



ICAO

International Civil Aviation Organization
North American, Central American and Caribbean Office

**Fourth NAM/CAR Air Traffic Services Inter-facility
Data Communication (AIDC) and North American
Interface Control Document (NAM/IDC)
Implementation Follow-up Meeting**

(AIDC/NAM/ICD/4)

Final Report

On-line, 9 to 11 March 2021

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

List of Contents

| Contents | Page |
|---|-------------|
| Index | i-1 |
| Historical | ii-1 |
| ii.1 Place and Date of the Meeting..... | ii-1 |
| ii.2 Opening Ceremony..... | ii-1 |
| ii.3 Officers of the Meeting | ii-1 |
| ii.4 Working Languages | ii-2 |
| ii.5 Schedule and Working Arrangements..... | ii-2 |
| ii.6 Agenda | ii-2 |
| ii.7 Attendance | ii-2 |
| ii.8 List of Decisions and Conclusions..... | ii-2 |
| ii.9 List of Working and Information Papers and Presentations | ii-3 |
| List of Participants | iii-1 |
| Contact Information | iv-1 |
| Agenda Item 1 | 1-1 |
| <i>Adoption of the Provisional Agenda and Schedule</i> | |
| Agenda Item 2 | 2-1 |
| <i>Updating of the Implementation Activities of the Automated Protocols</i> | |
| Agenda Item 3 | 3-1 |
| <i>Follow-up on the Activities to Regionally Minimize Flight Plan Errors</i> | |
| Agenda Item 4 | 4-1 |
| <i>Analysis of cybersecurity that is applied to databases of ATM systems</i> | |
| Agenda Item 5 | 5-1 |
| <i>Flight and Flow - Information for a Collaborative Environment (FF-ICE)</i> | |
| Agenda Item 6 | 6-1 |
| <i>Alignment of the NAM/CAR Air Navigation Implementation Working Group (ANI/WG) AIDC Task Force with the programme of GREPECAS</i> | |
| Agenda Item 7 | 7-1 |
| <i>Other Business</i> | |

HISTORICAL

ii.1 Place and Date of the Meeting

The Fourth NAM/CAR Air Traffic Services Inter-facility Data Communication (AIDC) and North American Interface Control Document (NAM/IDC) Implementation Follow-up Meeting (AIDC/NAM/ICD/4) was held on-line from 9 to 11 March 2021.

ii.2 Opening Ceremony

Mr. Melvin Cintron, Regional Director of the North American, Central American and Caribbean (NACC) Regional Office of the International Civil Aviation Organization (ICAO) welcomed the participants, highlighting the importance of the AIDC and NAM/IDC implementation and how this solution supports the increase of regional safety.

Mr. Cintron emphasized the role of everyone in this meeting on AIDC implementation and the benefits that the CAR Region obtains from implementation, increasing safety and awareness due to data sharing, which is part of the important technology innovation and one of ICAO's priorities.

Mr. Cintron invited all participants to have an active role in the automated protocols to achieve a hundred percent of implementation in the region.

Mr. Fernando Cassó, AIDC Task Force Rapporteur (Dominican Republic) welcomed all the participants. He provided an overview about the effect of the COVID-19 pandemic in the aviation system and highlighted that aviation is an important engine of our world, and plays a critical role to help the world recovery from COVID-19.

Providing an example of how the business continuity benefits from the available technology, Mr. Cassó emphasized that as an implementation group, technology available today is used to make aviation safer, more efficient and better, not only for the industry, but also for the people that work directly and indirectly for aviation.

ii.3 Officers of the Meeting

The Fourth NAM/CAR Air Traffic Services Inter-facility Data Communication (AIDC) and North American Interface Control Document (NAM/IDC) Implementation Follow-up Meeting (AIDC/NAM/ICD/4) was chaired by the AIDC TF Rapporteur, Mr. Fernando Cassó from Dominican Republic. Mrs. Mayda Ávila, Regional Officer, Communications, Navigation and Surveillance of the ICAO NACC Regional Office, served as Secretary of the Meeting.

ii.4 Working Languages

The working languages of the Meeting were English and Spanish. The working papers, information papers and report of the meeting were available to participants in both languages.

ii.5 Schedule and Working Arrangements

It was agreed to hold three sessions of three hours each day. The sessions of the meeting were from 15:00 to 18:00 UTC daily with adequate breaks.

ii.6 Agenda

- Agenda Item 1:** Adoption of the Provisional Agenda and Schedule
- Agenda Item 2:** Updating of the Implementation Activities of the Automated Protocols
- Agenda Item 3:** Follow-up on the Activities to Regionally Minimize Flight Plan Errors
- Agenda Item 4:** Analysis of cybersecurity that is applied to databases of ATM systems
- Agenda Item 5:** Flight and Flow - Information for a Collaborative Environment (FF-ICE)
- Agenda Item 6:** Alignment of the NAM/CAR Air Navigation Implementation Working Group (ANI/WG) AIDC Task Force with the programme of GREPECAS
- Agenda Item 7:** Other Business

ii.7 Attendance

The Meeting was attended by 15 States/Territories from the NAM/CAR Regions, two International Organizations, and diverse Industry representatives, totalling 56 delegates as indicated in the list of participants.

ii.8 List of Decisions and Conclusions

ii.8.1 The Meeting recorded its activities as Conclusions and Decisions as follows:

CONCLUSIONS: Activities requiring endorsement by the Directors of Civil Aviation of North America, Central America and Caribbean (NACC/DCA).

DECISIONS: Internal activities of the NAM/CAR Air Navigation Implementation Working Group (ANI/WG).

ii.8.2 Decisions:

| Number | Title | Page |
|-----------------|--|------|
| AIDC/NAM/ICD/01 | <i>Implementation of the automatized AIDC and NAM/ICD protocols</i> | 2-3 |
| AIDC/NAM/ICD/02 | <i>Coordination with the United States to improve NAM/ICD implementation</i> | 2-5 |
| AIDC/NAM/ICD/04 | <i>Development of the Flight and Flow Information for the cooperative environment (FF-ICE) and assessment of Key Performance Indicator (KPI)</i> | 6-1 |

ii.8.3 Conclusions

| Number | Title | Page |
|-----------------|---|------|
| AIDC/NAM/ICD/03 | <i>Regional procedure and PoC designation</i> | 3-3 |

An executive summary of these decisions is presented in **Appendix A** to this report.

ii.9 List of Working and Information Papers and Presentations

Refer to the Meeting web page:

<https://www.icao.int/NACC/Pages/meetings-2021-aidc4.aspx>

WORKING PAPERS

| Number | Agenda Item | Title | Date | Prepared and Presented by |
|--------------|-------------|---|----------|---------------------------|
| WP/01 rev | 1 | Provisional agenda and schedule | 22/02/21 | Secretariat |
| WP/02 | 2 | Follow up to decision and conclusions of previous meetings | 03/03/21 | Secretariat |
| WP/03 | 2 | Carried out activities in Cuba for automation of the new system in 2020 | 22/02/21 | Cuba |
| WP/04 | 3 | Follow up to decision and conclusions of previous meetings | 05/03/21 | Secretariat |
| WP/05 | 6 | AIDC Task Force support to regional implementation | 11/03/21 | Secretariat |

INFORMATION PAPER

| Number | Agenda Item | Title | Date | Prepared and Presented by |
|--------|-------------|---|----------|---------------------------|
| IP/01 | ---- | LIST OF WORKING, INFORMATION PAPERS AND PRESENTATIONS | 11/03/21 | Secretariat |

PRESENTATIONS

| Number | Agenda Item | Title | Presented by |
|---------------|--------------------|---|---------------------|
| P/01 | 2 | AIDC- NAM activities proposal 2021 | COCESNA |
| P/02 | 4 | Interoperability based on collaborative work | INDRA |
| P/03 | 4 | TopSky ATC - Activities in the CAR/SAM Region | Thales |
| P/04 | 5 | ATM's database cybersecurity | CyberInFlight. |
| P/05 | 1 | NAM ICD - FAA NAM/CAR Activities | United States |
| P/06 | 3 | Procesador de validación inicial de plan de vuelo ProVIP | COCESNA |
| P/07 | 4 | Introduction of Global Air Navigation Plan (GANP) tasks linked to light and flow - information for a collaborative environment (FF-ICE) | Secretariat |
| P/08 | 4 | Thales' expertise and new technologies | THALES |

LIST OF PARTICIPANTS

BARBADOS

1. Richard Prempeh
2. Donna Archer
3. Gail Clarke
4. Rommel Chase
5. Roderick A. Oliver

BELIZE

6. Randy Banner
7. Marvin Polanco
8. Gilberto Orlando Torres

COSTA RICA

9. Jeffrey Rios
10. Fernando Naranjo
11. Warren Quiros
12. Asdrubal Sanders

CUBA

13. Jorge Vega
14. Sandor Gonzalez
15. Alexander Reinoso
16. Victor Machado

CURAÇAO

17. Jacques Lasten

DOMINICAN REPUBLIC

18. Fernando Casso
19. Luciano Rojas Almonte

EL SALVADOR

20. Andrea Lopez

HAITI

21. Emmanuel Jacques
22. Erns Edmond

HONDURAS

23. Alberto Josue Zuniga Lopez
24. Samuel Isai Palma Canales

JAMAICA

25. Deano Ledford
26. Peter Spence

27. Courtney Malcolm

28. Charles Wright

MEXICO

29. Caterina Strobbe
30. Berenice Perez
31. Daniel Conrado Castañeda Cruz
32. Sofia Manzo
33. Arturo Villela
34. Jorge Caballero

NICARAGUA

35. Martha Hernandez
36. Luis Alemán
37. Luis Mahmud

SAINT VINCENT AND THE GRENADINES

38. David Burgin
39. James Ollivierre

TRINIDAD AND TOBAGO

40. Kent Ramnarace-Singh
41. Ricky Bissessar

UNITED STATES

42. Keith Dutch
43. Alfredo Costa
44. Mark Knupp
45. Scott Leis
46. Rudolph E. Lawrance

COCESNA

47. Juan Sevilla
48. Reybin Sanabria
49. Ivan Reyes

CYBERINFLIGHT

50. Florent Rizzo

INDRA

51. Rodrigo San Martin

THALES

52. Tiphaine Siri
53. Pablo Fernandez Izquierdo

54. Govind Vekaria

ICAO

55. Crystal Kim

56. Mayda Ávila

CONTACT INFORMATION

| Name / Position | Administration / Organization | E-mail |
|---|--|--|
| Barbados | | |
| Richard Prempeh Air Traffic Control Supervisor | Barbados Civil Aviation Department | E-mail richard.prempeh@barbados.gov.bb |
| Donna Archer Chief Aeronautical Information Service Officer | Barbados Civil Aviation Department | E-mail donna.archer@barbados.gov.bb |
| Gail Clarke Aerodrome and ATS Inspector | Barbados Civil Aviation Department | E-mail gail.clarke@barbados.gov.bb |
| Rommel Chase Air Traffic Controller | Barbados Civil Aviation Department | E-mail rommel.chase@barbados.gov.bb |
| Roderick A. Oliver Assistant Aerodromes and Air Traffic Services Inspector | Barbados Civil Aviation Department | E-mail Roderick.Oliver@barbados.gov.bb |
| Belize | | |
| Randy Banner CNS INSPECTOR | Belize Department Of Civil Aviation | E-mail randy.banner@civilaviation.gov.bz |
| Marvin Polanco Chief Air Traffic Control Officer | Belize Department Of Civil Aviation | E-mail marvin.polanco@civilaviation.gov.bz |
| Gilberto Orlando Torres Air Navigation Services Advisor And Ans Inspector | Belize Department Of Civil Aviation | E-mail gilberto.torres@civilaviation.gov.bz |
| Costa Rica | | |
| Jeffrey Rios Encargado Centro de Control Radar | Direccion General de Aviacion Civil | E-mail jrios@dgac.go.cr |
| Fernando Naranjo Jefe Servicios de Navegación Aérea | Direccion General de Aviacion Civil | E-mail fnaranjo@dgac.go.cr |
| Warren Quiros Gestor CNS | Direccion General de Aviacion Civil | E-mail wquiros@hotmail.com |
| Asdrubal Sanders Supervisor ATM Radar | Direccion General de Aviacion Civil | E-mail asandersv@gmail.com |

