INTERNATIONAL CIVIL AVIATION ORGANIZATION

CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP

(GREPECAS)

SEVENTH MEETING OF THE GREPECAS AERODROMES AND GROUND AIDS/ AERODROME OPERATIONAL PLANNING SUBGROUP

(AGA/AOP/SG/7)

FINAL REPORT

Buenos Aires, Argentina
9 to 13 November 2009

November 2009

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HISTORICAL

ii.1 Duration and Site of the Meeting

The Seventh Meeting of the GREPECAS Aerodromes and Ground Aids/Aerodrome Operational Planning Subgroup (AGA/AOP/SG/7) was held in the Círculo de Oficiales de la Fuerza Aérea, Buenos Aires, Argentina, from 9 to 13 November 2009.

ii.2 Opening Ceremony

Mr. Daniel Ayesta, Director of Aerodromes of the National Civil Aviation Administration (ANAC) of Argentina, welcomed participants and addressed the Meeting presenting the new structure of the Civil Aviation Authority of Argentina. He also thanked participants for their attendance, wishing them a successful Meeting. Mr. Alberto Palermo, Vice-Chairman of the AGA/AOP Subgroup, on behalf of the Chairman of the Subgroup, Mr. Norberto Cabrera, also addressed the Meeting welcoming participants and presenting a brief history of the Group conformation.

Mr. Jaime Calderón, Secretary of the AGA/AOP Subgroup, welcomed participants to the Meeting, thanked the host State for its hospitality, referred to the challenges being confronted by airports with an increasing traffic and the need to maintain safe operations at airports. Finally he thanked participants for their presence in the Meeting and he officially opened the Seventh Meeting of the GREPECAS Aerodromes and Ground Aids / Aerodrome Operational Planning Subgroup (AGA/AOP/SG/7).

ii.3 Organization of the Meeting

At the beginning of the Meeting, the Secretariat invited the AGA/AOP Sub group members to proceed with the election of the President and Vice President, which was scheduled by the last day of the Meeting, due to the absence of the actual President, Mr. Norberto Cabrera, who could not assist to the Meeting adducing working reasons in his country and the actual Vice President, Mr. Alberto Palermo, due to the re organization of the Argentinean Administración Nacional de Aviación Civil, from which he is no longer a member.

Mr. Palermo, as last action from his direction, headed the election of the new Sub group directive. After the election took place, the Meeting elected Mr. George Legarreta as President and Mr. Sergio Gallo as Vice President.

According to the AGA/AOP/SG Terms of Reference, the President and Vice President are appointed for the next two years (2009-2011). Mr. Palermo expressed his gratitude to the Sub group members and stated his compromise in supporting the Subgroup. He invited the new President George Legarreta to assume the direction of the Meeting.

The Meeting was conducted by the newly elected Chairman Mr. George Legarreta (United States). Mr. Jaime Calderón, ICAO Regional Officer, Aerodromes and Ground Aids from the ICAO NACC Regional Office, acted as Secretary of the Meeting, assisted by Ms. Lia Ricalde, ICAO Regional Officer, Aerodromes and Ground Aids from the ICAO SAM Regional Office.

ii.4 **Working languages**

The working languages of the Meeting were Spanish and English. The documentation and the Report of the Meeting were available to participants in both languages.

ii.5 **Agenda**

Agenda Item 1 **Approval of the Meeting Agenda and Schedule**

Agenda Item 2 **Review of GREPECAS/15 Conclusions and Decisions related to the AGA/AOP/SG**

Agenda Item 3 **Review of Deficiencies and Air Navigation subjects in the AGA Field**

- 3.1 Database, Deficiencies and Action Plans in the AGA Field
- 3.2 Certification of Aerodromes / Safety Management Systems
- 3.3 State Safety Programme / Safety Management Systems (SSP/SMS)
- 3.4 Runway Safety
- 3.5 AGA related performance objectives contained in the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan

Agenda Item 4 **Review of Task Forces Activities, CARSAMPAF and ALACPA**

- 4.1 Report of the Runway Strips and Runway End Safety Areas (RESA) Task Force
- 4.2 Report of the Airport Demand/Capacity Task Force
- 4.3 Report of the Emergency Plans/Emergency Operations Centre (EOC) Task Force
- 4.4 Report of the AGA Aeronautical Studies Task Force
- 4.5 Report of the Airport Infrastructure Adequacy Task Force
- 4.6 Report of the Slippery Runways (Friction coefficient, Runway Decontamination and Rubber Removal) Task Force
- 4.7 Progress in the activities of the CAR/SAM Regional Bird/Wildlife Hazard Prevention Committee (CARSAMPAF)
- 4.8 Progress in the activities of the Latin American and Caribbean Association of Airfield Pavements ALACPA

Agenda Item 5 **Review of Other Technical Matters**

- 5.1 Amendments 10 and 4 to Annex 14, Volumes I and II, respectively
- 5.2 e-TOD Aerodrome mapping
- 5.3 Regional and Global ICAO activities in the AGA field

Agenda Item 6 Administrative Matters

6.1 Terms of Reference, Work Programme and Composition of the AGA/AOP/SG, with a performance based approach

6.2 Next Meeting Site and Dates

Agenda Item 7 Other Business

ii.6 **Attendance**

The Meeting was attended by 40 participants from 13 States and 3 International Organizations Members of the AGA/AOP Subgroup, and one Contracting State having Territories in the CAR/SAM Regions. The list of participants is shown in pages from iii-1 to iii-4.

ii.7 **List of working papers**

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/01	1	Draft Agenda, Working Method and Schedule of the AGA/AOP/SG/7 Meeting	16/10/09	Secretariat
WP/02	2	Review of the GREPECAS/15 Conclusions and Decisions	20/09/09	Secretariat
WP/03	3.1	Deficiencies Database in the AGA Field	25/09/09	Secretariat
WP/04	3.2	Implementation of Aerodrome Certification and Safety Management Systems	12/10/09	Secretariat
WP/05	3.3	ICAO SMS/SSP Evolution and Current Status	16/10/09	Secretariat
WP/06	3.4	Runway Safety	27/10/09	Secretariat
WP/07	3.5	Regional Performance Objectives in the AGA Field	14/10/09	Secretariat
WP/08	4.1	Report by the Runway Strips and Runway End Safety Areas (RESA) Task Force on the Outcomes by the Aerodrome Design Working Group Relative to Runway Strips, RESA, EMAS and PANS-AGA	06/10/09	Rapporteur
WP/09	5.2	Electronic Terrain, Obstacle and Aerodrome Mapping Information	19/10/09	Secretariat
WP/10	6.1	AGA/AOP/SG Terms of Reference, Work Programme and Composition	29/10/09	Secretariat
WP/11	4.7	Activities Developed by the CAR/SAM Regional Bird/Wildlife Hazard Prevention Committee (CARSAMPAF)	27/10/09	CARSAMPAF
WP/12	4.5	Report by the Airport Infrastructures Adequacy Task Force Taxiway Designs and Procedures to Minimize Runway Incursions	11/10/09	Rapporteur and IFALPA
WP/13	4.2	Report by the Airport Demand/Capacity Task Force	3/11/09	Rapporteur
WP/14	4.8	Review of ALACPA Activities	9/11/09	ALACPA

ii.8 **List of information papers**

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
IP/01	--	General Information	09/11/09 Revised	Secretariat
IP/02	--	List of Working and Information Papers	30/10/09	Secretariat
IP/03	5	ENGLISH ONLY - United States Federal Aviation Administration (FAA) Sponsored Pavement Maintenance and Rehabilitation Training Workshops for the Caribbean Region	12/10/09	United States
IP/04	7	Feasibility Study on the Development of PANS-AGA	28/10/09	Secretariat
IP/05	5.3	ICAO Headquarters AGA Section Work Programme	30/10/09	Secretariat
NI/06	4.1	SPANISH ONLY – Análisis de Obstáculos Próximos a los Aeródromos	04/11/09	Brazil
NI/07	4.4	SPANISH ONLY – Estudios Aeronáuticos de la Franja de Pista/RESA	04/11/09	Brazil
NI/08	4.2	SPANISH ONLY – Estudios de Demanda y Capacidad	06/11/09	Brazil
NI/09	4.2	SPANISH ONLY - Utilización del sistema de luces de aproximación MALSR (Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights)	10/11/09	Uruguay

ii.9 **Draft Conclusions, Draft Decisions and Decisions**

The AGA/AOP Subgroup records its activities in the form of Draft Conclusions, Draft Decisions, and Decisions, as follows:

Draft Conclusions: *Conclusions that require approval by GREPECAS prior to their implementation.*

Draft Decisions: *Decisions that require approval by GREPECAS prior to their implementation*

Decisions: *Decisions that deal with matters of concern to the AGA/AOP Subgroup.*

ii.9.1 **Draft Conclusions**

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Agenda Item 1: Approval of the Meeting Agenda and Schedule

1.1 The Secretariat invited the Meeting to approve the draft meeting agenda and schedule. The Meeting approved the meeting schedule and the agenda as presented in the Historical section of this Report.

