



International Civil Aviation Organization

**AUTOMATIC DEPENDENT SURVEILLANCE –
BROADCAST SEMINAR AND TWELFTH MEETING
OF AUTOMATIC DEPENDENT SURVEILLANCE –
BROADCAST (ADS-B) STUDY AND
IMPLEMENTATION TASK FORCE (ADS-B SITF/12)**



Kolkata, India, 15-18 April 2013

Agenda Item 6: Review States' activities and interregional issues on trials and implementation of ADS-B

USE OF A COMMISSIONING CHECKLIST FOR ADS-B GROUND STATIONS

(Presented by Australia)

SUMMARY

Whenever Australia places an ADS-B ground station into service a set of formal actions are taken, and confirmation of each action noted in a commissioning checklist, before the commissioning certificate is signed. This paper outlines this process.

1. Background

1.1 Before systems become operational, Airservices Australia conducts a rigorous check and review to ensure that all aspects of the system are ready. This documented process ensures that performance, safety and maintainability and other aspects are in place. Individuals with delegated responsibility sign a commissioning certificate when all is ready.

2. Commissioning process

2.1 The commissioning process is part of Airservices Australia's System and Safety Management System (SMS).

2.2 Both the Commissioning Checklist and Commissioning Certificate are filled in from templates with the appropriate level of detail for the particular change being proposed.

2.3 This process is applied for the introduction of new ADS-B ground stations and/or upgrade of an ADS-B site to provide a consistent approach to change management and configuration management.

2.4 The Commissioning Checklist and Commissioning Certificate are reviewed by stakeholders and system authorities and are signed by designated delegates.

2.5 A Commissioning Checklist and Certificate is given in Appendix A. In this example, a single template (C-FORM0300) captures both the Commissioning Readiness Checklist and Commissioning Certificate artifacts.

2.6 Note that as of August 2012, Airservices Australia has updated its process and templates which now includes for Regulated Standard commissioning, a separate Commissioning Readiness Checklist (C-FORMS0348) and a Commissioning Certificate (C-FORMS0300).

3. Commissioning Readiness Checklist

3.1 A Commissioning checklist provides in-depth detail of a system's (ADS-B ground station site) status and readiness for Commissioning. There are several parts (sub-sections) to a commissioning checklist which are summarized as follows:

- Safety and Enterprise Risk Management.
- Environment
- Security
- Federal/State Statutory Licensing Compliance
- System Specification Compliance and Performance
- ATC Documentation
- Technical Documentation
- Training – ATC
- Training – Technical
- Logistics
- Asset Management
- Deployment Pre-requisites
- Commissioning

Section 1 is Safety and Enterprise Risk Management. This section covers all aspects of safety including regulatory safety (Safety assessment process and Safety Plan and/or Safety Case), operational safety (hazard identification or HazID and Bowtie), Enterprise Risk Management including acceptable level of risk, and Work Health & Safety (WHS) considerations.

For ADS-B ground stations commissioning as shown in Appendix A, a Safety Plan was submitted for each of the new site to supplement the original ADS-B Safety Case.

Section 2 is Environment and includes Environmental Impact Statement (EIS) where appropriate, and any related environmental assessment in accordance with environmental laws and regulation.

For ADS-B commissioning (as per Appendix A), an EIS was completed and environment changes assessment conducted at each of the remote ADS-B ground station site.

Section 3 is concerned with Security and in particular measures of applicable information security (InfoSec), data security, network security, IT security (ITSec), and physical site security.

For ADS-B, information security is managed thru link bearer design and system procedures, while data/IT/network security are addressed by mission specific independent network with firewalls to protect the core network and monitoring.

Section 4 relates to Federal/State Statutory Licensing Compliance, including Telecommunications, RF, Spectrum, Media, Electrical and other relevant standards. ADS-B ground stations are receive only and registered with the Australian Communications Management Agency (ACMA).

Section 5 covers System Specification Compliance and Performance. This comprehensive check-list includes system change acceptance tests (FAT/ SAT/ UAT data), Site configuration and data established and approved, hardware Physical Configuration Audit (PCA), infrastructure supports (power, communications, and structure), monitoring, labeling, and site/property impact.