AIDC/NAM/ICD/4
List of Participants – Contact Information

iv – 2

| Name / Position | Administration / Organization | E-mail |
|--|--|---|
| Cuba | | |
| Jorge Vega Especialista del grupo de desarrollo | Empresa Cubana de Navegación Aérea | E-mail Jorge.vega@aeronav.avianet.cu |
| Sandor Gonzalez Ingeniero informático | Empresa Cubana de Navegación Aérea | E-mail sandor.gonzalez@aeronav.avianet.cu |
| Alexander Reinoso Ingeniero en telecomunicaciones | Empresa Cubana de Navegación Aérea | E-mail alexander.reinoso@aeronav.avianet.cu |
| Victor Machado Especialista ATM | Empresa Cubana de Navegación Aérea | E-mail victor.machado@aeronav.avianet.cu |
| Curaçao | | |
| Jacques Lasten ATCS Manager | DC-ANSP | E-mail J.lasten@dc-ansp.org |
| Dominican Republic | | |
| Fernando Casso Radar Systems Manager | IDAC | E-mail fernando.casso@idac.gov.do |
| Luciano Rojas Almonte Enc. Sección Automatización Sistemas Radar | IDAC | E-mail lucianorojas_almonte@hotmail.com |
| El Salvador | | |
| Andrea Lopez Subdirectora de Navegación Aérea | AAC | E-mail alopez@aac.gob.sv |
| Haiti | | |
| Emmanuel Jacques CNS Engineer | OFNAC | E-mail Emmanueljacques@gmail.com |
| Ernsó Edmond AIS SUPERVISOR | OFNAC | E-mail ernsoedmond15@gmail.com |
| Honduras | | |
| Alberto Josue Zuniga Lopez Supervisor Nacional CNS | Agencia Hondureña de Aeronautica Civil | E-mail josalberto777@gmail.com |
| Samuel Isai Palma Canales Inspector de Servicios ANS | Agencia Hondureña de Aeronautica Civil | E-mail sammyhunny@hotmail.com |
| Jamaica | | |

AIDC/NAM/ICD/4
List of Participants – Contact Information

iv – 3

| Name / Position | Administration / Organization | E-mail |
|--|--|-------------------------------------|
| Deano Ledford Director ATM | Jamaica Civil Aviation Authority | E-mail deano.ledford@jcaa.gov.jm |
| Peter Spence ASST OPS MGR | AEROTEL | E-mail PSPENCE@AEROTEL-JM.COM |
| Courtney Malcolm Unit Manager - KATCC | Jamaica Civil Aviation Authority | E-mail Courtney.malcolm@jcaa.gov.jm |
| Charles Wright Air Traffic Control Radar Specialist | Jamaica Civil Aviation Authority | E-mail charles.wright@jcaa.gov.jm |
| Mexico | | |
| Berenice Perez Auditor | SENEAM | E-mail geckoisa@gmail.com |
| Daniel Conrado Castañeda Cruz Inspector Verificador Aeronáutico CNS | Agencia Federal de Aviación Civil (AFAC) | E-mail dcastane@sct.gob.mx |
| Sofia Manzo Jefe de los Servicios de Tránsito Aéreo | SENEAM | E-mail SPTISHA@HOTMAIL.COM |
| Arturo Villela Jefe de los Servicios De Tránsito Aereo Noreste | SENEAM | E-mail arvivi@gmail.com |
| Jorge Caballero Jefe de Centro de Control | SENEAM | E-mail jecfebles@hotmail.com |
| Nicaragua | | |
| Martha Hernandez Inspector MET / ATS | Instituto Nicaragüense de Aeronáutica Civil - INAC. | E-mail ats@inac.gob.ni |
| Luis Alemán Inspector CNS | Instituto Nicaraguense de Aeronautica Civil - INAC | E-mail inacvirtual@gmail.com |
| Luis Mahmud Inspector CNS | Instituto Nicaragüense de Aeronáutica Civil - INAC. | E-mail aeronav2@inac.gob.ni |
| Saint Vincent and the Grenadines | | |
| David Burgin Aeronautical Information Service Coordinator | Airport Services Department | E-mail dburgin.airports@gmail.com |
| James Ollivierre Senior Airport Officer | Aviation Services Department | E-mail jaysyl2009@gmail.com |

AIDC/NAM/ICD/4
List of Participants – Contact Information

iv – 4

| Name / Position | Administration / Organization | E-mail |
|---|--|--|
| Trinidad and Tobago | | |
| Kent Ramnarace-Singh Unit Chief Planning and Technical Evaluation | Trinidad and Tobago Civil Aviation Authority | E-mail krsingh@caa.gov.tt |
| Ricky Bissessar Unit Chief, AIM Operations | Trinidad and Tobago Civil Aviation Authority | E-mail rbissessar@caa.gov.tt |
| United States | | |
| Keith Dutch Air Traffic Control | Air Traffic Organization | E-mail keithdutch@gmail.com |
| Alfredo Costa Computer Specialist | Federal Aviation Administration | E-mail arcosta15@comcast.net |
| Mark Knupp HSI Division of Oasis Systems | FAA | E-mail markknupp@gmail.com |
| Scott Leis Caribbean Air Traffic Specialist | FAA | E-mail scottleis@hotmail.com |
| Rudolph (Rudy) Lawrence Air Traffic Control Specialist | FAA | E-mail trinikatch1@gmail.com |
| COCESNA | | |
| Juan Sevilla Controlador ejecutivo | COCESNA | E-mail jsevillaherrera@yahoo.com |
| Reybin Sanabria Ingeniero en Mantenimiento | COCESNA | E-mail reybin@yahoo.com |
| Ivan Reyes IT Technician | COCESNA | E-mail ivan.reyes@cocesna.org |
| CyberInflight | | |
| Florent RIZZO CEO | CyberInflight | E-mail florent.rizzo@cyberinflight.com |
| INDRA | | |
| Rodrigo San Martin Gerente | Indra Sistemas | E-mail rasan@indracompany.com |
| THALES | | |
| Tiphaine Siri Sales manager | Thales Colombia S.A. | E-mail tiphaine.siri@grenoble-em.com |

AIDC/NAM/ICD/4
List of Participants – Contact Information

iv – 5

| Name / Position | Administration / Organization | E-mail |
|---|-------------------------------|---|
| Pablo Fernandez Izquierdo Business Development Manager | Thales | E-mail pablo.fernandez@thalesgroup.com |
| Govind Vekaria Design Authority | Thales | E-mail govind.vekaria@uk.thalesgroup.com |
| ICAO | | |
| Crystal Kim Technical Officer, Airspace Management and Optimization Section | ICAO Headquarters | E-mail ckim@icao.int |
| Mayda Ávila Communication, Navigation and Surveillance, ICAO NACC Regional Office | ICAO NACC Regional Office | E-mail mavila@icao.int |

Agenda Item 1 Adoption of the Provisional Agenda and Schedule

1.1 The Secretariat presented WP/01 with the provisional agenda and schedule of the Fourth NAM/CAR Air Traffic Services Inter-facility Data Communication (AIDC) and North American Interface Control Document (NAM/IDC) Implementation Follow-up Meeting (AIDC/NAM/ICD/4).

1.2 The Meeting was carried out on the Zoom platform, three hours every day and with some time for breaks. The participants of the Meeting approved the agenda as presented in the historical section of this report and the schedule as presented in WP/01.

Agenda Item 2 Updating of the Implementation Activities of the Automated Protocols

2.1 Under WP/02, the Secretariat presented information regarding the follow up of the status of the decisions and conclusions taken by the AIDC Task Force in previous meetings.

2.2 The Meeting reviewed all decisions and conclusions and updated their status shown in **Appendix B** to this report. The AIDC Task Force will update the valid decisions and conclusions and provide information on the date of their implementation.

2.3 According with the evaluation to the conclusions and decisions of previous meetings, hereunder is their current status:

| Completed Decisions and Conclusions | | |
|-------------------------------------|--|---------------|
| <i>Decision or Conclusion</i> | <i>Title</i> | <i>Status</i> |
| Decision AIM/FPL/AIDC/8 | IMPROVE FEEDBACK BETWEEN AIRLINES AND ATS UNITS | Completed |
| Decision AIM/FPL/AIDC/1/9 | REGIONAL PROCEDURE DRAFT FOR FLIGHT PLAN PROCESSING | Completed |
| Decision AIM/FPL/AIDC/10 | DATA FOR ANALYSIS OF THE ERROR IN FLIGHT PLANS | Completed |
| Decision AIM/FPL/AIDC/11 | MAINTENANCE OF THE AIRCRAFT TYPE DATABASE | Completed |
| Decision AIDC/NAM/ICD/D/01 | TECHNICAL/OPERATIVE TRAINING PROFILE FOR THE USE OF THE AIDC | Completed |
| Decision AIDC/NAM/ICD/D/03 | TO EXPOSE THE PROBLEM OF THE LACK OF AVAILABILITY OF THE PERFORMANCE DATA OF AIRCRAFT TYPES FOR UPDATING ATC SYSTEMS DATABASES. | Completed |
| Conclusion AIDC/NAM/ICD/3/2 | DEVELOP A WEB PAGE UNDER THE ICAO WEB PAGE DEDICATED TO INFORMATION RELATIVE TO AIDC IMPLEMENTATION | Completed |

2.4 During the NAM/CAR/SAM Regions AIDC implementation Meeting for NAM/CAR/SAM Regions held in 2018, the final report provided many recommendations aiming that all States could evaluate and implement them according with their operations.

