



ICAO

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

**Second Meeting for Regional Accident and Incident
Investigation Organizations (RAIOs)
Implementation in the CAR Region and Workshop
on Accident Investigation and Prevention (AIG)
Implementation**

RAIO/CAR/02

Final Report

ICAO NACC Regional Office, Mexico City, 12 to 15 March 2019

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.

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HISTORICAL

ii.1 Place and Date of the Meeting

The Second Meeting for Regional Accident and Incident Investigation Organizations (RAIOs) Implementation in the CAR Region and Workshop on Accident Investigation and Prevention (AIG) Implementation (RAIO/CAR/02) was held at the ICAO NACC Regional Office, Mexico City, from 12 to 15 March 2019.

ii.2 Opening Ceremony

Mr. Julio Siu, Deputy Regional Director of the North American, Central American and Caribbean (NACC) Regional Office of the International Civil Aviation Organization (ICAO) highlighted the efforts being coordinated in the region to improve the compliance with Annex 13 and the implementation in the area of Accident and Incident investigation (AIG) - one of the less effective implemented as recognized in by the Directors of Civil Aviation in the Eight North America, Central America, and Caribbean Directors of Civil Aviation Meeting (NACC/DCA/8). He also congratulated the Central American States commitment with their RAIO Regional Aviation Accident Investigation Group (GRIAA) and the Caribbean States like Bahamas for their progress on developing an independent AIG authority. Finally, he pointed out the challenges for improving AIG in the region and the expectations of this meeting toward enhancing regional collaboration for AIG and continues the support for the RAIOs in the region.

ii.3 Officers of the Meeting

The RAIO/CAR/02 Meeting was held as a meeting plenary and Mr. Marc St – Laurent, AIG Consultant of the ICAO NACC Regional Office served as Secretary.

ii.4 Working Languages

The working language of the Meeting was English. The working papers, information papers and draft report of the meeting were available to participants in English only, but simultaneous English-Spanish interpretation was provided to facilitate discussion.

ii.5 Schedule and Working Arrangements

It was agreed that the working hours for the sessions of the meeting would be from 09:00 to 16:00 hours daily with adequate breaks.

ii.6 Agenda

- Agenda Item 1: Approval of the Provisional Agenda and Work Schedule**
- Agenda Item 2: Review of Action Items from Last RAIO/CAR/01 Meeting**
- Agenda Item 3: Status of Implementation/Planning of RAIO Project Phase I – Planning Update on NACC RAIO Missions to CASSOS-RAIO-C and GRIIAA**
- Agenda Item 4: Discussion on AIG Implementation Matters**
- Agenda Item 5: Other Business**

ii.7 Attendance

The Meeting was attended by 12 States/Territories from the NAM/CAR Regions and 4 International Organization, totalling 42 delegates as indicated in the list of participants.

ii.8 Conclusions and Decisions

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 Regional Accident and Incident Investigation Organizations (RAIOs) Group (GRIIAA/RAIO-C).

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

ii.8 List of Conclusions

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ii.9 List of Working and Information Papers and Presentations

Refer to the Meeting web page:

<https://www.icao.int/NACC/Pages/meetings-2018-carraio.aspx>

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/01	1	Approval of the Provisional Agenda and Work Schedule	28/02/19	Secretariat

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
IP/01	---	List of Working and Information Papers and Presentations	28/02/19	Secretariat

PRESENTATIONS

Number	Module Topic	Title	Presented by
P/01	GASOS Initiative	GASOS - A General Overview	Secretariat
P/02	GASOS Initiative	GASOS – Organización Regional de Vigilancia de la Seguridad Operacional (RSOO) (available in Spanish only)	COCESNA
P/04	AIG LEG/REG	AIG LEG –Annex 13 Implementation	Nicaragua
P/05	AIG LEG/REG	AIG LEG – Status of AIG Implementation and Bahamas AAIA Bill and Regulations Cabinet	Bahamas

PRESENTATIONS			
Number	Module Topic	Title	Presented by
P/06	RAIO	RAIO - ARCM-SAM	ARCM-SAM
P/07	RAIO	RAIO – GRIAA (available in Spanish only)	Nicaragua
P/08	RAIO	RAIO - LARSASI - Latin America Regional Chapter of ISASI	ARCM-SAM
P/10	MAJ ACC INVESTIGATIONS	Major Accident Investigation - MU-2 LV-MCV	ARCM-SAM
P/11	MAJ ACC INVESTIGATIONS	Major Accident Investigation - COMISIÓN INVESTIGADORA DE ACCIDENTES DE AVIACIÓN (CIAA) (available in Spanish only)	Dominican Republic
P/12	MAJ ACC INVESTIGATIONS	Major Accident Investigation – AIG Mexico (available in Spanish only)	Mexico
P/13	MAJ ACC INVESTIGATIONS	Human Factor Investigations (available in Spanish only)	Mexico
P/14	MAJ ACC INVESTIGATIONS	Family Assistance (available in Spanish only)	Nicaragua
P/15	SMS/SSP	SMS/SSP (available in Spanish only)	Nicaragua
P/16	SMS/SSP	SMS/SSP (available in Spanish only)	Dominican Republic
P/17	Agenda Item 2	Review of Action Items from NOV AIG Meeting	Secretariat
P/18	Agenda Item 3	Status of RAIOS and AIG Implementation	Secretariat
P/19	Agenda Item 4	Discussion on AIG implementation matters	Secretariat
P/20	Field Exercise	Investigation Field Exercise, Friday 15th March Briefing	Secretariat

LIST OF PARTICIPANTS

ARGENTINA

Pamela Suarez
Daniel Barafani

ARUBA

Glenn Kelly

BAHAMAS

Delvin R Major

BELIZE

Shaun Young

CANADA

Ewan Tasker

COSTA RICA

Luis Giovanni Villalobos García

DOMINICAN REPUBLIC

Joaquin Félix Félix
Brenda Nuñez
Ninoska Elizabeth Rodríguez Reynoso
Enmanuel Souffront
Julio Alexis Lewis Camarena

EL SALVADOR

José Carlos Rodríguez

GUATEMALA

Victor Haroldo Celada Muñoz

HONDURAS

Mario Enrique Carcamo Ordoñez

MEXICO

Alejandro René García Pascual
Jorge Alejandro Acevedo Aguilar
Felipe de Jesús Castillo Reyes
Berenice Isabel Pérez García
Mariana Aidé Hernández Martínez
Conrado Macías Vázquez
Ramón González Castellón
Jose Armando Constantino Tercero
Jorge Ángel Hernández Aguilar
Rubén Gildardo Martínez Lino
Salvador A. R. Méndez Martínez
Francisco Trujillo Hernández
Francisco Luis Quiroz Pulido
Alfredo Arellano Herrera

NICARAGUA

Carlos Salazar
Guillermo Guido Yesca
Uwe David Cano Navarro
Ruth Elizabeth Molina Hernández
César Andrés Jirón Cajina