Agenda Item 2: Review of GREPECAS/15 Conclusions and Decisions related to the AGA/AOP/SG

2.1 The Secretariat invited the Meeting to review the GREPECAS/15 Meeting conclusions and decisions relevant to the AGA/AOP/SG and to consider those with pending actions in its deliberations throughout the Meeting duration.

2.2 The Secretary informed the Meeting that, in compliance with Conclusion 15/19 – *Aerodrome certification training*, an ICAO CAR/SAM Seminar/Workshop on Aerodrome Certification and Aeronautical Studies was held in Saint Lucia from 9 to 12 June 2009.

2.3 With regard to Conclusion 15/20 - *New Text within Paragraph 3.5, Volume 1, Annex 14 for Runway End Safety Areas (RESAS)*, the Meeting was informed that the proposal is being considered by the ICAO Secretariat, the Secretary also mentioned that guidelines on this matter already exist in Annex 14 Appendix A, and if the appropriate authority considers a runway end safety area essential, consideration may have to be given to reducing some of the declared distances.

2.4 On Conclusion 15/21 - *Seminar on Airport Demand/Capacity for the CAR/SAM Regions,* the Secretary informed that the seminar is scheduled for 2010 and was dealt with under Agenda Item 4.2 of this Meeting. Furthermore, the Meeting agreed that a workshop should be included in this event to let participants exchange experiences on apron management and related actions on apron safety.

2.5 As to Conclusion 15/22 - *Survey on Aeronautical Studies in the AGA Field,* the survey was sent to States accredited to NACC and SAM Regional Offices. Due to the change of date of the AGA/AOP/SG/7 Meeting for November 2009, the deadline for States submission was extended to 31 may 2009. The surveys received from the States/Territories were delivered to the rapporteur of the Aeronautical Studies in the AGA field.

2.6 Conclusion 15/23 – *Location of Obstacles*, CAR States: Anguilla, Costa Rica, British Virgin Islands, Montserrat and United States, and SAM States: Bolivia, Brazil and Chile, have informed on the determination of elevations and the location of obstacles in the runway approach areas. The updating of information to be included in the AIP was concluded on 31 July 2009, according to the deadline

2.7 Regarding Conclusion 15/24 - *Identification of Marking Pairs to be Eliminated*, the proposal to eliminate the touchdown zone marking pairs *closer* to the runway centre line was sent to ICAO Headquarters in May 2009. The ICAO ANC Secretariat considered that the proposal were included in its work programme. The revision of the text in Annex 14 is in process.

2.8 Finally, Conclusion 15/25 – *Compatibility of English and Spanish Wording in Annex 14, Vol. I, Para. 5.2.5.4,* the Secretary informed that the proposal to correct the Spanish version had been sent to ICAO Montreal. The ICAO ANC deemed it convenient that the proposal be included in the work programme of the ANC Secretariat. The inclusion of the text in Annex 14 is in process.

2.9 The Meeting had referred again to the GREPECAS/15 Conclusions 15/20 and 15/25 addressing the great utility of having the revised versions in English and Spanish of paragraph 5.2.5.4, Annex 14, Vol. I. To this respect the Secretary informed that the proposal was in a reviewing process.

Agenda Item 3: Review of Deficiencies and Air Navigation subjects in the AGA Field

3.1 Database, Deficiencies and Action Plans in the AGA Field

3.1.1 The Meeting reviewed the current deficiencies in the AGA field contained in the aerodromes deficiencies notification form of the CAR/SAM Regions. Furthermore, the States members were requested to present the list of corrected deficiencies in order to update the GANDD deficiencies database before the Meeting comes to its end.

3.1.2 Brazil indicated that they had notified to SAM Regional Office on the correction of deficiencies, but these had not been updated in the GANDD. The SAM Regional AGA Officer requested Brazil to send once again the information for further updating the GANDD. Furthermore, Brazil and Chile expressed that they had tried to update on line valid deficiencies in the GANDD web page without success. The Secretariat indicated that the best way to update this information is through the AGA Officers, once they received the information from the States, they validate it and authorize its update in the GANDD through the administrator who has direct access to the referred database. In this sense, the Secretariat mentioned that the developed procedures based on GREPECAS Conclusion 14/59 and Decision 14/60 should be applied.

3.1.3 The Secretariat expressed to the Meeting that there are several States that don´t report yet to the Regional Offices on corrections made to the reported deficiencies by AGA Officers on their airport visits for updating the GANDD database. He mentioned on existing deficiencies reported a long time ago and these have not yet updated because States don´t inform on actions taken for the correction of these deficiencies.

3.1.4 Haiti questioned the relationship between the update of a deficiency and the action plans required by GREPECAS when a deficiency is reported. The Secretary clarified the situation indicating that every deficiency should have and action plan including the estimated dates for correction.

3.1.5 As a large number of deficiencies are encountered in the aerodromes field, the Secretary addressed the importance of maintaining the GANDD database updated all the time, because the work performed by the aerodrome specialists should be reflected in it. Furthermore, he mentioned the importance of applying updating developed procedures to the GANDD based on Conclusion 14/59 and Decision 14/60 as mentioned before.

3.2 Certification of Aerodromes / Safety Management Systems

3.2.1 The Secretary emphasized the importance that ICAO requirement for the certification of aerodromes used for international operations in conformity with specifications contained in Annex 14 and other pertinent specifications, as well as the implementation of the safety management system (SMS) in aerodromes.

3.2.2 The Meeting agreed upon the need for ICAO Regional Offices to have updated information regarding the actual aerodrome certification process and SMS implementation. The Secretariat urged the Meeting to update the tables attached to the working paper and have them available at the end of the Meeting.

3.2.3 Brazil expressed that of the 26 airports, only 15 have been certificated following Annex 14 requirements since Brazil only considers certifiable those airports with more than one million passengers. The information on this difference has been reported to ICAO HQ in Montreal. However, with reference to SMS implementation, Brazil has implemented the programme in 26 international and domestic airports of the country due to their condition of public usage.

3.2.4 Chile requested to extend the deadline for submission the information on certification update; the Secretary indicated that updates could be presented in February 2010. This deadline extension is considered as a conclusion of the Subgroup.

DRAFT
CONCLUSION 7/1 UPDATED STATUS ON AERODROME CERTIFICATION

That States submit to ICAO NACC and SAM Regional Offices a report on the implementation of airports certification no later than 28 February 2010.

3.2.4.1 The Meeting agreed upon that the implementation of this Conclusion requires the appliance of the ”fast track” immediate procedure in view that GREPECAS will consider the referred conclusion next October 2010.

3.2.5 The Chairman inquired on the feasibility to adopt the same SMS programme at different airports, which is the case of the United Kingdom conformed by several countries. The Secretary confirmed this possibility considering the similarity in size, installations and services of the airports. He mentioned the example of Central America where COCESNA has used a similar pattern in different States, such as the Aerodrome Manual.

3.3 State Safety Programme / Safety Management Systems (SSP/SMS)

3.3.1 The Secretary presented to the Meeting the evolved process of the operational safety concept and subsequent implementation of the Safety Management System (SMS) and the State Operational Safety Programmes (SSP), which presents singular challenges for the industry as well as for the actual responsible organizations. In this regard, he gave a perspective on evolution, challenges and some implementation issues that should be overcome during the migration process towards SMS/SSP environment.

3.3.2 In this respect, the Meeting was invited to express their needs to ICAO Regional Offices to organize basic courses for the SSP implementation by States. Different representatives indicated their interest in participating in these courses. The Meeting agreed on the following draft conclusion :

DRAFT
CONCLUSION 7/2 WORKSHOPS ON SSP AND SMS COURSES

That ICAO Regional Offices organize workshops on the implementation of the SSP by States and SMS for aerodrome operators, during 2010.

3.4 Runway Safety

3.4.1 Regarding runway operational safety, the Secretary expressed that this is a collective responsibility (mainly to airport operators, Air Navigation services providers and Air Line operators).

3.4.2 While airport authorities do not orient efforts to reduce incidents caused by runway incursions and excursions, these incidences will continue happening and catastrophic consequences might occur regarding runway operational safety.

3.4.3 A wide range of factors contributes to runway incursions, including: imperfect aerodrome design, technology, procedures, training, regulations and human error.

3.4.4 States were recommended to develop runway incursion prevention programmes as well as the formation of runway safety teams. Also, the best air safety practices were pointed out, as well as different States initiatives, principally in Europe, the United States and Canada, addressed to improve runway safety. These initiatives include the implementation of action plans with recommendations that should be considered to decrease runway incidents and improve operational safety.

3.4.5 Furthermore, he mentioned that several factors should be considered in the development of management runway safety, as a continuous effort of several actors from the aviation industry. The Meeting was invited to inform Regional Offices about the best practices implemented at their airports in terms of runway incursions and excursions and to be presented no later than 31 March 2010.

DRAFT
CONCLUSION 7/3 BEST PRACTICES TO PREVENT RUNWAY INCURSIONS /EXCURSIONS

That States submit to NACC and SAM Regional Offices:

a) a report on the best practices used to prevent runway incursions/excursions in airports, and that; and

b) this report be submitted no later than 30 March 2010.

3.4.6 The Meeting proposed the creation of a task force for the collection of information and to focus their work in order to minimize runway incursions/excursions. This group should include airlines and related organizations, and analyze existing information. After further discussions the Meeting agreed that the Task Force on Management of the Movement Area should undertake these tasks and there was no need to create a new Task Force.