2.5 Finally, it was informed that the following conclusions are still valid. The proposed activities are to be completed, led by the AIDC Task Force:

| Decision or Conclusion | Description | Status |
|---------------------------------|--|--|
| Decision AIM/FPL/AIDC/6 | IMPLEMENTATION OF THE FLIGHT PLAN PROCESSING PROCEDURE | Valid |
| Decision AIM/FPL/AIDC/7 | MONITORING AND REPORTING ERRORS IN FLIGHT PLANS | Valid AIDC Task Force will evaluate the regional status of flight plan errors. |
| Decision AIDC/NAM/ICD/D/02 | SENDING SPECIFIC TASKS TO THE NACC AIM AND PBN TASKS FORCES | Valid AIDC Task Force will coordinate activities to ensure a document proposal by September 2021. |
| Conclusion AIDC/NAM/ICD/C/01 | MECHANISMS TO UPDATE ATC SYSTEMS DATABASES | Valid |
| Conclusion AIDC/NAM/ICD/C/02 | REGISTRY OF THE FUNCTIONALITIES OF THE FLIGHT PLAN TREATMENT SYSTEMS | Valid |
| Conclusion AIDC/NAM/ICD/C/03 | REPORT TO THE AIM TASK FORCE CASES OF DIFFERENCES IN THE INTERPRETATION OF ICAO DOCUMENTS FOR THE FLIGHT PLANS PROCESSING | Valid |
| Decision AIDC/NAM/ICD/3/1 | COORDINATE TELECONFERENCES BETWEEN AIRSPACE USERS AND STATE PERSONNEL FOR DISCUSSING AND CORRECTING FLIGHT PLAN ERRORS | Valid |
| Decision AIDC/NAM/ICD/3/3 | OBTAIN A LIST OF CONTACTS OF THE RESPONSIBLE ENTITIES FOR AIDC PROTOCOL DEVELOPMENT | Valid Each State will provide a point of contact responsible for the AIDC implementation to facilitate future coordination by 30 June 2021. |
| Conclusion AIDC/NAM/ICD/3/4 | STATES' AND INDUSTRY AIDC SUBJECT MATTER EXPERTS CONTACT LIST | Valid Each State will provide a point of contact responsible for the AIDC implementation to facilitate future coordination by 30 June 2021. Industry already provided their Points of contact. |
| Decision AIDC/NAM/ICD/3/5 | DEVELOPMENT OF AN AIDC TRAINING PROFILE FOR THE NACC REGION | Valid COCESNA provided a profile for AIDC Training to be reviewed for CUBA. AIDC Profile Training is in Appendix C to this report. |
| Conclusion AIDC/NAM/ICD/3/6 | IDENTIFICATION OF ATC AND FLIGHT PLAN SYSTEMS' DIFFICULTIES FOR DATABASE UPDATES | Valid |

2.6 According with the evaluation to the decisions and conclusions from previous meetings, the following decision was adopted by the Meeting:

| | |
|---|--|
| DECISION | |
| AIDC/NAM/ICD/01 | Implementation of the automated AIDC and NAM/ICD protocols |
| What: That, as the implementation of the automated AIDC and NAM/ICD protocols is a priority for the NAM/CAR Regions and it is necessary to ensure an appropriate implementation and a high level of correct coordination between ATC control centers the AIDC Task Force evaluate the valid conclusion and provide an action plan by June 2021. | Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical |
| Why: it is necessary to complete the activities identified in previous AIDC meetings to ensure the correct information to support a high percentage of protocols implementation. | |
| When: June 2021 | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input type="checkbox"/> States <input type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other: | AIDC Task Force |

2.7 Under WP/03, Cuba presented a summary of the automation AIDC tests in the Havana Control Centre (CCTA) during 2020. Cuba maintained activities on automation during 2020. The AIDC Regional implementation plan was updated by the State locating Cuba with a Class 1 messaging and Logical Rejection Messages (LRM) Version E with Miami, CENAMER and Merida adjacent areas, and in testing process with Jamaica, which is not yet finished, and that will continue during March 2021.

2.8 Cuba informed that they finished testing with Miami the exchange of NAM/ICD Class I and II messages. In addition, Class I messages were tested with Houston and it is planned to have tests next June for Class II. Between Cuba and Mexico, with the control centre of Merida, the tests were Class I; two tests were planned but three tests were carried out at the end during which some difficulties were faced when receiving reply messages. Finally, with the Central American flight information region (FIR) (COCESNA), testing was postponed due to the COVID-19 pandemic. Activities reinitiated carrying out tests for Classes I and II on 17 and 18 February 2021 and on 16 March 2021.

2.9 In the case of Jamaica, two tests were planned with Kingston Air Traffic Control (ATC), which were not carried out due to communication problems in both systems.

2.10 The Secretariat recommended to take up the action plan for the implementation of the AIDC made in January 2020, during the AIDC mission to Jamaica, as well as to take advantage of the fact that Jamaica is a member of Project RLA/09/801 – Multi-Regional Civil Aviation Assistance Programme (MCAAP) and thus may request support to the operational implementation activities of the AIDC.

2.11 Jamaica took note of this information and will submit its updated action plan by 30 June 2021.

2.12 In the Q&A session that followed WP/03, Thales reminded that Jamaica had successfully tested NAM (with Cuba and CENAMER) and APAC (Barranquilla and Panama) back in late 2017. For unknown reason, when the ICAO's Go Team visited Jamaica in 2019, they were unsuccessful in performing further AIDC tests. As a result, Thales agreed to assist Jamaica in getting their AIDC system ready.

2.13 Towards the end of last year, Jamaica informed Thales that it wanted to perform further AIDC tests. To assist, Thales upgraded Jamaica's test system remotely in January 2021 which, whilst not the same as the version in Dominican Republic, has been tested thoroughly for NAM Class 1 between Dominican Republic, Miami and San Juan.

2.14 With this updated test system, Jamaica tested successfully (with on-line support from Thales) the system for APAC with Barranquilla. This system is also ready to test NAM Class 1 with Cuba whenever it makes the necessary arrangements; as is usual, Jamaica and Cuba need to agree on the necessary adaptation data changes.

2.15 In addition, Thales informed that the test system in Dominican Republic has resolved the last few issues, and recent testing with Miami and San Juan has been successful for NAM Class II. Dominican Republic stated that it hopes to be NAM Class II by end of March. Thales have planned site visits later this year (subject to change due to COVID-19 travel restrictions) to both Jamaica and Dominican Republic with the intent to upgrade their operational system to the same latest versions.

2.16 Under P/01, COCESNA presented information about the activities of AIDC implementation between CENAMER (ACC Control Centre of Central American FIR) and "La Lima" Approach (APP) Control Centre of Honduras and provided update of testing plan with Belize (Belize), Bogota (Colombia), Kingston (Jamaica), Havana (Cuba) and San Jose (Costa Rica). COCESNA indicated that it is necessary to update the testing schedule with all States above indicated.

2.17 COCESNA will work with those with technical-operative availability and with States with CENAMER coordination and will support any request of the Member States related with automated coordination among them, within the permissible limits due to the COVID-19 pandemics. Currently, activities are being carried out remotely with Belize, and a rapprochement with Costa Rica and Jamaica to resume activities related to the AIDC, and will provide a new action plan before 30 June 2021.

2.18 Under P/05, United States presented information about Automated Handoff Program with Canada, developed in two phases; NAM Direct IP Interface Infrastructure - Non United States interface: Deployment starting April 2021 and Automated Radar Handoff Application with NAV Canada: Deployment planned for the Fall of 2022.

2.19 United States indicated that the actual NAM/ICD version is Version E. They are working in a new version that includes results from actual testing with Canada updating Class III capabilities. The new version will be NAM ICD Update, Revision F.

2.20 Thales requested to review a pre-release of NAM/ICD Rev F. This led to a wider discussion that both Air Navigation Services Providers (ANSPs) and suppliers new to AIDC needed contact points within ICAO to be able to ask questions and request assistance. ICAO agreed to publish a list of AIDC Subject Matter Experts (SMEs) according with previous conclusions taken by the AIDC Task Force to provide such assistance and help CAR States in their future implementation, benefitting from the lesson learned.

2.21 The Secretariat shared its concern about coordination between the Caribbean States and United States using NAM/ICD protocol. The Caribbean States are not prepared to implement new NAM/ICD phase in their control centres (ATC). For a new implementation a software upgrade is necessary, which will take time and financial investments that may cause a delay in the projects.

2.22 In this regard, the Secretariat recommended that United States share with the Caribbean States the information of the new NAM/ICD version as well as the results of the tests with Canada, in order to give the Caribbean States the opportunity to share this information with their suppliers, as well as to reach agreements on the standardisation of the use of the protocol.

2.23 United States agreed to share the document and testing result as soon as possible and work closely with CAR States in order to support them in a clear understanding of the protocol operational requirements and its implementation.

| DECISION AIDC/NAM/ICD/02 | | Coordination with United States to improve NAM/ICD implementation |
|---|---|---|
| <p>What:</p> <p>That, as the implementation of NAM/ICD protocol in CAR States to ensure coordination with United States in the last years has been a time-consuming activity because the Control Centres of the CAR States do not have this functionality and its implementation has required an update of the software of the control centres, United States</p> <p>a) provide to the CAR States the new version of the NAM/ICD document protocol (Version F) and results of the operational test and agreements between the State and Canada; and</p> <p>b) be open to discuss technical and operational</p> | <p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Operational/Technical</p> | |

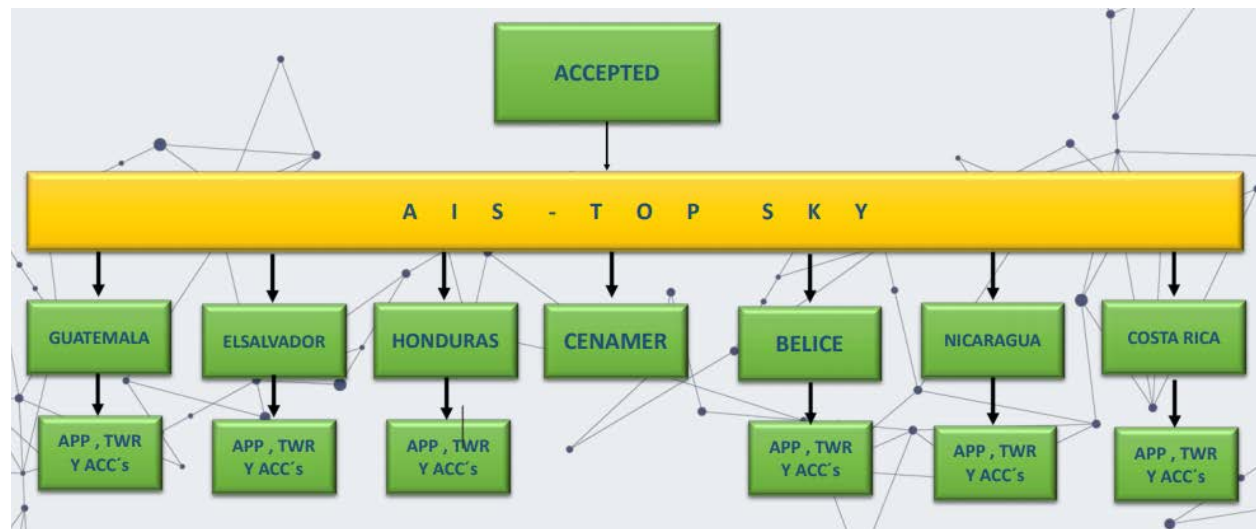
| | |
|---|--|
| <p>functionalities about the new version of the NAM/ICD and its new phases with the CAR States with the aim to providing its standardization in the region.</p> | |
| <p>Why: Because the NAM/ICD implementation in the last years has required an analysis by the suppliers of the CAR States ATC systems, being a project that has required an investment in considerable financial resources for the CAR States, in addition to human resources and time. It is necessary to ensure that the implementation of the NAM/ICD protocol in its next phases will be more efficient and at a lower cost for the CAR States.</p> | |
| <p>When: According with the test results and documentation development by United States.</p> | <p>Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p> |
| <p>Who: <input type="checkbox"/> States <input type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other:</p> | <p>United States</p> |

Agenda Item 3: Follow-up on the Activities to Regionally Minimize Flight Plan Errors

3.1 Under P/06, COCESNA offered details of their flight plan validation software system: ProVIP. The presentation covered the explanation of the phases of implementation, a diagram of how it works, and the benefits it will bring to users.

3.2 ProVIP, developed by COCESNA, aims to ensure the quality of the flight plan information that operate in Central American FIR, streamlining the validation, acceptance and distribution of flight plan data through an initial flight plan validation and its sub-sequences phases.