AIRBUS

Xavier Barriola

COCESNA

Eveling Arauz Betanco
Ricardo Paredes
Victor Manuel Andrade Salgado
Pablo Alexander Luna Servellon
Eduardo Montero Peña

COCTAM

Araceli del Socorro Muñoz Muñoz

IFALPA

Carlos Salicrup Díaz de León

ICAO

Julio Siu

Marcelo Orellana

Marc St-Laurent

Murillo Boery

Miguel Marin (Remote participation)

Tim Adams (Remote participation)

CONTACT INFORMATION

Name / Position Nombre / Puesto	Administration / Organization Administración / Organización	Telephone / E-mail Teléfono / Correo-e
Argentina		
Pamela Suarez Presidente	ARCM JIAAC	Tel. 5491166519922 E-mail psuarez@jiaac.gob.ar
Daniel Barafani Director Nacional de Investigaciones	JIAAC	Tel. 5491132954023 E-mail dbarafani@jiaac.gob.ar
Aruba		
Glenn Kelly Aircraft Accident Investigator	DCA	Tel. 2975232683 E-mail glenn.kelly@dca.gov.aw
Bahamas		
Delvin R Major Chief Investigator of Air Accidents	AAID	Tel. + 1 242 3761 617 E-mail: delvinmajor@bahamas.gov.bs
Belize/Belice		
Shaun Young Investigador de Accidentes	Civil Aviation	Tel. +501 225 2014 E-mail shaun.young@civilaviation.gov.bz
Canada/Canadá		
Ewan Tasker Jefe de Investigación de Accidentes e Incidentes Aéreos	DGAC	Tel. +506 87-05-6962 E-mail Ewan.Tasker@tsb-bst.gc.ca
Costa Rica		
Luis Giovanni Villalobos García Jefe de Investigación de Accidentes e Incidentes Aéreos	DGAC	Tel. +506 87-05-6962 E-mail gvillalobos@dgac.go.cr
Dominican Republic/República Dominicana		
Enmanuel Souffront Director General	CIAA	Tel. 8299612750 E-mail esouffront@gmail.com
Joaquin Félix Félix Investigador de Accidentes de Aviación	CIAA	Tel. 1829 961 2750 E-mail jfeliz@ciaa.gob.do
Julio Alexis Lewis Camarena Encargado Div. de Gestión de Riesgo de Seguridad Operacional	Instituto Dominicano de Aviación Civil (IDAC)	Tel. +809-274-4322 Ext. 2290 E-mail Julio.lewis@idac.gov.do

RAIO/CAR/02
List of Participants – Contact Information

iv – 2

Name / Position Nombre / Puesto	Administration / Organization Administración / Organización	Telephone / E-mail Teléfono / Correo-e
Dominican Republic/República Dominicana		
Brenda Nuñez State Safety Assurance Division Manager	IDAC	Tel. + 18092744322 Ext 6221 E-mail: brenda.nunez@idac.gov.do
Ninoska Elizabeth Rodríguez Encargada Div. Gestión Estatal del Riesgo de Seguridad Operacional	IDAC	Tel. +809 274 4322 ext2237 E-mail ninoska.rodriguez@idac.gov.do
El Salvador		
José Carlos Rodríguez Investigador AIG	AAC	Tel. 50325654470 E-mail jrodriguez@aac.gov.sv
Guatemala		
Victor Haroldo Celada Muñoz Jefe de la Unidad de Investigacion de Accidentes	DGAC	Tel. + 502 2321 5234 E-mail victor.celada@dgac.gob.gt
Honduras		
Mario Enrique Cárcamo Ordoñez Investigador de Accidentes	AHAC	Tel. + 504 2233 1115 E-mail mcarcamo@ahac.gob.hn; mariocarcamo81@gmail.com
Mexico/México		
Alfredo Arellano Herrera Comandante Regional - Región V	Dirección General de Aeronáutica Civil (DGAC)	Tel. +52 229 9380 911 ext67549 E-mail aarellan@sct.gob.mx
Felipe de Jesús Castillo Reyes Comandante Regional - Región I	DGAC	Tel. +52 669 982 4561 ext62549 E-mail fcastill@sct.gob.mx
Jose Armando Constantino Tercero Director de Análisis de Accidentes e Incidentes de Aviación	DGAC	Tel. + 57 23 9800 Ext 18548 E-mail jconstan@sct.gob.mx
Carlos Cruz García Inspector Verificador Aeronáutico	DGAC	Tel. 5521818137 E-mail ccruzgar@sct.gob.mx
Alejandro René García Pascual Comandante Regional IV	DGAC	Tel. +52 999 946 0796 E-mail rgarciap@sct.gob.mx
Ramón González Castellón Comandante Regional - Región III	DGAC	Tel. 3334505575 E-mail rgonzalc@sct.gob.mx
Jorge Ángel Hernández Aguilar	DGAC	Tel. + 57 23 9300 E-mail Jorge.hernandez@sct.gob.mx

Name / Position Nombre / Puesto	Administration / Organization Administración / Organización	Telephone / E-mail Teléfono / Correo-e
Mexico/México		
Conrado Macías Vázquez Comandante de la Región de Inspección Aérea	DGAC	Tel. +52 81 4000 2800 ext56019 E-mail cmaciasv@sct.gob.mx
Francisco Luis Quiroz Pulido Comandante General del AICM	DGAC	Tel. +52 57239300 Ext. 18920 E-mail fquirzop@sct.gob.mx
Francisco Trujillo Hernández Inspector Verificador Aeronáutico-SSM-SSP	DGAC	Tel. +55 5482 4100 Ext. 18918 E-mail: ftrujill@sct.gob.mx
Jorge Alejandro Acevedo Aguilar Subjefe del A-3 de la FAM	FAM	Tel. 5573734730 E-mail jaacevedoa@hotmail.com
Rubén Gildardo Martínez Lino Teniente Coronel FAPA DEMA	FAM	Tel. 5227629876 E-mail rubalh15@hotmail.com
Salvador A. R. Méndez Martínez	SENEAM	Tel. +55 71 25 33 E-mail salvador.mendezr@cgotam.org.mx
Berenice Isabel Pérez García Controlador de Tráfico Aéreo	SENEAM	Tel. 57865500 Ext. 5617 E-mail: berenice.perez@sct.gob.mx
Mariana Aidé Hernández Martínez Controlador de Tránsito Aéreo	SENEAM	Tel. 6141614230 E-mail marianaaide@hotmail.com
Nicaragua		
Carlos Salazar Director INAC y Coordinador del GRIAA	Instituto Nicaragüense de Aeronáutica Civil (INAC)	Tel. +505 2276 8580 E-mail capcdsalazar@yahoo.com
Guillermo Guido Yesca Director de Seguridad de la Aviación - DSA/INAC	INAC	Tel. +505 2276 8580 E-mail seguridad@inac.gob.ni
Ruth E. Molina Hernández Responsable de Asesoría Legal	INAC	Tel. +505 2276 8580 E-mail capacitacion@inac.gob.ni
Uwe David Cano Navarro Coordinador SSP	INAC	Tel. +505 2276 8580 x 1708 E-mail safetystate@inac.gob.ni
César Andrés Jirón Cajina Responsable del Departamento de Facilitación	INAC	Tel. +1-505-2276-8580 x. 1170 E-mail facilitacion@inac.gob.ni
Airbus		
Xavier Barriola Flight Safety Director	Airbus	Tel. 33562118108 E-mail xavier.barriola@airbus.com

