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INTERNATIONAL CIVIL AVIATION ORGANIZATION

MIDDLE EAST AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (MIDANPIRG)

MID REGION GUIDANCE FOR THE IMPLEMENTATION OF AIDC/OLDI

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RECORD OF AMENDMENTS

The following table records the history of the successive editions of the present document:

Edition Number	Edition Date	Description	Pages Affected
0.1	03 February 2014	Initial version	All
0.2	09 September 2014	CNS SG/6 update	All
1.0	26 November 2014	MSG/4 endorsement	All
1.1	June 2015	Deletion of the planning parts and change of title of the Document. MIDANPIRG/15 endorsement.	All
1.2	April 2019	Update the table - Details of the ATM systems to support Implementation Table	13-15

1. INTRODUCTION

1.1 Seeking to ensure continuous Safety improvement and Air Navigation modernization, the International Civil Aviation Organization (ICAO) has developed the strategic systems approach termed Aviation System Block Upgrade (ASBU). The latter, defines programmatic and flexible global systems, allows all States to advance their Air Navigation capacities based on their specific operational requirements.

1.2 The ASBU approach has four Blocks, namely Block 0, Block 1, Block 2 and Block 3. Each block is further divided into Modules. Block 0 is composed of Modules containing technologies and capabilities that are implemented currently.

1.3 Module FICE in Block 0 is introduced to improve coordination between air traffic service units (ATSUs) by using ATS inter-facility data communication (AIDC). The transfer of communication in a data link environment improves the efficiency of this process. The data link environment enhances capacity, efficiency, interoperability, safety and reduces cost.

1.4 The AIDC and the OLDI are tools to coordinate flight data between Air Traffic Service Units (ATSU) and both satisfies the requirements of basic coordination of flight notification, coordination and transfer of control.

1.5 Various items concerning MID Region Implementation of AIDC/OLDI have been detailed in this document.

2. BACKGROUND AND ASBU B0-FICE

Module B0-FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration:

Summary	To improve coordination between air traffic service units (ATSUs) by using ATS interfacility data communication (AIDC) defined by the ICAO *Manual of Air Traffic Services Data Link Applications* (Doc 9694). The transfer of communication in a data link environment improves the efficiency of this process particularly for oceanic ATSUs.	
Main performance impact as per Doc 9883	KPA-02 – Capacity, KPA-04 – Efficiency**,** KPA-07 – Global Interoperability, KPA-10 – Safety.	
Operating environment/ Phases of flight	All flight phases and all type of ATS units.	
Applicability considerations	Applicable to at least two area control centres (ACCs) dealing with en-route and/or terminal control area (TMA) airspace. A greater number of consecutive participating ACCs will increase the benefits.	
Global concept component(s) as per Doc 9854	CM – conflict management	
Global plan initiatives (GPI)	GPI-16: Decision support systems	
Main dependencies	Linkage with B*0-TBO*	
Global readiness checklist		Status (ready now or estimated date)
	Standards readiness	√
	Avionics availability	No requirement
	Ground systems availability	√
	Procedures available	√
	Operations approvals	√

2.1 General

2.1.1 Flights which are being provided with air traffic services are transferred from one air traffic services (ATS) unit to the next in a manner designed to ensure safety. In order to accomplish this objective, it is a standard procedure that the passage of each flight across the boundary of the areas of responsibility of the two units is co-ordinated between them beforehand and that the control of the flight is transferred when it is at, or adjacent to, the said boundary.

2.1.2 Where it is carried out by telephone, the passing of data on individual flights as part of the coordination process is a major support task at ATS units, particularly at area control centres (ACCs). The operational use of connections between flight data processing systems (FDPSs) at ACCs replacing phone coordination (on-line data interchange (OLDI)) is already proven in Europe.

2.1.3 This is now fully integrated into the ATS interfacility data communications (AIDC) messages in the *Procedures for Air Navigation Services — Air Traffic Management*, (PANS-ATM, Doc 4444) which describes the types of messages and their contents to be used for operational communications between ATS unit computer systems. This type of data transfer (AIDC) will be the basis for migration of data communications to the aeronautical telecommunication network (ATN).

2.1.4 The AIDC module is aimed at improving the flow of traffic by allowing neighboring air traffic services units to exchange flight data automatically in the form of coordination and transfer messages.

2.1.5 With the greater accuracy of messages based on the updated trajectory information contained in the system and where possible updated by surveillance data, controllers have more reliable information on the conditions at which aircraft will enter in their airspace of jurisdiction with a reduction of the workload associated to flight coordination and transfer. The increased accuracy and data integrity permits the safe application of reduced separations.

2.1.6 Combined with air-ground data link applications, AIDC also allows the transfer of aircraft logon information and the timely initiation of establishing controller-pilot data link communications (CPDLC) by the next air traffic control (ATC) unit with the aircraft.

2.1.7 These improvements outlined above translate directly into a combination of performance improvements.

2.1.8 Information exchanges between flight data processing systems are established between air traffic services units for the purpose of notification, coordination and transfer of flights and for the purpose of civil/military coordination. These information exchanges rely upon appropriate and harmonized communication protocols to secure their interoperability.

2.1.9 Information exchanges apply to:

a) communication systems supporting the coordination procedures between air traffic services units using a peer-to-peer communication mechanism and providing services to general air traffic; and

b) communication systems supporting the coordination procedures between air traffic services units and controlling military units, using a peer-to-peer communication mechanism.

Baseline

2.1.10 The baseline for this module is the traditional coordination by phone, and procedural and/or radar distance/time separations.

Change brought by the module

2.1.11 The module makes available a set of messages to describe consistent transfer conditions via electronic means across ATS units' boundaries. It consists of the implementation of the set of AIDC messages in the flight data processing systems (FDPS) of the different ATS units involved and the establishment of a Letter of Agreement (LoA) between these units to set the appropriate parameters.

2.1.12 Prerequisites for the module, generally available before its implementation, are an ATC system with flight data processing functionality and a surveillance data processing system connected to each other.

Other remarks

2.1.13 This module is a first step towards the more sophisticated 4D trajectory exchanges between both ground/ground and air/ground according to the ICAO *Global Air Traffic Management Operational Concept* (Doc 9854).

2.2 Intended Performance Operational Improvement

2.2.1 Metrics to determine the success of the module are proposed in the *Manual on Global Performance of the Air Navigation System* (Doc 9883).

Capacity	Reduced controller workload and increased data integrity supporting reduced separations translating directly to cross sector or boundary capacity flow increases.
Efficiency	The reduced separation can also be used to more frequently offer aircraft flight levels closer to the flight optimum; in certain cases, this also translates into reduced en-route holding.
Global interoperability	Seamlessness: the use of standardized interfaces reduces the cost of development, allows air traffic controllers to apply the same procedures at the boundaries of all participating centres and border crossing becomes more transparent to flights.
Safety	Better knowledge of more accurate flight plan information.
Cost Benefit Analysis	Increase of throughput at ATS unit boundary and reduced ATCO workload will outweigh the cost of FDPS software changes. The business case is dependent on the environment.

2.3 Necessary Procedures (Air and Ground)

2.3.1 Required procedures exist. They need local analysis of the specific flows and should be spelled out in a Letter of Agreement between ATS units; the experience from other Regions can be a useful reference.

2.4 Necessary System Capability

Avionics

2.4.1 No specific airborne requirements.

Ground systems

2.4.2 Technology is available. It consists in implementing the relevant set of AIDC messages in flight data processing and could use the ground network standard AFTN-AMHS or ATN. Europe is presently implementing it in ADEXP format over IP wide area networks.

2.4.3 The technology also includes for oceanic ATSUs a function supporting transfer of communication via data link.

2.5 Human Performance

Human Factors Considerations

2.5.1 Ground interoperability reduces voice exchange between ATCOs and decreases workload. A system supporting appropriate human-machine interface (HMI) for ATCOs is required.