3.4.7 One important factor from the point of view of the operator is the lack of harmonization of taxiway designation in different States. In this sense, a recommendation was raised for Montreal to provide guidelines for the harmonization of taxiway designation.

DRAFT
CONCLUSION 7/4 HARMONIZATION OF TAXIWAY DESIGNATION

That ICAO Montreal considered the development and provision of guidelines on the harmonization of taxiway designation in order to reduce confusion from operators and to minimize runway incursions.

3.4.8 Brazil indicated that there are methods/means to prevent runway incursions/excursions. However, a good airport design during the construction of a new airport or the reconstruction of an existing one can help to avoid runway incursions/excursions situations.

3.5 AGA related performance objectives contained in the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan

3.5.1 Subsequently, the Secretary made reference to the regional performance objectives in the field of aerodromes. He emphasized the fact that one if the key aspects of the performance-based approach to air navigation planning is the development of performance objectives with related measurable indicators and metrics. He also mentioned that an initial set of key performance areas and associated metrics to be used as the basis for performance measurement of the regional air navigation work programme, has been proposed.

3.5.2 The Secretary recommended to the Meeting the creation of an ad hoc group to review the information contained in the working paper and make comments on the AGA regional work programme, based on Global Air Navigation Plan. These comments should be based on performance objectives, considering the forms referred to the performance framework presented to the Meeting.

3.5.3 The Chairman invited the States representatives to be part of the ad hoc group. Brazil expressed its interest in participating due to the experience already initiated in its country. In this respect, the representatives of Chile, Colombia and Haiti jointed the group. The ad hoc group should elect its rapporteur. In view that several areas are involved, Brazil indicated that more than one representative of its State would participate in the ad hoc group.

3.5.4 The ad hoc group presented to the Meeting on Thursday 12 November 2009, the chart shown in **Appendix A** to this part of the Report, with recommendations to the terms of reference based on the WP/7 presented by the Secretariat.

3.5.5 On the proposal of the ad hoc group, the Meeting took note and made some changes and recommendations, which are included under Agenda Item 6.1 - Terms of Reference, Work Programme and Composition of the AGA/AOP/SG, with a performance based approach.

3.5.6 Regarding the establishment of a set of metrics related to key performance areas including access, capacity, cost effectiveness, efficiency, environment, flexibility, predictability and safety, the ad hoc group mentioned that these metrics should be established by States in order to obtain a future harmonization in the Regions.

APPENDIX

TASK NUMBER	DESCRIPTION OF THE TASK	TASK OF THE PERFORMANCE OBJECTIVE	PRIORITY	EXPECTED RESULTS	DATE	
					START	END
AGA/AOP/7	• Implementation of an action plan for the prevention of runway incursions and excursions • Coordinate the implementation of initiatives with the seven components of Doc. 9854, (AOM, DCB, AO, TS, CM, AUO, ATMSDM) as appropriate.	**a) Improve runway safety.** Runway incursions and excursions are extremely dangerous and have resulted in a number of serious incidents and collisions in the past years. **c) Improve runway capability** Uncertainty in the position of an aircraft or vehicle during visibility conditions due to meteorological conditions, at night due to darkness, or when traffic is distant. **e) Separation of taxiways and improvement in the situational awareness of the movement area** Incident or accident risk at taxiways and apron – lack of follow-up to Air Traffic Control (ATC) instructions, particularly at night or in low visibility conditions, can lead to an accident or incident. **j) Situational awareness at the ground service for aerodrome operations.** Identification of conflicts and their solution should be provided at the movement area, including runways, taxiways and apron.	A	Establishment of a set of specific recommendations for implementation by the aerodrome community involved in runway operations. The implementation of the Advanced Surface Movement Guidance and Control System (A-SMGCS) evaluated, with views to: • Detect when an aircraft has landed and leaves the runway free; • Know when a departure aircraft starts taxiing on the runway; • Detect when a vehicle is on the runway; • Decide whether another take-off is possible, or up to just before the next landing, through the observation of the aircraft landing speed; • Provide the controllers with a clear idea of the traffic situation, under all types of weather conditions; • Permit the controller to keep situational awareness under all conditions; • Allow workload reductions and planning improvement through knowledge of air traffic current and pending situations; and • Ensure total situational awareness under all weather conditions and permit the controllers t detect aircraft and vehicles deviating from assigned routes.	Dec 2009	Dec 2010

TASK NUMBER	DESCRIPTION OF THE TASK	TASK OF THE PERFORMANCE OBJECTIVE	PRIORITY	EXPECTED RESULTS	DATE	
					START	END
AGA/AOP/11	Minimize adverse meteorological conditions in the airports operational capability	**Improve runway capability**. Uncertainty in the position of an aircraft or vehicle during visibility conditions, at night or when traffic is distant. **Minimize adverse meteorological conditions in the capability.** Significant risk due to visibility diminishment. Poor situational awareness and high workload are contributing factors to total traffic reduction.	A	• Establishment of reduced visibility conditions capabilities for aerodromes in the Region; • Establishment of better practices for low visibility operations, base don ICAO criteria; and • Evaluation for the adoption of Advanced Surface Movement Guidance and Control System (A-SMGCS).	7th Meeting	9th Meeting

TASK NUMBER	DESCRIPTION OF THE TASK	TASK OF THE PERFORMANCE OBJECTIVE	PRIORITY	EXPECTED RESULTS	DATE	
					START	END
AGA/AOP/12	• Implement Aerodrome Collaborative Decision Making (CDM), prioritizing the following aspects: o Recovery of procedures on adverse conditions o Determination of service time in apron o Variable taxi time o Apron congestion	**Congestion in apron (Congestion due to halts and assigned gate)**. Apron congestion is an every day challenge, with aircraft waiting for gate allocation or delays at gates **Sharing of flight and airport information** Airport operators should participate in the sharing of information with the aim or improving the planning of their resources, using information on flight real time, accessible through CDM **Minimize adverse meteorological conditions in the capability.** Significant risk due to visibility diminishment. Poor situational awareness and high workload are contributing factors to total traffic reduction. **On ground service time and variable taxi time**. The aircraft on ground attention process is complex and includes diverse individual operations. It is difficult to follow up the process and obtain precise information as to when an aircraft is ready to exit its parking post.	B	• Establishment of flight and aerodrome sharing of information, through the connection among the air traffic control (ATC), airport and aircraft operators, and ground service providers, through the application of Aerodrome Collaborative Decision Making (A-CDM). • Implementation of Adverse Conditions Collaborative Decision Making, with view to the adoption of better practices during predictable or unpredictable capability reduction periods. • Implementation of Collaborative Decision Making for the apron service, with views to permit: o Identify the important steps through which it is possible to precisely monitor the progress of an aircraft; o A common and precise situational awareness of those involved in the process; and o Availability of precise exit times that can be provided to the air traffic controller. • Establishment of an air traffic prediction methodology.	8th Meeting	10th Meeting

Agenda Item 4: Review of Task Forces Activities, CARSAMPAF and ALACPA

4.1 Report of the Runway Strips and Runway End Safety Areas (RESA) Task Force

4.1.1 The Rapporteur of the Task Force made reference to the Seventh Meeting of the Aerodrome Design Working Group (ADWG), under the Aerodromes Panel (AP), which took place in Montreal, Canada, from 14 to 16 July 2009. In addition, the group was informed that in that Meeting various topics were dealt with, which included:

a) the definition and specifications for the runway strips and runway end safety areas [RESA];

b) the acceptance of the Engineered Materials Arresting Systems [EMAS];

c) the development of a procedures for air navigation services – aerodromes [PANS-AGA] document; and

d) tasks associated with the continuous review to Annex 14, Volume 1, *Chapter 3, Physical characteristics.*

4.1.2 With this information, the AGA/AOP/SG members were made aware of the most significant changes proposed by the ADWG to Annex 14, Volume I, which might affect the runway strips and RESAs.

4.1.3 The Meeting took note of the results reported by the ADWG/7 under the AP, and was informed on the establishment of the PANS – Aerodromes Study Group (PASG) to support the Secretary in developing a document on *Procedures for Air Navigation Services and Aerodromes* that takes into consideration aerodrome operational management.

4.1.4 With regard to the experience gained by the State, the representative from Brazil indicated that technical studies are being carried out to verify the possibility of replacing the EMAS at Sao Paulo/Congonhas airport and compensate with declared distances, or through the use of another type of surface to compensate the lacking longitude.

4.1.5 The representative from Colombia requested ICAO for design criteria such as the braking minimum in order to evaluate the feasibility of using local material for EMAS. The Chairman mentioned that in a previous Meeting he has presented as rapporteur of the Runway Strips and Runway Safety Areas Task Force, information on the use of these materials as practice in the United States of America.

4.1.6 The representative from Brazil indicated in her presentation that, taking into account the restructuring of the ICAO PASG (PANS-AGA study group), whose objective is, among other things, the definition of a methodology to carry out aeronautical studies, the Task Force on Aeronautical Studies should limit its analysis to the areas of responsibility of the airports administrations, that is to say, up to the external limit of the runway strip/RESA.