Name / Position Nombre / Puesto	Administration / Organization Administración / Organización	Telephone / E-mail Teléfono / Correo-e
COCESNA		
Eveling Arauz Betanco Asesora Legal Regional	COCESNA Secretaría Técnica	Tel. +505 2276 8580/2233 1115 E-mail eveling.arauz@cocesna.org
Victor Manuel Andrade Salgado Gerente Operativo	COCESNA	Tel. +504 2275 7090 E-mail victor.andrade@cocesna.org
Pablo Alexander Luna Servellon Coordinador SMA	COCESNA	Tel. +504 2279 7090 E-mail pablo.luna@cocesna.org
Eduardo Montero Peña Inspector de Operaciones	COCESNA	Tel. +506 2435-7680 E-mail: eduardo.montero@cocesna.org
Ricardo Paredes Executive controller/Incident and Accident Investigator	COCESNA	Tel. +2275 7108 E-mail ricardo.paredes@cocesna.org
COCTAM		
Araceli del Socorro Muñoz Muñoz Presidente	COCTAM	Tel. +33 31375683 E-mail araceli.munoz@coctam.org.mx; ctaam2@hotmail.com
IFALPA		
Carlos Salicrup Díaz de León Miembro Conité HUPER -Flight Surgeon-Pilot	IFALPA	Tel. +(55)5091 5954 E-mail aerospacedr@gmail.com
ICAO		
Julio Siu Deputy Regional Director	North American, Central American and Caribbean (NACC) Regional Office	Tel. +5255 5250 3211 E-mail jsiu@icao.int
Marcelo Orellana Regional Officer, Flight Safety	North American, Central American and Caribbean (NACC) Regional Office	Tel. +5255 5250 3211 E-mail morellana@icao.int
Marc St-Laurent AIG Consultant	North American, Central American and Caribbean (NACC) Regional Office	Tel. +5255 5250 3211 E-mail MSt-Laurent@icao.int
Murillo Boery Aeronautical Accidents Investigation (AIG) Specialist	South American (SAM) Regional Office	Tel. 5116118686 E-mail mboery@icao.int
Miguel Marin Technical Officer, Operations	ICAO Headquarters Montreal, Canada	Tel. +1 514 954-8219 E-mail mmarin@icao.int
Tim Adams Regional Safety Oversight Organizations Officer	ICAO Headquarters Montreal, Canada	Tel. +1 514 954-8219 E-mail tadams@icao.int

Agenda Item 1: Approval of the Provisional Agenda and Work Schedule

1.1 As part of the opening of these proceedings, the Secretariat first invited all attendees to observe a moment of silence in memory of those involved in the recent accident of Ethiopian flight ET-302, including the UN colleagues and other passengers and crew who were on board and their families and relatives, and wished Godspeed to the international investigation team in their investigation.

1.2 Mr. Julio Siu, Deputy Regional Director of the International Civil Aviation Organization (ICAO), North American, Central American and Caribbean (NACC) Regional Office, highlighted the efforts being coordinated in the region to improve the compliance with Annex 13 and the implementation in the area of Accident and Incident investigation (AIG) - one of the less effective implemented as recognized by the Directors of Civil Aviation in the Eighth Meeting of the North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/08). He also congratulated the Central American States for commitment with their Regional Accident and Incident Investigation Organization (RAIO) Regional Aviation Accident Investigation Group (GRIAA) and the Caribbean States like Bahamas for their progress on developing an independent AIG authority. Finally, he pointed out the challenges for improving AIG in the region and the expectations of this meeting toward enhancing regional collaboration for AIG and continuing the support for the RAIOs in the region; he welcomed the participants to Mexico and officially opened the Meeting.

1.3 The Secretariat presented WP/01, inviting the Meeting to approve the provisional agenda and schedule. The Meeting approved the agenda as presented in the historical section of this report and did not make changes to the schedule.

Agenda Item 2: Review of action items from last RAIO/CAR/01 Meeting

2.1 The Secretariat provided a presentation (P17 - Agenda Item 2 - Review of Action Items from NOV AIG Meeting) and updates on the following action items from the previous meeting, as well as a summary of relevant activities completed since:

1. LEG (*Legislation*) & REG (*Regulation*) expert assistance
2. States AIG point of contact
3. Sharing of AIG reference documents
4. AIG training needs
5. IA investigator experience and roster
6. ACC/INC DB and case management software – Canada update
7. ECCAIRS/ADREP training
8. AIG on-site assistance missions

NOTE – An update on Item 6 above was provided at the beginning of this Agenda Item, in order to accommodate the limited availability of the Canada representative who was attending the meeting remotely.

LEG & REG expert assistance

2.2 The Secretariat reminded States as to the availability of expert assistance from ICAO Headquarters in helping States review and amend their AIG LEGs and REGs. That item will continue to be included in the ICAO NACC Regional AIG Workplan.

States AIG point of contact

2.3 In response to complaints from several States AIG representatives not readily receiving ICAO NACC correspondence on AIG matters, the Secretariat reiterated its request for all States to provide the ICAO NACC Regional Office with the appropriate contact and addressing information of their AIG representative. ICAO continues to await States input, and formulated the following:

CONCLUSION	
RAIO/CAR/02/01	ICAO CORRESPONDENCE TO INVESTIGATION AUTHORITIES (IA)
What: That, to ensure effective communication and involvement of State Investigation Authorities, States inform by 30 May 2019 to the ICAO NACC Regional Office, their AIG/IA Point of Contact and provide the appropriate contact and addressing information.	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: Several States Investigation Authority (IA) representatives advised that they do not always readily receive information from ICAO on meetings and other workshops or proceedings that may be of interest to them, with such information being routinely addressed by ICAO to the States CAAs but not necessarily forwarded to the attention of the AIs.	
When: 30 May 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:	

Sharing of AIG reference documents

2.4 The Secretariat reminded States representatives of the creation of the NACC_AIG_REF Group on the ICAO Portal, to allow States and organizations to benefit by contributing and sharing their AIG relevant documentation and best practices. The Secretariat encouraged all States representatives to actively contribute to this AIG document repository, and reminded States and Group Users of the Group User Agreement and Privacy Warning. ICAO will continue to await States contribution to the AIG repository, and formulated the following:

CONCLUSION	
RAIO/CAR/02/02	AIG REFERENCE REPOSITORY WEBPAGE
What: That, to foster the exchange and networking of AIG good practices, implementation experiences, procedural material, and other relevant documentation, the ICAO NACC Regional Office develop by 15 December 2018 an AIG Repository webpage for States usage and benefit.	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: All States favorably commented on the collaboration and the sharing of best practices and reference documents.	
When: 15 December 2018	Status: <input type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input checked="" type="checkbox"/> Completed
Who: <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input type="checkbox"/> Other:	

AIG training needs

2.5 Some of the States advised as to the existence of approved aviation training centres in their region that could potentially help address regional AIG and investigator training needs. The Secretariat recalled the current Declaration of Intent for regional collaboration among CAR Training Centres, and so requested the assistance from States in identifying and drafting a list of suitable AIG training sources and providers for Basic and Recurrent investigator training, and in the drafting of their requirements for the content and curriculum for such investigation courses, with the view to assisting existing regional aviation training organizations (e.g. ICCAE in El Salvador, CIIASA in Mexico, Trinidad and Tobago, etc.) in developing and making available suitable investigation training within the CAR Region in English and in Spanish languages.