2.5.2 Human factors have been taken into consideration during the development of the processes and procedures associated with this module. Where automation is to be used, the HMI has been considered from both a functional and ergonomic perspective (see Section 6 for examples). The possibility of latent failures, however, continues to exist and vigilance is required during all implementation activity. In addition it is important that human factor issues, identified during implementation, be reported to the international community through ICAO as part of any safety reporting initiative.

Training and Qualification Requirements

2.5.3 To make the most of the automation support, training in the operational standards and procedures will be required and can be found in the links to the documents in Section 8 to this module. Likewise, the qualifications requirements are identified in the regulatory requirements in Section 6 which are integral to the implementation of this module**.**

2.6 Regulatory/Standardization Needs and Approval Plan (Air and Ground)

- Regulatory/standardization: use current published criteria that include:

  a) ICAO Doc 4444, *Procedures for Air Navigation Services — Air Traffic Management*;
  b) EU Regulation, EC No 552/2004.

- Approval plans: to be determined based on regional consideration of ATS interfacility data communications (AIDC).

2.7 Implementation and Demonstration Activities (As known at time of writing)

2.7.1 Although already implemented in several areas, there is a need to complete the existing SARPs to improve harmonization and interoperabiltiy. For Oceanic data link application, North Atlantic (NAT) and Asia and Pacific (APAC) (cf ISPACG PT/8- WP.02 - GOLD) have defined some common coordination procedures and messages between oceanic centres for data link application (ADS-C CPDLC).

2.7.2 Current use

- **Europe:** It is mandatory for exchange between ATS units.
  http://europa.eu/legislation_summaries/transport/air_transport/l24070en.htm

  The European Commission has issued a mandate on the interoperability of the European air traffic management network, concerning the coordination and transfer (COTR) between ATS units through REG EC 1032/2006 and the exchange of flight data between ATS units in support of air-ground data link through REG EC 30/2009. This is based on the standard OLDI-Ed 4.2 and ADEXP-Ed 3.1.

- **EUROCONTROL:** Specification of interoperability and performance requirements for

the flight message transfer protocol (FMTP). The available set of messages to describe and negotiate consistent transfer conditions via electronic means across centres' boundaries have been used for trials in Europe in 2010 within the scope of EUROCONTROL's FASTI initiative.

- **India:** AIDC implementation is in progress in Indian airspace for improved coordination between ATC centres. Major Indian airports and ATC centres have integrated ATS automation systems having AIDC capability. AIDC functionality is operational between Mumbai and Chennai ACCs. AIDC will be implemented within India by 2012. AIDC trials are underway between Mumbai and Karachi (Pakistan) and are planned between India and Muscat in coordination with Oman.

- **AIDC:** is in use in the Asia-Pacific Region, Australia, New-Zealand, Indonesia and others.

2.7.3 Planned or Ongoing Activities

To be determined.

2.7.4 Currently in Operation

To be determined.

2.8 Reference Documents

2.8.1 Standards

- ICAO Doc 4444, *Procedures for Air Navigation Services - Air Traffic Management,* Appendix 6 - *ATS Interfacility Data Communications (AIDC) Messages.*

- ICAO Doc 9880, *Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols*, Part II — *Ground-Ground Applications — Air Traffic Services Message Handling Services (ATSMHS).*

2.8.2 Procedures

To be determined.

2.8.3 Guidance material ICAO Doc 9694, Manual of Air Traffic Services Data Link Applications; Part 6; GOLD Global Operational Data Link Document (APANPIRG, NAT SPG), June 2010; Pan Regional Interface Control Document for Oceanic ATS Interfacility Data.

Communications (PAN ICD) Coordination Draft Version 0.3. 31 August 2010; Asia/Pacific Regional Interface Control Document (ICD) for ATS Interfacility Data Communications (AIDC) available at http://www.bangkok.icao.int/edocs/icd_aidc_ver3.pdf, ICAO Asia/Pacific Regional Office. EUROCONTROL Standard for On-Line Data Interchange (OLDI); and EUROCONTROL Standard for ATS Data Exchange Presentation (ADEXP).

- ASSEMBLY — 38TH SESSION A38-WP/266.

3. ICAO GENERAL ASSEMBLY 38 WP-266

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ASSEMBLY — 38TH SESSION

TECHNICAL COMMISSION

Agenda Item 33: Air Navigation — Standardization

OLDI as AIDC realisation in the MID Region

(Presented by the United Arab Emirates)

EXECUTIVE SUMMARY

The Aviation System Block Upgrade (ASBU) B0-25 recommends "Increased interoperability, efficiency and capacity through ground-ground integration". To this end ATS inter-facility data communication (AIDC) is presumed by many States. The EUROCONTROL uses a different tool called On Line Data Interchange (OLDI) satisfying all AIDC requirements.

The AIDC and the OLDI are tools to coordinate flight data between Air Traffic Service Units (ATSU) and both satisfies the basic coordination of flight notification, coordination and transfer of control. Additional options like pre-departure coordination, Civil-Military coordination and air-ground data link for forwarding log-on parameters are available in the OLDI.

The majority of States in the MID Region has either implemented or is planning to implement OLDI and have no intention of using only AIDC.

Action: The Assembly is invited to:
a) Recommend that OLDI implementation be accepted as MID regional variation of AIDC implementation.
b) Urge States to capitalise opportunities provided by OLDI and wherever both AIDC and OLDI are implemented, choose the suitable option satisfying the requirements of the partnering States.

Strategic Objectives:	This working paper relates to Strategic Objective B
Financial implications:	Not applicable
References:	1. Manual of Air Traffic Services Data Link Applications (Doc 9694) 2. MID Region ATN-IPS WG5 meeting report, 3. MID Region ATN-IPS WG5 WP4 Appendix A

1. INTRODUCTION

1.1 Seeking to ensure continuous Safety improvement and Air Navigation modernization, the International Civil Aviation Organization (ICAO) has developed the strategic systems approach termed Aviation System Block Upgrade (ASBU). The latter, which defines programmatic and flexible global systems, allows all States to advance their Air Navigation capacities based on their specific operational requirements.

1.2 The ASBU approach has four Blocks, namely Block 0, Block 1, Block 2 and Block 3. Each block is further divided into Modules. Block 0 is composed of Modules containing technologies and capabilities that are implemented to date.

1.3 Module 25 in Block 0 is introduced to improve coordination between air traffic service units (ATSUs) by using ATS inter-facility data communication (AIDC). The transfer of communication in a data link environment improves the efficiency of this process. The data link environment enhances capacity, efficiency, interoperability, safety and reduces cost.

2. DISCUSSION

2.1 EUROCONTROL uses a different tool called On Line Data Interchange (OLDI) satisfying all AIDC requirements. The AIDC and the OLDI are tools to coordinate flight data between Air Traffic Service Units (ATSU) and both satisfies the basic coordination of flight notification, coordination and transfer of control. Additional options like pre-departure coordination, Civil-Military coordination and air-ground data link for forwarding log-on parameters are available in the OLDI.

2.2 The OLDI is a proven technology and is in operational use for more than twenty years in the European Region and for more than four years in the United Arab Emirates. This technology meets all the AIDC requirements and is kept up to date to cope with the new developments in the industry. An example is the release of OLDI version 4.2 to accommodate INFPL requirements.

2.3 Based on the analysis carried out during the MID Region ATN-IPS WG5 meeting it was noted that the majority of States in the MID Region have either implemented OLDI or are planning to implement OLDI and have no intention of using only AIDC. Therefore, the meeting agreed that OLDI implementation should be considered and accepted as Regional variation of AIDC implementation as was the case in the European Region.

2.4 The MID Region ATN-IPS WG5 meeting further agreed that if both AIDC and OLDI are implemented, then it will be a bilateral issue and some States that are interfacing with adjacent Regions may require to support and implement dual capabilities (AIDC and OLDI).