4.1.7 In this respect, the Secretary emphasized that the aeronautical studies can only be carried out in the areas that are specified in Annex 14 and cannot be extended to other areas.

4.2 Report of the Airport Demand/Capacity Task Force

4.2.1 The Rapporteur of the Task Force pointed out that in the sixth Meeting of the GREPECAS AGA/AOP Subgroup it was agreed by the Meeting that this Task Force should evaluate the results of the survey on "AIRPORT DEMAND/CAPACITY APPROACH, APRON MANAGEMENT SERVICE" " and propose further actions to increase apron capacity and safety.

4.2.2 In addition, it was agreed to raise a proposal to the Secretariat of both Subgroups, CNS/ATM and AGA, for them to develop a joint working methodology, so that, under a systemic perspective, a joint strategy should be reached in order to carry out an inventory, evaluation and provide guidelines to resolve the bottlenecks that might arise in the aircraft traffic flows in the aeronautical area.

4.2.3 The Rapporteur indicated that, as in previous Meetings, CAR/SAM States or Territories have not submitted any case study to the Task Force for analysis, becoming apparent that they are not confronting capacity/demand problems at their airports. The majority of the aerodromes have in place apron management regulations, most of them dictated by the aeronautical authority or in a joint manner. These are commonly applied by different airport users.

4.2.4 That 47% of the airports do not have in place a statistical report of incidents/accidents occurring at aprons or this is not complete, reflecting a weakness in the risk management process that each of them should have. That 76.5% of the States/Territories indicated not having in place a SMS at their airports. Nevertheless, most of them are in the process of implementing SMS, and are currently the training and dissemination stage.

4.2.5 In regard to apron demand/capacity, that 23.5% of the States/Territories indicated confronting some type of congestion. In turn, 41.1% indicated having apron congestion problems occasionally in some aerodromes, especially at peak hours or due to flight delays or earliness. Only one of the States/Territories replied that has experienced some degree of congestion in the manoeuvring area.

4.2.6 The Task Force suggested the organization of an ICAO workshop/seminar, in which States share their experiences with regard to apron management, and the actions adopted to improve their safety level. As a result of this workshop/seminar, a reference guide containing aspects such as apron procedures, check lists, statistical registration forms, training of personnel working at aprons, among others, should be drafted, in order to provide a consultation document to CAR/SAM States/Territories.

4.2.7 The Secretary emphasized that there is already programmed a workshop/seminar on airport demand/capacity for year 2010 and the workshop will be favourable for exchange of knowledge and experience between States on apron management and consider further actions for maintaining safety. As a result of this workshop a Reference Guide will be elaborated for further apron inspections, check lists and guidelines for training of personnel working at aprons.

4.2.8 The representative of Brazil made some comments to the Meeting, regarding the studies and practices developed in determining aerodrome demand and capacity which are being applied to Brazilian main airports. The mentioned programme was developed by the Centro de Gestiones de Navegación Aérea (CGNA) and its application has been presented through seminars, including practical workshops for its better understanding. .

4.2.9 These procedures include all the variables involved in airport demand/capacity related aspects, by applying appropriate parameters to be used in the patterns and procedures for the calculation of each runway landing capacity. To allow the development of these studies, different data is necessary to be collected, such as: planning factors, landing and take-off operational factors (runway occupancy time, aircraft mix, threshold usable factors, etc.).

4.2.10 With these parameters, the Brazilian CGNA developed a mathematical model for the theoretical calculation consisting of 14 steps to obtain the runway capacity at Porto Alegre Airport, based on aircraft performance, in conformity with the classification contained in Doc. 8168 – PANS OPS. This model, as indicated the Brazilian representative, can be introduced to the CAR/SAM States, in accordance to local factors and, if the case, it should be considered as a useful tool until ICAO publishes a manual in this regard.

4.2.11 Finally, he emphasized that the Meeting should consider the Brazilian experience as a tool to resolve domestic and international air traffic arrivals and departures saturation problems. In relation to previous considerations , which may lead to adopting the method a Task Force should be established to consider the validity of the Brazilian proposal in terms of air circuit in compliance with ICAO Standards and Recommended Practices (SARPs).

4.2.12 It was proposed that the Demand/Capacity Task Force invite the representative of Brazil to be part of the group, and their activities should be focus using the methodology applied in Brazil.

4.2.13 On the other hand, the representative of Uruguay shared his experience to the Meeting in the use of the MALSR (Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights) which, even though differs with Annex 14, Volume I, SARPs this system provides visual approach area identification, centre line alignment and reference to aircraft for day or night-time operational landing.. This configuration has been approved by the United States Federal Aviation Administration (FAA) for ILS Category I and would allow States whose airports, due to its location, have terrain constraints for installation of Category I approach lighting system recommended in Annex 14, Volume I, Chapter 5.

4.2.14 DINACIA Uruguay has used MALSR according to the FAA configuration for Category I approaches, without minimum reduction. MALSR has been used by United States for more than 30 years.

4.2.15 The system which was homologated by the DINACIA Standards, Procedures and Inspections Office, has been installed since 2004 in Montevideo/Carrasco International Airport in runway 19, which is served by an ILS CAT I with a 3° glide slope , the system has a 720 metre length according to FAA MALSR configuration.

4.2.16 DINACIA is currently drafting the AGA Uruguayan Aeronautical Regulation (RAU), in conformity with ICAO USOAP audit recommendations, with the perspective of including the MALSR as an option to regulate the use of the precision approach lighting system for Category I.

4.2.17 The representative of Uruguay invited the Meeting to take note of the information provided and to study and consider the action required in order that the MALSR be incorporated in the SARPs of Annex 14, Volume I, Chapter 5 – Category I, precision approach lighting system, as a third configuration allowing States to use this system according to their needs, without affecting safety.

4.2.18 The Secretariat informed that the Visual Aids Panel (VAP) is working on this subject (MALSR) but yet did not reach consensus. In this sense, ICAO Category I standards for approaching lighting system are contained in Annex 14, Vol. I. should apply

4.3 Report of the Emergency Plans/Emergency Operations Centres (EOC) Task Force

4.3.1 The Rapporteur of the Task Force was absent from the Meeting.

4.4 Report of the AGA Aeronautical Studies Task Force

4.4.1 The representative of Brazil informed the Meeting on the experience of his State with regard to aeronautical studies carried out for specific situations in the analysis of obstacles close to aerodromes, using Annex 14 and Doc 8168 (PANS OPS), as well as the guidelines for aeronautical studies presented at the ICAO CAR/SAM Seminar/Workshop on Aerodrome Certification and Aeronautical Studies (Gros Islet, Saint Lucia, 9 to12 June 2009).

4.4.2 Taking into account the experience gained from those studies during the past years, they concluded that it is possible to apply a less restrictive situation than that presented in Annex 14. In the approach analyses (2% and 2.5%) and without violation to safety, the Visual Follow-up Surfaces (VSS) method is applied, which covers a larger area with a 1,80º slope from the Minimum Descent Height (MDH) for a 3º slope for instrument approach procedures, in compliance with the PANS-OPS.

4.4.3 In accordance to the last PANS OPS amendment, , all direct instrument approach procedures, applicable since March 2007, should be protected from obstacles in conformity with the VSS, after the aircraft has reached the Decision Altitude/Height (DA/H) or Minimum Descent Altitude/Height (MDA/H). The procedures published since that date must be evaluated in terms of VSS until 2012, with the possibility of cancellation in cases of surface violations.

4.4.4 He concluded his presentation indicating that, as regards the adequacy of Annex 14 parameters with those of the PANS-OPS, it is feasible for obstacle analysis in the visual follow up, after instrument approach procedures, as long as Annex 14, Chapter 4, cannot be applied.

4.5 Report of the Airport Infrastructure Adequacy Task Force

4.5.1 The first report of the Task Force focused in minimizing runway incursions, recommending specific taxiway designs, avoiding entrance taxiway designs having any trend towards confusing the pilot and using the appropriate rapid exit taxiways only as runway exits.

4.5.2 The viewpoints of IFALPA (International Federation of Air Line Pilots Association) on how to and where should airport authorities build taxiways surrounding runways, in addition recommending that aircraft operators and vehicles use common frequencies and languages during operations, as well as using specific signs and markings in taxiways, as they are used by pilots. Section 2 provides air views of several taxiway designs with a high percentage of runway incursions, using the FAA Runway Safety Report: “Runway Incursions Diagrams at 75 Airports in U.S.A., 1997-2000.”

4.5.3 In case of confronting problems with taxiways use the airport authorities should follow IFALPA recommendations in the construction of future taxiways and those from Section 2 of the FAA Report, to reconstruct existing taxiway entrances that are similar to the illustrated inappropriate taxiway designs and potentially favourable for runway incursions.

The IFALPA representative informed the Meeting of situations when airline operators are unfamiliar with several airports in our regions and they are not aware of the location of hot spots. Aiming at minimizing runway incursions/excursions the Meeting recommended that these hot spots should be published in the AIP respectively.

4.7.10 To this respect, Annex 4, Aeronautical Charts, eleventh edition July 2009, specifies in section 14.6 – Aerodrome Data, from chapter 14 – Aerodrome and Ground Movement Chart – ICAO, that on this chart shall show all the information on the Aerodrome/Heliport Chart – ICAO relevant to the area depicted, including:

4.7.11 Where established, hot spots locations with additional information properly annotated. Additional information regarding hot spots may be shown in tabular form on the face or verso in the chart.

