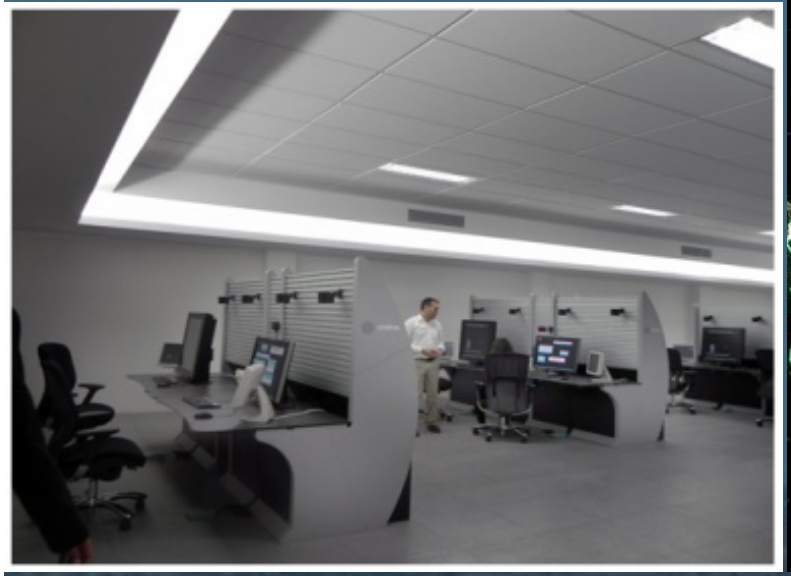
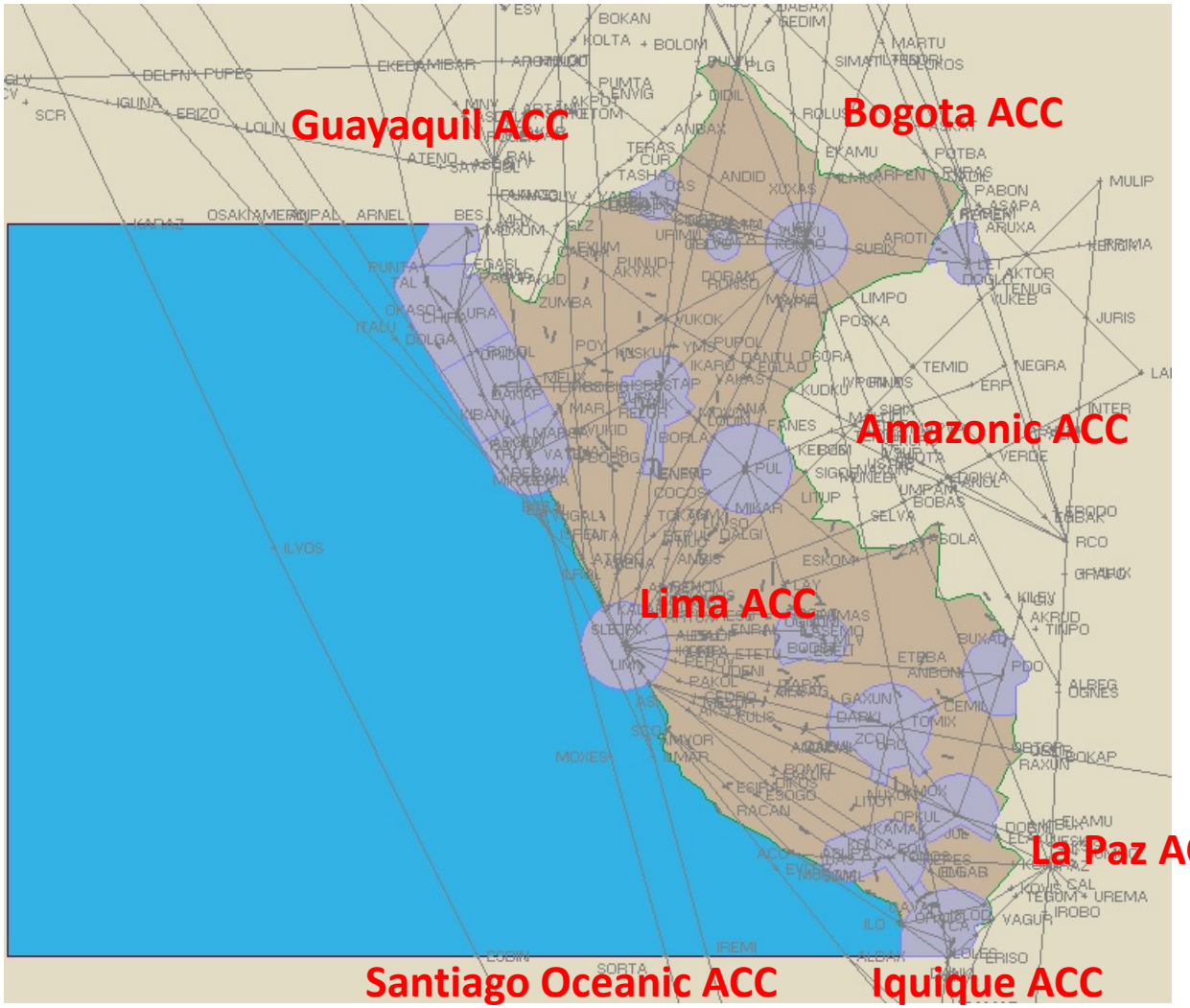
AIDC EXPERIENCE IN PERU