Section 6 is a checklist for ATC Documentation. ATC procedures and plans for a system change or new service may include for example

- The Manual of Air Traffic Control
- AIP

Section 7 provides checklist for Technical Documentation. Technical documentation is critical to the maintenance and support of and operational system such as ADS-B. The ADS-B documentation suite includes the System Management Plan (SMP) and System Continuity Plan (SCP) which provides the framework for the life-cycle management and support of the system. Where applicable, System Requirements Specification (SRS) and Concept of Operation (CONOPS) are also included. Detailed maintenance process and procedures, in the form of Airways Engineering Instructions (AEI), are created and managed for an operational system. Other technical documentation includes technical change description documents, manuals, drawings, and online documentation. The technical documentation suite is rigorously maintained and controlled to ensure integrity, compliance, and configuration management of the documents. System Technical documentation are available on-line (intranet) and at the local site.

Section 8 is about ATC Training and ensures that ATC staff are trained, rated, and endorsed for the provision of a separation service (ADS-B). Training records and currency are maintained for relevant ATC staff.

Section 9 is about Technical Training and covers Training Needs Analysis (TNA), Training Plan, and certification process for technical support and staff. ADS-B is a Regulated System under NAS and thus technical staff working on ADS-B equipment must be appropriately qualified. Airservices Australia has a recognized TechCert system and process where technical staff are appropriately trained and qualified to maintain a operational system.

Section 10 is focused on Logistics for the life cycle's maintenance support of the equipments and systems. Logistics can include a Support Contract with the prime's equipment vendor, spares or buffer stock including Business Continuity contingency, software media (including licences), test bed and specialized test equipment.

Section 11 is related to Asset Management of a change or new system introduced. It involves updating or creating records in the asset register, SAP Plant Maintenance, and issue register.

Section 12 is a Deployment Pre-requisites checklist where stakeholders are appropriately notified of the commissioning of a new system or change in service. The notification can be external stakeholders such as Pilot Education and Flight Operation publication for ADS-B. Internal stakeholders notification include Sponsor, relevant Business Managers, Documentation Management, and operational and support business units.

Section 13 Commissioning is the last phase of the readiness checklist and covers the final conditions for acceptance of a new system to service. Commissioning is executed into operational service via instructions and procedures in a Cutover Plan. A Cutover Plan informs stakeholder of the process and procedures to introduce a new system or change with appropriate risk assessment and reversion strategy.

4. Summary

4.1 The use of a Commissioning Readiness Checklist and Commissioning Certificate process for ADS-B has a number of benefits in that it provides a consistent, compliance, consulted and documented process and a formalized checklist for the introduction of an ADS-B service from remote ADS-B ground stations.

5. Recommendation

5.1 The meeting is invited to:

- a) note the Australian commissioning process; and
- b) consider any action that may be necessary

APPENDIX

- a) Example Commissioning Checklist
- b) Example Commissioning Certificate

Commissioning Readiness		
The requirement for this form is specified in the System Management Manual (Section 11.2 of V4), C-MAN0107		
Project/Task Name	SAP Project/Task ID:	Sites or Locations affected:
Documentation prepared by:	Date:	Commissioning Date:
Affected System(s)	System Criticality	Change Consequence Level
Brief Description of Change:		

Commissioning Readiness Endorsement		
The endorsement of this form by the appropriate authorities as specified in the System Management Manual certifies that the requirements detailed in this form (with the exception of the non-critical deficiencies ¹ listed herein) have been completed prior to the commissioning of the system change or new system.		
Chief Engineer or Technical or Maintenance Authority		
Name:	Signature:	Date:
Designation:		
Chief Operating/User Authority or Operating/User Authority		
Name:	Signature:	Date:
Designation:		
Chief Operating/User Authority or Operating/User Authority		
Name:	Signature:	Date:
Designation:		

Records Management Instructions
Place the completed Commissioning Readiness Form, together with any support documents on the Project file
Provide a copy of the completed Commissioning Readiness Form to P&E, Asset Lifecycle Manager, Planning and Integration

Note 1: Non-critical deficiencies (NCD) are those outstanding technical and operational issues that do not prevent the safe and effective use or maintenance of the facility, but will be addressed in a specified and agreed time. NCDs shall be listed on the Commissioning Certificate (C-FORMS0300) and recorded in the relevant system (ASID / HEAT / SAIR). It is preferable for each NCD to be recorded as a separate Issue.