2.5 The MID Region is monitoring the work of the joint taskforce harmonization of AIDC and OLDI in NAT and ASIA PAC as it is important to harmonize AIDC and OLDI in order that States in the interface areas have smooth operations.

3. CONCLUSION

3.1 The implementation of OLDI in the MID Region should be accepted as variation AIDC implementation. Wherever both AIDC and OLDI are implemented then States should choose the suitable one satisfying the requirements of the partnering State.

4. DETAILS OF THE ATM SYSTEMS TO SUPPORT IMPLEMENTATION

State	ATM System	Protocol and Version used	Number of adjacent ATSUs	Number of adjacent ATSUs connected by AIDC/ OLDI and type of connection	ATM System Capability		Current use		Planned Use		Intention of using AIDC only	Reasons and Remarks
					AIDC	OLDI	AIDC	OLDI	AIDC	OLDI		
Bahrain	Thales TopSky-C	OLDI 2.3 FMTP 2.0	7	1 OLDI	□	□			□	□	No	OLDI implemented with UAE OLDI with Doha is in progress
Egypt	TOPSKY (THALES) Support X25 Protocol only	OLDI V 4.2 AIDC V2.0	7	1 OLDI	□	□		□	□	□	No	- OLDI is implemented with EUR (Athens) - OLDI with Nicosia is in progress AIDC over AFTN is planned with Jeddah and Khartoum
Iran	Thales	OLDI	11	None		□						OLDI messages are sent to Ankara
Iraq	Thales TopSky	OLDI 4.0	5	none	□	□				□	No	OLDI planned with Kuwait and Ankara

Jordan	Aircon 2100 Indra	OLDI 4.1 AIDC 2.0	5	none	□	□				□	No	Planned with Jeddah and Egypt
Kuwait	Aircon 2100 INDRA	OLDI v4.2 AIDC v3.0	3	none	□	□				□	No	OLDI to connect to Bahrain and Riyadh
Lebanon			3	1 OLDI with Cyprus		□				□	No	OLDI with Cyprus is in progress Planned OLDI with Syria
Libya	Aircon 2000 Indra	OLDI 2.3 AIDC 2.0	7	None	□	□			□	□	No	AIDC planned with Egypt, OLDI planned withTunis and Malta (2020)
Oman	Indra Itec	OLDI 4.1 AIDC 2.3	5	1 OLDI	□	□			□	□	No	OLDI connection to UAE OLDI planned with Jeddah AIDC with Mumbai in progress AIDC planned with Karachi
Qatar	Selex	OLDI V4.2 FMTP 2.0 AIDC 2.0	3	1	□	□		□		□		OLDI in use with UAE and planned for use with Bahrain

Saudi Arabia	INDRA	OLDI V4.2 AIDC V3.0 FMTP V4 & V6	11	- None - - (Eurocat-X) AIDC Connected between Riyadh and Jeddah	□	□	□			□	No	OLDI planned for 2020/2021
Sudan	TopSky	OLDI 4.3 AIDC 2.0	5	2	□	□	□	□	□	□	No	Both AIDC and OLDI to cater to neighbouring units requests
Syria			5	none								
UAE	PRISMA from COMSOFT	OLDI V4.2 FMTP 2.0	10	-6 two-way integrated OLDI connections -1 two-way standalone OLDI Total 7 OLDI connections		□		□		□	No	OLDI already in use with 7 partners and all neighbouring ATSUs are OLDI capable
Yemen			3	none								

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5. MESSAGE TYPES – PHASE 1

These are the messages that were agreed to be used in ICAO MID Region:

I. Basic Procedure Messages

1.	Advance Boundary Information	ABI
2.	Activate	ACT
3.	Revision	REV
4.	Preliminary Activation	PAC
5.	Abrogation of Co-ordination	MAC
6.	SSR Code Assignment	COD
7.	Arrival Management	AMA
8.	Logical Acknowledgement Message	LAM
9.	Information Message	INF

II. Advance Boundary Information ABI

1. Purpose of the ABI Message

   The ABI message satisfies the following operational requirements:

   - Provide for acquisition of missing flight plan data;
   - Provide advance boundary information and revisions thereto for the next ATC unit;
   - Update the basic flight plan data;
   - Facilitate early correlation of radar tracks;
   - Facilitate accurate short-term sector load assessment;
   - Request the assignment of an SSR code from the unit to which the above notification is sent, if required.

   The ABI is a notification message.

2. Message Contents

   The ABI message shall contain the following items of data:

   - Message Type;
   - Message Number;
   - Aircraft Identification;
   - SSR Mode and Code (if available);
   - Departure Aerodrome;
   - Estimate Data;
   - Destination Aerodrome;
   - Number and Type of Aircraft;
   - Type of Flight;
   - Equipment Capability and Status.

   If bilaterally agreed, the ABI message shall contain any of the following items of data:

   - Route;
   - Other Flight Plan Data.

3. Example
   - (ABIOMAE/OMSJ578-ABY464/A5476-VIDP-MAXMO/0032F100-OMSJ-9/A320/M-15/N0457F360 OBDAG LUN G333 TIGER/N0454F380 G452 RK G214 PG G665 ASVIB M561 MOBET/N0409F260 A419 DARAX -80/S-81/W/EQ Y/EQ U/NO R/EQ/A1B1C1D1L1O1S1)

III. Activate ACT

1. Purpose of the ABI Message

   The ACT message satisfies the following operational requirements:
   - Replace the verbal boundary estimate by transmitting automatically details of a flight from one ATC unit to the next prior to the transfer of control;
   - Update the basic flight plan data in the receiving ATC unit with the most recent information;
   - Facilitate distribution and display of flight plan data within the receiving ATC unit to the working positions involved;
   - Enable display of correlation in the receiving ATC unit;
   - Provide transfer conditions to the receiving ATC unit.

2. Message Contents

   The ACT message shall contain the following items of data:
   - Message Type;
   - Message Number;
   - Aircraft Identification;
   - SSR Mode and Code;
   - Departure Aerodrome;
   - Estimate Data;
   - Destination Aerodrome;
   - Number and Type of Aircraft;
   - Type of Flight;
   - Equipment Capability and Status.

   If bilaterally agreed, the ACT message shall contain any of the following items of data:
   - Route;
   - Other Flight Plan Data;
   - Actual Take-Off Time.

   Note: The Actual Take-Off Time is normally used in the cases where the ACT follows a PAC message that included the Estimated Take-Off Time.

3. Example
   - (ACTOMAE/OMSJ727-ABY604/A7306-HEBA-ALRAR/0130F110-OMSJ-9/A320/M-15/N0428F250 DCT NOZ A727 CVO/N0461F350 UL677 MENLI UN697 NWB W733 METSA UB411 ASH G669 TOKLU UP559 ASPAK/N0438F290 UP559 NALPO P559 ITGIB/N0409F230 P559 -80/S-81/W/EQ Y/EQ U/NO R/EQ/A1B1C1D1L1O1S1)

IV. Revision Message REV

1. Purpose of the REV Message

   The REV message is used to transmit revisions to co-ordination data previously sent in an ACT message provided that the accepting unit does not change as a result of the modification.

2. Message Contents

   The REV message shall contain the following items of data:

   - Message Type;
   - Message Number;
   - Aircraft Identification;
   - Departure Aerodrome;
   - Estimate Data and/or Co-ordination point;
   - Destination Aerodrome;

   Note: The Estimate Data contained in the REV has to include complete data in the Estimate Data field in order to eliminate any ambiguity regarding the transfer elements. If the ACT message included the supplementary flight level, the following REV message will include the supplementary flight level if still applicable.

   The REV message shall contain the following items of data if they have changed:

   - SSR Mode and Code;
   - Equipment Capability and Status.

     If bilaterally agreed, the REV message shall contain any of the following items of data, if they have changed:
   - Route.

     If bilaterally agreed, the REV message shall contain any of the following items of data:
   - Message Reference.