2.6 It was remarked that several States continue to rely on quality AIG courses that are provided by recognized organizations (e.g. TSBC, NTSB, FAA, etc.) or training providers (e.g. SCSI, USC, etc.). Some States have with great success organized for training providers to deliver their AIG courses onsite, thereby reducing the travel costs of national candidates. It was also remarked also that via ICAO Trainair Plus, Basic and Advanced Investigation courses available elsewhere (e.g. in Argentina and Brazil) could be readily provided in the region, thereby obviating the development effort and costs of AIG courses by regional training organizations (e.g. in El Salvador, Trinidad and Tobago, Mexico, etc.). The Secretariat will continue to await input from the States.

2.7 Above and beyond the completion of formal Initial and Basic Investigator training courses, the formative value of practical experience gained through the participation to foreign investigations (whether accidents or incidents) as observer or as team member was also recognized as essential to the development and maintenance of investigators skills and knowledge, and the Secretariat encouraged States to make use of existing agreements and relationships to leverage existing regional opportunities to their fullest towards this form of collaboration and cooperation in improving their overall AIG capacity.

2.8 With regard to Human Factors (HF) and Medical Forensic specialised training for those medical practitioner specialists involved in accident investigations post-mortem examinations or the medical examination of surviving crew or passengers, it was remarked that such training is available from FAA CAMI, Nicaragua ICCAE, and in Mexico. It was also suggested that, in addition to a physiological post-mortem, a 72+H psychological evaluation of deceased crew can be successfully conducted, and that a HF Post-Mortem checklist is available from JIAC.

2.9 As part of the Memoranda of Understanding (MoUs) that were signed last year, the Transportation Safety Board of Canada (TSBC) has advised it will continue to offer a limited number of seats (2-3 max) on their investigator courses to Central American and Caribbean candidates. The next three-week Transportation Safety Board of Canada (TSBC) investigator course is scheduled in June 2019 (exact dates TBD). Canada advised being in the process of reviewing their investigator course curriculum, with the view to include Computer-Based Training (CBT) for the technical and theory, thereby reducing the duration of future courses for the hands-on/practical parts.

2.10 The Secretariat expressed its continued gratitude to Canada in providing investigation training opportunities to a select and limited number of candidates from the CAR Region as part of the recent MoUs. The Secretariat advised of the very positive responses received from the attendees as to the quality of the TSBC training, encouraged States to provide ICAO NACC Regional Office soonest with the names of their investigator training candidates for the forthcoming June 2019 course, and formulated the following:

CONCLUSION	
RAIO/CAR/02/03	AIG TRAINING COURSES AND TRAINING NEEDS
<p>What:</p> <p>That, States</p> <p>a) provide, soonest and by 25 April 2019, to the ICAO NACC Regional Office the names of their candidates for the next TSBC investigator course in June; and,</p> <p>b) to support States of progressing in the AIG implementation and improvements, by 25 June 2019, identify and draft a list of desirable AIG training sources and providers for Basic and Recurrent investigator training, and in the drafting of their requirements for the content and curriculum for such investigation courses, with the view to assist existing regional aviation training organizations.</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>Why:</p> <p>In addition to the current Declaration of Intent for regional collaboration among CAR Training centres, some of the States advised as to the existence of approved aviation training centres in their region that could potentially help address regional AIG and investigator training needs.</p>	
<p>When: 25 April 2019; 25 June 2019</p>	<p>Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p>
<p>Who: <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO <input type="checkbox"/> Other:</p>	

Investigators Experience and Qualifications Roster

2.11 As per the November 2018 meeting, the Secretariat had requested from States their assistance in the drafting of common minimum requirements in terms of qualifications and experience for investigators to participate in investigations. The Secretariat further requested that States provide information on the current experience and qualifications of each of their individuals actively tasked with investigation duties.

2.12 In the absence of responses from the States, the Secretariat presented a proposal for an AIG training standard, based on ICAO Circ.298. This AIG Training Standard is intended as a starting point for States and Regional Organizations to develop their own standard.

2.13 The Secretariat also reminded States as to the MS Excel Investigator Experience and Roster Form that was released in January and that would allow the collection of States individual investigators experience and training qualifications. The Secretariat advised that it was further suggested to include in the form information on the required inoculations, and the Secretariat requested from States that they advised as to which specific inoculations they require.

2.14 The Secretariat urged States to complete and return the forms to the ICAO NACC Regional Office, and formulated the following:

CONCLUSION	
RAIO/CAR/02/04	AIG INVESTIGATORS –EXPERIENCE AND ROSTER
<p>What:</p> <p>That, to coordinate and share of investigator resources within the RAIO framework, States:</p> <p>a) draft/share the minimum requirements in terms of qualifications and experience for investigators to actively participate in their investigations, including for inoculations requirements;</p> <p>b) provide information on the current experience and qualifications of each of their individuals actively tasked with investigation duties; and</p> <p>c) provide this information by 15 May 2019.</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>Why:</p> <p>States commented on the challenges in identifying and selecting which investigators from other States have suitable experience and qualifications to actively join their investigation team, especially with regard to the coordinating and sharing of investigator resources within the RAIO framework.</p>	
<p>When: 15 May 2019</p>	<p>Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p>
<p>Who: <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO <input type="checkbox"/> Other:</p>	

*European Coordination Centre for Accident and Incident Reporting Systems (ECCAIRS)/
Accident/Incident Data Reporting System (ADREP) Training*

2.15 States had commented on the continued need for ECCAIRS/ADREP training, not only for basic user level training (i.e. installation/set-up and data entry) but also the need for more advanced training that would allow extraction and analysis of ECCAIRS safety data. The Secretariat had requested that States advise of their plan and their need for ECCAIRS basic training, with the view to schedule ECCAIRS training in 2019; however, nil response was received from States in that regard. It was also remarked that ECCAIRS basic user training would be available from some of the States Authorities (e.g. Mexico).

