

Modifying the New Zealand Oceanic ATM system for PBCS



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Currently Implemented DO306 SR#14

- The Oceanic SPR standard, RTCA DO-306 Safety Requirement #14 requires the air traffic service provider to notify the controller when a clearance read-back is not received within the required time.
 - The RCP 240/D performance time (210”) is utilized for those CPDLC equipped aircraft where performance based separations are enabled.
 - The RCP 400/D performance time (370”) will be used for all other data-link connected aircraft.

“Clearance readback expected at [time] is overdue for aircraft [ACID].”



Currently Implemented DO306 SR#15

- The Oceanic SPR standard, RTCA DO-306 Safety Requirement #15 requires the air traffic service provider to notify the controller when a required response for a message is received late.
- The RCP 240/D performance time (210”) is utilized for those aircraft where performance based separations are enabled. The RCP 400/D performance time (370”) will be used for all other data-link connected aircraft.
- If the received response or request exceeds the corresponding VSP threshold, a warning will be appended to the downlink message received at the controlling sector queue stating:

“Message received LATE for this aircraft, message timestamp was [hh:mm:ss]”



Currently Implemented DO306 SR#15

- For WILCO responses that are automatically processed by the system, the following urgent priority system message is sent to the controlling sector queue:

“[acid]: Late WILCO response received with timestamp [hh:mm:ss] for clearance sent at [hh:mm:ss] UL: [clearance]”

- These messages will indicate to the controller that a late clearance response/request has been received. Operational procedures will determine what, if any, action may be required.



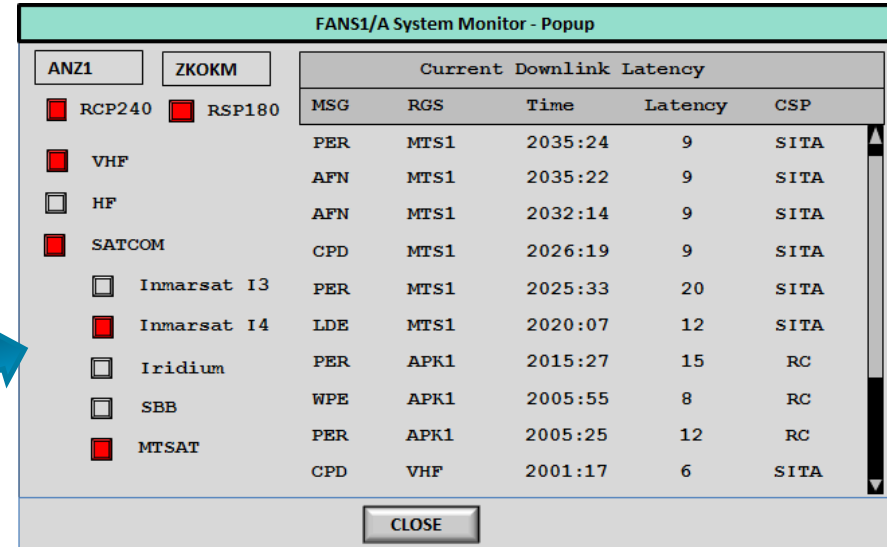
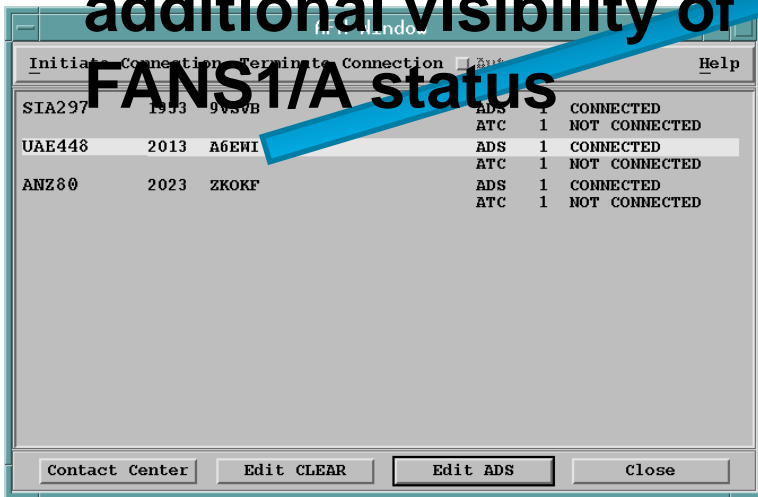
Modifications for PBCS

- **The Conflict Prediction algorithms for the application of 30NM lateral and 30NM and 50NM distance based longitudinal separation will be modified by November 10 2016 to verify from the filed FPL that the aircraft meets both the RCP240 and RSP180 requirements before application of the separation is allowed.**
- **A Variable System Parameter (VSP) will be created and used to activate/de-activate the Conflict Prediction code changes for RCP240 and RSP180.**
- **A 'degraded PBCS' button will allow the controller to prevent the application of the performance based separation standards if they are advised or consider that either RCP/RSP is degraded.**



