING ALTITUDE, I TRIED LOGON TO YBBB. BUT UNABLE LOGON.TEN MINITES LATER I TRIED LOGON AGAIN. BUT STILL UNABLE LOGON. FIFTEEN MINITES LATER I TRIED AGAIN THEN LOGON SUCEEDED .
- Analysis results:
  - The first two logon messages were received by ARINC and internetworked to SITA for delivery to YBBB
  - SITA was unable to deliver the FN_AK uplinks as there had been no media advisory from the aircraft to notify SITA that the aircraft was communicating on ARINC.

PR 2357-MM - A DM40 from the aircraft resulted in a parsing error in "routeinformationadditional" (B789)

Region: NAT Status: Open Type: AIR - Technical

- Description:
  - A DM40 from the aircraft resulted in a parsing error in "routeinformationadditional".
  - See also PR-2360-MM
- Analysis results:
  - Honeywell has duplicated the reported problems, which were caused by an avionics issue related to step climbs as altitude constraints.
  - Boeing and Honeywell are determining how to best resolve that issue.

PR 2362-SN - DM40 from a GLF5 not parsed correctly

Region: NAT Status: Open Type: AIR - Technical

- Description:
  - DM40 route from aircraft contained a # in one position, resulting in parsing error.
- Analysis results:
  - Honeywell provided the following feedback: The inclusion of waypoint names with a '#' character is per design for the G550 FMS (they denote a specific type of FMS created waypoint not present in the NavDatabase).
  - Since the FMS also includes the latlon information for these waypoints in DM40, the recommended solution is to update the ground system to handle these waypoint names as valid.
  - The CRA anticipates that the proposed interim solution is not a viable option for most (if not all) ground stations.

PR 2365-SH - Report of Possible Stale CPDLC Messages in FMS (G550)

Region: NAT Status: Active Type: AIR - Technical

- Description:
  - The following report was received by NATS from an operator:
  - We have received a pilot report indicating that one of our Gulfstream G550 aircraft, while in Shanwick Oceanic Control airspace received two false CPDLC messages instructing the crew to make a maximum decent and requesting to confirm assigned route of flight. The crew was very experienced in oceanic crossings and requested Shanwick to confirm the instructions before taking any action. Shanwick replied that they had not sent the messages.

- Analysis results:
  - The avionics transmitted an improperly encoded downlink message and displayed the message in the log as “Descend at Maximum Rate,” probably because the avionics erroneously decoded this garbage message.
  - Assigned to Gulfstream and Honeywell for further investigation

PR 2378-MH - CPDLC Uplink PROCEED DIRECT TO Waypoint 4000nm Away Erasing all of RTE 1 (B777 LR)

Region: ISPACG Status: Active Type: AIR - Technical

- Description:
  - We were given both a Brisbane YBBB voice and CPDLC clearance to fly direct to a filed point. The Captain selected the CPDLC Load prompt, and then activated the new FMS clearance. To our surprise it erased our whole FMS flight plan in Route 1 and loaded only one unrecognizable point 4,000 miles to the east.
- Analysis results:
  - After an inspection of the Datalink Logs it was determined that an FMS Master Reset occurred after a UM74 "Proceed Direct To S31 E160" uplink was received, loaded and executed. FMS BITE Logs have been requested for analysis.

PR 2387-MM - B788 omits FacilityDesignation in DM64

Region: NAT Status: Open Type: AIR - Technical

- Description:
  - DR1 + DM64 message received from B787 has no ICAOfacilitydesignation field, leading to decode failure in FDPS and discard of the DR1.
- Analysis results:
  - The problem occurs if the flight crew performs a Manual Reset from the Reset Manager Page while there is an active CPDLC connection. A subsequent attempt to establish a connection will fail. CMF will respond to a CR1 with a DR1 and DM64 containing no data (not four spaces).
  - Exposure is limited to aircraft with the ATN option disabled.
  - Problem will be corrected in 787 BPv5

