



Central Reporting Agency (CRA) Responsibilities

Global Operational Data Link (GOLD)

Familiarization with Performance Based Communications
and Surveillance (PBCS) Workshop

Dakar, Senegal 11-15 September 2017

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FAA



Federal Aviation
Administration

Overview

- Regional Problem Reporting
- Reporting Data
- Data Collection
- Data Analysis
- Reporting Website
- Mitigation and Resolution
- Summary

Regional Problem Reporting

PBCS Manual Doc 9869 Appendix D.5.1.3

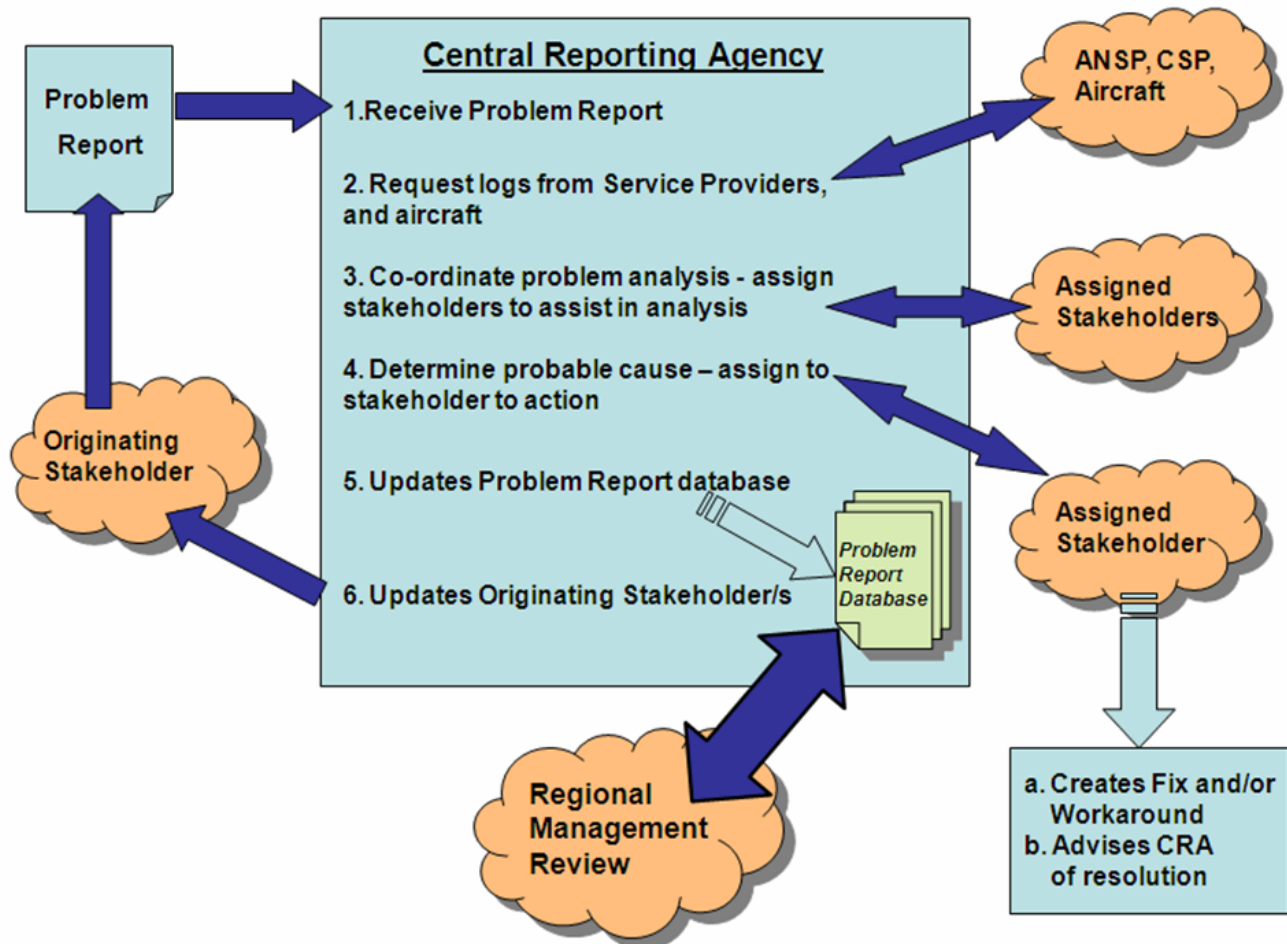
- All stakeholders should be actively involved in the problem reporting and resolution process.
- CRA's should be pro-active in getting all aircraft operators and other stakeholders to register and participate in the process.
 - It is essential that all aircraft operators in a region have the opportunity to become involved in the process
- The problem identification and resolution process, as it applies to an individual problem, consists of:
 - a data collection phase
 - followed by problem analysis and coordination with affected parties to secure a resolution,
 - recommendation of interim procedures to mitigate the problem in some instances.