2.16 The Secretariat had also agreed to approach the ECCAIRS software support and training providers to determine the availability of ECCAIRS safety data analysis training. In that regard, the Secretariat was unable to gather much information other than that the responsibility for ECCAIRS had now been undertaken by EASA, and that there were ongoing efforts to further develop ECCAIRS into a next version that would incorporate additional features and capabilities towards safety data analysis. There was no information available on when this new version of ECCAIRS would be available. The Secretariat advised it will continue to monitor ECCAIRS and report on any further development, and formulated the following:

CONCLUSION	
RAIO/CAR/02/05	ECCAIRS/ADREP TRAINING
<p>What:</p> <p>That, considering the continued need for ECCAIRS/ADREP training, not only for basic user level training (i.e. installation/set-up and data entry) but also the need for more advanced training that would allow extraction and analysis of ECCAIRS safety data:</p> <p>a) States advise by 15 June 2018 of their plan and their need for ECCAIRS basic training, with the view for the ICAO NACC Regional Office to schedule ECCAIRS training in 2019; and,</p> <p>b) the Secretariat continue to monitor ECCAIRS and report on any further development.</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>Why:</p> <p>States commented on the continued need for ECCAIRS/ADREP training, not only for basic user level training (i.e. installation/set-up and data entry) but also the need for more advanced training that would allow extraction and analysis of ECCAIRS safety data.</p>	
<p>When: 15 June 2019</p>	<p>Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p>
<p>Who: <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input type="checkbox"/> Other:</p>	<p>States</p>

ACC/INC database and Investigation management software

2.17 The Secretariat had agreed to continue to discuss and explore with TSBC the availability of their safety database and investigation management software to CAR States and organizations. The TSBC advised that both their ASIS database and ISIM investigation management software were now ongoing much needed re-development upgrade, including improvements to their interface and making these applications distributable. TSBC has re-iterated their agreement, as part of the MoUs, to make the new versions of these software tools and manuals available to Central American and Caribbean States and organizations once those are available.

AIG regional networking and sharing/workshop

2.18 In the absence of any input received from the States, the Secretariat had prepared the program of the AIG Workshop organized to take place jointly with the meeting. All meeting attendees were aware of the program of the AIG Workshop and recognized the importance of such AIG Meetings and Workshop being held regularly.

2.19 The Secretariat agreed to organize the next regional AIG meeting and workshop, and formulated the following:

CONCLUSION	
RAIO/CAR/02/06	2020 WORKSHOP
<p>What:</p> <p>That, to ensure the best benefits and meeting results for the next AIG Meeting,</p> <p>a) ICAO organize the next AIG Meeting together with an AIG Workshop for March 2020 with the foreseen participation of other States and industry AIG leaders; and</p> <p>b) States provide their suggested topics for the proposed AIG workshop before 15 June 2019.</p> <p>c)</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>Why:</p> <p>All meeting attendees recognized the importance of SMS and SSP, and the need to continue to foster AIG networking, sharing and collaboration between States within CAR Region.</p>	
<p>When: 15 June 2019, March 2020 (exact dates TBD)</p>	<p>Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p>
<p>Who: <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input type="checkbox"/> Other:</p>	

Onsite AIG assistance missions

2.20 The Secretariat presented a brief summary of the AIG onsite assistance missions provided to:

- CASSOS/RAIO-C : 5-7 February 2019;
- GRIAA : 26-28 February 2019; and,
- Bahamas AAIA : October 2018 and February 2019.

ICAO NACC AIG Regional Workplan 2019

2.21 The Secretariat presented an amended version of the ICAO NACC AIG Regional Workplan for 2019 (**Appendix B**), based on the various updates presented above.

Agenda Item 3: Status of Implementation/Planning of RAIO Project Phase I – Planning Update on NACC RAIO missions to CASSOS-RAIO-C and GRIAA

Status of RAIOs Implementation

3.1 Notwithstanding and without pre-empting the presentations to be made by RAIOs during the following workshop, with reference to presentation RAIOCAR02-POX – Agenda Item 3, the Secretariat invited the representatives from the RAIOs to provide the Meeting with a brief report on their current AIG/RAIO status and as to any changes since the last meeting to the status of their planning and implementation on AIG matters and compliance for Annex 13 requirements, and highlighting any need for assistance.

Status of GRIAA implementation

3.2 The Secretariat advised as to the 2019 February 01 - Meeting at ICAO NACC in Mexico City, and the 2019 February 26-28 – AIG on-site assistance mission at 3rd GRIAA Workshop in support of GRIAA.

3.2.1 The representative from GRIAA gave a brief historical overview of this project since its initial inception in 2004 and through the 2018 Managua resolution, and informed the Meeting of the significant progress being made since the last November meeting in establishing the legal foundation of GRIAA and, through three focused workshops to date and with the active assistance of all participating Central American States and organizations AIG and safety experts, in improving its operational role and functions and overall preparedness.

3.2.2 GRIAA remains a regional coordination and investigation resources sharing mechanism to conduct investigations at the request and under the delegation from the States, which retain their sovereignty and remain responsible for the final investigation report. Appropriate forms have been designed to formalize the State's delegation to GRIAA and ensure the protection of safety information gathered during investigations. Investigation training has been conducted, and a roster has been in place since December 2018 to ensure permanence and 24/7 response to notifications of accidents or other occurrences.

3.2.3 Further efforts are being conducted towards acquiring equipment and facilities and harmonize notifications response and investigations procedures and logistics, with the view for GRIAA to become fully operational by September 2019.

Status of CASSOS/RAIO-C implementation

3.3 In the absence of CASSOS/RAIO-C representatives, the Secretariat reported on the 2019 February 5-7 – AIG on-site assistance mission and implementation planning meeting, as follows:

3.3.1 The three-day meeting was successful in establishing with all CASSOS States AIG experts in attendance the basic framework for a regional coordination mechanism that would suit the immediate needs of the participating States and improve their AIG capacity.

3.3.2 It was agreed that the proposed establishment of an independent and separate regional organization that is adequately staffed with permanent professional investigators was at this point not immediately suitable, although that should remain a long-term goal for RAIO-C.

3.3.3 All participants agreed to a comprehensive action plan that would be carried out in coordination with CASSOS and as part of the CASSOS AIG Technical Committee proceedings, with continued assistance from the ICAO NACC Regional Office.

Status of ARCM-SAM Implementation

3.4 ARCM-SAM representative provided an overview of the status of the organization since the first AIG meeting in 2015, highlighting the similar issues experienced in the SAM region as to low/unequal AIG EI and the challenges in effective practical implementation. The SAM States willingness to recognize their weaknesses and improve was recognized, as well as the value of regional cooperation and collaboration.

3.4.1 In that regard, the role of ARCM as catalyst for improvements was highlighted in establishing regional Work Groups to foster collaboration and in developing regional standards and procedures for investigations and training, MoUs and ECCAIRS and ADREP databases. Given its regional perspective and participation, ARCM is also increasingly involved in establishing regional safety databases that would benefit to States SMS/SSP programs as per Annex 19, and in establishing a regional database for Recommendations.