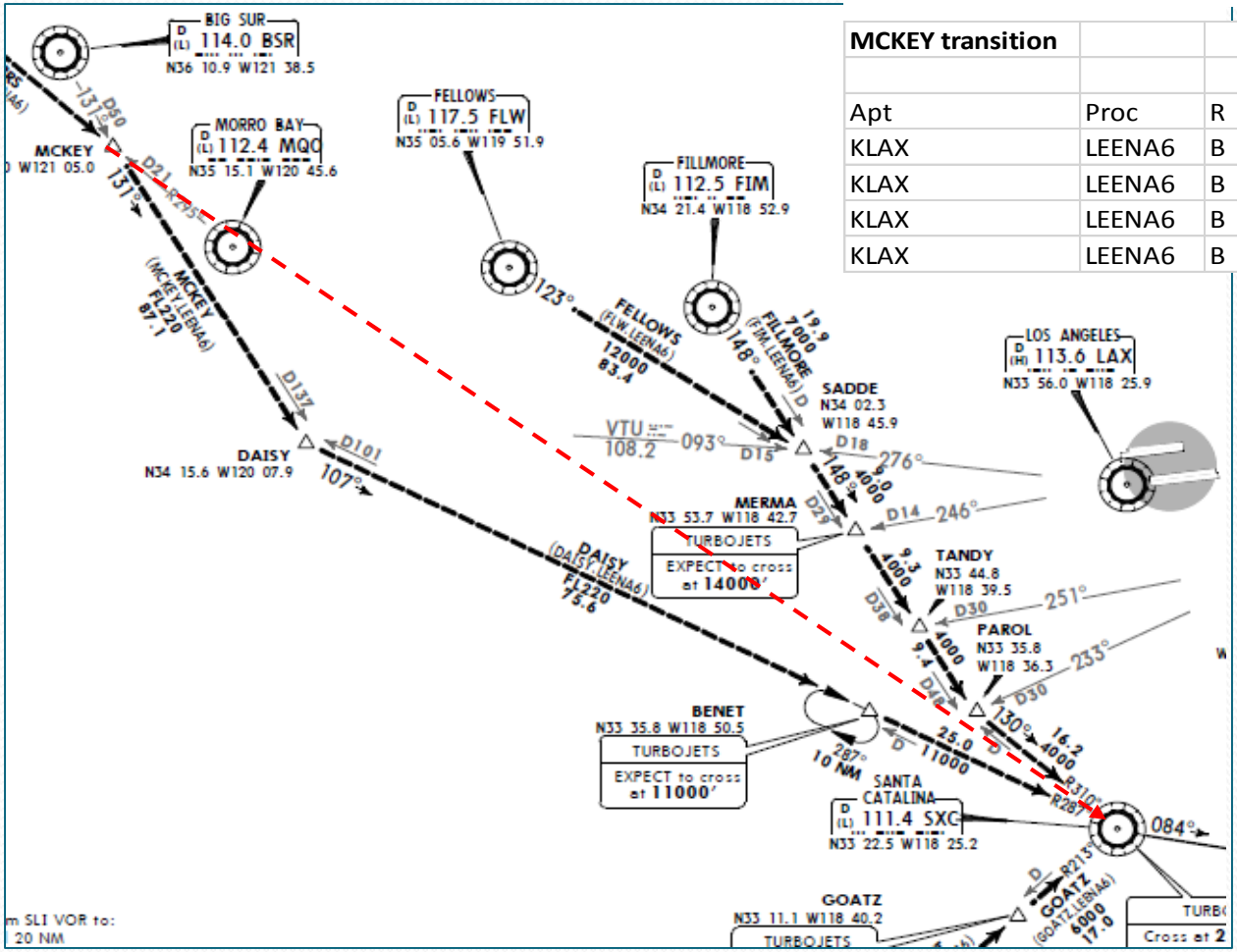
PR 2389-RP - Possible Pilot Deviation at LAX

Region: IPACG Status: Open Type: GROUND

- Description:
  - An operator reported receiving a letter from FAA regarding Pilot Deviation at LAX arrival.
  - According to FAA and ATC authority, "Pilot deviation occurred while on the LEENA SIX ARRIVAL to the Los Angels International Airport. The flight was cleared for the LEENA SIX ARRIVAL via MCKEY, DAISY and Santa Catalina VORTAC. After passing MCKEY, the route continues to DAISY and then to the Santa Catalina VORTAC. The Controller observed the flight deviating from the route after MCKEY.