AIDC IMPLEMENTATION BETWEEN LIMA ACC AND ADJACENT CONTROL CENTERS



AIDC IMPLEMENTATION STAGES

1. INTERCONECTION TESTS BETWEEN ADYACENT ACC

   Responsible: POC and development team

   AIDC message exchange tests between adjacent ACC

2. PRE-OPERATIONAL TESTS

   Responsible: POC and development team

   Selective AIDC coordination tests

   Performance analysis, system adjustments, errors and problems debug

3. OPERATIONAL TESTS

   Responsible: POC and ATC personnel

   Parallel AIDC coordination tests and voice confirmation and validation

   Identification and reduction of LRM causes

4. AIDC OPERATIONAL STATUS

   Responsible: POC and ATC personnel

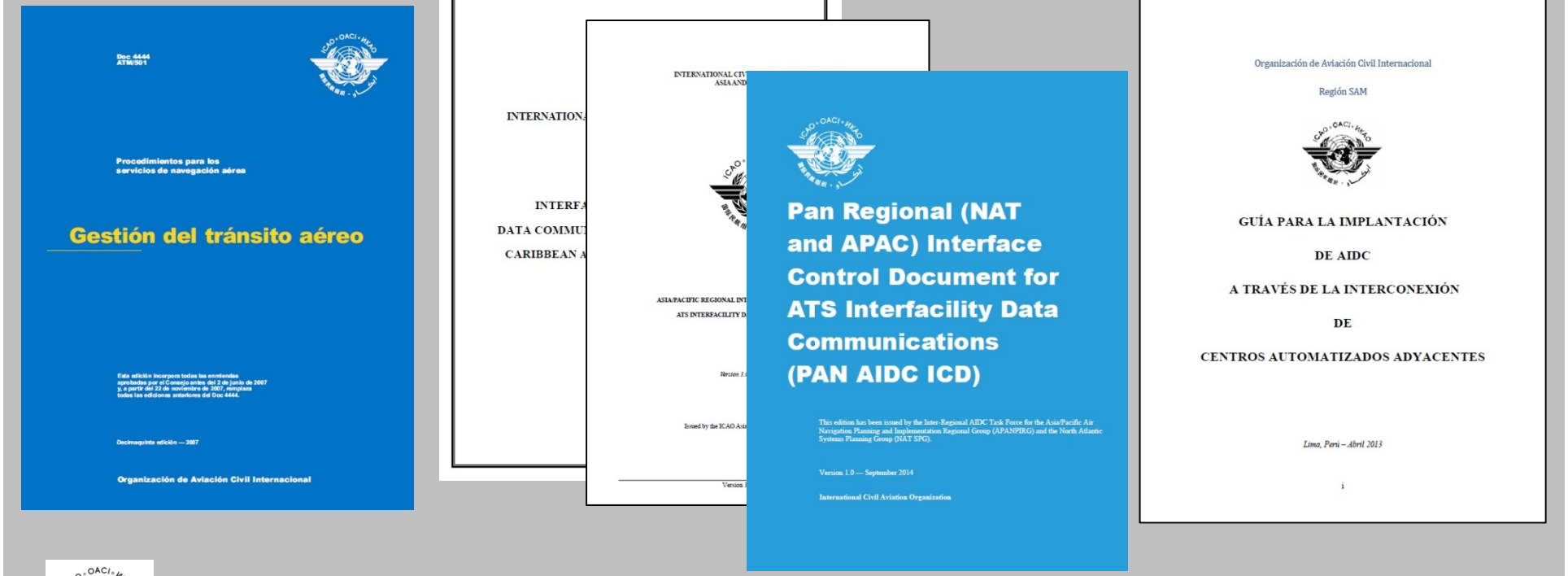
   Performance monitoring and continuous improvement