3. Example

   - (REVBC/P873-UAE4486-OMDB-TUMAK/2201F360-LERT-81/Y/NO U/EQ)

V. Preliminary Activation PAC

1. Purpose of the PAC Message

   The PAC message satisfies the following operational requirements:

   - Notification and pre-departure co-ordination of a flight where the time of flight from departure to the COP is less than that which would be required to comply with the agreed time parameters for ACT message transmission;
   - Notification and pre-departure co-ordination of a flight by a local (aerodrome /approach control) unit to the next unit that will take control of the flight;
   - Provide for acquisition of missing flight plan data in case of discrepancies in the initial distribution of flight plan data;
   - Request the assignment of an SSR code from the unit to which the above notification/coordination is sent.

2. Message Contents

   The PAC message shall contain the following items of data:

   - Message Type;
   - Message Number;
   - Aircraft Identification;
   - SSR Mode and Code;
   - Departure Aerodrome;
   - Estimated Take-Off Time or Estimate Data;
   - Destination Aerodrome;
   - Number and Type of Aircraft;

   A PAC message sent from a TMA control unit or an ACC shall contain the following items of data:

   - Type of Flight;
   - Equipment Capability and Status.

     If bilaterally agreed, the PAC message shall contain any of the following items of data:
   - Route;
   - Other Flight Plan Data;
   - Message Reference.

3. Example

   - (PACOMSJ/OMAE292-SQC7365/A9999-OMSJ0020-WSSS-9/B744/H-15/N0505F310 DCT RIKET B525 LALDO B505 NADSO A777 VAXIM P307 PARAR N571 VIRAM/N0505F330 N571 LAGOG/M084F330 N571 IGOGU/M084F350 N571 GUNIP/N0500F350 R467 -80/S-81/W/EQ Y/EQ U/NO R/EQ/)

VI. Message for the Abrogation of Co-ordination MAC

1. Purpose of the MAC Message
   A MAC message is used to indicate to the receiving unit that the co-ordination or notification previously effected for a flight is being abrogated. The MAC is not a replacement for a Cancellation (CNL) message, as defined by ICAO, and therefore, shall not be used to erase the basic flight plan data.

2. Message Contents
   The MAC message shall contain the following items of data:
   - Message Type;
   - Message Number;
   - Aircraft Identification;
   - Departure Aerodrome;
   - Co-ordination point;
   - Destination Aerodrome;

   If bilaterally agreed, the MAC message shall contain any of the following items of data:
   - Message Reference;
   - Co-ordination Status and Reason

3. Example
   - (MACAM/BC112 AM/BC105-HOZ3188-EHAM-NIK-LFPG-18/STA/INITFL)

VII. SSR Code Assignment Message COD

1. Purpose of the COD Message
   The Originating Region Code Allocation Method (ORCAM) is provided to permit a flight to respond on the same code to successive units within a participating area. Unless code allocation is performed centrally, e.g. by an ACC, airports may need to be individually allocated a set of discrete SSR codes. Such allocations are very wasteful of codes.
   The COD message satisfies the operational requirement for the issue of a Mode A SSR code by one Air Traffic Service Unit to another for a specified flight when requested.
   The COD message also satisfies the operational requirement to inform the transferring Air Traffic Service Unit of the next Mode A SSR code when the code assigned cannot be retained by the accepting Air Traffic Service Unit.

2. Message Contents
   The COD message shall contain the following items of data:
   - Message Type;
   - Message Number;
   - Aircraft Identification;
   - SSR Mode and Code;
   - Departure Aerodrome;
   - Destination Aerodrome;

   If bilaterally agreed, the COD message shall contain any of the following items of data:
   - Message Reference.

3. Example
   - (CODOMAE/OMSJ720-ABY567/A3450-OMSJ-OAKB)

VIII. Arrival Management Message AMA

1. Purpose of the AMA Message

   Arrival management requires the capability for an accepting unit to pass to the transferring unit information on the time that a flight is required to delay (lose) or gain in order to optimise the approach sequence.

   The AMA message satisfies the following operational requirements in order to alleviate ATC workload in co-ordinating arriving flights:

   - Provide the transferring ATC unit with the time that the flight is to delay/gain at the arrival management metering fix;
   - Where procedures have been bilaterally agreed between the units concerned, provide the transferring ATC unit with a target time for the flight to be at the COP;
   - When bilaterally agreed, provide the transferring unit with a speed advisory. The speed advisory needs to be communicated to the flight, prior to transfer.

2. Message Contents

   The AMA message shall contain the following items of data:

   - Message Type;
   - Message Number;
   - Aircraft Identification;
   - Departure Aerodrome;
   - Destination Aerodrome;

     and based on bilateral agreement, contain one or more of the following items of data:

     - Metering Fix and Time over Metering Fix;
     - Total Time to Lose or Gain;
     - Time at COP;
     - Assigned speed;
     - Application point;
     - Route;
     - Arrival sequence number

   Note: The item Route contains the requested routing

3. Example
   - (AMAM/BN112-AZA354-LIRF-CLS/0956-LEMD-18/MFX/PRADO TOM/1022 TTL/12)

IX. Logical Acknowledgement Message LAM

1. Purpose of the LAM Message

   The LAM is the means by which the receipt and safeguarding of a transmitted message is indicated to the sending unit by the receiving unit.

   The LAM processing provides the ATC staff at the transferring unit with the following:

   - A warning when no acknowledgement has been received;
   - An indication that the message being acknowledged has been received, processed successfully, found free of errors, stored and, where relevant, is available for presentation to the appropriate working position(s).

2. Message Contents

   The LAM message shall contain the following items of data:

   - Message Type;
   - Message Number;
   - Message Reference.

3. Example

   - (LAMOMSJ/OMAE939OMAE/OMSJ718)

X. Logical Acknowledgement Message LAM

1. The INF message is used to provide information on specific flights to agencies not directly involved in the coordination process between two successive ATC units on the route of flight.

   The INF message may be used to provide copies of messages and to communicate agreed co-ordination conditions to such agencies following a dialogue between controllers. For this purpose INF messages may be generated by the systems at the transferring or accepting unit. The message may also be used to provide information in relation to any point on the route of flight to an agency. The format allows the communication of initial data, revisions and cancellations.

2. The INF message shall contain the following items of data:

   - Message type;
   - Message number;
   - All items of operational data as contained in the original message or resultant
   - co-ordination being copied;
   - Reference Message Type.

6.3. Example

(INFL/IT112-BAW011/A5437-EGLL-KOK/1905F290-OMDB-9/B747/H-15/N0490F410 DVR KOK UG1 NTM UB6 KRH-18/MSG/ACT)

The Pan Regional (NAT and APAC) Interface Control Document for ATS Interfacility Data Communications (PAN AIDC ICD) Version1.0 has defined the specific AIDC messages to be used between ATSUs should be included in bilateral agreements as in the below table which is number as table 4-3

AIDC Messages

Core	Non-core	Message Class	Message
X		Notification	ABI (Advance Boundary Information)
X		Coordination	CPL (Current Flight Plan)
X		Coordination	EST (Coordination Estimate)
	X	Coordination	PAC (Preliminary Activate)
X		Coordination	MAC (Coordination Cancellation)
X		Coordination	CDN (Coordination Negotiation)
X		Coordination	ACP (Acceptance)
X		Coordination	REJ (Rejection)
	X	Coordination	PCM (Profile Confirmation Message)
	X	Coordination	PCA (Profile Confirmation Acceptance)
	X	Coordination	TRU (Track Update)
X		Transfer of Control	TOC (Transfer of Control)
X		Transfer of Control	AOC (Acceptance of Control)
X		General Information	EMG (Emergency)
X		General Information	MIS (Miscellaneous)
X		Application Management	LAM (Logical Acknowledgement Message)
X		Application Management	LRM (Logical Rejection Message)
	X	Application Management	ASM (Application Status Monitor)
	X	Application Management	FAN (FANS Application Message)
	X	Application Management	FCN (FANS Completion Notification)
	X	Surveillance Data Transfer	ADS (Surveillance ADS-C)