FANS1/A system monitor

- Airways OCS system displays CPDLC and ADS-C status in an AFN window -single row for each aircraft
- Implement selectable pop-up window for additional visibility of FANS1/A status



FANS1/A system monitor

FANS1/A System Monitor - Popup

ANZ1 ZKOKM

RCP240 RSP180

VHF

HF

SATCOM

Inmarsat I3

Inmarsat I4

Iridium

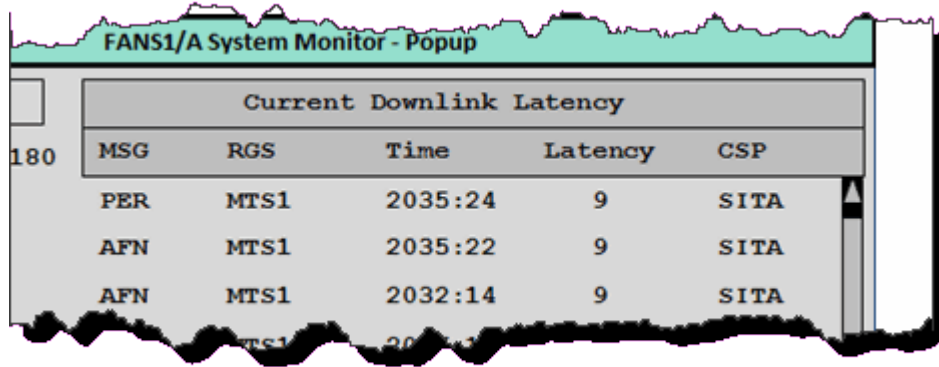
SBB

MTSAT

MSG	RGS	Time	Latency	CSP
PER	MTS1	2035:24	9	SITA
AFN	MTS1	2035:22	9	SITA
AFN	MTS1	2032:14	9	SITA
CPD	MTS1	2026:19	9	SITA
PER	MTS1	2025:33	20	SITA
LDE	MTS1	2020:07	12	SITA
PER	APK1	2015:27	15	RC
WPE	APK1	2005:55	8	RC
PER	APK1	2005:25	12	RC
CPD	VHF	2001:17	6	SITA

CLOSE

FANS1/A system monitor

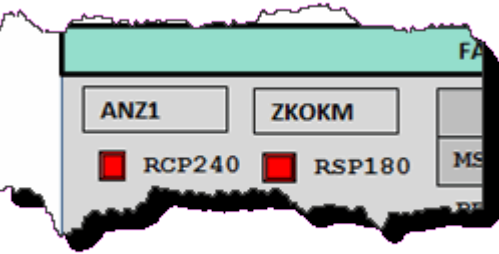


The screenshot shows a window titled "FANS1/A System Monitor - Popup". Inside the window, there is a table with the following data:

Current Downlink Latency					
MSG	RGS	Time	Latency	CSP	
PER	MTS1	2035:24	9	SITA	
AFN	MTS1	2035:22	9	SITA	
AFN	MTS1	2032:14	9	SITA	

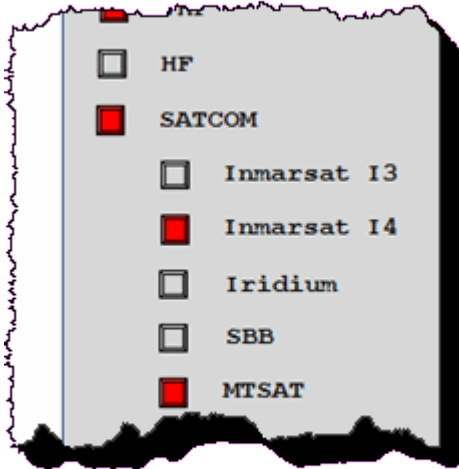
- Provide an indication of current FANS1/A latency observed for selected aircraft:
 - Message Type
 - RGS designator that message was received through
 - Time of receipt
 - Downlink Latency
 - Name of CSP that message passed through

FANS1/A system monitor



- Provide an indication of current RCP240 RSP180 status of selected aircraft:
 - Callsign/Tail Number
 - RCP240 indicator
 - Activated by FPL Item10a code P2
 - Deactivated by controller selection of “degraded PBCS” flag
 - Activated by controller deselection of “degraded PBCS” flag
 - RSP180 indicator
 - Activated by FPL Item 18 SUR/RSP180
 - Deactivated by controller selection of “degraded PBCS” flag
 - Activated by controller deselection of “degraded PBCS” flag

FANS1/A system monitor



- Provide an indication of media use by the selected aircraft:
 - Flags will be activated by receipt of a downlink message via that media:
 - VHF
 - HF
 - SATCOM
 - Inmarsat I3
 - Inmarsat I4
 - Iridium
 - SBB
 - MTSAT

Thank you