AIDC IMPLEMENTATION PROGRESS BETWEEN LIMA AND ADJACENT ACC

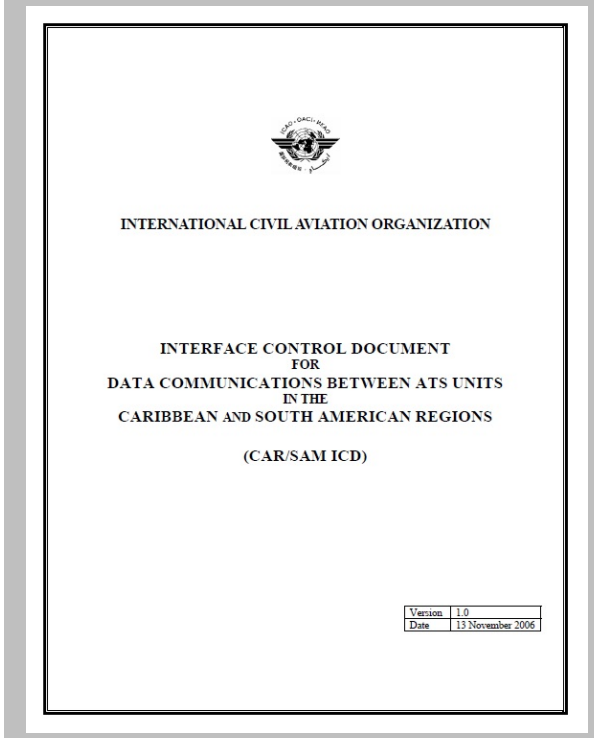
AIDC Lima ACC (SPIM)	Stage 1 Interconnection Tests	Stage 2 Pre-Operational Tests	Stage 3 Operational Tests	Stage 4 Operational Implementation
Guayaquil (SEFG)	Completed	Completed	Completed	Implemented March 31, 2016
Bogota (SKED)	Completed	Completed	In Progress	Planned May 30, 2016
Amazonic (SBAZ)	Completed	Planned June 2016	Planned December 2016	Planned March 2017
La Paz (SLLF)	Planned 2017	N/A	N/A	N/A
Iquique (SCDA)	Completed	Completed	In Progress	Planned June 2016
Santiago Oceanic (SCEL)	Completed	Completed	Planned 2017	Planned 2017

REFERENCE DOCUMENTS

- DOCUMENT 4444 ATM/501
- INTERFACE CONTROL DOCUMENTS (ICD)
- AIDC IMPLEMENTATION GUIDE (SAM)



INTERFACE CONTROL DOCUMENTS (ICD)