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
1 OPERATIONAL SAFETY				
1.1	Provide a link to the completed SCARD SCARD Template (AA-TEMP-SAF-0042) Note: For unregulated systems the SCARD shall be used to assess the impact of the change and perform a preliminary hazard analysis	Safety Change Management Requirements AA-NOS-SAF-0104	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to SCARD
1.2	The outcome of the SCARD will be the requirement for one of the following for commissioning: Safety Statement – included in SCARD or standalone Safety Statement which must provide Airservices Australia management with sufficient information to demonstrate that safety has been considered and the change presents minimal or no safety issues. Safety Plan & Safety Assessment Report, or Safety Plan & Safety Case Safety Plans, Safety Assessment Reports and Safety Cases are required to be available in the Document Search Database	Safety Change Management Requirements AA-NOS-SAF-0104 Document Search Database	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to Safety statement or Link to Safety Plan & Safety Assessment Report or Link to Safety Plan & Safety Case
1.3	Safety risk management process completed and includes <ul style="list-style-type: none"> • any new hazards / impact to existing hazards identified? • controls identified and in place? and • residual risk justified and accepted. 	Safety Risk Management Procedures AA-PROC-SAF-0105	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
1.4	Impacts on the Operational Risk Assessments from residual risks have been assessed and implemented using Operational Risk Assessment Change Request and Acceptance Record – AA-FORM-SAF-0032	Operational Risk Assessment AA-NOS-SAF-0006 Safety Risk Management Procedures AA-PROC-SAF-0105	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to Operational Risk Assessment Change Request and Acceptance Record:
1.5	Arrangements for monitoring and review of risks are in place including arrangements for safety performance monitoring following the transition.	Safety Risk Management Procedures AA-PROC-SAF-0105	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
1.6	CASA have approved / accepted or been advised of the change, as applicable	Safety Change Management Requirements AA-NOS-SAF-0104	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	

Item No:	Requirement:	Requirement Reference: (Procedure/Instruction used to specified required input)	Completed or N/A	Evidence of Compliance (If a requirement is N/A, a reason why it is N/A is required to be entered)
2 WORKPLACE HEALTH & SAFETY				
2.1	Initial WHS Hazard Identification must be completed as per the template AA-TEMP-SAF-0020	Safety Risk Management Procedures AA-PROC-SAF-0105 Initial WHS Hazard Identification AA-TEMP-SAF-0020 Workplace Health and Safety Risk Management Summary AA-TEMP-SAF-0016	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to completed Workplace Health and Safety Management Summary AA-TEMP-SAF-0016
2.2	Ensure employees and stakeholders are consulted when significant changes to work arrangements are being considered.	Working Together Workplace Consultation AA-PROC-SAF-0009	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
2.3	Tower Access / Classification assessed? Working at Heights Safety Checklist & Daily Toolbox Meeting (F098) Fall arrest facility / equipment available	Working at Heights PROC-157 Working at Heights Safety Checklist & Daily Toolbox Meeting F098	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
2.4	WHS hazard controls are in place - Safe Work Method Statement completed - Plant risks managed - Radhaz survey completed, published on the Avnet and general public & occupational exposure boundaries identified	Safe Work Method Statement AA-TEMP-SAF-0017 Managing WHS Risk for Contractors and Projects AA-PROC-SAF-0012 Plant Risk Management PROC-134 RF Radiation, Surveys & Health & Safety Mgmt PROC-121	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to completed Safe Work Method Statement AA-TEMP-SAF-0017 Link to completed F131 Plant Risk Management Checklist
2.5	At the completion of works ensure WHS Inspections are completed and hazard controls are in place. Building condition; clean, undamaged, all work completed.	Conducting Workplace Safety Inspections AA-PROC-SAF-0008	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
3 ENVIRONMENT				
3.1	Environmental Impact must be assessed using the Environmental Impact Screening & Assessment Criteria for Changes to On-ground Activities Assistance in assessing the Environmental Impact can be obtained from Environment and Climate Change Unit in Environment Group.	Environmental Screening & Assessment Criteria for Changes to On-ground Activities AA-REF-ENV-0010 Environmental Assessment of Changes to On-ground Activities. AA-NOS-ENV-2.200	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to completed Environmental Impact Screening and Assessment Form If a stage 2 assessment is required provide ARMS reference and links to any Permits, Master Development Plans and relevant correspondence as required.
3.2	Environmental Clearance obtained for ATM changes as per AA-NOS-ENV-2.100 Assistance in assessing the Environmental Impact can be obtained from Environment and Climate Change Unit in Environment Group.	Environment Assessment Process for ATM Changes AA-NOS-ENV-2.100	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Provide ARMS reference and NRFC reference if ATM change required
4 PEOPLE- SUPPORT				
ATC TRAINING				
4.1	ATC Training Needs Analysis completed and Training Plan developed?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to Training Needs Analysis and Training Plan
4.2	Sufficient number of trained, rated and endorsed ATC staff available.		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Number Trained:
4.3	ATC staff individual training records in SAP database have been updated		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.4	Plans are in place to complete any outstanding training, rating, and endorsement of remaining ATC staff (Normally an identified hazard)		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	HAZLOG Register No:

