

**Fifteenth Meeting of the
ISPACE FANS Interoperability Team (FIT/15)**

Papeete, Tahiti, 11-12 March 2008

Agenda Item 5: FOM System Performance Requirements

SPR Compliance and Auckland Oceanic Control System

Presented by Airways New Zealand

SUMMARY

DO-306/ED-122 Oceanic SPR standard puts a number of safety requirements on ATSP ground systems. New requirements exist for the monitoring of operational transactions. Some work is required to bring the Auckland Oceanic Control System (OCS) into compliance with these requirements and this paper provides information on the work underway and the time frame for completion.

1. INTRODUCTION

- 1.1 DO-306/ED-122 Oceanic SPR standard lists twenty seven safety requirements for the application of datalink services in oceanic airspace. Twenty four requirements are applicable to ATSP ground systems.
- 1.2 This paper provides information on the work underway and completed by Airways New Zealand to bring the Oceanic Control System (OCS) into compliance.

2. DISCUSSION

- 2.1 Of the twenty four safety requirements in the Oceanic SPR applicable to ground systems the OCS is compliant with twenty two, partially compliant with one, and not compliant with one.
- 2.2 The introduction of Required Communication Performance (RCP) has seen three safety requirements relating to the monitoring of operational transactions introduced by the Oceanic SPR standard. These three safety requirements, the status of OCS compliance, and target dates for bringing OCS into compliance are listed in Appendix A.

- 2.3 The safety requirement to which the OCS is not currently complaint is SR-15 which relates to an appropriate indication to the controller when a CPDLC downlink is received that has a latency exceeding ET_{TRN} . We are currently working through a decision on what an “appropriate indication” will consist of and when this is made it will be implemented in the system by November 2008.
- 2.4 The safety requirement to which OCS is partially complaint is SR-14. This relates to an indication to the controller when a read back is not received within ET_{TRN} . The OCS has an adapted variable system parameter (VSP) currently set at 300 seconds, which warns the controller if a clearance read back is not received within the VSP time. We are still undecided as to whether we just reduce this VSP to 210 seconds (ET_{TRN} for RCP240) with a target date of June 2008 or carry out further work to differentiate between RCP400 (ET_{TRN} is 370 seconds) and RCP240 to be implemented by November 2008.
- 2.5 In the original DO-219 CPDLC specification the requirement to time stamp CPDLC uplink messages was optional. The Oceanic SPR makes this a safety requirement in SR-9. Airways originally did not implement a time stamp on uplinks but upgraded the system in 2005 to add this feature. The OCS is compliant with SR-9.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
- a) Note the safety requirements listed in the Oceanic SPR standard, and Airways progress towards meeting these requirements in the OCS system.

Appendix A : DO306 New Transaction Monitoring Safety Requirements

Safety requirement reference	Safety requirement	OCS Compliance
SR-9	The end system shall time stamp to within one second UTC for each CPDLC message when it is released for onward transmission.	Compliant. Although time stamp is optional by DO219 Airways added time stamp in an upgrade in 2006.
SR-14	The ATSU system shall indicate to the controller when a required response for a message sent by the ATSU is not received within the required time (ET _{TRN}).	Partial Compliance. Adapted Variable System Parameter (VSP) RBK_WAIT_PRD set to 300 secs. Compliance target June 08 or November 08 depending on design decision.
SR-15	<p>When the end system receives a message whose time stamp exceeds ET_{TRN}, the end system shall provide appropriate indication.</p> <p><i>Note1: Appropriate indication may include the need for real time monitoring and alerting (such as via an uplink delay timer, see Error! Reference source not found. and Error! Reference source not found.). This is determined based on further safety assessment and is a local matter. The safety assessment needs to consider message content, intended use, and environmental conditions that could potentially lead to an unacceptable risk of undetected late delivery of a message as determined by the continuity requirement.</i></p>	Not Compliant. ADS messages with latency >10' are discarded. CPDLC downlink messages always processed. Compliance target November 08.