4.7.12 Furthermore, the IFALPA representative has recommended to the Meeting that aiming to preventing runway incursions, that airport operators should provide non entrance mandatory instruction signs at rapid exit taxiways [RET]. In this sense, it is generally known that many airports use NO ENTRY sign at RET, but still in some places, aerodrome operators use RET to enter the runway for small aircraft that does need the full length for takeoff. But anyway, the recommendation is worth for further study for the Task Force on Movement Area.

4.6 Report of the Slippery Runways (Friction coefficient, Runway Decontamination and Rubber Removal) Task Force

4.6.1 The Rapporteur of the Task Force was absent from the Meeting.

4.7 Progress in the activities of the CAR/SAM Regional Bird/Wildlife Hazard Prevention Committee (CARSAMPAF)

4.7.1 The Sixth International Conference on Bird Strike and Wildlife prevention was held in Brasilia, Brazil, from 24to 28 November 2008, with the joint participation of the European and US International Bird Strike Committee (IBSC), and the Caribbean and South American Regional Committee on Bird Strike and Wildlife (CARSAMPAF). The Seventh International Conference on Bird/Wildlife Hazard will be held in Grenada, Eastern Caribbean, between 24 and 27 November 2009.

4.7.2 At present, the Regional Committee has 97 registered members. By way of reference, the CARSAMPAF Committee had 17 members before the Fifth Conference held in Ecuador, in October 2007. The specific objectives of the "2009 Annual Work programme" are:

a) Prioritize tasks and activities concerning bird strike hazard which are the responsibility of the CARSAMPAF Committee;

b) Enable the exchange of experiences concerning bird strike hazard among CAR/SAM States/Territories;

c) Measure the degree of communication and participation of the members, in order to assess their real commitment and contribution to the Regional Committee;

d) Maintain permanent coordination between the Board and the various Group Coordinators of the Regional Committee;

e) Contribute to minimise the risk of impact between aircraft and birds/fauna;

f) Maintain continuous development and increase ongoing activities carried out by the Regional Committee;

g) Consolidate an efficient and integrated management, in order to comply the recommended measures by ICAO; and

h) Consolidate an efficient system of dissemination of information.

4.7.3 Among the 2009 tasks of the group coordinators, it was mentioned :

a) Implementation of technical topics in the CARSAMPAF web page, including the establishment of a public forum at http://foro.carsampaf.org/.

b) Compilation of information from the States regarding bird strike and wildlife prevention programmes implemented at their aerodromes, in order to create a database to allow the analysis of existing gaps in order to plan future assistance of the Regional Committee to the States that so require.

c) Keep in touch with States representatives on bird strike and wildlife prevention in order to obtain information on the aerodromes activities and the training of personnel engaged in the mitigation and control of the risk of birds and wildlife, furthermore to compile information regarding the training of biologists and their support to the measures to be adopted at aerodromes.

d) Compile information sent by States in order to develop bird strike graphical statistics for the CAR/SAM Regions.

e) Participation at the IBIS Meeting held in England, in June 2009, where the activities of the CARSAMPAF Committee were informed.

f) Organization of workshops, within the framework of the CARSAMPAF International Conferences programme, especially in relation to Safety Management Systems (SMS), from the point of view of bird strike and wildlife management, and those related to risk management.

g) Some modifications have been proposed to the Organization Regulations of the Committee, such as a reduced tenure for Board members from 4 to 2 years, with only one chance of re-election. There is also a proposal to add a new article to the regulations, No. 20, establishing the use of e-mail to inform about the activities, and to modify article No. 13, changing "Secretariat Coordinator" for "Secretary", and "Organization Regulations" for "CARSAMPAF Committee Regulations". These proposals will be discussed on the next Meeting of the Committee, the 7th CARSAMPAF International Conference to be held in Point Salines, Grenada, East Caribbean, on 24 - 27 November 2009.

h) Creation of National Bird Strike and Wildlife Committees and Local Aerodrome Committees in the States are being constantly promoted through the web page and the Official Bulletin.

i) Likewise, increased recording and reporting of wildlife or bird strikes in the CAR/SAM States/Territories to ICAO are continuously being encouraged.

j) Coordination with the Training Centre of COCESNA (*Corporación Centroamericana de Navegación Aérea)* in El Salvador, on the possibility of conducting a course on bird strike and wildlife for all professionals involved in this topic.

4.7.4 In view of the above, the Meeting agreed that ICAO NACC and SAM Regional Offices send letters to States / Territories reminding them that wildlife strike reports shall be collected and forwarded to ICAO for inclusion in the ICAO Bird Strike Information System (IBIS) Database.

4.7.5 Chile considers that the bird strike problem is not airport related, but that should be dealt with at national level. States should be responsible for the occurrence of bird strike incidents and should take measures to prevent them. The establishment of bird strike committees should include national organizations, as well as specialists on the bird strike problem.

4.7.6 IFALPA considers that ICAO should be more involved in the bird strike problem. In addition, it requested that ICAO make itself present at IBIS Meetings.

4.7.7 The Brazilian experience at its seven most important aerodromes was oriented in the risk management methodology developed for airport certification including the bird strike problem and the civil aviation authority is in charge of the bird strike risk evaluation.

4.7.8 In this sense, and following the Brazilian experience, States/Territories should consider including the bird and wildlife strike problem when developing an aerodrome SMS programme. Brazil will be presenting in the Seventh CARSAMPAF Conference on Bird Strike and Wildlife Prevention (CARSAMPAF/7), to be held in Grenada from 24 to 27 November 2009, the methodology developed for its administration in regards to this topic, said his representative.

4.8 Progress in the activities of the Latin American and Caribbean Association of Airfield Pavements ALACPA

4.8.1 The ALACPA Technical and Communications Director presented the Meeting, on behalf of its Chairman, a report on ALACPA activities during the 2008/2009 period.

4.8.2 During the ALACPA VI Airfield Pavements Seminar, IV FAA Workshop and II Business Workshop held in Sao Paulo, Brazil, from 26 to 30 October 2009, the new Board of Directors for the 2009/2011 period was elected. The new Board is composed of the following members:

- William B. Fullerton, Chairman
- Gilberto Vásquez Alanís, Vice-chairman
- Wilhelm Funcke, Secretary and Treasurer
- Gustavo Fernández Favarón, Technical and Communications Director
- Gonzalo Rada, Academic Director
- Fernando Ratto, Administration Director
- José M. Martínez Cal, South American and Caribbean Coordinator

4.8.3 In 2008, the V Annual Seminar of Airfield Pavements, First Business Meeting of Airfield Pavements and Third Workshop of Airfield Pavements Design FAARFIELD for North America, Central America, the Caribbean and South America (NAM/CAR/SAM), was held in Ciudad de México, México, from 27 to 31 October 2008. More than 170 attendees from 14 countries participated, among others there were Administrators, Professionals, Consultants, Manufacturers, and mainly, Government Officials from Latin America, the Caribbean and the USA, which are directly or indirectly involved in airport pavements activities. Furthermore, there were representatives from 15 companies involved in the construction and maintenance of airport pavements. Another important achievement in 2008 was the optimization of the ALACPA web site, www.alacpa.org.

4.8.4 The ALACPA VI Airfield Pavements Seminar, the IV FAA Workshop and the II Business Workshop were held in Sao Paulo, Brazil from 26 to 30 October 2009. More than 150 attendees from 14 countries participated in the seminar, among others Administrators, Professionals, Consultants, Aircraft manufacturers and mainly Government Officials from Latin America and the Caribbean, as well as constructing companies, services and products suppliers. The Federal Aviation Administration introduced to the participants the latest version of the pavement design software FAARFIELD 1.3 and Advisory Circular AC 150/5320-6E, which replace the AC 150/5320-6D in airport pavement design. The fourth FAA workshop also presented the latest version of the FAA software: COMFAA PCN, BAKFAA, FEAFAA and PROFAA.

4.8.5 ALACPA currently has more than 250 associates from 20 States in the NAM/CAR/SAM regions and other ICAO Regions. One of the main objectives of ALACPA is achieving better quality standards for airport pavement in the Region, by dealing with areas related to planning, design, construction and maintenance management, in order to provide to provide a safe and efficient pavement surface for air operations. This is the reason for which ALACPA is responsible to contribute towards the elimination/mitigation of deficiencies in the CAR/SAM aerodromes. Through technical seminars, ALACPA has consolidated itself in the Region as the only technical forum related to airport pavements.

4.8.6 The objective of ALACPA is assist ICAO member States with standards and recommended practices compliance regarding aerodrome pavement planning, design, construction and maintenance. Provide assistance to public and private organizations, airport operators and every organization involved in civil aviation. Disseminate better practices for aerodrome pavement planning, design, construction and maintenance. Conduct annual seminars and participate with other international organizations such as ICAO, Airports Council International (ACI), Federal Aviation Administration (FAA), Air Line Pilots Association (APLA) and others, in order to present results of studies and investigations in the aerodrome pavements area, with the objective of exchanging experience and knowledge. Promote knowledge and remedial impacts to the environment regarding aerodrome pavement activities. Promote investigations, studies, workshops, seminars, courses, Meetings, among others, related to aerodrome pavement planning, design, construction, material selection, maintenance and management systems.