Status of States AIG Implementation

3.5 The Secretariat invited the representatives from Caribbean and Central American States Investigation Authorities to provide the Meeting with a brief report on their AIG status, and on any changes since the last meeting to the status of their planning and implementation on AIG matters and compliance for Annex 13 requirements, and highlighting any need for assistance.

3.5.1 Aruba advised that amendments to their AIG LEG are in progress to ensure compliance with the latest ICAO Annex 13 amendments. In light of their limited resources, Aruba has entered an agreement with the Dutch OVV investigation authorities and a protocol was recently signed.

3.5.2 Bahamas AAID advised on their ongoing separation and independence from the BCAA, with the draft AAIA Bill (Primary Aviation Legislation) having successfully completed its second review at Cabinet level. The AAIA Bill that will effectively create the Bahamas AAIA as an independent investigation authority incorporates the latest amendments to Annex 13 and is expected to be promulgated before June 2019. Bahamas also reported on the significant effort they have carried out in addressing all of the AIG PQs in preparation for the next ICVM at the end of 2019. Bahamas AAIA advised being most willing to assist in improving the overall AIG capacity in the region and open to sharing any of their LEG/REG documents and manuals for the benefit of other States.

3.5.3 Belize is participating in GRIAA and advised as to ongoing changes to its enabling legislation since 2017 in creating an Investigation Authority. There are limited AIG resources consisting of one full-time and three part-time investigators, and they have conducted 21 investigations in 2018. They were provided investigation training from SCSI on Basic and Advanced investigations, as well as helicopter and gas turbine specialty courses.

3.5.4 El Salvador is participating in GRIAA and advised as to their ongoing improving trend in the number of accidents, especially those involving General Aviation. The annual number of accidents has reduced from 10/year to 1-2/year, and that improvement is largely attributed to better safety oversight by authorities. El Salvador faces similar challenges regarding AIG resources, equipment and training, and is still in the process of amending its AIG LEG and REG.

3.5.5 Guatemala is participating in GRIAA and has currently two investigators who conduct on average 17 investigations in total each year. Other than the similar challenges reported with regard to AIG resources, Guatemala advised of the significant under-reporting of occurrences, and the ongoing challenges in addressing this overall poor reporting culture in relation to the States Civil Aviation Authorities punitive culture.

3.5.6 Honduras is participating in GRIAA. They investigate on average three accidents each year, and they are currently undergoing a transition with regard to their independence from the State's Ministry of Defence.

3.5.7 Mexico advised that they are in the process of updating their 1950s regulations to also incorporate AIG independence and Family Assistance provisions. Mexico advised that there are some improvements in their reporting culture, with on average 60 accidents and 250 incidents reported each year.

3.5.8 Nicaragua is participating in GRIAA and is in the process of amending its Civil Aviation Law, including provisions for the independence of the investigation authority. Nicaragua continues to rely on the support from CAA staff and SMEs in the conduct of investigations, and is also making progress towards improved ADREP reporting.

3.5.9 Dominican Republic advised that the independence of their investigation authority was established by the introduction of relevant legislation in 2006. There are six full-time investigators for OPS, TECH and HF and they investigate on average 11-12 accidents and incidents each year, mostly associated with aerial application. They have achieved 93.8%EI for AIG at their last USOAP audit, with further improvements being focused on occurrence notifications. Dominican Republic advised being most willing to contribute and assist other States in improving their AIG capacity.

3.5.10 Argentina Civil Aviation Accident Investigation Board (JIAAC) is participating and heading the AIG Regional Cooperation Mechanism for South American Region (ARCM-SAM), and advised having transitioned from the military and created as an independent civil aviation investigation authority in 2010. They have been functional since 2013, and currently experience on average 88 accidents each year, with an increasing number of incident investigations being conducted. With other participating stakeholders and experts, they are also involved in investigation and safety data management and analysis (SSP), as well as in the implementation of Family Assistance and Environmental Protection protocols related to accidents and field investigations.

Conclusions

3.6 The Meeting recognized the similarity in the challenges experienced by States not only within the CAR but also in the SAM regions. The Meeting also recognized the tremendous benefits in synergy from regional and inter-regional cooperation and collaboration fostered by Regional Investigation Organizations and by the opportunity for regular open and frank discussions from, for example, this AIG meeting and workshop.

3.6.1 The Meeting did not identify specific actions or activities that would be above or beyond those already identified within the current ICAO NACC AIG Work Plan and SAP activities.

Agenda Item 4: Discussion on AIG implementation matters

4.1 With reference to P/19 – Agenda Item 4, the Secretariat re-emphasized the AIG Vision Statement that was presented at the previous Meeting, insisting that States Investigation Authorities effectively meeting those key objectives would be meeting their mandate and readily have in place the key AIG components identified in the PQs.

4.2 The Secretariat presented the various key AIG principles in relation to its providing assistance to ICAO NACC States, as well as an overview of the key regional AIG Strengths, Weaknesses, Opportunities and Threats that have been identified.

4.3 The Secretariat presented a more comprehensive review of the following key AIG implementation elements:

1. Legislation and Regulations
2. Documents and Manuals
3. Resources
4. Training
5. Occurrence Reporting & Notification
6. Investigation Management & Conduct
7. Major Accident Readiness

4.4 The Secretariat provided the opportunity for clarification and more detailed discussions and advice on each of the above items, with an emphasis on an adequate understanding of:

- The importance of CE-1 Primary Aviation Legislation requirements with regard to AIG PQs and Annex 13;
- The necessity for achieving effective implementation of developing ‘operational’ procedures, forms, documents and manuals, and adequate guidance material so as to allow its investigators and staff to effectively and reliably carry out their assigned duties;
- The proposed draft Investigation Training Standard and Investigator Experience and Training Form;
- The need for Investigation Authorities to consider aligning their Occurrence Reporting/Notification and Investigation processes with the States SSPs and Risk Management and Safety Actions processes; and,
- The need for States to ensure their readiness to respond to major accidents, including the mechanisms to provide Investigation Authorities with the necessary additional funding, the coordination with the various other agencies involved and for media/public communications and the provision of Family Assistance.

4.5 The Secretariat provided additional clarifications and advice on the ICAO USOAP CMA Protocol Questions specific to AIG and, based on its ongoing review of AIG PQs responses from NACC States, presented a 'Hit List' of those AIG PQs that are most often found unsatisfactory due to either inadequate documentation or inadequate evidence of effective implementation being provided.

Conclusions

4.6 The Meeting recognized the challenges experienced by many States with AIG implementation and welcomed the opportunity for States to benefit from such clarification and advice on improving their AIG capacity to not only meet AIG requirements but to also to fulfil their Annex 13 obligations and responsibilities.

4.7 The Meeting did not identify specific actions or activities that would be above or beyond those already identified within the current ICAO NACC AIG Work Plan and SAP activities.