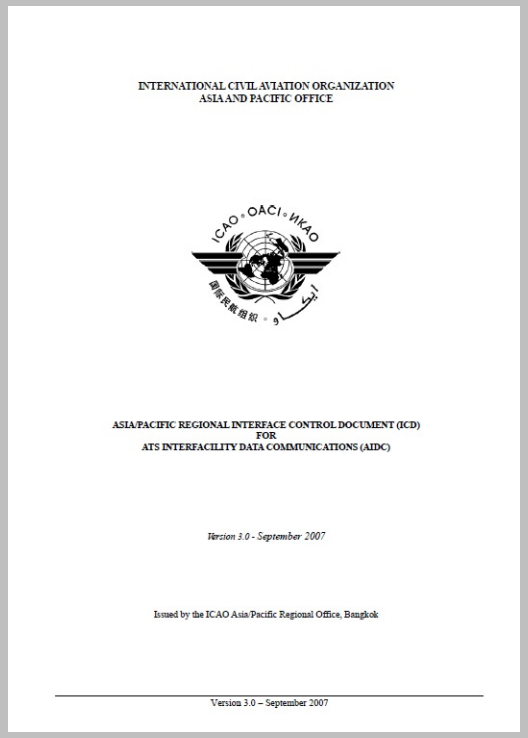
INTERNATIONAL CIVIL AVIATION ORGANIZATION

INTERFACE CONTROL DOCUMENT
FOR
DATA COMMUNICATIONS BETWEEN ATS UNITS
IN THE
CARIBBEAN AND SOUTH AMERICAN REGIONS

(CAR/SAM ICD)

Version	1.0
Date	13 November 2006

ICD CAR/SAM (v1.0 - 2006)



INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

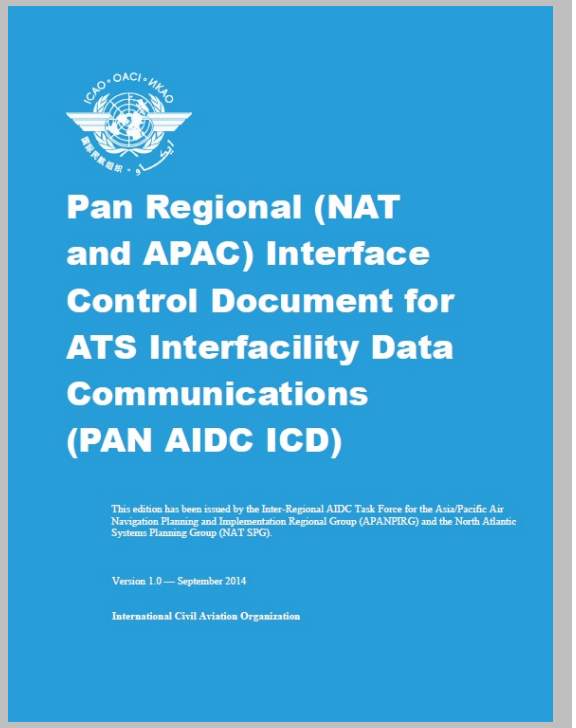
ASIA/PACIFIC REGIONAL INTERFACE CONTROL DOCUMENT (ICD)
FOR
ATS INTERFACILITY DATA COMMUNICATIONS (AIDC)

Version 3.0 - September 2007

Issued by the ICAO Asia/Pacific Regional Office, Bangkok

Version 3.0 – September 2007

ICD ASIA/PAC (v3.0 - 2007)



Pan Regional (NAT and APAC) Interface Control Document for ATS Interfacility Data Communications (PAN AIDC ICD)

This edition has been issued by the Inter-Regional AIDC Task Force for the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) and the North Atlantic Systems Planning Group (NAT SPG).