3.3 ProVIP is a flight plan validation processor. After the ProVIP software validates the flight plan information, flight plans will be addressed to all Aeronautical Information Management (AIM) Offices in the Central America States according with flight plan data using AMHS-AIM Thales system for the different Central America States. The distribution of the information will be according to the following diagram:



3.4 According to COCESNA, ProVIP has many benefits for the Central American FIR, such as better acknowledgment about the status of the operations in the region to eliminate flight plan errors, reduction of the work overload for AIM and Air Traffic control staff and other benefits.

3.5 The Secretariat indicated that it is necessary that COCESNA socializes this new implementation with the adjacent States to avoid failures in the next months when the ProVIP will change it status to operations. Currently there are letters of agreement and operating agreements in this regard.

3.6 In addition, the Secretariat stressed the importance that States specify both the technical and operational contacts for AIDC, to ensure that implementations as ProVIP will operate in a correct manner and every State has the information of the point of contact of the responsible of the AMHS systems and ATC (AIDC) protocols implementation in each State.

3.7 The Rapporteur stressed out the importance of feedback regarding the errors to the airlines, and to this end he suggested that Dominican Republic and COCESNA share the contact lists they have been using for flight plan error feedback to airlines, in coordination with IATA.

3.8 Under WP/04, the Secretariat informed about the actions followed up by the Secretariat about the errors in flight plans caused by the lack of information of the aircraft performance.

3.9 During the last AIDC Task force meeting NAM/CAR States and even SAM States, discussed the need to have a certified database of aircraft technical capabilities, so that this data could be placed in the databases of the control centres in the different States: a single, standardized and certified database to avoid errors in coordination and increase safety in the use of automated protocols. The working paper explained the need for Air Traffic Services (ATS) units to have the correct tools.

3.10 The Secretariat informed that according with the Assembly Resolutions and Decisions during its 219th and 220th Sessions (CWP/14983 and C-WP/15075 refer), the Council agreed that the proposed development of the ICAO online database be pending the identification of resources. At this moment, no further actions from ICAO Headquarters are envisioned.

3.11 Other solution identified by AIDC Task Force was the use of the Aircraft Data (BADA) from Eurocontrol, which was seen as an option to improve the aircraft performance information in the database used by ATS units of the CAR States.

3.12 The Secretariat informed that the ICAO NACC Regional Office carried out a direct coordination with Eurocontrol on this requirement and obtained a positive answer from this organization. Eurocontrol is very pleased to support the region and to provide the corresponding access to each of the States through a designated person, responsible for the access and correct use of this information.

3.13 The link to the BADA web site is <https://www.eurocontrol.int/model/bada> and the BADA access user guide is located at <https://www.eurocontrol.int/sites/default/files/2020-06/badauser-guide-bada-3-4-h.pdf>

3.14 The Secretariat indicated that it is necessary that every CAR State designate the person (s) that will be responsible to update the aircraft performance information in every ATC Control Centre. Each Point of Contact must cover the following steps:

- a) Official designation from the State to the ICAO NACC Regional Office.
- b) After designation, each Point of Contact (PoC) of the States is required to first create a One Sky account, which is a mandatory step to ensure a secure access to the Eurocontrol portal before accessing the BADA User Interface (BUI).
- c) Only official e-mails and organization addresses will be used for the PoC.
- d) The State and the PoC must agree to fulfil the legal obligations for a BADA user, support the access for each State/International Organization and use the BADA information only for outlined data needs.

3.13 The Secretariat recommended that the PoC(s) be the person(s) with the necessary training for the management and configuration of the air traffic centres databases and be responsible for the system database updates.

3.14 The Secretariat recommended that the AIDC Task Force develop a regional procedure to ensure that all ATC databases in the region be updated timely and in a uniform manner. The PoC will be responsible for carrying out the procedure with the aim that all ATCs in the region have the same information on the same day and time.

3.15 Cuba indicated its concern about the reject of Eurocontrol to share the BADA database with them. Cuba informed that the lack of access to the BADA database would have a negative impact in the operation in the region and in the coordination of Cuba with adjacent FIRs. The Secretariat informed that the ICAO NACC Regional Office is working in this issue and will provide information on it in the next weeks.

3.16 In line with the previous discussion, the following decision was adopted by the Meeting:

| CONCLUSION | |
|--|--|
| AIDC/NAM/ICD/03 | Regional procedure and PoC designation |
| <p>What:</p> <p>That, CAR States integrate a regional procedure to ensure that all Air Traffic Control Centres in the region are updated with the last version of the Aircraft Performance according with the Aircraft Database (BADA) from Eurocontrol every time it is needed; in order to ensure this activity,</p> <ul style="list-style-type: none"> a) every CAR State officially designate a Point of Contact (PoC) who will be responsible for integrating the BADA information in its database; b) every CAR State ensure that the PoC complies with the appropriate training on database management and with the development of the responsibilities that this activity requires; c) every CAR State provide the information on the PoC(s) by 30 May 2021; and d) The AIDC Task Force develop a procedure to ensure that all States update their databases in a timely and uniform manner by 30 May 2021. | <p>Expected impact:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical |
| <p>Why: The lack of information about the aircraft performance causes many coordination problems in the implementation of automatize protocols. It is important to solve this deficiency as soon as possible to ensure a safe AIDC and NAM/ICD operations.</p> | |

| | |
|---|---|
| When: 30 May 2021 | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other: | CAR States and the AIDC Task Force |

3.17 Once all PoCs in the region are available, the ICAO NACC Regional Office will coordinate with Eurocontrol a workshop to provide information about the BADA access process to all the PoCs, the user interface, access to the BADA libraries containing BADA data files and documentation, report problems in its ticketing system (BADA Support Application) and on performing basic aircraft performance calculations with the BADA 3 model.

3.18 The ATC Provider indicated its desire to participate in the BADA workshop with the purpose to assist the CAR States in this process. The Meeting welcomed this collaboration.

Agenda Item 4 Analysis of cybersecurity that is applied to databases of Air Traffic Management (ATM) systems

4.1 Under P/02, Indra provided information about the interoperability based on collaborative work, giving an example as iTEC Suite, safe and reliable Air Traffic Management System as a sample of this new type of share information between ANSPs.

4.2 Indra provided information about the interoperability through European collaboration. iTEC is an ATM system collaboratively developed by ENAIRE, DFS, NATS (original ANSPs), LVNL, AVINOR, ORO NAVIGACIJA y PANSAs and Indra as technological partner and supplier.

4.3 The objective is to deliver improved operational performance and increase cost efficiency through the introduction of a common concept of operations based on Single European Sky ATM Research Programme (SESAR), including 4D-trajectory management, airspace structure aligned with FABS and based on common airspace types, system architecture that features improved interoperability via FOs and System Wide Information Management (SWIM), and ATS system with interchangeable ATS components supported by open standards.

4.4 Finally Indra indicated the iTEC ATM benefits, like the increase in capacity by minimizing routine tasks while increasing safety and productivity, interoperability between ATM systems using SESAR data interfaces, and trajectory-based operations reduction of flight diversions, flight time, fuel consumption and CO2 emissions.

4.5 Indra indicated that this solution could be implemented in the region; involving many ANSPs that can obtain regional benefits, improving safety with reduction of cost implementation.

4.6 COCESNA informed that it benefits from the fact that all APP Control Centres of Central American State Members and the ACC Control Centre of Central American FIR (CENAMER) are from Indra. As an evolution of its technology, COCESNA is evaluating the implementation of an iTEC solution for the Central American FIR.

4.7 The Secretariat indicated that it is important to measure this implementation, evaluate its benefits and provide information to assess future study solutions of this type that will benefit the region. This is a project proposal, which COCESNA finds attractive and a report will be presented if implementation takes place. In this regard, COCESNA asked to report on the progress of this solution for Central America in future meetings, indicating the lessons learned that would serve as data for analysis of regional implementations covering future information and exchange solutions for the region.

4.8 Under P/03, Thales shared information on its expertise and new technologies, projects in the Americas, new technologies and capacities integrated to its system, such as cybersecurity and new solution to cover automation, navigation aids and global surveillance.

4.9 Under P/08, Thales presented a summary about the activities developed in the CAR/SAM Regions in the last year. The following are important implementation activities in the CAR Region in the following months, subject to COVID-19 travel restrictions:

- ✓ Aruba: Transition to EFS upgrade planned for Q3 2021.
- ✓ Dominican Republic: NAM Class 2 testing successful early this year and site visit planned for Q3 2021.
- ✓ Mexico: Ongoing modernization for ATC for the Merida FIR.
- ✓ Jamaica: Off-line support provided for Automatic dependent surveillance - contract (ADS-C) / controller-pilot data link communication (CPDLC) configuration. Updated test platform to allow AIDC testing and a planned onsite visit for Q3 2021.

4.10 Under P/04, CyberInflight provided information about ATM database cybersecurity. Cyber-attacks are a global risk and one of the five challenges to face in the next 10 years. They affect economic, environmental, geopolitical, societal and technological aspects of States.

4.11 Regarding aviation, cyber-attacks affect airlines, airports, travel agencies, ANSPs and the Industry in general.

4.12 Cybersecurity is transversal and implies organizations at various levels. In that sense, States and Organizations must incorporate technical, legal, financial, regulatory, cultural and organizational aspects to cover cybersecurity needs.

4.13 Cyber-attack evolution has led to increased investment in cybersecurity by organizations, including companies and organizations working in the aviation sector. Different items for cybersecurity investments: employee awareness and training, regulatory compliance, identity and access management, network security, SOC¹, threat intel, security framework, cloud security, artificial intelligence (AI), block chain, and innovative technologies.

4.14 Concerning cybersecurity splits, airlines have started to seize the importance of cybersecurity training and awareness, which is rightly the most important item in terms of budget. Regulatory compliance is one compulsory investment (for GDPR² in particular). Regulations translate into increased spending to protect passenger data.

¹ SOC: Security Operation Centre

² General Data Protection Regulation

4.15 With regard to AIDC protocol and data security, the protocol allows to manage a wide range of key ATM data such as aircraft related information, route related information and it uses specific operational sequences according with the operations and coordination messages.

4.16 Due to the fact AIDC works based on data, the general approach for database security must have to be implemented to cover confidentiality, integrity and availability. Every attack comes down to the loss of the one or more of these factors. Some of the following recommendations must be put in place to ensure database security:

| Recommendation | Example of Cyber-attack |
|---|--|
| Only authorized users and processes should be able to access or modify data. | data breach, leak, exfiltration, espionage, APT, eavesdropping, man-in-the-middle etc. |
| Data should be maintained in a correct state and Nobody should be able to improperly modify it, either accidentally or maliciously. | interception, manipulation, data compromising, MITM, encryption, ransomware, etc |
| Authorized users should be able to access data whenever they need to do so | Denial of Service, DDOS (distributed), protocol sequence attack, NTP attack (timestamp), |

4.17 Some Cybersecurity basics for databases (based on national security agency guidelines):

- ✓ **INFRASTRUCTURE ISOLATION;** ATM world is already used to isolation of sensitive information. The degree of isolation should be clearly defined.
- ✓ **DATA MAPPING & TAGGING:** Identification and categorization of data. A mapping allows to have a clear view of your set of data and to know exactly how widely they can be spread. A technical inventory of accesses will help to draw potential attack scenarios.
- ✓ **ENCRYPTION:** Encryption of data based on a set of parameters: sensitivity, usage, performance, volume, lifetime, spread etc. Encryption allows avoiding the publication of confidential data by ransomware groups on the Dark Web.
- ✓ **BACKUP & LOGGING:** The simplest way to retrieve data encrypted by a ransomware. Frequency and scope of backups to be clearly defined. Efficient logs can allow to detect suspicious activities early.
Among other solutions: Authentication, SOC, SIEM, threat intelligence, regulatory compliance, awareness & training, cloud security, AI, etc.