6. D – MESSAGE TYPES – PHASE 2

The messages during this phase will be the advance messages covering all phases of flight

Intentionally left blank

7. TEST OBJECTIVES

Test Objectives		
No	**Test step**	**Test Description**
01	Connectivity between FDPSs	Check connectivity between FDPSs.
02	FPL Processing	Check FPLs are correctly received and processed.
Preliminary Activation Message (PAC)		
03	PAC Message association	Check PAC messages are correctly sent, received, processed and associated with the correct FPL. If the system is unable to process a message that is syntactically and semantically correct, it should be referred for Manual intervention.
04	Coordination of Changes to previous PAC message	Check changes to previous PAC messages such as Change in SSR code, Aircraft type, Coordination point, Flight level and Destination aerodrome are correctly sent, received and associated with the correct FPL.
Advance Boundary Information (ABI)		
05	ABI Message association	Check ABI messages are correctly sent, received, processed and associated with the correct FPL. If the system is unable to process a message that is syntactically and semantically correct, it should be referred for Manual intervention.
06	Coordination of Changes to previous ABI message	Check changes to previous ABI messages such as Change in SSR code, Aircraft type, Coordination point, Flight level and Destination aerodrome are correctly sent, received and associated with the correct FPL.
Activate (ACT)		
07	ACT Message association	Check ACT messages are correctly sent, received, processed and associated with the correct FPL. If the system is unable to process a message that is syntactically and semantically correct, it should be referred for Manual intervention.
Logical Acknowledgement Messages (LAM)		
08	LAM Message generation	Check LAM messages are generated for messages that are syntactically and semantically correct.
SSR Code Request Messages (COD)		
09	COD Message association	Check COD messages are sent with correct SSR Code, received, processed and associated with the correct FPL. If the system is unable to process a message that is syntactically and semantically correct, it should be referred for Manual intervention.

8. SAMPLE TEST SCRIPTS

NOTE: All the samples are provided by UAE

1. Test 001 Connectivity:

Test 001 – Connectivity				
No	***Test description***	***UAE ACC FDPS***	***Doha FDPS***	***Remarks***
01	Ping Doha FDPS from RDS FDPS	OK / Not OK	OK / Not OK	
02	Ping RDS FDPS from Doha FDPS	OK / Not OK	OK / Not OK	
03	Check the link	Log in as root in rds fdps Type in netstat –tnap, should show the link "established" OK / Not OK	Check the link "established" OK / Not OK	

2. Test 002 Flight plan:

Test 002 – Flight Plan – *sent from UAE ACC*				
No	***Test description***	***UAE ACC FDPS***	***Doha FDPS***	***Remarks***
01	Send TST001 (OMAA-OTBD)	OK / Not OK	OK / Not OK	
02	Send TST002 (OMAM-OTBH)	OK / Not OK	OK / Not OK	

03	Send TST003 (OMAA-OEJN)	OK / Not OK	OK / Not OK	
04	Send TST004 (OOMS – OTBD)	OK / Not OK	OK / Not OK	
05	Send TST005 (OTBD – OMDB)	OK / Not OK	OK / Not OK	
06	Send TST006 (OTBH – OMDM)	OK / Not OK	OK / Not OK	
07	Send TST007 (OEJN-OMAD)	OK / Not OK	OK / Not OK	
08	Send TST008 (OTBD – OOMS)	OK / Not OK	OK / Not OK	

3. Test 003 Preliminary Activation Message (PAC):

Test 003 – Preliminary Activation Message (PAC) ***Doha FDPS to UAE ACC FDPS***				
No	***Test description***	***UAE ACC FDPS***	***Doha FDPS***	***Remarks***
01	Activate start up TST005 (OTBD – OMDB) SSR code:0001 RFL : FPL level	SFPL moves from Pending to Workqueue with SSR code, check CFL field OK / Not OK	OK / Not OK	
02	Change SSR of TST005 New SSR Code:0002	SFPL colour changes to Green in Workqueue OK / Not OK	OK / Not OK	
03	Change ATYP of TST005 New ATYP: A332	SFPL colour changes to Green in Workqueue OK / Not OK	OK / Not OK	
04	Change ADES of TST005 New ADES: VOMM	New FPL is created by OLDI with new ADES	OK / Not OK	

		OK / Not OK		
05	Change RFL of TST005 New RFL: 370	Manual coordination requires OK / Not OK	OK / Not OK	
06	Change COP of TST005 New COP : NADAM	SFPL colour changes to Green in Workqueue OK / Not OK	OK / Not OK	
07	Check LAM messages	OK / Not OK	OK / Not OK	

4. Test 004 ABI & ACT messages:

Test 004 – Advance Boundary Information Message (ABI), Activate Message (ACT) ***Doha FDPS to UAE ACC FDPS***				
No	***Test description***	***UAE ACC FDPS***	***Doha FDPS***	***Remarks***
01	Enter estimate for TST007 (OEJN – OMAD) SSR code:0003 Exit level : 190 ETX : Current time	SFPL moves from Pending to Work queue with SSR code, check ETN and CFL field OK / Not OK	OK / Not OK	
02	Change SSR of TST007 New SSR code: 0004	SFPL colour changes to Green if in Workqueue OK / Not OK	OK / Not OK	
03	Change ATYP of TST007 New ATYP: C130	SFPL colour changes to Green if in Workqueue OK / Not OK	OK / Not OK	

04	Change ADES of TST007 New ADES: OMAL	New FPL is created by OLDI with new ADES OK / Not OK	OK / Not OK	
05	Change XFL of TST007 New XFL: 170	SFPL colour changes to Green if in Workqueue OK / Not OK	OK / Not OK	
06	Change COP of TST007 New COP: NAMLA	SFPL colour changes to Green if in Workqueue OK / Not OK	OK / Not OK	
07	when ETX is Current time + 5 minutes the ACT should be automatically generated	No change, SFPL already in active. OK / Not OK	OK / Not OK	
08	Change ATYP of TST007 New ATYP:C30J	No change, SFPL already in active Expect manual coordination. OK / Not OK	Flag to notify ATCA that ATYP change is not communicated OK / Not OK	
09	Check LAM messages	OK / Not OK	OK / Not OK	

5. Test 005 ABI & ACT messages:

Test 005 – Advance Boundary Information Message (ABI), Activate Message (ACT) ***UAE ACC FDPS to Doha FDPS***				
No	***Test description***	***UAE ACC FDPS***	***Doha FDPS***	***Remarks***
01	Enter estimate for TST004 (OOMS – OTBD) SSR code:0005 Exit level : 180 ETN : Current time COPX: MEKMA	SFPL moves from Pending to Active with SSR code A new ABI wiil be generated OK / Not OK	SSR, ETN and Entry level and entry point should be automatically updated for the concerned flight and flagged for ATCA OK / Not OK	

02	Change SSR of TST004 New SSR code: 0006	A new ABI wiil be generated OK / Not OK	SSR should be automatically updated for the concerned flight and flagged for ATCA OK / Not OK	
03	Change ATYP of TST004 New ATYP: AT45	A new ABI wiil be generated OK / Not OK	ATYP should be automatically updated for the concerned flight and flagged for ATCA OK / Not OK	
04	Change ADES of TST004 New ADES: OTBH	A new ABI wiil be generated OK / Not OK	ADES should be automatically updated for the concerned flight and flagged for ATCA OK / Not OK	
05	Change XFL of TST004 New XFL: 160	A new ABI wiil be generated OK / Not OK	Entry level should be automatically updated for the concerned flight and flagged for ATCA OK / Not OK	
06	Change COP of TST004 New COP: BUNDU	A new ABI wiil be generated OK / Not OK	COP should be automatically updated for the concerned flight and flagged for ATCA OK / Not OK	
07	when ETX is Current time + 5 minutes the ACT should be automatically generated	ACT will be generated OK / Not OK	OK / Not OK	
08	Change ATYP of TST004 New ATYP: B738	An indication to ATCO to show that this change needs to be manually coordinated	Expect manual coordination OK / Not OK	
09	Check LAM messages	OK / Not OK	OK / Not OK	