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
TECHNICAL TRAINING				
4.5	Training Needs Analysis completed and Training Plan developed for system support staff and field maintenance staff?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to Training Needs Analysis and Training Plan
4.6	TechCert codes have been created, assessment criteria developed or existing assessment criteria has been amended	TechCert codes TechCert Guides and Forms	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to TechCert Guides and Forms
4.7	Sufficient system support staff and field maintenance staff appropriately trained?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.8	Are plans are in place to complete any outstanding training and certification of system support staff and remaining field maintenance staff?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.9	Field maintenance staff hold the relevant TechCert to perform duties.	Technical Certification PROC-141	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.10	Statutory / special licensing obtained by field maintenance staff including high risk work competencies and licensing requirements?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.11	ABS and FMS staff training details sent to Technical Training Coordinator and training records updated as required?	Training PROC-119	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.12	TechCert details sent to FMS System Support to update the Qualifications (TechCert) Database	Technical Certification PROC-141	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
LOGISTICAL SUPPORT				
4.13	CMRD have been consulted regarding special test equipment, test beds, etc		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
4.14	CMRD / NDC have been consulted regarding spares holdings and repair of LRUs from this equipment or in-house support of Depot Level Support Contract / repair contract		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.15	TEMACC advised of any specialised test equipment requirements.	Test Equipment Management PROC-150	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.16	Maintenance support contracts in place (external and/or internal)? – Appropriate vendor and/or internal support? – Appropriate Level 3 maintenance arrangements		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.17	Test equipment provided to maintenance base. Note: Test equipment purchasing and calibration requirements detailed in Engineering Execution Readiness form.		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.18	Specialised hardware or software system support and field maintenance tools, test / patch leads, adaptors, isolators, electronic discharge protection (mats, straps), etc supplied?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.19	System Business Continuity/ Disaster Recovery provisions supplied/updated?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.20	Spares – Supplied, storage correct, transport cases supplied?	Management of Goods & Supplies PROC-118	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.21	Spares – Software / firmware loaded, tested & configured?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
4.22	Service Restoration Times (SRT) established?	Airways Service Data PROC-207	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
4.23	Conduct Hardware physical configuration audit and ensure SAP Plant Maintenance has updated information of all installed and/or demolished equipment (including monitoring circuits) and sent to System Operations SAP PM DATA CHANGES.	Equipment Installed/Demolished Advice SAP Data Input Form F104	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to Email from SAP PM Support confirming update/s
5 PROCEDURES				
ATC DOCUMENTATION				
5.1	System Requirements documentation including Operating Concept or Business Process Rules - produced/updated and approved?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to documentation
5.2	Manual of Air Traffic Services (MATS) reviewed / updated. Aeronautical information publications (AIP Book, AIP SUPP, AIC, DAP, ERSA, Charts, etc) reviewed / updated. Amendment times are determined by the AIS Distribution Schedule	AA Publications AIS Distribution Schedule	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	NRFC No.
5.3	National ATC Procedures Manual (NAPM) and any other relevant ATC procedures reviewed / updated.		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	NRFC No.
5.4	ATC contingency / continuity plans reviewed / updated.	ATS Contingency Plans Business Continuity Plans C-BCP	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	ATS-CP No: C-BCP No:
5.5	NOTAM and/or AIP SUP issued / amended / cancelled	Works Planning PROC-213 Refer also LOA3024	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	NOTAM No:
5.6	ATC Temporary Local Instruction (TLI) issued notifying Operational staff of change?	Temporary Local Instructions & Database	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	NRFC No.

