



**THE FORTY-FOURTH MEETING OF THE
INFORMAL PACIFIC ATC CO-ORDINATING GROUP
(IPACG/44)**

(Honolulu, Hawaii, 22 & 23 August 2018)

Agenda Item 5: Communications/Navigation/Surveillance (CNS) Issues

The Network Outage Detection and Reporting (NODAR) Project Team

(Presented by the Federal Aviation Administration)

SUMMARY

This paper provides information concerning the recently formed Network Outage Detection and Reporting Project Team (NODAR PT).

1. Introduction

1.1. One of the most significant contributions of the performance-based communication and surveillance (PBCS) framework is addressing the ongoing challenges with respect to the performance of the network, which is the backbone of the FANS data link system. The use of performance-based standards and FANS data link in general is highly dependent upon the ability of the network to provide a certain level of performance that includes the availability of the network at any given time and the delays when the various sub-systems of the network are being used.

1.2. Through the work that has been accomplished so far to support the global implementation of PBCS, availability has been identified as one of the greatest concerns impacting the application of performance-based separations.

1.3. One major challenge with this work has been how to measure the actual availability against the requirements defined for RCP240 and RSP180. This analysis is highly dependent upon the information received from the CSPs when outages and service degradations occur.

1.4. Thorough review of the information contained in the CSP outage reports and feedback obtained from operations air traffic services (ATS) personnel from the Federal Aviation Administration (FAA) regarding the timing, content, and format of the notifications has made it clear that the current level of detection and reporting is insufficient to support the PBCS environment going forward.

1.5. In April 2018, the Network Outage Detection and Reporting (NODAR) Project Team was established by the North Atlantic Technology and Interoperability Group (NAT TIG) to work collectively between data link system stakeholders to improve the detection and reporting related to outages at the communication service provider (CSP) and satellite service provider (SSP) system levels. Attachment A provides the definition of the project team in the format defined by the NAT systems planning group (SPG).

1.6. This paper provides an update on the activities of the NODAR PT that may be of interest to the IPACG.

2. Discussion

2.1. In preparation for the first teleconference, a series of questions was distributed to the participants based on stakeholder category, i.e. air navigation service provider (ANSP), communication service provider (CSP), and satellite service provider (SSP).

ANSP questions

1. *Does anyone in your organization currently receive notification on planned and unplanned outages from SITAONAIR? ARINC?*
2. *Do you have an internal list of all email addresses/phone numbers/fax numbers that are receiving the notifications?*
3. *How do you make use of the notifications?*
4. *Are the current format and content of the notifications provided by SITAONAIR effective? ARINC?*
5. *Do you have contact information from SITAONAIR and ARINC for help during outage situations?*
6. *Do you get useful feedback from those contacts when you reach out?*
7. *Do you experience apparent outage periods that have not been reported and if so, do you reach out to the CSPs to investigate/confirm?*

2.2. Responses were received from FAA, ISAVIA, NavCanada, UK NATS, and NAV Portugal and these were reviewed during the meeting. Though not a member of the project team, Airways New Zealand also contributed feedback. Similar responses were received from all ANSPs, which include the following main points:

- 2.2.1. Internal ANSP coordination for receipt of CSP notifications may need to be re-assessed, especially for larger organizations. Some ANSPs have multiple email addresses receiving the notifications, and in some cases the belong to personnel no longer with the organization.
- 2.2.2. Most ANSPs have some process for trying to interpret the notifications and connect them to operational issues being experienced. For those getting faxed copies of the notifications these are sometimes more useful during a significant outage.
- 2.2.3. There are too many notifications in general and it is not always clear which regions or services are expected to be impacted. There are different nomenclature used by CSP, SSP, and ANSP so there should be standardized guidance developed to enable operational ATC to decipher the notifications.
- 2.2.4. The times in the outages provided by the CSPs do not typically align with the operational impact experienced by the ANSP. The notifications are generally received after the impact has begun and in some cases after the service has resumed. In addition to operational impact, this complicates use of the outage times reported by the CSP for filtering the data for PBCS monitoring.
- 2.2.5. Some ANSPs have contacts beyond the serviced desk level that are more knowledgeable for responding in outage situations, but most ANSPs struggle to get in contact with the right people and get useful information during outage situations. Some ANSPs have developed “buzz words” that are used by technical support personnel to be directed to the correct CSP personnel in a given situation, and find they have a better response.
- 2.2.6. All ANSPs agreed they experience outages that have not been reported and some reach out to the CSP during the period of impact or after, in some cases filing a problem report with the FANS-CRA.

CSP questions

1. *Do you have issues with obtaining up-to-date distribution lists for notifications?*
2. *Is the information provided by users of the FANS-CRA website when signing up for the Charter a useful source for obtaining that information or could it be?*

3. *At a high level can you share information on what capabilities you have in place to detect and provide alerts for outages/degradations in the various segments of your system? In what way are humans involved?*
4. *How long do you wait before sending out notifications of an unplanned outage/degradation in one of your services? Is this automated or is there a manual/subjective element?*
5. *How are outage situations monitored and updates provided to distribution list? At what intervals?*
6. *What is the process for providing follow up notifications?*

2.3. Response were provided by ARINC and SITAONAIR during the meeting and include the following main points:

- 2.3.1. There was some concern over ANSPs having 1 main email address for CSP communications, because there are different lists used to provide communications on different services and areas.
- 2.3.2. There are automated monitoring systems to detect when various services are degraded, but they rely on alerts from the SSP to provide information on problems within their system that cannot be detected by the CSP.
- 2.3.3. The process of confirming there is a problem and generating the notification is manual.
- 2.3.4. Some ANSPs have indicated interest in telephone notifications, but this would not be practical considering the number of service desk personnel versus customers. Similarly, they cannot handle large volumes of callers contacting them in outage situations.
- 2.3.5. There is a capability to send more timely “type B” messages for notifications. Some ANSPs are developing processes to ingest this type of message to obtain more real-time information.
- 2.3.6. SITA provides updates every 30 minutes for the most significant outages, and 1-2 hours for outages with lower impact. They provide follow-up information to customers that request it.
- 2.3.7. ARINC has a portal for customers to monitor trouble tickets that have been submitted for outages.
- 2.3.8. Both CSPs indicated interest in learning more about the issues being communicated by the ANSPs and working to make improvements.

SSP questions

1. *At a high level can you share information on what capabilities you have in place to detect and provide alerts for outages/degradations in the various segments of your system including interface points with CSPs? In what way are humans involved?*
2. *How long do you wait before sending out notifications to the CSPs of an unplanned outage/degradation in one of your services? Is this automated or is there a manual/subjective element?*
3. *How are outage situations monitored and updates provided to CSPs? At what intervals?*
4. *What is the process for providing follow up notifications to the CSPs?*

2.4. Inmarsat provided responses to the SSP questions prior to the meeting, but Iridium was still working on their responses. The next telcon is scheduled for the first week of September, and will include a continuation of the agenda from the first telcon to review the SSP responses and cover any remaining points from the ANSP and CSP discussions.

2.5. The FAA will continue to provide updates on this effort to the IPACG.

Conclusion

3.1 The meeting is invited to note the information provided.