6. Test 006 PAC, ABI, ACT without FPL for UAE:

Test 006 – PAC, ABI, ACT – No FPL for UAE ***Doha FDPS to UAE ACC FDPS***				
No	***Test description***	***UAE ACC FDPS***	***Doha FDPS***	***Remarks***
01	Activate start up TST009 (OTBD – OMAA) SSR code:0007 ATYP:A320 XFL: 210 COP: NAMLA	SFPL is created by PAC. OLDI window pops up. OK / Not OK	Automatically generates PAC message OK / Not OK	
02	Enter estimate for TST010, (OEJN – OOMS) SSR Code: 0010 ATYP: B738 XFL: 230 COP: BUNDU ETX: Current time	SFPL is created by ABI. OLDI window pops up. OK / Not OK	Automatically generates ABI message OK / Not OK	
03	Enter estimate for TST011, (OEJN – OOMS) SSR Code: 0011 ATYP: B738 XFL: 230 COP: BUNDU ETX: Current time + 3 mins	SFPL is created by ACT. OLDI window pops up. OK / Not OK	Automatically generates ACT message OK / Not OK	
04	Check LAM messages	OK / Not OK	OK / Not OK	

7. Test 007 ABI, ACT without FPL for Doha:

Test 007 – ABI, ACT – No FPL for Doha FDPS ***UAE ACC FDPS to Doha FDPS***				
No	***Test description***	***UAE ACC FDPS***	***Doha FDPS***	***Remarks***
01	Enter estimate for TST012, (TACT – OTBH) SSR Code: 0012 ATYP: K35R XFL: 220 COP: TOSNA ETN: Current time	Automatically generates ABI message OK / Not OK	FPL created by ABI and flags for ATCA attention. OK / Not OK	
02	Enter estimate for TST013, (OOMS – OTBD) SSR Code: 0013 ATYP: A321 XFL: 180 COP: MEKMA ETN: Current time -20 mins	Automatically generates ACT message OK / Not OK	FPL created by ACT and flags for ATCA attention. OK / Not OK	
03	Check LAM messages	OK / Not OK	OK / Not OK	

8. Test 008 Duplicate SSR:

Test 008 – Duplicate SSR				
No	***Test description***	***UAE ACC FDPS***	***Doha FDPS***	***Remarks***
01	Create a FPL TST020 at Doha with SSR 0014 to block SSR code Enter estimate data for TST002 at UAE RDS (OMAM – OTBH) SSR Code : 0014 ETN: Current time XFL: 180	OLDI message window pops up with a question mark on TST002 OK / Not OK	Duplicate SSR should be duly flagged to operator OK / Not OK	
02	Create a FPL TST030 at UAE RDS with SSR 0015 to block SSR code Enter estimate data for TST008 at Doha (OTBD – OOMS) SSR Code : 0015 ETN: Current time XFL: 230	OLDI message window pops up with a question mark on TST008 OK / Not OK	Duplicate SSR should be duly flagged to operator OK / Not OK	

9. Test 009 Communication failure:

Test 009 – Communication failure				
No	***Test description***	***UAE ACC FDPS***	***Doha FDPS***	***Remarks***
01	Simulated link failure	OLDI messages that are not coordinated will move from Active to Workqueue OK / Not OK	Failures should be duly flagged to operator OK / Not OK	

10. Test Flight plans:

a. TST001 (OMAA – OTBD)

(FPL-TST001-IS
-A320/M-SDFHIJLOPRVWY/SD
-OMAA0655
-N0415F220 TOXIG Z994 VEBAT P899 MEKMA DCT NAJMA DCT DOH
-OTBD0030 OEDF
-PBN/A1B1C1D1L1O1S1 NAV/GPSRNAV DOF/13???? REG/A6TST
EET/OMAE0008 OBBB0020 SEL/ARKQ OPR/TST RMK/TEST FPL)

b. TST002 (OMAM – OTBH)

(FPL-TST002-IM
-C17/H-SGHJPRWXYZ/SD
-OMAM0820
-N0454F280 DCT MA270020 DCT MA285032 DCT DASLA Z994 BUNDU B415 DOH
DCT
-OTBH0032 OMAM
-PBN/A1B1C1D1L1O1S1 NAV/GPSRNAV DOF/13???? REG/A6TST
EET/OBBB0019 SEL/CFPR NAV/RNP10 RNAV1 RNAV5 RNVD1E2A1
RMK/TEST FPL)

c. TST003 (OMAA – OEJN)

(FPL-TST003-IS
-A320/M-SDGHIJLPRWXY/S
-OMAA0800
-N0467F220 TOXIG Z994 BUNDU B415 DOH A415 KIA G782 RGB/N0461F360
UM309 RABTO G782 ASLAT DCT
-OEJN0201 OEMA
-PBN/A1B1C1D1L1O1S1 NAV/GPSRNAV DAT/SV DOF/13???? REG/A6TST
EET/OMAE0009 OBBB0021 OEJD0044 SEL/BMAR RMK/TCAS
EQUIPPED RMK/TEST FPL)

d. TST004 (OOMS – OTBD)

(FPL-TST004-IS
-A320/M-SDFHIJLOPRVWY/SD
-OOMS0655
-N0458F320 MCT L764 PAXIM P899 ITRAX ALN P899 DASLA/N0440F260
Z994
VEBAT/N0424F220 P899 MEKMA DCT NAJMA DCT DOH
-OTBD0057 OMAA
-PBN/A1B1C1D1L1O1S1 DAT/V NAV/TCAS DOF/13???? REG/A6TST
EET/OMAE0023 OBBB0047 SEL/GLEH RMK/TEST FPL)

e. TST005 (OTBD – OMDB)

(FPL-TST005-IS

-B738/M-SHPRWXYIGZ/S
-OTBD1230
-N0390F210 DOH L305 ITITA L308 DESDI DESDI4T
-OMDB0049 OMRK OMAL
-PBN/A1B1C1D1L1O1S1 NAV/RNAV1 RNAV5 RNP4 RNP10 RNP5
RNVD1E2A1 DOF/13???? REG/A6TST
EET/OMAE0015 SEL/HQER RMK/TEST FPL)

f. TST006 (OTBH – OMDM)

(FPL-TST006-IM
-C130/M-SHITUY/S
-OTBH1000
-N0311F150 UL305 ALSEM L305 ITITA L308 SHJ DCT
-OMDM0059 OBBI
-PBN/A1B1C1D1L1O1S1 NAV/RNAV1 RNAV5 RNP4 RNP10 RNP5
RNVD1E2A1 DOF/13???? REG/A6TST
EET/OMAE0020 RMK/TEST FPL)

g. TST007 (OEJN – OMAD)

(FPL-TST007-IN
-GLF4/M-SDGHIRVWXY/S
-OEJN0600
-N0458F210 JDW T532 KIA B418 ASPAN N318 XAKUM Q666 BOXAK DCT
-OMAD0212 OMAL
-PBN/A1B1C1D1L1O1S1 NAV/RNAV1 RNAV5 RNP4 RNP10 RNP5
RNVD1E2A1 DOF/13???? REG/A6TST EET/OBBB0113 OMAE0151
RMK/TEST FPL)

h. TST008 (OTBD – OOMS)

(FPL-TST008-IS
-A320/M-SDFHIJLOPRVWY/SD
-OTBD0630
-N0466F310 B415 AFNAN B415 ADV N685 LAKLU G216 MCT DCT
-OOMS0103 OMAL
-PBN/A1B1C1D1L1O1S1 NAV/RNAV1 RNAV5 RNP4 RNP10 RNP5
RNVD1E2A1 DOF/13???? REG/A6TST EET/OBBB0007 OMAE0012
OOMM0038 SEL/GLEH RMK/TEST FPL)

9. BILATERAL AGREEMENT TEMPLATE

Bilateral Agreement Template to be appended to the main Letter of Agreement (LoA) Template
Please choose the appropriate OLDI or AIDC.