Version 1.0 — September 2014

International Civil Aviation Organization

PAN ICD NAT/APAC (v1.0 - 2014)

FLIGHT STATE DIAGRAM PAN ICD NAT/APAC - 2014

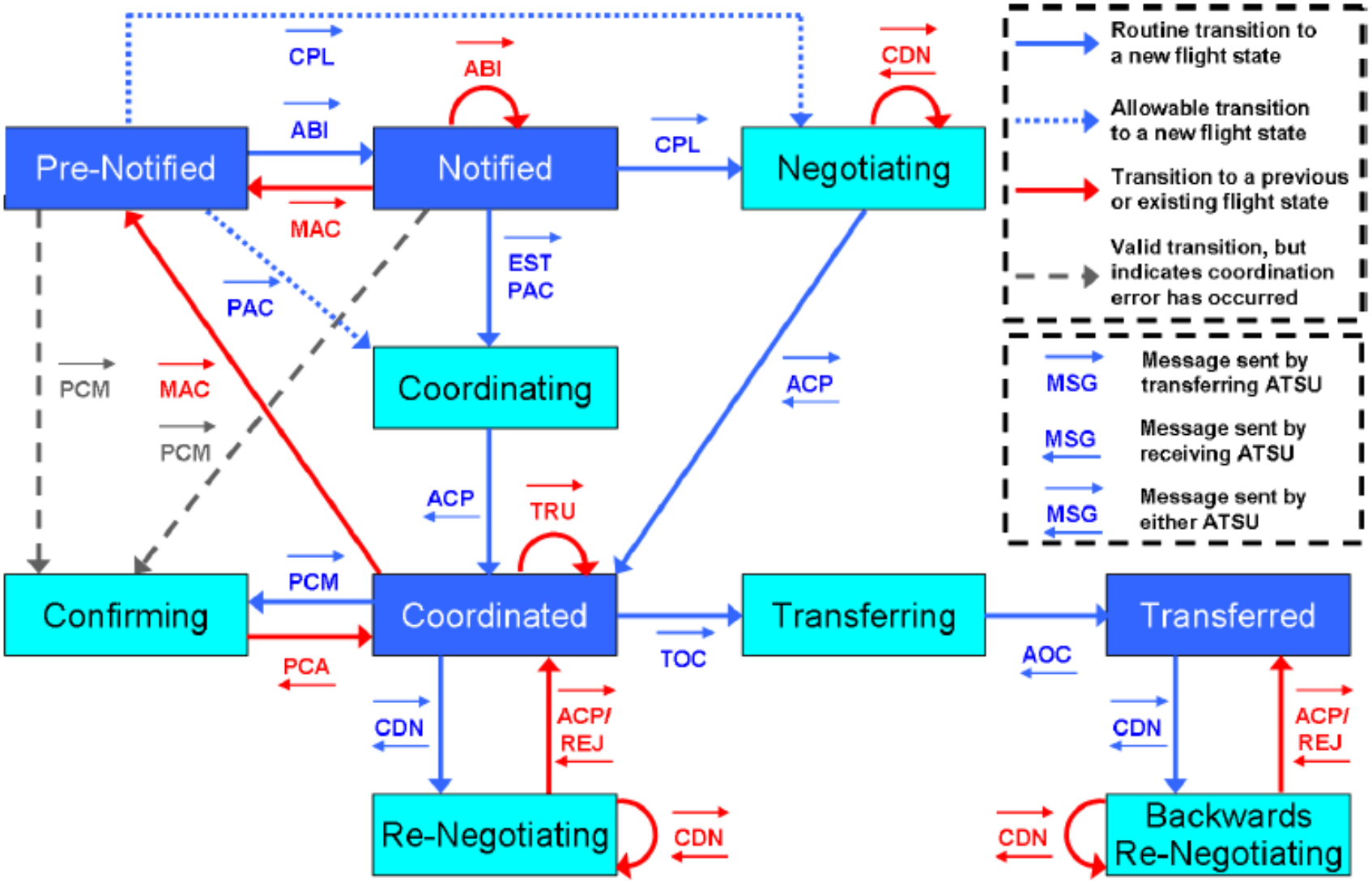


Figure 6-1 Flight State Transition Diagram

AIDC Message Set

Mensaje	Significado	Mensaje	Significado
ABI	Advanced Boundary Information	**PCM**	Profile Confirmation Message
CPL	Current Flight Plan	**PCA**	Profile Confirmation Acceptance
EST	Coordination Estimate	**TRU**	Track Update
PAC	Preliminary Activate	**EMG**	Emergency
MAC	Cancellation of Notif/Coord	**MIS**	Miscellaneous
CDN	Coordination Negotiation	**ASM**	Application Status Monitor
ACP	Acceptance	**FAN**	FANS Application Message
REJ	Rejection	**FCN**	FANS Completion Notification
TOC	Transfer of Control	**ADS**	Surveillance ADS-C
AOC	Acceptance of Control	**TDM**	Track Definition Message
LAM	Logical Acknowledgement Msg	**NAT**	Organized Track Structure
LRM	Logical Rejection Message		

Minimum set or existing messages

Additional recommended messages