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
USER DOCUMENTATION				
5.7	User/operator manuals updated		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.8	User/operator procedures provided/updated as applicable		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.9	On-line user/operator documentation completed and published		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.10	ARFF instructions updated		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.11	Other Business Groups instructions updated?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
TECHNICAL DOCUMENTATION				
5.12	Software design documents updated, adequate and supplied to system support?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.13	Software and/or dataset Version or Release Description Documentation supplied and adequate?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to Version Description Document or Release Description Document
5.14	Software installation procedure and instructions supplied/updated and adequate?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to Installation Procedure

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
5.15	SMP: System Management Plan created / updated and adequate?	SMP Template	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	SMP No:
5.16	SCP: System Contingency / continuity plans supplied/updated and adequate?	SCP Template	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	SCP No:
5.17	Technical drawings updated and listed in Data Viewer and list supplied to system supporters and field maintenance staff.	Technical Drawing Management PROC-178	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.18	Technical handbooks/manuals supplied to ABS or FMS Engineering/IT support and field maintenance staff (base and site copy).	Document Management PROC-103	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.19	On-line system support and field maintenance documentation completed and published		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.20	Technical documentation registered and placed under documentation control	Document Management PROC-103	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.21	Appropriate engineering performance requirements specified and issued for ongoing use? System Specification documentation supplied/updated and adequate?	System Performance Requirements & Reporting Specification ASYS-106	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.22	Configuration & Modification AEI: Equipment and System Modifications and Configuration (for hardware and software), and Software Release Authorisations are documented in a Part 2 AEI (or other approved documentation)	Development of Maintenance Instructions for Equipment PROC-151	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	AEI No/s: Link to documentation detailing configuration and modification
5.23	Maintenance AEI: Maintenance requirements, including Performance Inspection tolerances, have been defined and documented in AEIs (or other approved documentation). (AEI Part 3,4,7)	Development of Maintenance Instructions for Equipment PROC-151	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	AEI No/s:

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
5.24	AEI: New maintenance AEIs trialled by maintenance staff	Development of Maintenance Instructions for Equipment PROC-151	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
5.25	TTD: Temporary Technical Dispensation raised and published on the Document Search database.	Temporary Technical Dispensations PROC-153	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	TTD No:
5.26	Site Manifest updated	Site Manifests FMS-304	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6 SYSTEM				
DESIGN REQUIREMENTS				
6.1	System Requirements documentation including Operating Concept or Business Process Rules - supplied/updated and approved?	<u>Design Control</u> PROC-146	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Links to documentation
6.2	Standards – Installation and equipment comply with all relevant Australian Standards? Building Codes - Structures comply with the relevant Building Codes? The relevant Australian Standards and Building Codes are to be determined by the Chief Engineer, Technical Authority or Maintenance Authority	Australian Standards Design Control PROC-146	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.3	Other applicable Federal and/or State licensing requirements met? The relevant licensing requirements are to be determined by the Chief Engineer, Technical Authority or Maintenance Authority	Design Control PROC-146	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	