NOTE:
This part of the LOA only to be used as guidance it is related to the Automatic data exchange either OLDI or AIDC which are attachments 1 and 2 respectively to Appendix C of the complete letter of agreement.

Appendix C (1)

Exchange of Flight Data

(With automatic data exchange)

Unit 1 **Unit 2**

Revision: xxxx

Effective: xx xxxx xxxx

Revised: xxx

C.1 General

C.1.1 **Basic Flight Plans**

Basic flight plan data should normally be available at both ATS Units.

C.1.2 **Current Flight Plan Data**

Messages, including current flight plan data, shall be forwarded by the transferring ATS unit to the accepting ATS unit either by automatic data exchange or by telephone to the appropriate sector/position.

C.1.2.1 Automatic Data Exchange.

The messages (List agreed message for OLD e.g. ABI/ACT/LAM/PAC/REV/MAC messages are exchanged between the two ATS units in accordance with Attachment 1 or Attachment 2 to Appendix C.

C.1.2.2 Verbal Estimates.

For conditions that are not supported by the automatic data exchange, verbal estimates will be exchanged.

A verbal estimate shall be passed to the appropriate sector at the accepting ATS unit at least value minutes prior, but not earlier than 30 minutes before the aircraft is estimated to pass the transfer of control point.

A verbal estimate shall contain:

a) Callsign.

Note: To indicate that the flight plan is available, the accepting ATS unit should state aircraft type and destination after having received the callsign.

b) SSR code:

Note: Normally, the notification of a SSR code indicates that the selection of that code by the aircraft was verified.

c) ETO for the appropriate COP as laid down in Appendix D to this LoA.

d) Cleared level, specifying climb or descent conditions if applicable, at the transfer of control point.

Requested level if different from cleared level.

e) Other information, if applicable.

Normally, verbal estimates will not be passed in parallel with ACT messages.

In all cases, verbally passed data shall take precedence over data exchanged automatically.

C.1.2.3 Failure of Automatic Data Exchange.

In the event of a failure which prevents the automatic transfer of data, the Supervisors shall immediately decide to revert to the verbal exchange of estimates.

After recovery from a system failure, the Supervisors shall agree as to when they will revert to automatic data exchange.

C.1.3 **Non-availability of Basic Flight Plan Data**

If the accepting ATS unit does not have basic flight plan data available, additional information may be requested from the transferring ATS unit to supplement the ACT message or a verbal estimate.

Within the context of RVSM, such additional information should include:

a. the RVSM approval status of the aircraft; and

b. whether or not a non-RVSM approved aircraft is a State aircraft.

C.1.4 **Revisions**

Any significant revisions to the flight data are to be transmitted to the accepting ATS unit. Time differences of value minutes or more are to be exchanged.

Any levels which different than describe in Appendix D of this LOA are subject to an Approval Request.

C.1.5 **Expedite Clearance and Approval Requests**

Whenever the minimum time of value minutes for a verbal estimate, or those prescribed in Attachment 1 to Appendix C for ACT messages, cannot be met, either an expedite clearance request, an approval request (*or a PAC)*, as appropriate, shall be initiated.

C.2 Means of Communications and their Use

C.2.1 **Equipment**

The following lines are available between Unit 1 and Unit 2:

Line Type	Amount	Additional Information
Data Line		
Telephone Lines		

"Additional Information" column should indicate if telephone lines meet the requirements for Direct Controller-Controller Voice Communication (DCCVC) or Instantaneous Direct Controller-Controller Voice Communication (ICCVC)

C.2.2 **Verbal Co-ordination**

All verbal communications between non-physically adjacent controllers should be terminated with the initials of both parties concerned.

Exchange of flight plan data, estimates and control messages by voice shall be carried out in accordance with the following tables:

C.2.2.1 Messages from Unit 1 to Unit 2.

Receiving Sector/COPs	Message	Position
Sector Name COPs	Flight Plan Data and Estimates	
	Control Messages, Expedite Clearances, Approval Requests and Revisions	
	Surveillance Co-ordination	

C.2.2.2 Messages from Unit 2 to Unit 1.

Receiving Sector/COPs	Message	Position
Sector Name COPs	Flight Plan Data and Estimates	
	Control Messages, Expedite Clearances, Approval Requests and Revisions	
	Surveillance Co-ordination	

C.3 Failure of Ground/Ground Voice Communications

C.3.1 Fall-Back Procedures for Co-ordination

To mitigate the effects of failures of direct speech circuits, both parties will establish and maintain dial-up facilities via PABX and ATC Voice Communications Systems (VCS) as follows:

Sector Name Tel Number (For Both Units)

Stand-alone telephones with auto-dial facilities will be maintained as a second level of fall-back to cover the event of failure of PABX or VCS:

Sector Name Tel Number (For Both Units)

C.3.2 Alternate Fall-Back Procedures for Co-ordination

In case of communications failure where the alternatives described in paragraph C.3.1 above are not available or practicable, pilots shall be instructed, at least 5 minutes prior to the transfer of control point, to pass flight data on the appropriate frequency of the accepting ATS unit for the purpose of obtaining an ATC entry clearance from the accepting ATS unit.

If the accepting ATS unit cannot issue an entry clearance to the pilot upon his initial contact, the pilot shall be instructed to inform the transferring ATS unit accordingly via RTF.

The transferring ATS unit shall hold the aircraft within its AoR and after a minimum of 10 minutes instruct the pilot to re-establish RTF contact with the accepting ATS unit.

This procedure shall be repeated until an onward clearance has been obtained from the accepting ATS unit.

C.4 Validity

This Appendix to the LoA takes effect on xxx xxxx xxxx and supersedes previous Appendix to Letter of arrangements between the Unit 1 and Unit 2.

Date:	Date:
_____	_____
Name	Name
Title	Title
Authority 1	Authority 2

Attachment 1 to Appendix C

Automatic Data Exchange related to OLDI

ABI/ACT/LAM messages are exchanged between the two ATS units in accordance with the table below:

Messages	COPs	Time and/or Distance Parameters	
		Messages from Unit 1 To Unit 2	Messages from Unit 1 To Unit 2
ABI			
ACT			
LAM			
REV			
PAC			
MAC			
LOF			
NAN			

Attachment 2 to Appendix C

Automatic Data Exchange related to AIDC

This is the Generic Template available in the PAN which also contain real sample agreement Auckland Oceanic – Brisbane ATS Centre and Auckland Oceanic – Nadi ATM Operations Centre

AIDC Procedures

1. The format of AIDC messages (*List messages used e.g. ABI, PAC, CDN, CPL, ACP*, *REJ, MAC, LAM and LRM)* are as defined by the Pan Regional (NAT and APAC) AIDC Interface Control Document (ICD) as amended from time to time, unless described otherwise in this LOA.
2. List messages not supported (*e.g. "EST, TOC, AOC* messages are not supported").
3. Acceptance of CPL or CDN message is approval of the flight's profile and requires no further voice communication (i.e. Non-Standard Altitudes, Block Altitudes, and Deviations).
4. (*Describe other procedures applicable to the use of AIDC for this LOA. Some examples are listed below)*
    a. *Example only. If there is any doubt with regard to the final coordination data, voice coordination should be used for confirmation.*
    b. *Example only. Receipt of a MAC message must not be interpreted as meaning that the flight plan has been cancelled. Voice coordination must be conducted by the transferring controller to confirm the status of the flight.*
    c. *Example only. Each facility should advise the other facility of any known equipment outage that affects AIDC. In the event of AIDC outage, voice communication procedures will apply.*
    d. *Example only. Truncation. Where route amendment outside the FIR is unavoidable.*
        i. *Terminate the route details at the farthest possible flight plan significant point of the flight and enter "T" immediately following this.*
        ii. *Without amending the originally received details, every effort is to be made to truncate the route at a minimum of one significant point beyond the adjacent FIR to provide an entry track in that FIR.*

AIDC Messages

(For each message used describe when it will be sent by each ATSU under the parameter column and use the Notes column to describe other applicable information for the message use by each ATSU. The data below provides an example of the type of information that could be incorporated.)