4.8.7 A survey on Specifications for flexible pavements, based on performance was sent to the States. ALACPA supported a project on Airfield Asphalt Pavement Technology Programme (AAPTP). Collaboration from Airports Council International – Latin American Caribbean (ACI-LAC). ALACPA has allied with the ACI-LAC Operations Committee, Technical Committee and Security Committee at the Meeting of the general board of said organization, Medellin, April 2008.

4.8.8 Collaboration activities forming part of the 2008 work program for both organizations are the following:

a) Study of the pavement condition at the main airports in the Region, including roughness and structural capacity;

b) Study of the RESA (runway end safety area) situation at the main airports in the Region;

c) Establish a friction control equipment calibration and certification centre; and

d) Prepare a comparative study on security programs regarding constructions at main aerodrome sites with operations.

Agenda Item 5: Review of other technical matters

5.1 Amendments 10 and 4 to Annex 14, Volumes I and II, respectively

5.1.1 The Secretary presented to the Meeting the amendment 10 to Annex 14, Volume I, pointing out the new definitions and requirements included in the fifth edition, such as : Definitions of instrument runway and obstacle, certification of aerodromes; aerodrome data; enhanced taxiway centre line marking, mandatory instruction marking, taxiway edge lights, advanced visual docking guidance system; mandatory instruction signs; marking and lighting of wind turbines; public health emergencies in aerodrome emergency planning, rescue and fire fighting, wildlife strike hazard reduction; pavement monitoring and maintenance; chromaticity and luminance factors of green colour in Appendix 1; notes to Figures A2-9 and A2-10 for isocandela diagrams for runway edge lights in Appendix 2; NO ENTRY sign in Figure A4-2 in Appendix 4; guidance on runway surface evenness, location of displaces threshold and rescue and fire fighting in Attachment A.

5.1.2 The IFALPA representative referred to Attachment A, of Annex 14, Volume I, 5th Edition and found in section 6.6 an inconsistency between English and the Spanish version. The measured coefficient of 0.25 and below corresponds to a “poor” estimated braking action in the English version, and in the Spanish version should be “pobre” instead of “deficiente”. In the attachment there is a table with associated descriptive terms that was developed from friction data collected only in compacted snow and ice and should not be taken to be absolute values applicable in all conditions. If the surface is affected by snow or ice and the braking action is reported as “good”, pilots should not expect to find conditions as good as on a clean dry runway.

5.1.3 Although, the measured coefficients in the table have a comparative value, in the estimating braking action as “good” (measured coefficient 0.40 and above), it is intended to mean that airplanes should not experience directional control or braking difficulties, especially when landing. The other measured coefficients with values below than 0.40 mean an estimated braking action, being deficient for values 0.25 or below, and this should not be confused when obtaining a measured coefficient.

5.1.4 Subsequently, the Secretary referred to amendment 4 of Annex 14, Volume II. Several aspects to be included in the third edition were mentioned, such as: Introductory note; definitions of air transit route, declared distances, dynamic load bearing surface, final approach and take-off area, helicopter air taxiway, helicopter clearway, helicopter ground taxiway, helicopter stand, helideck, obstacle, protection area, rejected take-off area, shipboard heliport, static load-bearing surface, taxi-route, touchdown and lift-off area, winching area; applicability; physical characteristics for surface-level heliports, elevated heliports, helidecks, and shipboard heliports; obstacle limitation surfaces and sectors and requirements for helidecks and shipboard heliports; winching area marking; heliport identification marking; maximum allowable mass marking; maximum allowable D-value marking; touchdown and lift-off area marking; touchdown/positioning marking; helideck obstacle-free sector marking; helideck surface marking; and helideck prohibited landing sector marking.

5.2 E-TOD aerodrome mapping

5.2.1 The Secretary referred to Annex 14 requirement regarding determination of geographical coordinates of obstacles and terrain, as well as their notification to the aeronautical information services (AIP) and implementation of Annex 15 provision 10.6.1.2 concerning the availability, as of 18 November 2010, of electronic obstacle and terrain data according to Area 2 and Area 3 specifications that should be facilitated by appropriate advanced planning for the collection and processing of such data.

5.2.2 It also describes the benefits associated with the implementation of aerodrome mapping information based on E-TOD.

5.2.3 According to ICAO requirements, the definition of geographical coordinates of obstacles should be done in accordance with requisites of precision, integrity and quality of aeronautical information prescribed, particularly for the design characteristics for aerodrome, its presentation and electronic distribution by the State in charge of Aeronautical Information Publication.

5.2.4 In order to satisfy the necessary requirements of users on electronic data of terrain and obstacles, considering cost-benefit, purchasing methods and available information, this information should be provided according to four basic coverage areas. Area 1 has a total coverage of a State territory, including all aerodromes and heliports. Area 2 covers the terminal management areas (TMA) that do not exceed a 45-km radius from the aerodrome reference point (ARP); which coincides with the actual specifications for the provision of the topographical information of the electronic Aerodrome Obstacles Chart. Area 3 covers the area of specified distances in an aerodrome or the surface of the movement area of a heliport, while Area 4 is limited to runways where Category II or III precision approach operations have been determined, where detailed information on terrain from operators is necessary in order to permit the evaluation of the terrain effect when determining decision altitude with altimeter radio.

5.2.5 Also, reference was made to Documents 9881 “Guidelines for Electronic Terrain, Obstacles and Aerodrome Mapping Information”, which provides a complete guide for mapping information or aerodrome surface required by aeronautical users, particularly for the use of in flight aircrafts. In this guide minimum requirements and reference material are included for content, origin, publication, maintenance and improvement of aerodrome mapping information. Also, this provides an integral approach in relation with the available aerodrome mapping information in the form of specific resulting information, in order to evaluate results and determine if requirements satisfy user’s particular applications.

5.2.6 Presentation was concluded exhorting the Meeting to examine the information contained in the **Appendix** to this part of the Report on electronic data on aerodrome terrain, obstacles and mapping information, excerpted from Doc. 9881; and to proceed to mediation and to the respective AIP report of geographical coordinates of obstacles in areas 2 and 3, according to requirements of Annex 14.

5.3 Regional and Global ICAO activities in the AGA field

5.3.1 Regarding this issue, the Secretary presented to the Meeting the current work programme of the Aerodromes, Air Routes and Ground Aids Section (AGA) in ICAO headquarters. Also, the Meeting was informed of the Annex 14 amendments, and of the Technical Work Groups in the field of Aerodromes, as well as AGA related documents.

5.3.2 The Air Navigation Commission has programmed the following Meetings:

- ANC/182, presently in activity since 21 September to 13 November 2009.
- ANC/183, programmed for 11 January to 12 March 2010
- ANC/184, programmed for 12 to 18 June 2010

5.3.3 The PANS-Aerodromes work will be oriented towards the publication of its first edition programmed for 2013, to be approved by the Council. Also, the issuance of a Circular has been programmed for orientation and guidelines on the conditions of pavement surfaces, which will be available for 2010.

5.3.4 Regarding the Airports Services Manual, Part 3, on bird control and reduction, and Part 5, on removal of disabled aircrafts, will be available in 2010.

APPENDIX

For all the activities by the different users detailed aerodrome geospatial information is required. This information is commonly made available in aerodrome mapping databases (AMDBs). These databases contain aerodrome information that is organized and arranged for ease of electronic storage and retrieval in systems that support a range of activities on and around the aerodrome.

Document 9881-Guidelines for Electronic Terrain, Obstacle and Aerodrome Mapping Information, provides a complete guidance for the aerodrome surface mapping information required for aeronautical users and particularly for on-board aircraft use. The guidance included provides minimum requirements and reference material for the content, origination, publication, maintenance and enhancements of aerodrome mapping information. It also provides a comprehensive statements regarding available aerodrome mapping information data sets in the form of the data product specification. This specification is intended for use by air navigation users when evaluating the products and determining if they satisfy requirements for use in a particular application.

- The information contained in this document has been compiled for the purpose of stating aerodrome surface mapping information requirements for aeronautical uses, particularly on-board aircraft. The requirements are not all-inclusive, but represent those of more immediate concern. As future applications are developed, more stringent numerical requirements may be needed. Airworthiness authorities, civil aviation authorities, and the aviation industry urge the aerodrome mapping data originators and integrators to use this information when providing those data to system designers and users.

- Based on the availability of standardized aerodrome mapping databases (AMDBs), a wide variety of applications can be envisioned. It is important to note that multiple user classes can benefit from using these databases, for example: pilots, controllers, aerodrome managers, and aerodrome emergency/security personnel.