Agenda Item 5: Other Business

CAR Regional Chapter of ISASI

5.1 With one of the conclusions of this Meeting being the recognized need to foster regional collaboration and cultivate synergies, and in light of the success of several Regional International Society of Air Safety Investigators (ISASI) Chapters in creating synergies and ensuring the sustainability of AIG improvements through collaboration and cooperation between States, the Secretariat re-iterated its previous suggestion and invitation for States to consider the opportunity of creating a CAR Region Chapter of the ISASI, spearheaded by a cluster of founding States.

5.2 The representative from Argentina JIAAC informed the Meeting as to the existence of Latin America Regional Society of Air Safety Investigators (LARSASI), the Latin America Regional Chapter of ISASI, and offered to make a short presentation on this topic during the AIG Workshop.

Cooperation agreement between GRIAA and JIAAC/ARCM

5.3 As an independent and separate initiative to the meeting, both GRIAA and JIAAC/ARCM representatives met and agreed on a proposal to further mutual cooperation between their organizations. The Secretariat participated in the discussions as observer, and provided its support to both parties in their proposal.

**APPENDIX A
EXECUTIVE LIST OF CONCLUSIONS**

Number	Conclusion	Responsible for action	Deadline
C/01	ICAO CORRESPONDENCE TO INVESTIGATION AUTHORITIES (IA)		
	That, to ensure effective communication and involvement of State Investigation Authorities, States inform by 30 May 2019 to the ICAO NACC Regional Office, their AIG/IA Point of Contact and provide the appropriate contact and addressing information.	States	30 May 2019
C/02	AIG REFERENCE REPOSITORY WEB PAGE		
	That, to foster the exchange and networking of AIG good practices, implementation experiences, procedural material, and other relevant documentation, the ICAO NACC Regional Office develop by 15 December 2018 an AIG Repository webpage for States usage and benefit.	ICAO NACC RO	15 December 2018 Completed
C/03	AIG TRAINING COURSES AND TRAINING NEEDS		
	That, States a) provide, soonest and by 25 April 2019 , to the ICAO NACC Regional Office the names of their candidates for the next TSBC investigator course in June; and, b) to support States of progressing in the AIG implementation and improvements, by 25 June 2019 , identify and draft a list of desirable AIG training sources and providers for Basic and Recurrent investigator training, and in the drafting of their requirements for the content and curriculum for such investigation courses, with the view to assist existing regional aviation training organizations.	States	25 April 2019 25 June 2019

Number	Conclusion	Responsible for action	Deadline
C/04	AIG INVESTIGATORS –EXPERIENCE AND ROSTER		
	That, to coordinate and share of investigator resources within the RAIO framework, States to:		
	a) draft/share the minimum requirements in terms of qualifications and experience for investigators to actively participate in their investigations, including for inoculations requirements;	States	15 May 2019
	b) provide information on the current experience and qualifications of each of their individuals actively tasked with investigation duties;		
c) provide this information by 15 May 2019 .			
C/05	ECCAIRS/ADREP TRAINING		
	That, considering the continued need for ECCAIRS/ADREP training, not only for basic user level training (i.e. installation/set-up and data entry) but also the need for more advanced training that would allow extraction and analysis of ECCAIRS safety data:	States, ICAO	15 June 2019
	a) States advise by 15 June 2018 of their plan and their need for ECCAIRS basic training, with the view for the ICAO NACC Regional Office to schedule ECCAIRS training in 2019; and,		
b) the Secretariat continue to monitor ECCAIRS and report on any further development.			
C/06	2020 AIG WORKSHOP		
	That, to ensure the best benefits and meeting results for the next AIG Meeting,	States, ICAO	March2020 (exact dates TBD)
	a) ICAO organize the next AIG Meeting together with an AIG Workshop for March 2020 with the foreseen participation of other States and industry AIG leaders; and		
b) States provide their suggested topics for the proposed AIG workshop before 15 June 2019	15 June 2019		

ICAO NACC AIG REGIONAL WORK PLAN – 2018-11-14

	AIG Elements/Activities	Start/Finish	Responsible	Status	Notes
1	Drafting of AIG LEG & REG – Provision of assistance from ICAO TCB LEG Expert in reviewing the States draft AIG LEG & REG, as necessary and as requested by States.	N/A	ICAO NACC / TCB	Ongoing	Ref. RAIOCAR01 meeting record
2	ICAO Correspondence to Investigation Authorities (IA) - States to inform ICAO NACC of their IAs Point of Contact information and correspondence address.	By 30 January 2019	States	Ongoing	Ref. Draft Conclusion RAIO/CAR/01/01
3	Sharing of AIG Reference Documents – The Secretariat will undertake the creation of a Regional AIG Reference Repository for AIG LEG & REG, MoUs, Manuals and other reference materials to be made available to CAR States.	By 15 December 2018	ICAO NACC	Pending	Ref. Draft Conclusion RAIO/CAR/01/02
4	AIG Investigators – Experience and roster – That, to coordinate and share investigator resources within the RAIO framework, States to: a) draft/share the minimum requirements in terms of qualifications and experience for investigators to participate in investigations; b) provide information on the current experience and qualifications of each of their individuals actively tasked with investigation duties; and c) provide this information by 15 February 2019.	By 15 February 2019	States		Ref. Draft Conclusion RAIO/CAR/01/04
5	AIG training courses and training needs - States to identify and draft a list of desirable AIG training sources and providers for Basic and Recurrent investigator training, and draft their requirements for the content and curriculum for such investigation courses, with the view to assist existing regional aviation training organizations.	By 15 December 2018	States	Ongoing	Ref. Draft Conclusion RAIO/CAR/01/03

	AIG Elements/Activities	Start/Finish	Responsible	Status	Notes
6	<p>2019 AIG Workshop - That, to ensure the best benefits and meeting results for the next AIG Meeting,</p> <p>a) ICAO to organize the next AIG Meeting together with an AIG Workshop for March 2019 with the foreseen participation of other States and industry AIG leaders; and</p> <p>b) States to provide their suggested topics for the proposed AIG workshop before 15 December 2018.</p>	<p>By March 2019</p> <p>By 15 December 2018</p>	<p>ICAO NACC</p> <p>States</p>	<p>Ongoing</p> <p>Ongoing</p>	<p>Ref. Draft Conclusion RAIO/CAR/01/06</p>
7	<p>ACC/INC database and investigation management software – The Secretariat will continue to discuss and explore with TSBC the availability of their safety database and investigation management software to CAR States and organizations.</p>	<p>By end of March 2019</p>	<p>ICAO NACC</p>	<p>Ongoing</p>	<p>Ref. RAIO/CAR/01 meeting record</p>
8	<p>ECCAIRS/ADREP Training - That, considering the continued need for ECCAIRS/ADREP training, not only for basic user level training (i.e. installation/set-up and data entry) but also the need for more advanced training that would allow extraction and analysis of ECCAIRS safety data, States to advise by 15 December 2018 of their plan and their need for ECCAIRS basic training, with the view for ICAO NACC to program ECCAIRS training in 2019.</p>	<p>By 15 December 2019</p>	<p>States</p>	<p>Ongoing</p>	<p>Ref. Draft Decision RAIO/CAR/01/05</p>

ICAO NACC AIG Workshop
Summary of key conclusions and topics
Mexico City, 13 to 15 March 2019

1. GASOS Initiative

- *GASOS - A General Overview - ICAO HQ Tim ADAMS (REMOTE)*
- *GASOS - Organización Regional de Vigilancia de la Seguridad Operacional (RSOO) - E. MONTERO PENA (COCESNA)*

The presentations were of great interest to both RSOOs and RAIOS and provided a thorough overview of the ICAO GASOS initiative and potential benefits from the point of view of both ICAO global approach and from one leading RSOO's ongoing implementation (COCESNA).