Messages	Parameter	Notes
ABI	***ATSU1*:** Sends ABI approx. 80 minutes prior to boundary (73 minutes prior to the 50 nm expanded sector boundary). ***ATSU2:*** Sends ABI approx. 87 minutes prior to boundary (80 minutes prior to the 50 nm expanded sector boundary). (*Note: An updated ABI will not be sent once a CPL has been sent.)*	***ATSU1 : ATSU2*** *Updated ABI's will be sent automatically if there is any change to profile. ABI is sent automatically and is transparent to the controller. ABI automatically updates the receiving unit's flight data record.*
CPL	***ATSU1 : ATSU2*** *Send CPL messages approx. 37 minutes prior to the boundary (30 minutes prior to the 50 nm expanded sector boundary).*	***ATSU1 : ATSU2*** *CPL messages should be sent by the transferring controller in sufficient time to allow the completion of coordination at least 30 minutes prior to the boundary or 30 minutes prior to the aircraft passing within 50nmof the FIR boundary for information transfers.*
CDN	***ATSU1 : ATSU2*** *CDN messages are sent by either the transferring or receiving facility to propose a change once the coordination process has been completed, i.e., CPL sent and ACP received. CDN's must contain all applicable profile restrictions (e.g. weather deviations, speed assignment, block altitude). If the use of a CDN does not support this requirement, then verbal coordination is required.*	***ATSU1 : ATSU2*** *The APS will display a flashing "DIA" until receipt of ACP. If ACPJ not received within ten (10) minutes, controller is alerted with a message to the queue. CDN messages are not normally used for coordination of reroutes; however, with the receiving facilities approval a CDN may be used to coordinate a reroute on a critical status aircraft such as in an emergency.*
PAC	***ATSU1 : ATSU2*** *PAC messages will normally be sent when the time criteria from the departure point to the boundary is less than that stipulated in the CPL.*	***ATSU1 : ATSU2*** *Will respond to a PAC message with an ACP. PAC messages should be verbally verified with receiving facility.*
ACP	***ATSU1 : ATSU2***	***ATSU1 : ATSU2*** *The APS will display a flashing "DIA" until receipt of ACP. If ACP not received within ten (10) minutes, controller is alerted with a message to the queue.*
TOC	***ATSU1 : ATSU2*** *Not supported. Implicit hand in/off.*	
AOC	***ATSU1 : ATSU2*** *Not supported. Implicit hand in/off.*	
MAC	***ATSU1 : ATSU2*** *MAC messages are sent when a change to the route makes the other facility no longer the "next" responsible unit.*	***ATSU1 : ATSU2*** *Receipt of a MAC message must not be interpreted as meaning that the flight plan has been cancelled. Voice coordination must be conducted by the transferring*

		controller to confirm the status of the flight.
REJ	***ATSU1 : ATSU2*** *REJ messages are sent in reply to a CDN message when the request change is unacceptable*	***ATSU1 : ATSU2*** *REJ messages are sent only as a response to a CDN message.*

AIDC Messages

(For each message used describe when it will be sent by each ATSU under the parameter column and use the Notes column to describe other applicable information for the message use by each ATSU. The data below provides an example of the type of information that could be incorporated.)

Messages	Parameter	Notes
ABI	***ATSU1*:** Sends ABI approx. 80 minutes prior to boundary (73 min prior to the 50 nm expanded sector boundary). ***ATSU2:*** Sends ABI approx. 87 minutes prior to boundary (80 min prior to the 50 nm expanded sector boundary). (*Note: An updated ABI will not be sent once a CPL has been sent.)*	***ATSU1 : ATSU2*** *Updated ABI's will be sent automatically if there is any change to profile. ABI is sent automatically and is transparent to the controller. ABI automatically updates the receiving unit's flight data record.*
CPL	***ATSU1 : ATSU2*** *Send CPL messages approx 37 minutes prior to the boundary (30 minutes prior to the 50 nm expanded sector boundary).*	***ATSU1 : ATSU2*** *CPL messages should be sent by the transferring controller in sufficient time to allow the completion of coordination at least 30 minutes prior to the boundary or 30 minutes prior to the aircraft passing within 50nmof the FIR boundary for information transfers.*
CDN	***ATSU1 : ATSU2*** *CDN messages are sent by either the transferring or receiving facility to propose a change once the coordination process has been completed, i.e., CPL sent and ACP received. CDN's must contain all applicable profile restrictions (e.g. weather deviations, speed assignment, block altitude). If the use of a CDN does not support this requirement, then verbal coordination is required.*	***ATSU1 : ATSU2*** *The APS will display a flashing "DIA" until receipt of ACP. If ACPJ not received within ten (10) minutes, controller is alerted with a message to the queue.* *CDN messages are not normally used for coordination of reroutes; however, with the receiving facilities approval a CDN may be used to coordinate a reroute on a critical status aircraft such as in an emergency.*

PAC	***ATSU1 : ATSU2*** *PAC messages will normally be sent when the time criteria from the departure point to the boundary is less than that stipulated in the CPL.*	***ATSU1 : ATSU2*** *Will respond to a PAC message with an ACP. PAC messages should be verbally verified with receiving facility.*
ACP	***ATSU1 : ATSU2***	***ATSU1 : ATSU2*** *The APS will display a flashing "DIA" until receipt of ACP. If ACP not received within ten (10) minutes, controller is alerted with a message to the queue.*
TOC	***ATSU1 : ATSU2*** *Not supported. Implicit hand in/off.*	***ATSU1 : ATSU2***
AOC	***ATSU1 : ATSU2*** *Not supported. Implicit hand in/off.*	
MAC	***ATSU1 : ATSU2*** *MAC messages are sent when a change to the route makes the other facility no longer the "next" responsible unit.*	***ATSU1 : ATSU2*** *Receipt of a MAC message must not be interpreted as meaning that the flight plan has been cancelled. Voice coordination must be conducted by the transferring controller to confirm the status of the flight.*
REJ	***ATSU1 : ATSU2*** *REJ messages are sent in reply to a CDN message when the request change is unacceptable*	***ATSU1 : ATSU2*** *REJ messages are sent only as a response to a CDN message.*

10. IMPLEMENTATION PHASES

In line with ASBU Block 0 time lines, the AIDC/OLDI implementation shall be completed as per the MID Air Navigation Plan. In order to support and assist, the implementation could be accomplished in phases listed below. The actual targets set for the MID Region are in the MID Air Navigation Strategy.

Phase 1	• OLDI/AIDC capable ATSUs should start implementation activities. The activity should cover the following: ➢ test activities ➢ operator training ➢ Revision of LoA ➢ transition activities ➢ implementation ➢ post-implementation reviews • The ATSUs not capable of OLDI/AIDC should avail the facility of Standalone terminals with a planned implementation asap, and budget for full Integration with a planned implementation date of the MID Air Navigation Strategy.
Phase 2	• The ATSUs using OLDI/AIDC in an Operational environment should assist other ATSUs to implement OLDI/AIDC • The OLDI/AIDC software is readily available therefore the ATSUs waiting for software upgrade should expect a software package asap. On receipt of it they should start implementation activities. The activity should cover the following: ➢ test activities ➢ operator training ➢ Revision of LoA ➢ transition activities ➢ implementation ➢ post-implementation reviews
Phase 3	• All ATSUs are connected by Integrated OLDI/AIDC or Standalone terminals

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