Regional Problem Reporting

PBCS Manual Doc 9869 Figure D-13

The problem identification task begins with receipt of a problem report from a stakeholder, usually an operator, an ANSP or CSP/SSP but may include an aircraft or avionics manufacturer.

Standard reporting forms should be developed and regions should investigate the use of a website to receive and store problem reports.



Regional Problem Reporting Form Data

PBCS Manual Doc 9869 Figure D.5.2.1.2

- a) **Originator's Reference Number:** Originators problem report reference (e.g. ANZ_2009-23);
- b) **Title:** A short title which conveys the main issue of the reported problem (e.g. CPDLC transfer failure);
- c) **Date UTC:** Date in YYYYMMDD format (e.g. 20090705);
- d) **Time UTC:** Time in HHMM (e.g. 2345);
- e) **Aircraft registration:** ICAO flight plan aircraft registration (e.g. ZKADR);
- f) **Aircraft identification:** ICAO flight plan call sign if applicable (e.g. NZA456);
- g) **Flight Sector:** If applicable the departure and destination airfield of the flight (e.g. NZAA-RJBB);
- h) **Organization:** Name of the originators organization (e.g. Airways NZ);
- i) **Active Centre:** Controlling Centre at time of occurrence if applicable (e.g. NZZO);
- j) **Next Centre:** Next controlling centre at time of occurrence if applicable (e.g. NFFF);
- k) **Position:** Position of occurrence (e.g. 3022S16345E);
- l) **Problem Description:** Detailed description of problem;
- m) **Attach File:** Area of web page where originator and assigned stakeholders can attach data files or other detailed information such as geographic overlays; and
- n) **Additional Data:** Area set aside for feedback from stakeholders assigned by the regional/local monitoring entity. This will includes the results of the investigation and the agreed action plan.

Problem Assessment: Data Collection

PBCS Manual Doc 9869 D.5.3.1

- The data collection phase consists of obtaining message logs from the appropriate parties
 - Which will depend on which ANSPs and CSP/SSPs were being used and operator service contracts
 - Today, this usually means obtaining logs for the appropriate period of time from the CSP/SSPs involved.
 - Usually, a log for a few hours before and after the event that was reported will suffice, but once the analysis has begun, it is sometimes necessary to request additional data, (perhaps for several days prior to the event if the problem appears to be an on-going one).

Problem Assessment: Data Collection

PBCS Manual Doc 9869 D.5.3.1 –Operator’s Data

- Aircraft-specific recordings may be available that may assist in the data analysis task.
 - These are not always requested initially as doing so would be an unacceptable imposition on the operators, but may occur when the nature of the problem has been clarified enough to indicate the line of investigation that needs to be pursued. These additional records include:
 - Aircraft maintenance system logs.
 - Built-In Test Equipment data dumps for some aircraft systems.
 - SATCOM activity logs.
 - Logs and printouts from the flight crew and recordings/logs from the ANSPs involved in the problem may also be necessary. It is important that the entity collecting data for the analysis task requests all this data in a timely manner, as much of it is subject to limited retention.

Problem Assessment: Data Analysis

PBCS Manual Doc 9869 D.5.3.2

- A tool that can decode every ATS message type used in the region is essential to beginning data analysis. These messages may include:
 - AFN (ARINC 622), ADS-C and CPDLC (RTCA DO-258/EUROCAE ED-100) in a region operating FANS-1/A.
 - Context Management, ADS-C and CPDLC applications (ICAO Doc 9705 and RTCA DO 280B/ED-110B) in a region using ATN B1.
 - ARINC 623 messages used in the region.
- The analysis of the decoded messages requires a thorough understanding of the complete message traffic, including:
 - Media management messages.
 - Relationship of ground-ground and air-ground traffic.
 - Message envelope schemes used by the particular CPDLC and ADS C technology (e.g. ACARS or ATN).
- The analyst must also have a good understanding of how the aircraft systems operate and interact to provide CPDLC and ADS-C, as many of the reported problems are aircraft system problems.