Messages for possible implementation

Messages for APAC and NAT only

AIDC ADVANTAGES

- OPERATIONAL SAFETY IMPROVEMENT:
  - REDUCTION OF POSSIBLE MESSAGE RECEPTION ERRORS.
  - AVOIDMENT OF COMMUNICATION MISINTERPRETATION.
  - AVOIDMENT OF LATE OR OVERDUE COORDINATIONS.

- INCREASE IN COMMUNICATION CHANNELS AVAILABILITY:
  - COMMUNICATION TIME USAGE REDUCTION.
  - REDUCTION OF VOICE CHANNELS CONGESTION.

- REDUCTION OF ATC WORKLOAD.

- **STRESS REDUCTION AND AVOIDMENT**

AIDC PERFORMANCE
IDENTIFIED OPERATION PROBLEMS

- INADEQUATE ATC CONSOLE CONFIGURATION.
- LACK OR INSUFFICIENT ATC PERSONNEL TRAINING.
- LACK OF COOPERATION FROM ATC PERSONNEL.
- INCOMPLETE OR MUTILATED FLIGHT PLAN ROUTE.
- DUPLICATED FLIGHT PLANS.
- TRACK PREMATURELY ASSUMED BY ADJACENT ACC BEFORE AIDC TRANSFER IS DONE.
- UNCOMPLIANCE OF ADOPTED ICD SPECIFICATIONS BY ATC SYSTEM MANUFACTURERS.
- INCOMPATIBILITY BETWEEN DIFFERENT ATC SYSTEMS.
- INCORRECT AIDC ADDRESS CONFIGURATION IN THE SYSTEM DATABASES.
- AMHS / AFTN GATEWAY PROBLEMS