- Analysis results:
  - ATC was expecting the route to be flown with MCKEY transition; however, ATC center did not include the MCKEY transition in the uplink message.

PR 2389-RP - Possible Pilot Deviation at LAX (cont'd)



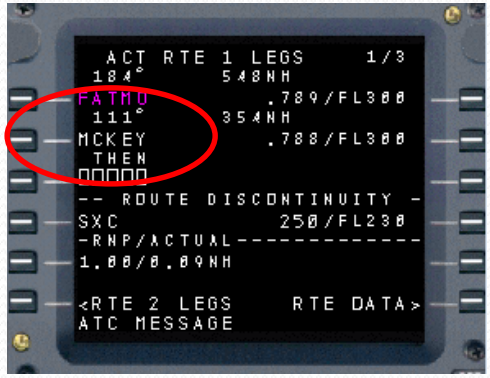
FMC Nav Database record for MCKEY Transition to LEENA6

MCKEY transition					
Apt	Proc	R	Via	Fix	Type
KLAX	LEENA6	B	STARET	MCKEY	WPT
KLAX	LEENA6	B	STARET	DAISY	WPT
KLAX	LEENA6	B	STARET	BENET	WPT
KLAX	LEENA6	B	STARET	SXC	NAV

PR 2389-RP - Possible Pilot Deviation at LAX (cont'd)

Uplinked route did not contain MCKEY transition

ATC DL Uplink Message
5,,20:55:17
0(80) CLEARED [routeclr]
arr procname(): ARR, LEENA6
route info(): 2
(pub): FATMO
(pub): MCKEY



This uplink would have resulted in intended flight path.

ATC DL Uplink Message
1,,21:47:00
0(80) : Cleared [routeclr]
arr procname(): ARR,LEENA6,MCKEY
route info(): 2
(pub): FATMO
(pub): MCKEY

Airbus PRs

- Refer to Airbus Working Paper

Questions?

South Pacific PRs

CRA number	Status	Type	Title
2161-GS	Closed	AIR - Technical - Avionics Fault	Logon Failure
2172-SN	Active	TBA	Aircraft unable to send a CPDLC position report. But only to YBBB - works everywhere else....
2179-MM	Active	AIR - Technical - Avionics Fault	Delayed AFN/ADS/CPDLC messages
2181-GS	Open - Fix Available	AIR - Technical - Avionics Fault	Unusual loss of CPDLC_ADS-C
2194-MM	Closed As Duplicate	AIR - Technical - Avionics Fault	Unable to establish CPDLC connection - CDA was CZYZ
2195-MM	Open	AIR - Technical - Avionics Fault	Not Current Data Authority - No DM63 received
2197-RP	Open	AIR - Technical - Avionics Fault	Unrequested ADS-C intent information received from aircraft
2201-SN	Closed	AIR - Procedural - Flight Crew Action	Unexplained ADS-C emergency received
2204-RP	Closed	NONE - Report Is A Non-problem	Unsuccessful CPDLC transfer but no NCDA downlink
2205-MM	Open	AIR - Technical - Avionics Fault	Multiple CPDLC disconnections from B788
2207-SN	Closed	NONE - Report Is A Non-problem	Unrecognized Message Ref Number
2213-MM	Active	TBA	Unexpected latdev report received from GLF5
2214-SN	Closed	AIR - Technical - Avionics Fault	Inconsistent estimates received in ADS-C reports from A332
2215-MM	Closed	NETWORK - Problem At GES Or Network	Address forwarding failed with MD-11
2220-MM	Closed As Duplicate	AIR - Technical - Avionics Fault	Unrecognised message reference number - A332
2224-SH	Closed	NONE - Report Is A Non-problem	Unrecognised message reference number - A332