Problem Assessment: Data Analysis

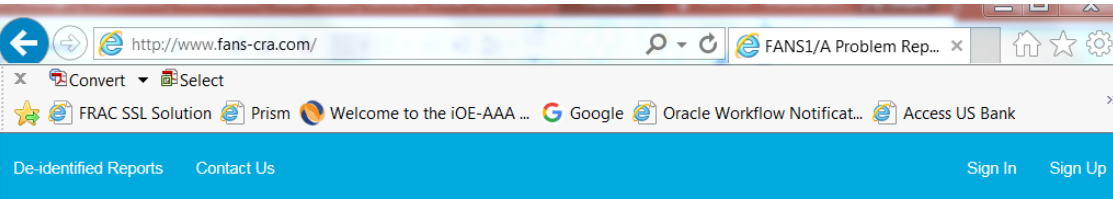
PBCS Manual Doc 9869 D.5.3.2

- This information will enable the analyst to determine a probable cause by working back from the area where the problem was noticed to where it began.
- In some cases, this may entail manual decoding of parts of messages based on the appropriate standard to identify particular encoding errors. It may also require lab testing using the airborne equipment (and sometimes the ground networks) to reliably assign the problem to a particular cause.

Problem Assessment: Data Analysis

PBCS Manual Doc 9869 D.5.3.2

- This information - the **problem description**, the **results of the analysis** and the **plan for corrective action** - is then entered into a database covering CPDLC and ADS-C problems, both in a complete form to allow continued analysis and monitoring of the corrective action and in a de-identified form for the information of other stakeholders.
- These de-identified summaries are reported at the appropriate regional management forum and made available to other PBCS monitoring entities on request.



FANS1/A Problem Reporting

This website provides a means for FANS1/A stakeholders to:

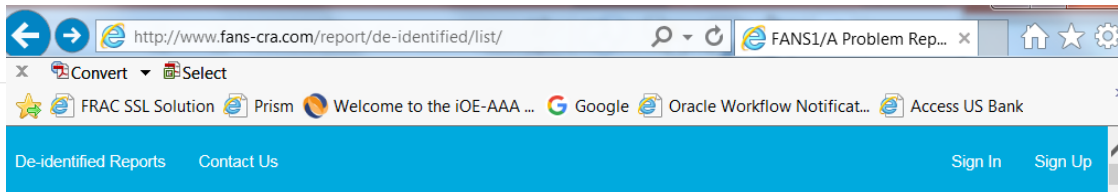
- Raise problem reports against the FANS1/A system
- View de-identified problem reports.
- View problem report reports raised by the stakeholder.
- View those problem reports assigned to the stakeholder by the regional monitoring authority (CRA or DLMA).
- View information on system performance.

Only authorised users may raise problem reports and only authorised users have problem reports. The level of user access granted to individual stakeholders is at monitoring authority (CRA or DLMA).

FANS1/A stakeholders wishing to register as an authorised user should complete the form from this page. All "Sign Up" requests will be reviewed by the appropriate CRA/DLMA access permissions assigned.

When a problem report is raised by a stakeholder the CRA/DLMA will be advised by email to advise the originator of the outcome of an investigation and any status change.

This website is maintained by [Airways New Zealand](#) as a service to the global FANS community.



De-identified Reports

DOWNLOAD

CRA Ref	Region	Status	Type	Title
2478-SH	OTHER	Closed As Duplicate	NONE - Report Is A Non-problem	B744 sends DR1 with an empty (truncated) DM64
2470-SH	IPACG FIT	Active	AIR - Technical - Avionics Fault	ADS-C position reports received with a Figure of Merit Value of 0
2463-MM	NAT TIG	Open	GROUND - Technical	CZQX Did Not Receive Position Reports
2459-MM	NAT TIG	Open	AIR - Technical - Avionics Fault	Invalid ADS-C Timestamp
2458-SH	NAT TIG	Active	TBA	Unexplained When Are You Able uM Msg
2456-MM	NAT TIG	Closed	AIR - Technical - Avionics Fault	A/C Did Not Respond to Frequency Uplink
2455-MM	IPACG FIT	Closed As Duplicate	AIR - Technical - Avionics Fault	FANS PROBLEM REPORT



Problem Mitigation and Resolution

PBCS Manual Doc 9869 D.5.4

- The regional monitoring entity's responsibility does not end with determining the cause of the problem and identifying a fix.
- As part of that activity, and because a considerable period may elapse while software updates are applied to all aircraft in a fleet, **procedural methods to mitigate** the problem may have to be developed while the solution is being coordinated.
- The regional monitoring entity should identify the need for such procedures and develop recommendations for implementation by the ANSPs, CSP/SSPs and operators involved.

Summary and Questions

- Presented the Central Reporting Agency (CRA) functions and flow
- Identified suggested data to be collected, data sources, and stakeholders
- Discussed data analysis
- Provided the link to the FANS 1/A reporting site
- Risk mitigation of pending/unresolved issues was reviewed.

- Questions?