4.18 Finally, under the P/04, Cyberinflight referred to the ICAO documents and Standards and Recommended Practices (SARPs) and guidance materials (Doc 8973), considered them at high-level and commenting that there is an urgent need for more specific guidance that can be applied by States.

4.19 Cybersecurity is a topic that should be included in the security culture through the training delivered to the staff of the air transport ecosystem.

4.20 The establishment of a global trust framework would definitely improve safety and resilience of air traffic management and aircraft operations. With A40-10 resolution, ICAO has taken one of the most significant steps toward a cyber-secure airspace.

Agenda Item 5 Flight and Flow - Information for a Collaborative Environment (FF-ICE)

5.1 Under P/07, the Secretariat presented a summary on the new version of the Global Air Navigation Plan (GANP) and Flight and Flow for a Collaborative Environment (FF-ICE) part of the Aviation System Block Upgrade (ASBU) thread, identifying it as the thread that corresponds to the activities of the Task Force, both AIDC and Flight Plan processing.

5.2 Each of the modules was reviewed, outlining their purpose, the new capabilities introduced and the maturity level achieved up to date. Since the Block 0 element is the implementation of AIDC, this element is the only one ready for implementation. Most of the elements are in validation process, meaning that they have to cover other activities until the element is ready for implementation. The last three elements are in concept as maturity level.

5.3 The FICE Module and its elements are the point of interest of the AIDC Task Force, each element has the following maturity level:

| Block | Element | Maturity Level |
|-----------|---|--------------------------|
| FICE-B0/1 | Automated basic inter facility data exchange (AIDC). | Ready for implementation |
| FICE-B2/1 | Planning Service | Validation |
| FICE-B2/2 | Filing Service | Validation |
| FICE-B2/3 | Trial Service | Validation |
| FICE-B2/4 | Flight Data Request Service | Validation |
| FICE-B2/5 | Notification Service | Validation |
| FICE-B2/6 | Publication Service | Validation |
| FICE-B2/7 | Flight management service for higher airspace operations | Validation |
| FICE-B2/8 | Flight management service for low-altitude operations | Validation |
| FICE-B2/9 | Flight management support for inflight re-planning | Validation |
| FICE-B3/1 | Flight management services for enhanced trajectory operations | Concept |
| FICE-B4/1 | Integrated flight management system for end-to-end global flight planning | Concept |
| FICE-B4/2 | Real-Time Participation of operators in flight | Concept |

5.4 The presentation pointed out that the level of implementation of AIDC in the region is around 70% of FICE-B0/1 AIDC. The NAM/CAR are the only ICAO regions with implementation of AIDC and NAM/ICD automation protocols; the Central American FIR is using AIDC/PAC protocol not only for ACC coordination, but also for APP-ACC coordination.

5.5 The Secretariat emphasized the need to improve safety in coordination between the CAR and SAM Regions using AIDC and to resume the testing of many connections between the CAR States postponed due the COVID-19 pandemic.

5.6 A review of the GANP performance objectives and Key Performance Indicators (KPIs) was offered, as well as a list of activities for the AIDC Task Force stemming from the adoption of the new GANP version 6.

GANP-KPI: Key Performance Indicator

| | |
|--|-------------------------------------|
| KPI01 Departure punctuality | KPI11 Airport throughput efficiency |
| KPI02 Taxi-out additional time | KPI12 Airport/Terminal ATFM delay |
| KPI03 ATFM slot adherence | KPI13 Taxi-in additional time |
| KPI04 Filed flight plan en-route extension | KPI14 Arrival punctuality |
| KPI05 Actual en-route extension | KPI15 Flight time variability |
| KPI06 En-route airspace capacity | KPI16 Additional fuel burn |
| KPI07 En-route ATFM delay | KPI17 Level-off during climb |
| KPI08 Additional time in terminal airspace | KPI18 Level capping during cruise |
| KPI09 Airport peak capacity | KPI19 Level-off during descent |
| KPI10 Airport peak throughput | |

5.7 Among the attendees was the Secretary for the ICAO Air Traffic Management Requirements and Performance Panel, who informed the Meeting that work was being done on a global AIDC implementation Guidance Document, as well as an amendment to certain documents and procedures for air navigation services (PANS), such as Doc 4444, to take into account the use of FF-ICE, applicable by 2024.

5.8 ICAO informed the Meeting that Doc 9965, *Manual on Flight and Flow Information for a Collaborative Environment (FF-ICE)*, was to be divided into several sections to address concept and implementation guidance separately.

5.9 The Rapporteur reviewed with the Meeting the regional procedure developed by the Task Force, and related it to how ICAO Doc 9965 devises flight plan data exchange under FF-ICE, explaining that, while technology is not yet available for FF-ICE, at least the paradigm and processes used today can emulate the future procedures as a way of initiating adaptation.

Agenda Item 6 Alignment of the NAM/CAR Air Navigation Implementation Working Group (ANI/WG) AIDC Task Force with the Programme of GREPECAS

6.1 Under WP/05, the Secretariat highlighted the adoption of the Global Air Navigation Plan (GANP) version 6, and the concerns raised by the NAM/CAR Air Navigation Implementation Working Group (ANI/WG) in 2019, as well as the GREPECAS Programmes and Projects Review Committee (PPRC) in 2020, regarding the alignment of regional plans and activities to the objectives established in the GANP.

6.2 In further meetings of the PPRC regional priorities were agreed, one of them being AIDC implementation, as well as the evaluation criteria of the regional projects maintained by the CAR/SAM Planning and Implementation Regional Group (GREPECAS).

6.3 The Secretariat continued indicating the responsibilities of the AIDC Task Force in certain activities included in GREPECAS Project C, which were reviewed by the Meeting to evaluate their status and validity, and included in **Appendix D** to this report.

6.4 The role of the AIDC Task Force in supporting the FF-ICE, as well as in the collaborative work with the other Task Forces regarding regional objectives was also mentioned.

6.5 ICAO mentioned other activities influential to the advancement of FF-ICE, such as the trials carried out by Cuba, United States and COCESNA for the transmission of Extensible Markup Language (XML) messages through Aeronautical message handling systems (AMHS), as well as the transformation of the MEVA in a new network to accommodate current and future requirements, to be renamed CANSNET.

6.6 The working paper stressed out the importance of updating actions plans and aligning them with common goals that result in regional benefit, and put forward the objective of the ANI Working Group to have the regional plan and Task Forces’ action plans updated by the end of this year.

6.7 According to the discussion, the following decision was made by the Meeting:

| | |
|---|---|
| DECISION | |
| AIDC/NAM/ICD/04 | |
| Development of the Flight and Flow Information for the cooperative environment (FF-ICE) and assessment of Key Performance Indicator (KPI) | |
| What: | Expected impact: |
| That, as the ANI/WG Task Force is the regional implementation arm of the GREPECAS Projects, and the AIDC Task Force part of the ANI/WG responsible for analyzing and providing implementation guidelines for elements of Flight and Flow in a Collaborative Environment (FF-ICE), the AIDC Task Force | <input type="checkbox"/> Political / Global |
| | <input checked="" type="checkbox"/> Inter-regional |
| | <input type="checkbox"/> Economic |
| | <input type="checkbox"/> Environmental |
| | <input checked="" type="checkbox"/> Operational/Technical |
| a) conduct an assessment of its action plan and indicate | |

| | |
|---|--|
| <p>the activities that are still valid by 30 December 2021;</p> <p>b) conduct an evaluation of the FF-ICE together with the other ANI/WG Task Forces to validate its regional implementation; and</p> <p>c) evaluate the KPI listed in the new version of the GANP and propose the KPI that will measure the future FICE elements implementation by 30 December 2021.</p> | |
| <p>Why: Establishing the requirements for the exchange of information on the elements of the FF-ICE is important for the region, it is necessary to establish the implementation of different ASBU elements to achieve operational objectives and with key performance indicators to better measure its implementation and benefit.</p> | |
| <p>When: 30 December 2021</p> | <p>Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p> |
| <p>Who: <input type="checkbox"/> States <input type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other:</p> | <p>AIDC Task Force</p> |

Agenda Item 7 Other Business

7.1 No other business were discussed.

**APPENDIX A
EXECUTIVE LIST OF DECISIONS**

| Number | Conclusion/Decision | Responsible for action | Deadline |
|-----------------|---|------------------------|---|
| AIDC/NAM/ICD/01 | Implementation of the automated AIDC and NAM/ICD protocols | | |
| | That, as the implementation of the automated AIDC and NAM/ICD protocols is a priority for the NAM/CAR Regions and it is necessary to ensure an appropriate implementation and a high level of correct coordination between ATC control centers the AIDC Task Force evaluate the valid conclusion and provide an action plan by June 2021. | AIDC Task Force | June 2021 |
| AIDC/NAM/ICD/02 | Coordination with United States to improve NAM/ICD implementation | | |
| | <p>That, as the implementation of NAM/ICD protocol in CAR States to ensure coordination with United States in the last years has been a time-consuming activity because the Control Centres of the CAR States do not have this functionality and its implementation has required an update of the software of the control centres, United States</p> <ul style="list-style-type: none"> a) provide to the CAR States the new version of the NAM/ICD document protocol (Version F) and results of the operational test and agreements between the State and Canada; and b) be open to discuss technical and operational functionalities about the new version of the NAM/ICD and its new phases with the CAR States with the aim to providing its standardization in the region. | United States | According with the test results and documentation development by United States. |
| AIDC/NAM/ICD/03 | Regional procedure and PoC designation | | |

| Number | Conclusion/Decision | Responsible for action | Deadline |
|-----------------|--|--------------------------------|-------------|
| | <p>That, CAR States integrate a regional procedure to ensure that all Air Traffic Control Centres in the region are updated with the last version of the Aircraft Performance according with the Aircraft Database (BADA) from Eurocontrol every time it is needed; in order to ensure this activity,</p> <ul style="list-style-type: none"> a) every CAR State officially designate a Point of Contact (PoC) who will be responsible for integrating the BADA information in its database; b) every CAR State ensure that the PoC complies with the appropriate training on database management and with the development of the responsibilities that this activity requires; c) every CAR State provide the information on the PoC(s) by 30 May 2021; and d) The AIDC Task Force develop a procedure to ensure that all States update their databases in a timely and uniform manner by 30 May 2021. | CAR States and AIDC Task Force | 30 May 2021 |
| AIDC/NAM/ICD/04 | Development of the Flight and Flow Information for the cooperative environment (FF-ICE) and assessment of tKey Performance Indicator (KPI) | | |

| Number | Conclusion/Decision | Responsible for action | Deadline |
|--------|--|------------------------|------------------|
| | <p>That, as the ANI/WG Task Force is the regional implementation arm of the GREPECAS Projects, and the AIDC Task Force part of the ANI/WG responsible for analyzing and providing implementation guidelines for elements of Flight and Flow in a Collaborative Environment (FF-ICE), the AIDC Task Force</p> <ul style="list-style-type: none"> a) conduct an assessment of its action plan and indicate the activities that are still valid by 30 December 2021; b) conduct an evaluation of the FF-ICE together with the other ANI/WG Task Forces to validate its regional implementation; and c) evaluate the KPI listed in the new version of the GANP and propose the KPI that will measure the future FICE elements implementation by 30 December 2021. | AIDC Task Force | 30 December 2021 |

APPENDIX B

NAM/CAR AIR NAVIGATION IMPLEMENTATION WORKING GROUP (ANI/WG) TASK FORCES FIRST AERONAUTICAL INFORMATION MANAGEMENT (AIM), FLIGHT PLAN (FPL) ERROR MANAGEMENT AND AIR TRAFFIC SERVICES INTER- FACILITY DATA COMMUNICATION (AIDC) MEETING AIM/FPL/AIDC/1 2017

**DECISION
AIM/FPL/AIDC/6**

IMPLEMENTATION OF THE FLIGHT PLAN PROCESSING PROCEDURE

That, the States in the NAM/CAR Regions adopt the flight plan processing procedure described in Attachment 1 to this report, and propose its inclusion in the ICAO Doc 7030 - *Regional Supplementary Procedures* by the end of July 2018.