CRA number	Status	Type	Title
2256-SH	Closed	GROUND - Technical	Not Current Data Authority - unsuccessful transfer from NFFF
2257-MM	Closed	Ground	Multiple Address Forwarding to NFFF failed for B752
2262-SN	Closed As Duplicate	AIR - Technical - Avionics Fault	Multiple Downlinks received from B77W
2264-MM	Closed As Duplicate	AIR - Technical - Avionics Fault	SATCOM issues with B788
2268-MM	Closed As Duplicate	AIR - Technical - Avionics Fault	B789 Delayed ADS-C reports
2269-MM	Closed	NONE - Report Is A Non-problem	B788 ADS-C Estimate
2270-SN	Open	AIR - Technical - Avionics Fault	Assigned route missing data
2274-MH	Active	AIR - Technical - Avionics Fault	Unable to Establish a CPDLC connection with a B777
2278-MM	Closed	AIR - Technical - Avionics Fault	787 unable to uplink wind data while enroute for DARP operation
2307-SN	Open	AIR - Technical - Avionics Fault	Confused B772
2311-MM	Closed	MULTIPLE - Problems Occurred In More Than One Area	No ADS-C disconnect received after MAS S on disconnect request
2313-SN	Open	AIR - Technical - Avionics Fault	CPDLC Problem 20160918
2325-SN	Closed As Duplicate	AIR - Technical - Avionics Fault	756 FN_CONs, CC1s and DR1s received from a B77W
2328-MM	Open	AIR - Technical - Avionics Fault	Logon difficulties
2331-SN	Open	AIR - Technical - Avionics Fault	Consecutive ADS reports received with reported position 00N000W
2332-SN	Active	TBA	No ADS-C WCE following re-route - GLEX

CRA number	Status	Type	Title
2334-MH	Active	TBA	ACK and Toss
2336-SN	Closed As Duplicate	AIR - Technical - Avionics Fault	Unable to Establish an ADS Contract
2338-MM	Closed As Duplicate	AIR - Technical - Avionics Fault	No ADS-C for A333
2341-SN	Closed As Duplicate	AIR - Technical - Avionics Fault	Numerous Downlinks received from B77L
2348-MM	Closed	AIR - Technical - Avionics Fault	LOGON FAILURE
2356-MM	Closed	AIR - Technical - Avionics Fault	Aircraft ADS-C not operating normally
2359-SN	Open	AIR - Technical - Avionics Fault	Weather Deviation Clearance did not make it to flight deck but MAS received
2364-MH	Active	TBA	MAS delivery success received on climb clearance uplink but crew did not receive message. Clearance passed again via HF voice.
2370-MH	Closed As Duplicate	AIR - Technical - Avionics Fault	Unable to establish CPDLC connection with B777. CDA = YMMM
2371-SN	Active	TBA	Incorrect estimate in ADS-C Waypoint Event
2377-MM	Closed As Duplicate	AIR - Technical - Avionics Fault	Unable to establish active CPDLC connection
2378-MH	Active	AIR - Technical - Avionics Fault	CPDLC Uplnk PROCEED DIRECT TO Waypoint 4000nm Away Erasing all of RTE 1
2379-MH	Closed As Duplicate	AIR - Technical - Avionics Fault	Domestic CPDLC connection not released
2381-XX	Active	AIR - Technical - Avionics Fault	A320 performance on Iridium SATCOM well below RSP180 requirements
2382-MM	Active	AIR - Technical - Avionics Fault	40% of one airlines B789 fleet observed SATCOM performance below RSP180 99.0% requirement

Thank you!