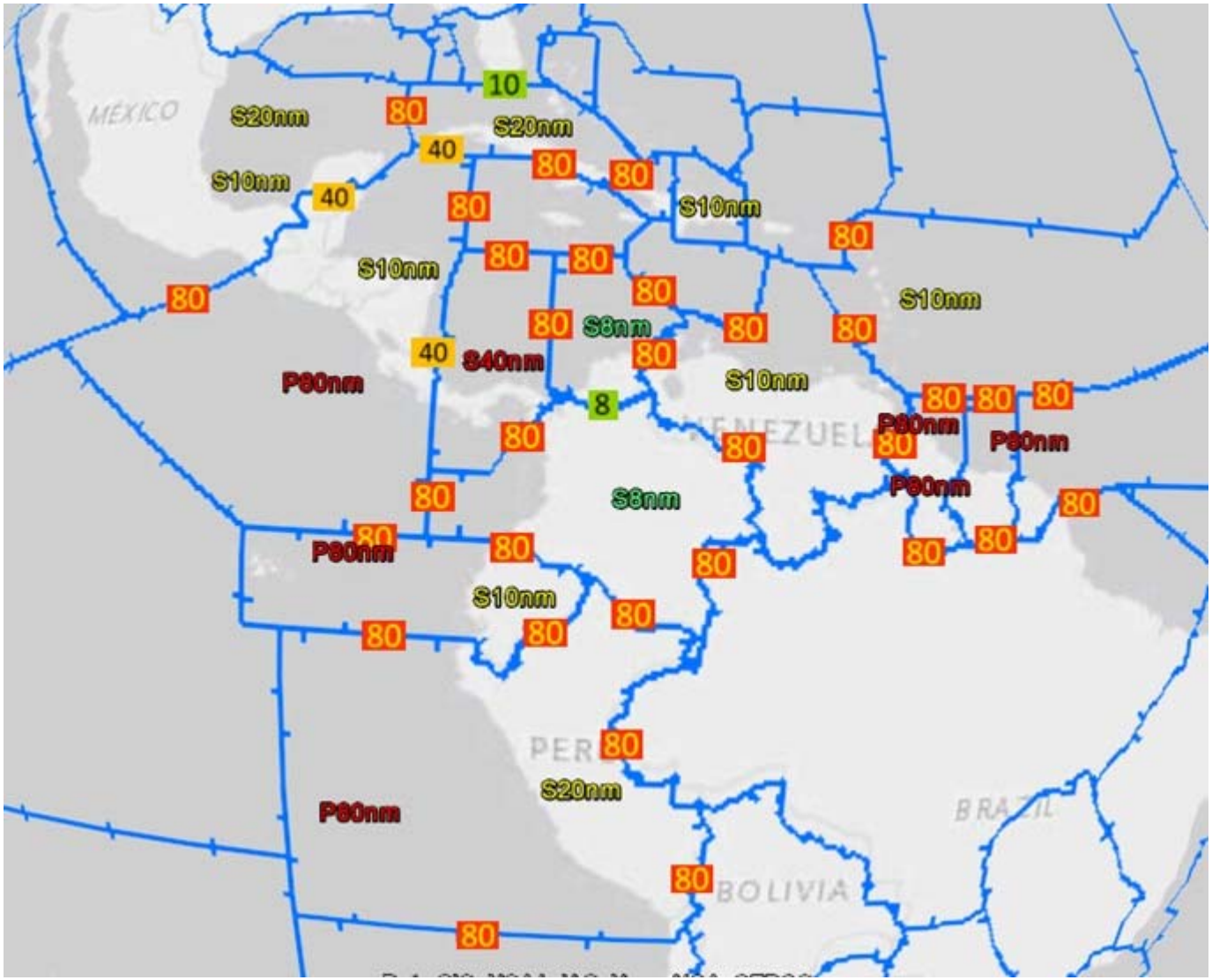
AIDC PERFORMANCE BETWEEN SPIM AND SEFG SUCCESS RATE

AIDC Coordinations	%
Successful	**77.55%**
Unsuccessful (LRM)	**22.45%**

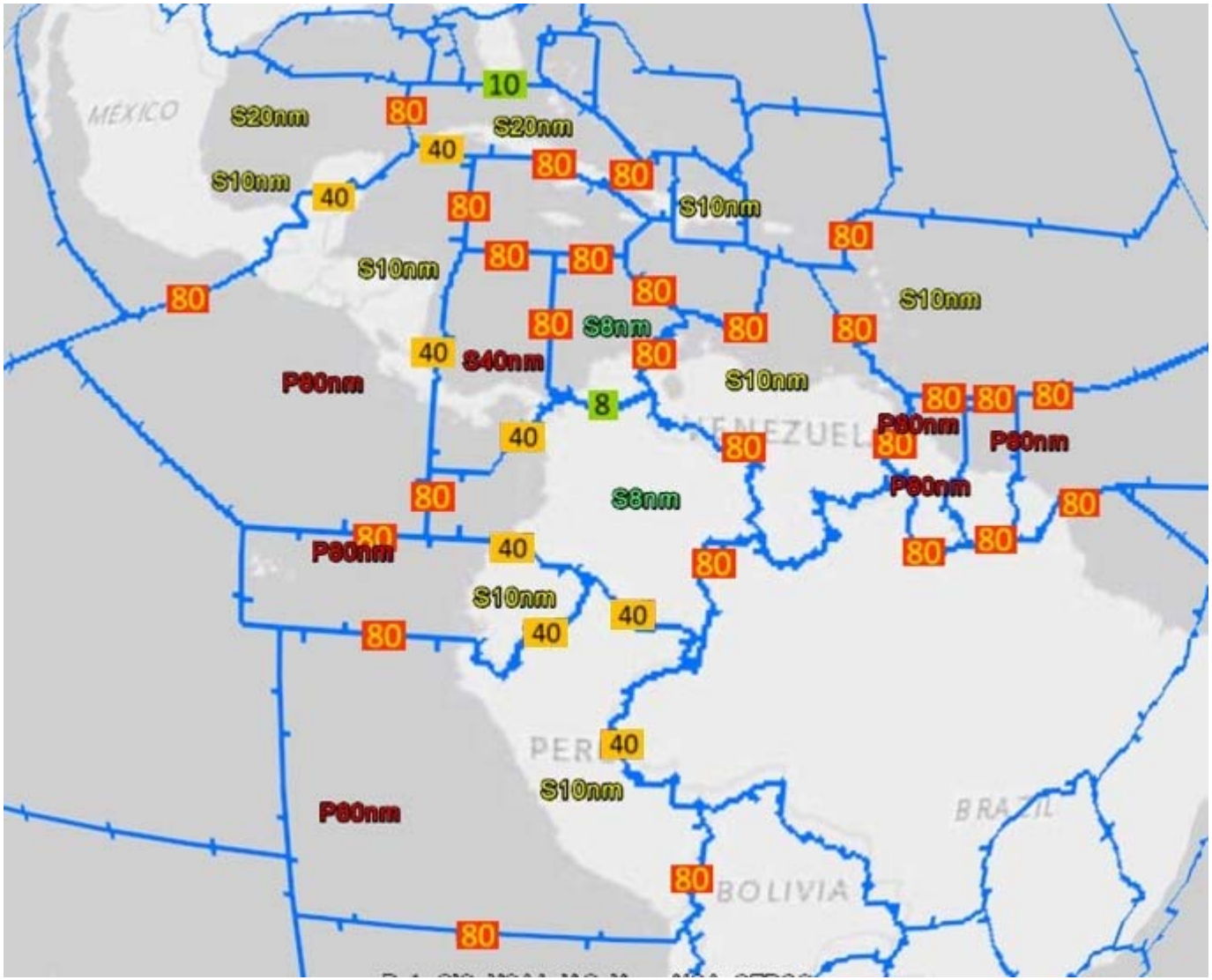
AIDC PERFORMANCE BETWEEN SPIM AND SEFG IDENTIFIED LRM CAUSES

LRM Code	Error Description	Identified Cause	%
06	Invalid Aircraft Id	FPL not received by remote ACC	**8.57%**
07	Duplicate Aircraft Id	Duplicated FPL in remote ACC	**5.71%**
41	Invalid ATS Route Point	FPL Route incorrect or mutilated	**22.86%**
41	Invalid ATS Route Point	Missing Point in remote Database	**25.71%**
57	Invalid Message	Message out of coordination phase (for example when a TOC is sent and the remote ACC has already assumed the radar track)	**28.57%**
65	Message Sequence Error	Renegotiation sent before the previous Coordination message has been accepted by remote ACC	**8.57%**

REDUCTION IN SEPARATION MINIMA



REDUCTION IN SEPARATION MINIMA



AIDC IMPLEMENTATION CHALLENGES

Involves a Cultural Change

AIDC IMPLEMENTATION CHALLENGES

Overcome reluctance to changes

AIDC IMPLEMENTATION CHALLENGES

Compromise between participants

AIDC IMPLEMENTATION CHALLENGES

Concesions between participants

AIDC IMPLEMENTATION CHALLENGES

New and more efficient ways for doing the same job

AIDC IMPLEMENTATION CHALLENGES

Adoption of new habits