The availability of funds and the role of ICAO NACC Regional Office in facilitating and providing assistance with assessments and through action plans were clarified.

2. AIG LEG

- *AIG LEG – Protection of Safety Information, Miguel MARIN, ICAO HQ (REMOTE)*
- *AIG LEG - IMPLEMENTACION DEL ANEXO 13 - G. GUIDO, ANIA (Nicaragua)*
- *AIG LEG - Status of AIG Implementation - Delvin MAJOR, AAIA (Bahamas)*
- *Bahamas AAIA Bill and Regulations Cabinet Presentation - D. Major*

The presentations provided attendees with a thorough understanding of the legal foundation and the requirements for the protection of safety investigations information and records, the balancing test process for the determination of 'justice vs safety' by competent authorities, etc. The 'titanic' difficulties and the long process for some States in amending their Primary Aviation Legislation were also highlighted, in contrast with other States such as Bahamas being in the process of successfully doing so.

There are good examples of Primary and other Aviation Legislation that are available and that States are willing to share with others for their benefit. The presentation from Bahamas also provided a good example as to the ability for States to improve their AIG operational capacity and conform to Annex 13 requirements, with the assistance of ICAO NACC through its SAP programme activities.

3. RAIO - AIG regional cooperation and collaboration (1-2x)

- *RAIO - ARCM, P. SUAREZ, ARCM-SAM*
- *RAIO - GRIAA, Capt. SALAZAR, GRIAA*
- *LARSASI – Latin American Chapter of ISASI – Daniel BARAFANI (JIAAC, Argentina)*

The presentations provided an excellent overview of the progress made by two of the key RAIO projects in South and Central America, and highlighted the strong spirit of solidarity and collaboration that is a key element of the AIG community and which manifests itself through the desire to share and contribute.

ARCM identified three important axis for RAIOS to achieve success: 1- independence, with the associated establishment of trust and credibility; 2- the mechanisms for the delegation of investigations; and, 3- the sharing of data intelligence with SMS/SSP programmes and counterparts. GRIAA provided an

excellent overview of the progress made since its initial inception in 2004, and especially the work recently accomplished in 'operationalizing' their Central American RAIO.

Attendees welcomed the recent announcement of the agreement between ARCM and GRIAA to collaborate more closely. The clear benefits of RAIOs in improving the overall AIG implementation of participating States were also highlighted. With the example of LARSASI, the advantages of establishing Regional ISASI Chapters with regard not only to collaboration and cooperation but also for improving training and AIG visibility were also clearly demonstrated.

4. Major accident preparedness and response

- *Major ACC Investigation, Xavier BARRIOLA, Airbus*
- *Major ACC Investigation, Daniel BARAFANI, JIAAC (Argentina)*
- *Major ACC Investigation, Enmanuel SOUFFRONT, (Dominican Republic)*
- *Major ACC Investigation, José Armando Constantino (Mexico)*
- *Human Factor Investigations, Salvador Méndez (Mexico)*
- *Family Assistance, César Jirón (Nicaragua)*

The presentations covered several key aspects related to major accident investigations. Airbus presented an overview of the role of manufacturers and the assistance available from them during investigations. This was further illustrated with the presentation of three cases involving Airbus. Airbus welcomed the opportunity to interface with several investigation authorities and to better understand how they can be of assistance to their investigations.

Argentina JIAAC, Dominican Republic CIAA and Mexico SCT presented on how investigations authorities can manage and conduct successful investigations despite very challenging conditions such as remote or inaccessible accident sites through prior preparation and effective coordination and liaison with key participating agencies.

The use of new technologies such as drones, the value from Human Factor specialist investigators, the need for independence for investigation authorities, as well as the need for CISM programme and how to deal with the families of the victims were also highlighted.

5. Investigation analysis

NOTE - Safety investigation analysis methodologies were initially planned as a key topic for the workshop, especially given their importance for both AIG and SMS/SSP audiences. However, due to the unavailability of presenters this topic could not be featured in this workshop.

6. SMS/SSP

- *SMS/SSP, Uwe D. C. NAVARRO, INAC (Nicaragua)*
- *SMS/SSP, Brenda NUNEZ, Ninoska RODRIGUEZ, IDAC (Dominican Republic)*

The subjects presented by both Dominican Republic and Nicaragua highlighted their leading role in their implementation of effective SMS/SSP programmes, and also highlighted the key relationship between AIG and SMS/SSP.

7. Field exercise (1/2 day - optional)

- a. Organized by MEX AIA (off site – MEX airport)
 - i. Transportation from ICAO NACC to Airport
- b. Methodology of Operation:
 - i. Advance (previous evening) briefing and provision of 2 scenarios (one for each of two INV teams)
 1. Scenario A - XC-UHM AS332L Puma (helicopter)
 2. Scenario B - N345MC Learjet 25 (aeroplane)
 - ii. Selection at random of the two IICs and their team members
 - iii. 2x MEX AIA to be D/IIC and Site Safety Officer for each team
 - iv. 2x ORG/OBS to observe the two teams and provide feedback
 - v. Following an intro briefing by ORG and the IIC/Team selection (30 min), the two teams IIC's will be expected to lead and brief their respective teams on the INV activities to be performed by their team during the exercise (1.5H)
 - vi. All will then gather for feedback/de-brief session (30 min), with each of the Team IIC and Group Leaders providing a summary of their findings and further investigation plan
- c. Key points to observe during the exercise is the conduct at the site:
 - i. Group preparation and briefings (by IIC and others)
 - ii. Site coordination and safety (e.g. handover from local authorities)
 - iii. Practical evidence gathering activities using basic/available means – e.g.:
 1. Documenting, incl. photo
 2. Sampling
 3. Site survey
 4. Witness interview

Nearly all workshop attendees participated in the investigation field exercise, thus providing an interesting mix of seasoned and experienced investigators and non-investigation experienced safety experts. This allowed the opportunity for each to learn about the way investigations are effectively carried out in team, as well as the various and different challenges that each accident case provide to investigators.

Attendees favourably commented on the benefits from regularly conducting such field exercises to review investigation management concepts and procedures, site safety procedures, team work and communication. This was also a unique opportunity for investigators from different organizations to discuss and exchange and overall learn from their operational techniques and procedures.

- END -