2.4. An important aspect covered was that of feedback. Airlines and Air Navigation Service Providers (ANSPs) informed of a lack of feedback between themselves. The fact that most airline systems can respond to reject messages under a specific format was pointed out. These rejection or acknowledge messages are described in a document from the Federal Aviation Administration of United States, which was sent to the group. Cuba and COCESNA have also defined formats for rejection messages. The Meeting agreed to review and use these message formats as a reference for future updates and implementations, to allow systems to automatically send feedback to the airlines in a format that they can accept, and thus receive answers to any detected errors. Furthermore, to address the need of alternate means of each party having a direct contact with each other to handle any flight plan issues, the publication of updated contact information for both airlines and ANSPs was agreed,

using the NAM/CAR Air Navigation Implementation Working Group (ANI/WG) AIDC Task Force web page (<https://www.icao.int/NACC/Pages/regional-group-AIDC.aspx>) as a repository. From this discussion the following draft decision was adopted:

**DECISION
AIM/FPL/AIDC/7**

MONITORING AND REPORTING ERRORS IN FLIGHT PLANS

That,

- a) States and operators provide feedback to each other on the quality of flight plans processed by means of direct contact, automated systems, regular teleconferences and/or any other means deemed feasible; and
- b) States/International Organizations provide the information of the point of contact, who will be in charge of the quality of flight plan processing and of the report of the FPL errors for the other States by January 2018.

DECISION
AIM/FPL/AIDC/1/8

IMPROVED FEEDBACK BETWEEN AIRLINES AND ATS UNITS

That,

- a) IATA update the contact list for the airlines, in which to include Aeronautical Fixed Telecommunication Network (AFTN)/Aeronautical Message Handling System (AMHS) addresses, e-mail addresses and/or phone numbers for the entity responsible for handling flight plan errors, for uploading to the ANI/WG AIDC Task Force web page (<https://www.icao.int/NACC/Pages/regional-group-AIDC.aspx>), by 30 November 2017;
- b) the FPL Monitoring Group of the AIDC Task Force create an ANSPs contact list for, in which to include AFTN/AMHS addresses, email addresses and/or phone numbers for the entity responsible for handling flight plan errors, for uploading to the AIDC Task Force web page, and also update the Aeronautical Information Publication (AIPs) of each State accordingly, by 1 December 2017;
- c) the FPL Monitoring group review and recommend the use of the reference of the Rejection Message (REJ/ACK) guidance from Cuba, United States and COCESNA, and for future updates and implementation of flight plan processing systems, by 8 December 2017;
- d) the FPL Monitoring Group create a guidance document for determining which circumstances require a rejection of flight plans and which does not, by 15 December 2017;
- e) States consider and carry out user teleconferences with the participation of air navigation personnel as deemed necessary; and
- f) the FPL monitoring group promote and carry out regional user teleconferences to follow up on pertinent issues.

DECISION
AIM/FPL/AIDC/1/9

REGIONAL PROCEDURE DRAFT FOR FLIGHT PLAN PROCESSING

That,

- a) IATA send a survey to airlines to determine flight plan processing systems capabilities;
- b) the Rapporteur of the ANI/WG AIDC Task Force FPL monitoring group send a survey to ANSPs to determine flight plan processing systems capabilities by 11 December 2017;
- c) States and airlines discuss and agree on the use of ATS messages, in the light of the capabilities of the systems as identified in items a) and b) of Draft Decision AIM/FPL/AIDC/1/8 - *IMPROVED FEEDBACK BETWEEN AIRLINES AND ATS UNITS*, by 30 March 2018);
- d) States and airlines, which will be selected, carry out trials as proof of concept of the regional procedure, by means of bilateral agreements, by 29 June 2018;
- e) States review and publish the addresses to which airspace users should send flight plans, taking into account the capabilities of their systems and in accordance with the regional procedure, by 28 September 2018; and
- f) the FPL Monitoring Group propose the resulting procedure for flight plan processing, based on the discussed procedure and considering the results of items c) and d) of this decision, to be the regional procedure, and request its publication in Doc 7030 - *Regional Supplementary Procedures*, by 28 September 2018.

DECISION
AIM/FPL/AIDC/11

MAINTENANCE OF THE AIRCRAFT TYPE DATABASE

That, States:

- a) update aircraft type data; and
- b) develop a procedure to allow timely update of this data.

Meeting of Implementation of AIDC in the NAM/CAR/SAM Regions 2018

RECOMMENDATION AIDC/1.- Increase efforts to complete AIDC operational implementation

That NAM/CAR/SAM States, taking into account the information provided by the GREPECAS GTE that shows the significant contribution of AIDC to the reduction of LHDs, increase their AIDC implementation efforts, aiming at the operational implementation of AIC systems. Likewise, that States, through their task forces, promote the exchange of lessons learned regarding AIDC implementation.

RECOMMENDATION AIDC/2.- Consider the recommendations of manufacturers and States regarding AIDC implementation

That NAM/CAR/SAM States examine and use as a reference the document containing the integrated recommendations made at the Meeting by Indra Systems, Thales, and ATECH, which is shown in Appendix D of the Meeting Report, as well as the weaknesses identified by the regional AIDC implementation working groups, with a view to expediting and coordinating the implementation of AIDC interconnections.

RECOMMENDATION AIDC/3.- List of AMHS staff

That the NAM/CAR/SAM States update the contact information of the AMHS technicians of their States/FIRs to have an updated version of the AMHS technical management contact list and that the ICAO NAM/CAR and SAM Offices ensure that this information is available on their WEB pages with the aim of obtaining an updated version to coordinate, as soon as possible, any necessary action with those centers with which messaging is exchanged and traffic is permanently monitored, establishing maximum time between consecutive messages processed, as well as how to check permanently reports of non-delivery reports (NDR) generated by messaging systems, mainly those that are not related to unknown addresses.

RECOMMENDATION AIDC/5.- ATC database configuration

That NAM/CAR/SAM States apply mechanisms to validate and verify the information contained in the databases of their control centres and aeronautical messaging systems, taking into account AIP current data, ICAO standards, and changes to information addressing, in accordance with AMC tables, in order to allow systems to properly manage their security alarms and properly validate flight plans.

RECOMMENDATION AIDC/6.- Measures on aeronautical information for the mitigation of errors in flight plans and support for automation

That the NAM/CAR/SAM States, without prejudice to the national regulations for compliance with Annex 15 and Doc. 8126, establish activities that guarantee that the relevant aeronautical information of the State is available to users involved in the preparation of flight plans and/or in the management of automated ATS systems, and that said States, when planning amendments in the aeronautical information, carry out coordination and communications as soon as possible with the other States and users involved.

RECOMMENDATION AIDC/7.- Data base of the technical characteristics (performance) of the aircraft

That ICAO complete the information already available on the ICAO website (<https://www.icao.int/publications/DOC8643/Pages/Search.aspx>) with the necessary characteristics to possess the integrated and validated information of the technical characteristics of the aircraft (performance) that would allow the States to perform the correct configuration of the databases of their ATC systems, since this information is essential for the systems to perform the correct calculation of the trajectory of the aircraft, that they operate correctly the alerts of prediction/avoid conflicts (Safety nets), as well as impel the correct operation of the AIDC and of the based tracks on flight plan and performance of the aircraft.

RECOMMENDATION AIDC/8.- Activities for the implementation of FF ICE and Cybersecurity

Taking into account the future impact involved in the implementation of the FF ICE, that the NAM/CAR/SAM States complete the implementation activities of the AIDC, the digitization of the aeronautical information and the exchange thereof, as well as the implementation of the networks digital IP. Also, analyze the impact of cyber threats in these digital environments in all areas of air navigation, and participate actively in meetings, seminars and workshops of ICAO on this subject, in order to achieve the required harmonization and maintain necessary operational security.

NAM/CAR Air Traffic Services Inter-facility Data Communication (AIDC) and North American Interface Control Document (NAM/ICD) Implementation Follow-up Meeting

| | |
|---|--|
| DECISION | |
| AIDC/NAM/ICD/D/01 | TECHNICAL/OPERATIVE TRAINING PROFILE FOR THE USE OF THE AIDC |
| What: That, to respond to the need that technical and operative personnel who participate in the implementation of the automatized protocols have the suitable knowledge for leading in a better way its implementation and operation was identified, Cuba and COCESNA develop a training profile that covers this matter, by 30 August 2019. | Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical |
| Why: It will have an impact in future implementations. It will support the Region for the States that are already working in the implementation of these protocols can learn of the experience of other States. | |
| When: 30 August 2019 | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO <input type="checkbox"/> Other: | Cuba and COCESNA |

| | |
|--|--|
| DECISION | |
| AIDC/NAM/ICD/D/02 | PROPOSAL OF A REGIONAL AGREEMENT FOR 6 CHARACTERS IN SID AND STAR NAMES |
| What: That the AIDC Task Force will prepare a proposal on a regional agreement for NAM/CAR States to apply 6 characters for SID and STAR designators, in coordination with the AIM Task Force for opinions and comments, for its presentation in the ANI/WG meeting. | Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical |
| Why: Because for avionics limitations, airline operators cannot use SID and STAR designators of more than 6 characters, causing conflicts with States' databases that use 7 characters. Furthermore, to facilitate the configuration of the ATC Systems configuration, harmonizing only one name for each procedure. | |
| When: ANI/WG Meeting, May 2019 | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input type="checkbox"/> States <input type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other: | AIDC Task Force |

| | |
|--|--|
| DECISION | |
| AIDC/NAM/ICD/D/03 | PROBLEM OF THE LACK OF AVAILABILITY OF THE PERFORMANCE DATA OF AIRCRAFT TYPES FOR UPDATING ATC SYSTEMS DATABASES |
| What: That, in order that the States have at their disposal the performance data of the types of aircraft and that these be kept updated in the databases of their systems, Cuba, United States and COCESNA prepare a working paper that explains the risks that produces this situation and proposes solutions to it, to be presented in the next ANI/WG Meeting for its possible presentation by a Member State in the next ICAO Assembly. | Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input type="checkbox"/> Operational/Technical |
| Why: Because the lack of updated aircraft performance data represents a safety risk, since the systems cannot accurately project the trajectories of aircraft without this data. | |
| When: ANI/WG Meeting | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO <input type="checkbox"/> Other: | Cuba, the United States and COCESNA |