Item No:	Requirement:	Requirement Reference: (Procedure/instruction used to specified required input)	Completed or N/A	Evidence of Compliance (If a requirement is N/A, a reason why it is N/A is required to be entered)
6.4	Electrical Mechanical, Structure and Building impacts have been assessed as adequate or modifications organised and completed through consultation with Engineering Branch, P&E? (Power supply capability / airconditioning capacity / mast loadings)	Design Control PROC-146	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.5	Earthing and Lightning Protection meets Airservices requirements?	Earthing and Lightning Protection Systems for Operational Facilities AEI 3.1504 Site Earthing and Lightning Protection Systems for Existing Installations AEI 2.3011	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.6	Battery Procurement as per Airservices requirements?	Lead Acid Batteries (Stationary) Procurement and Acceptance Testing AEI-3.7050 Panel Contract Arrangement C-PROC0140	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.7	Assessing the impact of information systems against corporate objectives (7 Ticks process).	Information Technology Application Certification –‘7 Ticks’ MI-0804 and PROC-190	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to completed 7 Ticks Interim Certificate or Final Certificate
6.8	IT Security measures appropriate and in place(ie. to ensure effective security and control practices to minimise the risks of unauthorised access, inappropriate use, modification, destruction or disclosure of electronically held data).	IT Security Roles and Responsibilities Statement MS-0013 Information Security MI-0808 ICT Resources – Conditions of Use MI-0829	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
6.9	Information Security	Information Security C-PROC0184	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to completed security risk management plan
INSTALLATION REQUIREMENTS				
6.10	Has met the regulation and safety requirements for Telecommunications Installations. Cable Markers installed (external)? Equipment complies with ACMA statutory requirement Telecommunication Labelling (Customer Equipment and Customer Cabling) Notice 2001 as amended (i.e. 'A' ticked on the equipment compliance plate)	Implementing Regulation and Safety Requirements for Telecommunications Installations PROC-138 Installation of Optical Fibre Cable - Underground AEI 4.5001 Underground Cable Marking AEI 4.3001	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to Telecommunications Cabling Advice
6.11	MDF/IDF Records created / updated? Labelling/Colour Coding – Rack, Cable, Chassis, etc.?	Colour Coding of RJ45 Patch Leads for Voice and Data Installations AEI 7.3241	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.12	Transmitters licence label affixed	Radio Communication Transmitter Labelling AEI 7.4238	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.13	Electrical Certificate of Testing and Safety or Testing and Compliance on connection to a source of electricity (i.e. installation conforms to AS3000) are required to be supplied as soon as possible after connection or testing of any electrical installation or change. Labelling – Switch Boards, etc Meets Airservices Electrical Cable Colour Coding requirements?	Electrical Safety Regulation 2002 Sections 15 and 159 AS 3000 – Aust Standard Electrical Cable Colour Coding AEI 3.1502	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Links to Electrical Certificates

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
6.14	All modifications complete and scratch plate labels affixed to equipments	Identification of Airways Systems Equipment Hardware Modifications PROC-154	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.15	Integration with National Technical Monitoring has been organised and completed through Engineering Branch, P&E?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.16	Alarm monitoring installed and tested at TOC for local and remote site?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.17	Source media – supplied/backed up, stored, registered with system support?	Software Media Archival and Storage PROC-147	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.18	Site installable media – supplied/backed up, appropriately stored and registered by field maintainers?	Software Media Archival and Storage PROC-147	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.19	Software licences provided, registered and appropriately stored? (Including details of any third party licensing)		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.20	Update HEAT and/or ASID database to incorporate new system/version number and assign issue management roles?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
DESIGN CONFIRMATION				
6.21	<p>Airservices Physical Security requirements met.</p> <p>The minimum security requirements are specified in C-GUIDE0157. Physical Security advise can be obtained from the relevant Security Advisor in Security and Crisis Planning, Safety & Environment</p> <p>Physical Access requirements are determined and established</p> <p>Siting and accommodation impact has been assessed as being satisfactory or modifications organised through National Property?</p>	<p>Physical Security – Critical Operational Facilities C-GUIDE0157</p> <p>Site Management PROC-170</p>	<p>Completed <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p>	
6.22	<p>Network data load impact has been assessed as being satisfactory or modifications organised and completed through Engineering Branch, P&E?</p>		<p>Completed <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p>	
6.23	<p>Spectrum licences (either cancelled if no longer required or for new licenses including if antenna moves by more than 10 metres)</p>	<p>Frequency Management: Obtaining a Frequency Assignment and Licence AEI 7.4202</p>	<p>Completed <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p>	
6.24	<p>New system or system change acceptance tests (software and/or hardware) satisfactorily completed against the approved system requirements?</p> <ul style="list-style-type: none"> – Test Plans provided? – FAT, SAT, UAT test results complete, passed to the required level and provided? – Test identified defect listings and re-test information provided? 	<p>System Management Manual SMM</p> <p>Design Control PROC-146</p>	<p>Completed <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p>	
6.25	<p>Battery Acceptance Tests as per Airservices requirements?</p>	<p>Lead Acid Batteries (Stationary) Procurement and Acceptance Testing AEI-3.7050</p>	<p>Completed <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p>	Link to Battery Acceptance Test Results