- Applications of AMDBs

    - ❖ Chart information
    - ❖ Surveillance and runway incursion detection and alerting
    - ❖ Route and hold-short display and deviation detection and alerting
    - ❖ Display of digital ATIS information
    - ❖ Aerodrome surface guidance and navigation
    - ❖ Runway operations
    - ❖ Aerodrome and airline resource management
    - ❖ Training (flight simulation)
    - ❖ Aerodrome facility and asset management
    - ❖ Emergency and security service management
    - ❖ Notice To Airmen (NOTAM) and aeronautical data overlays
    - ❖ Synthetic vision

The figure depicts the data integration processes that contribute to the development of an AMDB. Initially, data originators may collect aerodrome mapping data using various technologies (e.g. aerial photography, satellite imagery, or topographical surveys). The originators may collect data to support non-aeronautical applications; however, any data to be used to support aeronautical applications must meet the requirements defined herein (illustrated as Requirements A, in Figure 4-1).

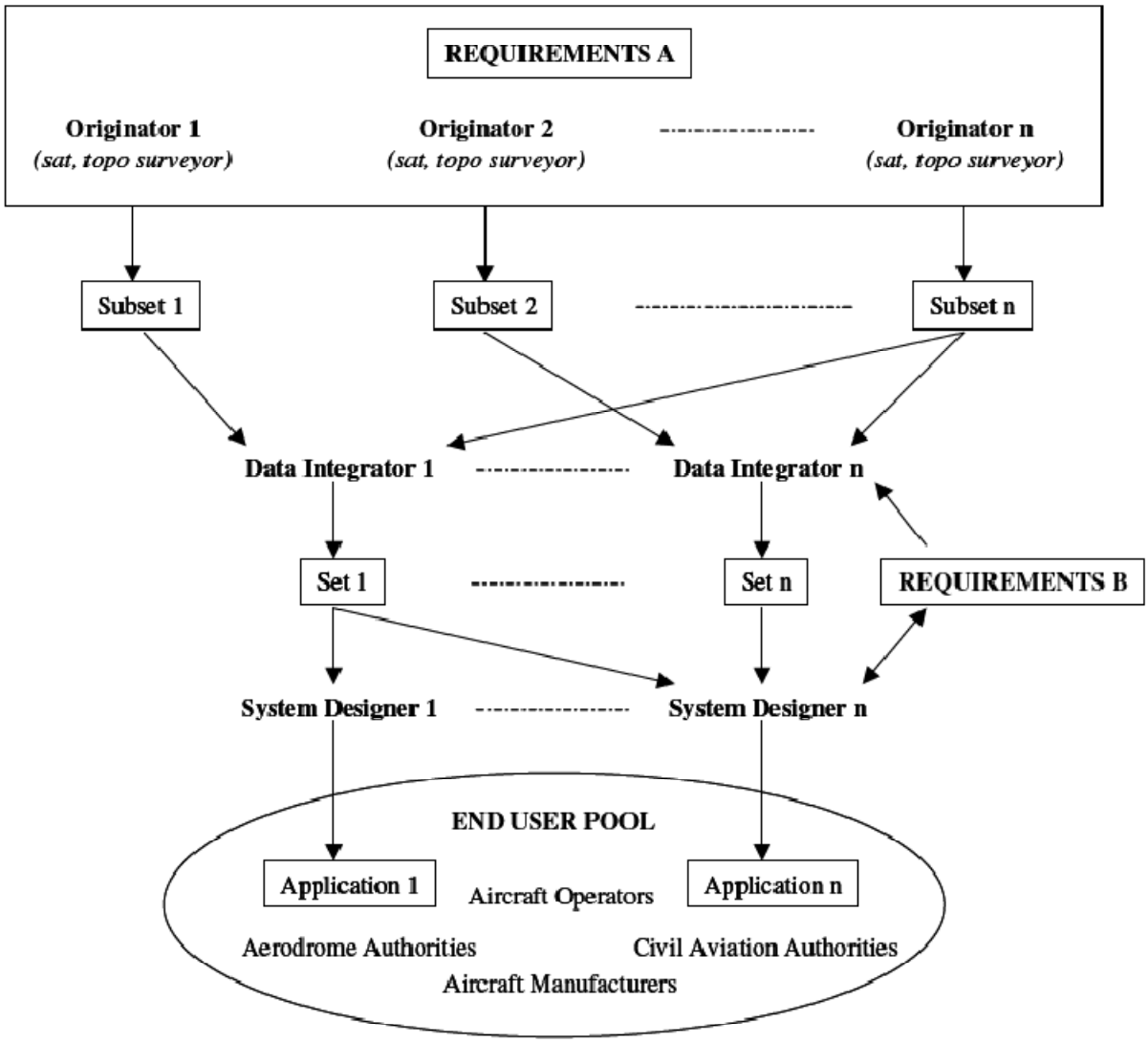

Figure 4-1. Data integration processes

When using data provided from multiple data originators, data integrator(s) may be responsible for merging all appropriate data sets for two purposes:

- ❖ the correlation of multiple data sets representing the same aerodrome area to ensure full aerodrome coverage and to ensure the required accuracy and integrity
- ❖ the concatenation of the many aerodromes into a consistent, globally-referenced database that may also include other data types such as terrain, obstacles, and/or air navigation data

Aerodrome Mapping Information

Most of the existing standards and guidance materials are primarily applicable to air navigation data and were not written with aerodrome surface applications in mind. Issues specific to AMDBs include:

- Data may be derived from aerial survey and/or engineering drawings that are not traditional sources of aeronautical information
- Suppliers of aerodrome mapping data may not be familiar with typical civil aeronautical requirements, standards, and methods
- There are many different formats available for aerodrome mapping data (vector, raster, digital elevation models, etc.)

The starting point for aerodrome information is the data published by States in their Aeronautical Information Publication (AIP) in accordance with Annex 15. However, much of the specific detail required to support the kinds of applications envisaged in Appendix A is not reported on, as it is not necessary for traditional aviation operations. Therefore, other sources of information for the aerodrome may be necessary for these applications.

The majority of existing AMDBs has been captured and maintained using Geographic Information Systems (GIS). GIS technology has evolved from the Computer-Aided Design (CAD) industry, combining the detailed information available in engineering drawings with a geographic reference system. A GIS is a computer program that combines geographically referenced digital data with spatial and attribute analysis tools. The strength of a GIS lies in the methods it provides to represent and analyze geographic information. A GIS can include many different types of data including: control networks, vector data, raster grid data, triangulated irregular networks (TINs), 3-D surface representations, remotely sensed data, and other digital source data such as geo-referenced drawings or Airport Layout Plans (ALPs)

Aerodrome Mapping Data Considerations

Different datums and sufficient conversion algorithms do not exist. Air navigation considerations and the state of the art regarding the use of the Global Navigation Satellite System (GNSS) for instantaneous positioning and navigation require that the reference frame for AMDBs be based on the theoretical surface and universally-positioned ellipsoid defined as WGS-84 (see Section _4.2). WGS-84 is the adopted aviation standard for horizontal reference system while Mean Sea Level (MSL) is the adopted vertical reference system. MSL elevations can be derived using an appropriate geoid model. The Earth Gravitational Model (EGM-96) is the adopted global gravity model.

- From an interoperability standpoint, having the data available using a common datum is essential.
- Problems may be encountered when dealing with sources that have an unknown datum.
- Further, on-board sensors and avionics instruments may provide dynamic inputs to aerodrome mapping databases. These are other sources of information that may need to be converted within the system. It is expected that these datums will be known and the appropriate conversion can be applied.
- In cases where an AMDB already exists and is based on a different reference system, the data must be transformed to a WGS-84 reference. This transformation may induce errors. Therefore, care must be taken to ensure that the conversion process does not impact the integrity of the data and prevent its use in the application for which it was intended.

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Characterization of Aerodrome Mapping Data

Unlike terrain databases, which are typically represented as grid points with associated elevation data, aerodrome databases are typically constructed from a photogrammetric image that is converted to vectors and assigned themes and attributes using GIS techniques. This is because many important data elements are features and not just elevations. These features are more easily characterized by points, lines, and polygons. Examples include runway edges, hold points, and stand locations

The use of vector-based data has several advantages:

- Small data storage requirement
- Easy use of a relational data base structure
- Easier for updating purposes
- No need of feature recognition software
- Easy attachment of attributes

Consequently, it is recommended that vector-based data (points, lines, and polygons) be used for the characterization of aerodrome features in AMDBs. An alternate approach is to use raster data or imagery. Using this approach, features are portrayed via contiguous pixels of equal or similar density number. This less precise approach may be acceptable for some applications. Aerodrome surface data, unlike terrain data, represents regular geometric objects that can be grouped or classified. Examples of classifications are: runways, taxiways, service roads, localizer antennas, glide slope antennas, buildings, radar sites, radio navigation facility sites, etc. All of these can be described with their own set of attributes, most of which are related to horizontal positioning, and not elevation.

Obstacle Data for the Aerodrome Surface

Aerodrome obstacles penetrate a defined obstacle identification surface. In determining obstacle data requirements, certain accuracy parameters are applied to construct buffers around obstacles and estimate whether they penetrate the defined surface. Depending on the radius specified, unrealistically large, converging or overlapping buffers may be generated, resulting in high false alarm conditions. Internationally recognized survey standards should be used. Annex 14 defines the requirements for identifying aerodrome obstacle limitation surfaces. Further criteria for evaluating obstacles are contained in the *Procedures for Air Navigation Services — Aircraft Operations* (PANS-OPS). An equivalent approach to those mentioned above has been taken when considering which aerodrome obstacles should be included in AMDBs.