| | |
|---|--|
| DRAFT CONCLUSION | |
| AIDC/NAM/ICD/C/01 | MECHANISMS TO UPDATE ATC SYSTEMS DATABASES |
| What: <p>That States ensure, in the short-term, the review of their ATC databases and the updating of the information of the different elements with the objective of having the latest information in force and to ensure the homogeneity of the information in the different control centres.</p> | Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical |
| Why: <p>The lack of a correct updating of the information in the databases creates failures in the automatization, diminishing safety.</p> | |
| When: No later than December 2019. | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO <input type="checkbox"/> Other: | |
| CONCLUSION PROJECT | |
| AIDC/NAM/ICD/C/02 | REGISTRY OF THE FUNCTIONALITIES OF THE FLIGHT PLAN TREATMENT SYSTEMS |
| What: <p>That,</p> <p>a) the States report to the AIDC Task Force Rapporteur which functionalities have their flight plan treatment systems, which functions they have, how is the parameter processing operator with the new plan format in order to identify operational incompatibilities and weaknesses in the standardization of coordination by 30 November 2019; and,</p> <p>b) the Group Rapporteur prepare an analysis of the provided information by 10 January 2019.</p> | Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input type="checkbox"/> Operational/Technical |
| Why: <p>The difference with which the systems process and validate the flight plan data can produce rejections of the same, producing situations of safety risk.</p> | |
| When: Data gathering no later than 30 November 2019; results presentation by 10 January 2020. | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other: | |
| Rapporteur | |

| | |
|--|--|
| DRAFT CONCLUSION | |
| AIDC/NAM/ICD/C/03 | CASES OF DIFFERENCES IN THE INTERPRETATION OF ICAO DOCUMENTS FOR THE FLIGHT PLANS PROCESSING |
| What: <p>That the States consult the AIM Task Force cases where the interpretation of ICAO documents related to flight plans that are not sufficiently explicit and clear in order to solve flight plan processing problems, by 30 November 2019..</p> | Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical |
| Why: <p>There are errors in flight plans produced because systems process them differently, based on interpretations of ICAO documents, and therefore require clarification.</p> | |
| When: November 2019 | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input type="checkbox"/> Other: | |

Third NAM/CAR Air Traffic Services Inter-facility Data Communication (AIDC) and North American Interface Control Document (NAM/IDC) Implementation Follow-up Meeting (AIDC/NAM/ICD/3) 2020

| | |
|--|--|
| DECISION | |
| AIDC/NAM/ICD/3/1 | COORDINATE TELECONFERENCES BETWEEN AIRSPACE USERS AND STATE PERSONNEL FOR DISCUSSING AND CORRECTING FLIGHT PLAN ERRORS. |
| What: <p>That the FPL Monitoring Group coordinate teleconferences with the airspace users, with the presence of any local personnel considered pertinent (AIM manager, ATM manager, CAA, etc.), in order to establish a communication channel with the users for the purpose of correcting flight plan errors.</p> | Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical |
| Why: <p>Because feedback with the user has proven effective in the reduction of flight plan errors.</p> | |
| When: Determined from teleconference with group. | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other: | FPL Monitoring Group and States |

| | |
|--|---|
| CONCLUSION | |
| AIDC/NAM/ICD/3/2 | DEVELOP A WEB PAGE UNDER THE ICAO WEB PAGE DEDICATED TO INFORMATION RELATIVE TO AIDC IMPLEMENTATION. |
| What: That ICAO update AIDC TF Web page Including: <ol style="list-style-type: none"> 1. information relevant for the implementation of AIDC, such as lessons learned, implementation status, and benefits obtained; 2. training opportunities; 3. mission information; and 4. any other relevant information. | Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical |
| Why: This information can serve as a reference for those States that will begin or are beginning the process of AIDC implementation, and thus ease the process. | |
| When: May 15, 2020 to send the design of web page. Comments received till June 15. | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input type="checkbox"/> Other: | ICAO |

| | |
|--|--|
| DECISION | |
| AIDC/NAM/ICD/3/3 | OBTAIN A LIST OF CONTACTS OF THE RESPONSIBLE ENTITIES FOR AIDC PROTOCOL DEVELOPMENT |
| What: That in view that is important to obtain a list of contacts for the entity responsible of developing the AIDC protocols (ASIA PAC, NAM) used in the region, <ol style="list-style-type: none"> a) the AIDC Task Force to obtain the point of contact of the different NAM/CAR States by 30 May, 2020; and. b) ICAO to update and put this information available by 30 June 2020. | Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical |
| Why: To allow industry and States to consult any doubts in the interpretation of the ICDs, and be notified of any updates or changes in these protocols. | |
| When: June 30, 2020 | Status: <input type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other: | AIDC Task Force and ICAO NACC |

| CONCLUSION | |
|--|--|
| AIDC/NAM/ICD/3/4 | STATES' AND INDUSTRY AIDC SUBJECT MATTER EXPERTS CONTACT LIST |
| What: Who? to obtain a list of subject matter experts' contacts from States that have successfully implemented AIDC, as well as industry, and have this published in the AIDC Task Force website. | Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input type="checkbox"/> Operational/Technical |
| Why: This will allow States that are implementing AIDC to discuss the necessary topics to take into account for developing the specifications for their systems, as well as to assist with the implementation process. | |
| When: June 30, 2020 | Status: <input type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other: | AIDC Task Force and ICAO NACC |

| DECISION | |
|--|---|
| AIDC/NAM/ICD/3/5 | DEVELOPMENT OF AN AIDC TRAINING PROFILE FOR THE NACC REGION |
| What: That AIDC subject matter experts from the States that have implemented AIDC submit suggestions on a non-system specific AIDC training profile to the AIDC Task Force Rapporteur, based on their experience of implementation; this proposed profile to be presented to the NACC Working Group meeting in September 2020. | Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical |
| Why: Because AIDC training, apart from specific system training, is scarce in the region, and the lack of training is an important factor affecting AIDC implementation. | |
| When: August 7, 2020 | Status: <input type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input type="checkbox"/> States <input type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other: | AIDC Task Force |

| CONCLUSION | |
|--|---|
| AIDC/NAM/ICD/3/6 | IDENTIFICATION OF ATC AND FLIGHT PLAN SYSTEMS' DIFFICULTIES FOR DATABASE UPDATES |
| <p>What:</p> <p>That States identify and submit to the AIDC Task Force Rapporteur any difficulties encountered with updating the databases of their ATC and flight plan processing systems, in order to evaluate the possible solutions to these difficulties.</p> <ol style="list-style-type: none"> 1. Each State to provide this information with the actual problems by 30 June 2020. 2. Every time that States find information about it, it will be addressed to the AIDC Task Force. | <p>Expected impact:</p> <p><input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical</p> |
| <p>Why:</p> <p>Because differences in ATC and flight plan processing systems are a source of errors that impact AIDC operation.</p> | |
| <p>When: June 30, 2020</p> | <p>Status: <input type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p> |
| <p>Who: <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other:</p> | <p>States and AIDC Task Force</p> |

APPENDIX C

**AIDC TRAINING
DESIGN PROFILE**

Contents

| | |
|--|---|
| 1. Introduction | 3 |
| 2. Training | 3 |
| 2.1 Importance of Training | 4 |
| 2.2 Training Benefits | 4 |
| 2.3 Training Objectives | 4 |
| 2.4 Training needs | 5 |
| 3. Training programme | 5 |
| 3.1 Training needs for AIDC | 5 |
| 3.2 Training needs inventory | 5 |
| 3.3 Training planning | 6 |
| 3.4 AIDC Training Syllabus | 6 |
| 4. Training Performance | 7 |
| 5. Goals Evaluation and Feedback | 8 |

1. Introduction

Training is very important to achieve the mission and objectives of any company, as currently progress in science, technology, the growth of organizations and the increasing demand of customers make individuals within organizations are constantly undergoing learning processes that lead them to be updated or prepared for a future in the short, medium and long terms. The continuous preparation is achieved through an effective training system.

The implementation of automated coordination systems (using AIDC and NAM/ICD protocols)¹ are actors that require a training process definition that specifies the tasks to be performed, implementation responsibilities, evaluation performance to ensure achieve the objective established by the organization (approach ATS unit, Area Control Centre, among others).

The word training has many meanings. Some staff Managers consider training as a means to develop the labor force in the positions held. Others interpret it more broadly and conceive training as a means to achieve adequate performance in the position and extend the concept to an intellectual leveling achieved through general education. From birth to death, human beings live in constant interaction with the environment, receiving influences and influencing their relations with it.

Education is any influence that human beings receive from the social and professional environment during their existence in order to adapt to the social norms and values in force and accepted. The professional equation, institutionalized or not, prepares personnel for professional life.

It comprises three interdependent but perfectly differentiated stages:

- a) Professional Training: Prepares the person to exercise a profession.
- b) Professional Development: Perfects the person for a career within a profession.
- c) Training: Adapts the person to fulfill a position or function.

2. Training

Training can be defined as a learning process that allows to a person to acquire and/or develop knowledge, abilities and skills to improve attitudes towards work, in order to prepare them for efficient job performance.

Training is essential to ensure satisfactory job performance, and it is a fundamental tool for career plans, transfers, promotions and changes brought about by new technologies.

Organizational development is a complex educational effort aimed at changing attitudes, values, and behaviours; in such a way that it can better adapt to new situations, markets, problems and challenges that arise, it is a dynamic process that seeks organizational efficiency and effectiveness (Chiavenato, 1981)².

¹ Asia/pacific Regional Interface Control Document (ICD) for ATS Interfacility data communications (AIDC) and North American (NAM) Common Coordination Interface Control Document (ICD)

² Human Resources Management, the human capital of Organizations (Idalberto Chiavenato).

Therefore, it can be affirmed that the importance of an efficient training system lies in the fact that it allows the company's personnel to perform their activities with the level of efficiency required by their positions, which consequently contributes to their self-realization and the achievement of organizational objectives.

2.1 Importance of Training

Training can be essential to ensure a satisfactory performance of the job, and it is also a fundamental tool to carry out career plans, transfers, promotions and changes originated by new technologies; in this case, the implementation of automated AIDC and NAM/ICD protocols, among air traffic agencies.

Likewise, training is oriented to achieve organizational development, and it is therefore necessary to prepare the employees involved, such as:

- a) Aeronautical station personnel
- b) Controller planner or assistant
- c) Executive Controller
- d) ATS Supervisors/Instructors
- e) ATS systems and database administrators
- f) AMHS-AFTN routing systems administrator
- g) Control centre technical support personnel

In order for them to be able to perform the functions required by these protocols, i.e. to understand the different types of messages that are used, to interpret them correctly, to make the appropriate decisions for the execution of operations and to guarantee the continuity and security of operations.

2.2 Training Benefits

Among the benefits obtained through a training programme are the following:

- a) Improved systems and work methods.
- b) Reduces operational errors.
- c) Improved service to operators.
- d) Improves the management of shift personnel by reducing the workload.
- e) Achieves harmonization of functions among controllers.
- f) Reduction in operational errors and ATS incidents.

2.3 Training Objectives

- a) Train technical/operational staff to perform the various tasks associated with the AIDC.
- b) Provide personnel with the necessary skills to optimize their performance in their jobs.
- c) Change the reluctance to change through the exchange of experiences learned in the use of the AIDC and the benefits it provides.

2.4 Training needs

In this case, the modification or the insertion of a new proposed method of work, i.e. from a manual method or coordination by oral means (ATS channels), to an automated one (AIDC or AM/ICD). Prior training of the collaborators (ATM and technical staff) in the new working methods is necessary.