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
6.26	Standard Operating Conditions (SOCs) / Site Configuration Data (SCD) established / approved	Standard Operating Conditions & Site Configuration Data Management PROC-143	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.27	Flight Test results supplied and satisfactory	Certification of Radio Navigation Aid Facilities AEI 7.4003	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
6.28	Equipment operation is as per AEI specifications and any additionally specified requirements? Relevant requirements and performance specifications to be determined by the Chief Engineer, Technical Authority or Maintenance Authority		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
7 TRANSITION				
PLANNING				
7.1	Does the system meet all critical user and technical requirements?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
7.2	If non-critical deficiencies are proposed to be accepted into operation, are they managed and tracked via ASID, HEAT or SAIR, including responsibilities and timings and attached to the Commissioning Certificate?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
7.3	Cutover Plan prepared and authorised by: – Appropriate level of engineering authority? – Appropriate level of User Authority?	Cutover Plan C-TEMP0045	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Link to Cutover Plan
7.4	Works plan created at least 7 days before deployment	Works Planning PROC-213	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	Works Plan No.

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
NOTIFICATION				
7.5	Industry education / notification been completed?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
7.6	Relevant Business Managers advised of impending change?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
7.7	Change requester and/or sponsor notified?		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
7.8	System Operations' TOC and Service Desk notified and accepted operating responsibility for the change.		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
7.9	ABS/FMS Manager has accepted maintenance responsibility		Completed <input type="checkbox"/> N/A <input type="checkbox"/>	
7.10	Notify the following (as appropriate) that the system is at "OPERATIONAL READINESS" and provide details of commissioning and any system changes: ATC System Supervisor, Melbourne (ATC) System Supervisor, Brisbane (ATC) National ATC Systems Manager Operating Authority (relevant)	Sys to Svc List	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	

Item No:	Requirement:	Requirement Reference: <small>(Procedure/instruction used to specified required input)</small>	Completed or N/A	Evidence of Compliance <small>(If a requirement is N/A, a reason why it is N/A is required to be entered)</small>
7.11	Notify the following (as appropriate) that the system is at “ENGINEERING READINESS” and provide details of commissioning and any system changes: P&E Technical Authority (relevant) Technical Operations Centre – Director Service Desk -Airways SAP PM Support	Sys to Svc List	Completed <input type="checkbox"/> N/A <input type="checkbox"/>	

COMMISSIONING CERTIFICATE		
The requirement for this form is specified in the System Management Manual (Section 11.2 of V4), C-MAN0107		
Project/Task Name	SAP Project/Task ID:	Sites or Locations affected:
Documentation prepared by:	Date:	Commissioning Date:
Affected System(s)	System Criticality	Change Consequence Level
Brief Description of Change:		

Commissioning Approval		
<p>The approval of this document by the appropriate authorities as specified in the System Management Manual certifies that the new system or system change is satisfactory to meet the specified service and performance requirements; that system operating and support requirements are in place; that required user and technical training is adequately provisioned; as detailed in the Commissioning Readiness Form and consequently the new system or system change is declared fit-for-purpose and can be deployed and operated until formally decommissioned or otherwise revoked.</p> <p>This approval is provided subject to the non-critical deficiencies¹ listed herein.</p>		
Chief Engineer, Technical or Maintenance Authority		
Name	Signature:	Date
Designation:		
Name:	Signature:	Date:
Designation:		
Chief Operating/User Authority or Operating/User Authority		
Name:	Signature:	Date:
Designation:		

Records Management Instructions
Place the completed Commissioning Certificate, together with the completed Commissioning Readiness form on the Project file
Provide a copy of the completed Commissioning Certificate, and the completed Commissioning Readiness Form to P&E, Asset Lifecycle Manager, Planning and Integration

Note 1: Non-critical deficiencies are those outstanding technical and operational issues that do not prevent the safe and effective use of the facility by users or prevent effective technical maintenance, but will be addressed in a specified and agreed time.



LIST OF NON-CRITICAL DEFICIENCIES WAIVED AT TIME OF COMMISSIONING

Either list non-critical deficiencies here or attach a list if space insufficient

Issue	Issue Tracking Reference Number	Allocated to	Proposed Completion Date	Comments