This is the primary reason for training needs diagnose.

3. Training programme

The proper scheduling of activities related to training programming is important, in order to define the most relevant aspects to be highlighted.

After identification training needs, the training programming is systematized and based on the following aspects:

- What is the need?
- Where was it identified?
- Does it occur in another area or sector?
- What is its cause?
- Is it part of a larger need?
- How can it be satisfied?
- Is the need permanent or temporary?
- How many people and how many services will it reach?
- What is the time available for training?
- What is the likely cost of the training?
- Who will deliver the training?

3.1 Training needs for AIDC

It is a difference between the requirements demanded by the position and the current skills of its occupant, i.e. the new requirements that will be demanded for the development of new operations processes versus those that the employee currently has, for example to change coordination from a voice channel coordination environment to a mixed one (automated and oral).

3.2 Training needs inventory

It is the identification of who is involved, the personnel who will receive the training, the instructor, the methods to be used, the estimated duration and the place where the activities will take place.

The training needs inventory shall provide the following information to design the training programme:

- What should be taught? AIDC Protocol
- Who should learn? Technical-operational personnel

- When should it be taught? Estimated expected duration
- Where should it be taught? Physical facilities, classroom, simulator
- How should it be taught? Methodologies to be used, face-to-face, virtual
- Who should teach? Facilitator

3.3 Training planning

It consists of the planning of the activities to be carried out, which should contain aspects such as:

- a) Clear definition of the training objective: understanding, configuration, interpretation and use of the AIDC protocols to carry out coordination between ATS units. (depending on the case, technical or operational).
- b) Determine the training content: origin, conceptualization, implementation, benefits, practice in a simulated environment, etc.

3.4 AIDC Training Syllabus

- 1 Infrastructure and physical connections
- 2 Reference documentation
- 3 Introduction to the flight plan template
- 4 AIDC messaging
- 5 Logical Infrastructure
- 6 Database configuration
- 7 Database maintenance
- 8 Debugging faults
- 9 Data analysis
- 10 Group of messages used: Notification (ABI), coordination (CPL, EST, PAC, MAC, CDN, ACP, REJ, transfer of control (TOC, AOC), general information messages (MIS, EMG), management messages of application (LAM, LRM)
- 11 Flight phases: notification, coordination and transfer
- 12 Messaging sequence
- 13 Common error codes
- 14 Selection of training methods and technological availability: classroom, practical, theoretical, virtual
- 15 Definition of the necessary resources: facilitator, audio-visual resources, machines, equipment or tools needed, physical or digital materials, etc.
- 16 Target population: Who will be trained (ATM and/or technical personnel). Previous knowledge of the protocol, if any, and the number of people to be trained should be considered
- 17 Place of training: at the workplace, ATS simulator, virtual meeting, face-to-face
- 18 Periodicity: amount of time defined for training and if required Re-instruction prior to change from simulated environment to operational environment
- 19 Evaluation of results: verification of competencies to validate learning.

4. Training Performance

The execution of the training presupposes the facilitator/trainee binomial. Trainees are people at any hierarchical level of the company, who need to learn or improve their knowledge of a specific activity or work, in this case the AIDC or NAM/ICD. Facilitators are people at any hierarchical level of the company (technical or operational), expert or specialized in the Asia-Pacific APAC-ICD interface control document, who transmit their knowledge to the trainees.

The execution of the training depends on the following factors:

- **Adequacy of the training programme to the operational needs.** The decision to establish training programmes depends on the need to improve employee performance or in the case of a new protocol implementation. The training should be the solution to the problems that gave rise to the diagnosed or perceived needs.
- **Quality of the training material presented.** The teaching material must be planned in order to facilitate the execution of the training. The teaching material seeks to concretize the instruction, facilitate understanding with resources, which facilitate the understanding of the personnel under training.
- **Coordination with the heads of the ATS units in each State.** The training shall be done with the personnel that will use the AIDC or NAM/ICD protocol, at the different levels or categories of ACC maintenance (planner, executive controller, supervisor, technician, AMHS specialist). Subsequently, it should be coordinated that the personnel who already has the necessary training to correctly use the AIDC can provide the respective on-the-job training (OJT) to the new promotions to be enabled, based on the experience acquired and the performance evaluations of each State.
- **Be proactive and avoid resistance to change:** It is necessary for ATM staff to have a spirit of cooperation and for leaders to be supportive, as managers and supervisors must be effectively involved in the implementation of the programme.

- **Quality and preparation of the instructors:** The success of the execution will depend on the interest, effort and training of the instructors. It is very important the selection criteria of the instructors, who should have certain personal qualities: ease of human relations, motivation, and reasoning, and empathy, ease of exposition and knowledge of the specialty.

5. Goals Evaluation and Feedback

This is the last stage of the training process and is fundamental to determine if the outcomes training outcome were favourable and if the objectives were met.

The evaluation can be done using performance evaluations and verifying if the goals were met, if the reception and assimilation of the information was as expected.

The evaluation of training results can be done at three levels:

- 1. At the organizational level:** At this level, training shall provide results such as:
 - a) Increased organizational efficiency: reducing operational errors such as read-back in approvals or level changes.
 - b) Ease of change and innovation: Staff will be motivated and willing to change due to technological innovations, (controllers will trust the automated protocol).
 - c) Increased efficiency: by reducing the workload due to the saturation of coordination through the voice channel.
- 2. At the human resource level:**
 - a) Increase in the individual efficiency of operating personnel.
 - b) Increase in personnel skills.
 - c) Change in people's attitude and behaviour.
- 3. At the task and operations level.** At this level, training can provide results such as:
 - a) Increased productivity: driver flights per hour ratio.
 - b) Reduction of Large height deviation (LHD) due to read-back errors.
 - c) Improvement of air traffic service quality.

APPENDIX D

| CAR Region | PROJECT DESCRIPTION | DP N° C | |
|--|---|--------------|------------|
| <i>Programme</i> | <p>AUTOMATION AND IMPROVED ATM SITUATIONAL AWARENESS IN THE CAR REGION</p> <p>Project C</p> | Start | End |
| <p>AUTOMATION AND ATM SITUATIONAL AWARENESS</p> <p>(ICAO programme coordinator: Mayda Ávila)</p> | <p>Project Coordinator: Fernando Casso</p> <p>Experts contributing to the project: Jesus Sevilla (COCESNA) Victor Machado (Cuba)</p> | October 2011 | June 2022 |
| Objectives | <p>Based on the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP) regional performance objectives:</p> <ol style="list-style-type: none"> 1. Support NAM/CAR States with implementation of automated systems and interconnection at a regional level. 2. Support the implementation of Situational Awareness improvements at CAR Region ATS units. | | |
| Scope | <p>The scope of the project foresees the assessment and identification of the main levels of automation, production of guidelines for the use of existing capabilities, proposed improvements to automation levels to enhance operations and safety, development of studies and guidelines for automation and operational use of capabilities to reach these situational awareness improvements, supporting the implementation of different applications, such as: common display of traffic, common display of meteorological conditions, and communications in general.</p> | | |

| CAR Region | PROJECT DESCRIPTION | DP N° C | |
|------------------|---|---------|-----|
| <i>Programme</i> | AUTOMATION AND IMPROVED ATM SITUATIONAL AWARENESS IN THE CAR REGION Project C | Start | End |
| Metrics | <ul style="list-style-type: none"> • Number of States/ANSPs participating in regional automation tests • Number of States/ANSPs implementing ATC automation functionalities between systems • Complete proposals and guidance material for the reduction of operational errors with before and after effective date of implementation guides for the CAR/NAM Region • Number of States/ANSPs reporting a reduction of incidents resulting from implementing improvements in electronic ground and air alerts • Number of States/ANSPs conducting ADS-B data using the guides developed | | |
| Goals | <p>With this Project is expected to support States with the operational improvement implementation resulting from the implementation of ATM systems:</p> <ul style="list-style-type: none"> • NAM/CAR RPBANIP ASBU-FICE AIDC Target • Improvement of the ATM Situational Awareness | | |
| Strategy | <ul style="list-style-type: none"> • The Project activities execution will be coordinated among the project members, the project coordinator, and the programme coordinator, mainly through teleconferences and meetings held from time to time in accordance with the activities work programme. • The project coordinator will coordinate, as necessary, with the Programme Coordinator, the requirements for other projects and information from the NAM/CAR implementation Working Groups. Additional experts have been included according to the tasks and specialised works. | | |

| CAR Region | PROJECT DESCRIPTION | DP N° C | |
|-------------------------|--|--------------|------------|
| <i>Programme</i> | <p>AUTOMATION AND IMPROVED ATM SITUATIONAL AWARENESS IN THE CAR REGION</p> <p>Project C</p> | Start | End |
| Justification | <p>With the emergence of new technologies in ATM automated systems, as well as the standardization of communication protocols, data exchange in ATS units is actually viable in different ways. Available protocols in the systems such as AIDC/PAC and NAM/ICD allow ATS units to establish automated coordination, improving operational reliability and procedural effectiveness.</p> <p>These automated exchanges will result in a significant reduction of ATS incident rates and operational errors.</p> <p>Improving situational awareness facilitates coordination, improves efficiency and safety, and ensures that the different members of the ATM community have the same information when adopting decisions collaboratively.</p> | | |
| Related projects | <p>This project is related with Programme D Project (ATN and its ground-ground and air-ground applications)</p> | | |

AIDC/NAM/ICD/4
Appendix D to the Report

D-4

| Project Deliverables | Relationship with the regional performance-Objectives (RPO) and ASBU BO modules | Responsible Party | Status of Implementation | Date of Delivery | Comments |
|---|---|---|--------------------------|------------------|---|
| Proposals or guidelines for improving the operation and performance of flight plan data processing system, and automatic exchange of ATS messages | RPO 4 of NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO | Jenny Lee COCESNA Fernando Casso Dominican Republic | | Completed | According with the AIDC TF activities |
| Implementation of the errors regional plan of the flight plan | RPO 4 of the NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO | Fernando Casso – Dominican Republic | | Completed | According with the AIDC TF activities |
| Implementation of the standardization of the rejects message of the flight plan for the Region | RPO 4 of the NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO | Keith Dutch/FAA Cuba-COCESNA | VALID | December 2021 | According with the AIDC TF activities |
| Monitor the implementation of ATM automation and surveillance data exchange – Progress Report | RPO 4 of NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO | Fernando Casso – Dominican Republic | | Completed | An AIDC implementation regional plan has been developed as part of the ATM automation. |
| Monitor that the AIDC implementation plan in each State has the capacity to use this facility. | RPO 4 of the NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO | Jesus Sevilla Reybin Sanabria COCESNA Fernando Casso Dominican Republic | VALID | May 2021 | Jesus Sevilla and Reybin Sanabria for Central America Fernando Casso for the Caribbean |

| Project Deliverables | Relationship with the regional performance-Objectives (RPO) and ASBU BO modules | Responsible Party | Status of Implementation | Date of Delivery | Comments |
|---|--|--|--------------------------|------------------|------------------------------|
| Guidance on the use of AIDC to reduce coordination errors | RPO 4 and 6 of NAM/CAR RPBANIP/ RSEQ-SURF- ASUR-SNET-TBO-ACDM- FICE | Fernando Casso – Dominican Republic | | Completed | Date adjusted to the AIDC TF |
| Resources needed | <ul style="list-style-type: none"> • Designation of experts for the execution of the deliverables • Implement required facilities that allow interconnection of automated systems according to the established dates in the elaborated and signed MoU, respectively. | | | | |