Terminal Area Terrain Data

Consideration of terrain on and around the aerodrome is essential to terminal area airspace operations such as approach, departure, and contingency procedure planning. Hazards related to terminal area terrain awareness and avoidance have been cited as a major contributing factor in controlled flight into terrain (CFIT) accidents. Terrain is also important to surface navigation. It defines the surface topography of the ground in and around the surface movement areas. Since terrain data shares a physical boundary with many surface geometric objects on the aerodrome (runways, taxiways, buildings, etc.), it is important that the terrain data be correlated with these other data types.

General Requirements

The horizontal reference for all position data must be the WGS-84 ellipsoid. All aerodrome mapping data that includes horizontal position information must be described in units of latitude/longitude for the purpose of data interchange. It is expected that for many applications, implementation may include conversion to a local coordinate system (e.g. Cartesian) along with at least one geodetic reference point. Data quality must be preserved when performing coordinate system conversion. For all aerodrome mapping data that requires a vertical component, the vertical reference must be orthometric height (referenced to MSL) for the purpose of data interchange. Orthometric height can be derived using WGS-84 ellipsoidal heights and an appropriate geoid undulation. Geoid undulation must be derived using the Earth Gravitational Model of 1996 (EGM-96) or its later realizations. If EGM-96 is not used, the geoid model used to derive orthometric height must be provided (See Annex 15, Chapter 3). The metric system must be used for all linear measurements (e.g., runway length).

Data Acquisition

Any method is acceptable for capturing aerodrome mapping data subject to the information requirements specified in this document. Examples include: aerial photogrammetry, satellite photogrammetry, field surveying, and digitizing existing charts.
A description of the process used to acquire aerodrome mapping data must be provided. This must be consistent with this document.

Data Merging

In order to maintain quality where multiple data sets are merged to create a complete AMDB, each individual data set must be geo-referenced to the WGS-84 ellipsoid (horizontal) and orthometric height (vertical).

Data Conversion

Data sets may be converted to WGS-84 latitude/longitude (horizontal) and orthometric height (vertical); however, the original data, prior to conversion, must meet the quality standards described in this document.

Vertical Objects

Requirements regarding the collection of vertical objects are given in Annex 15 through terrain/obstacle data collection surfaces.

When surveying vertical objects, the horizontal spatial extent to be surveyed must include the aerodrome surface movement area plus a buffer of 50 meters (Figures 4-3 and 4-4), or the minimum separation distances specified in Doc 9157, whichever is greater.
When surveying vertical objects from a runway, the horizontal spatial extent to be surveyed must cover the area that extends from the edge(s) of the runway(s) to 90m from the runway centerline(s).
All vertical objects and terrain in the horizontal spatial extent region that extend more than 0.5 meters above the horizontal plane passing through the nearest point on the aerodrome surface movement area may be hazardous for surface movement and must, therefore, be surveyed (Figure 4-4).
Control towers must always be captured regardless of the location on the aerodrome.

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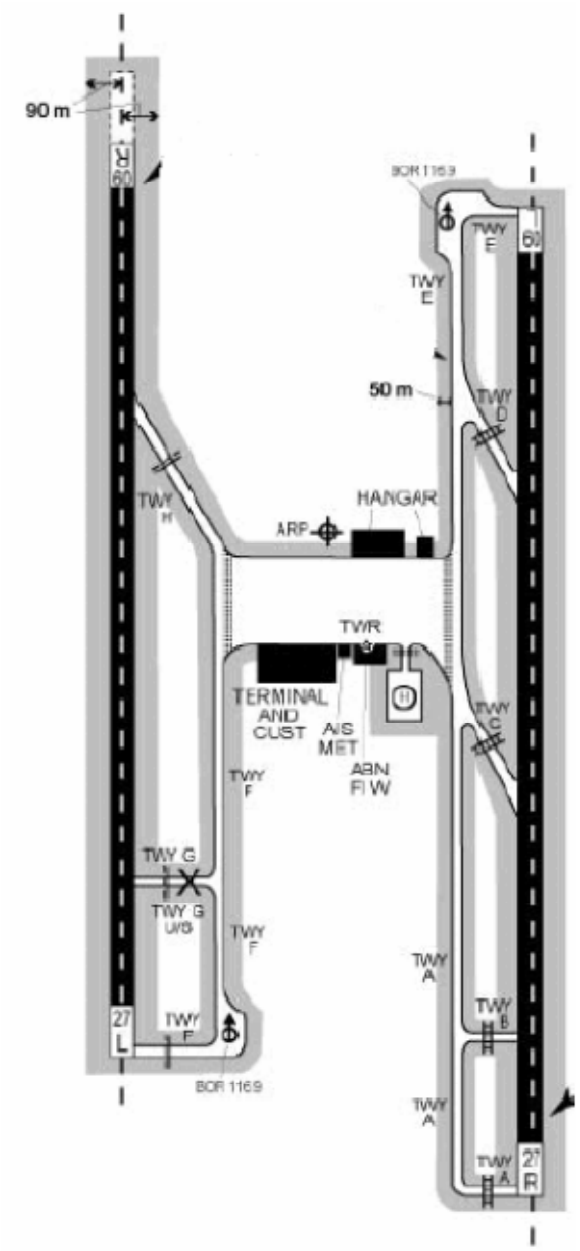

Figure 4-3. Aerodrome Mapping Data Horizontal Extent

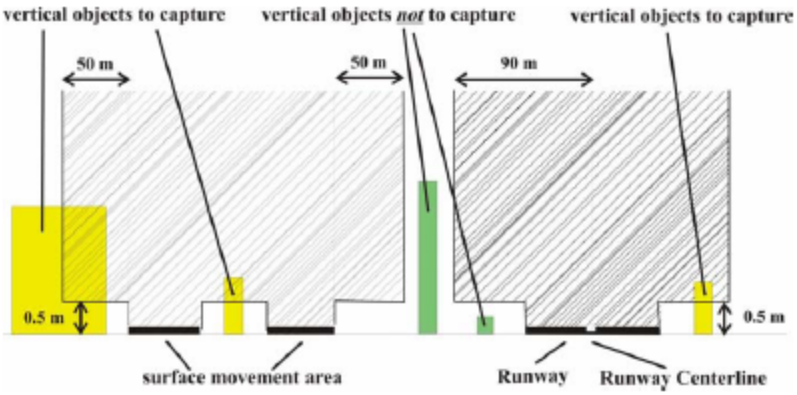

Figure 4-4. Aerodrome Mapping Data Vertical Extent

Data Elements

For the purposes of this document, data elements have been listed by class. The seven classes are runways, helipads, taxiways, aprons, vertical structures, construction areas, and quality data. Each class requires that different objects be captured in the AMDB.
Supplemental data classes that have not been specified but may be useful to some applications include, for example, INS/VOR checkpoints, noise abatement zones, special use areas, signage, and aerodrome boundaries.
AMDB features and attributes must be encoded according the rules of the feature catalogue.

Runways

An overview of runway data elements is shown in the following **Figure 4-11. Runway Elements:**

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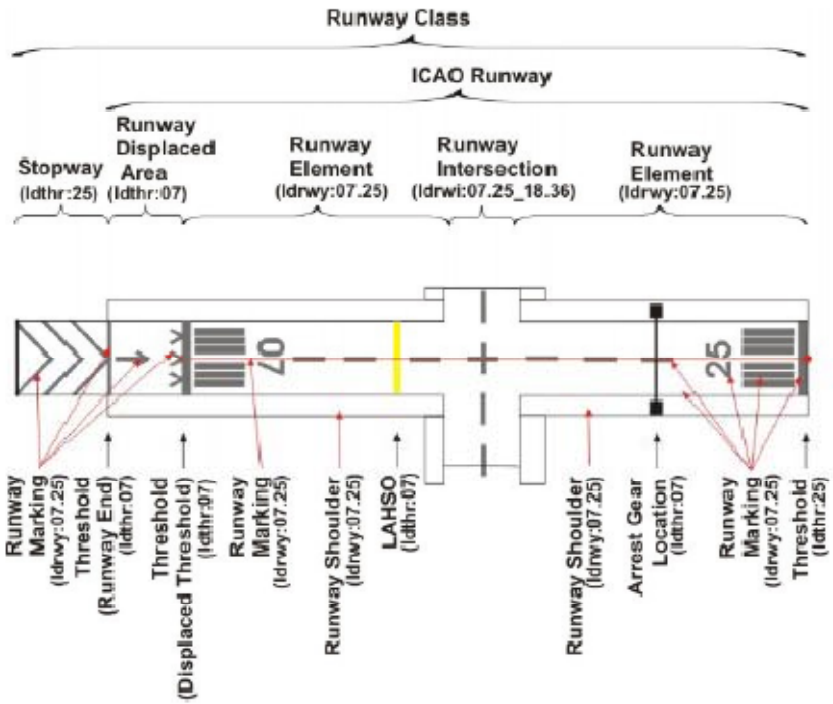

Aprons

The Apron as defined in Annex 14, Volume I, paragraph 1.1 is an aggregate of the features Apron Element, Parking Stand Area, and those Taxiway Elements that are located within the defined Apron Area. See Figure 4-19.

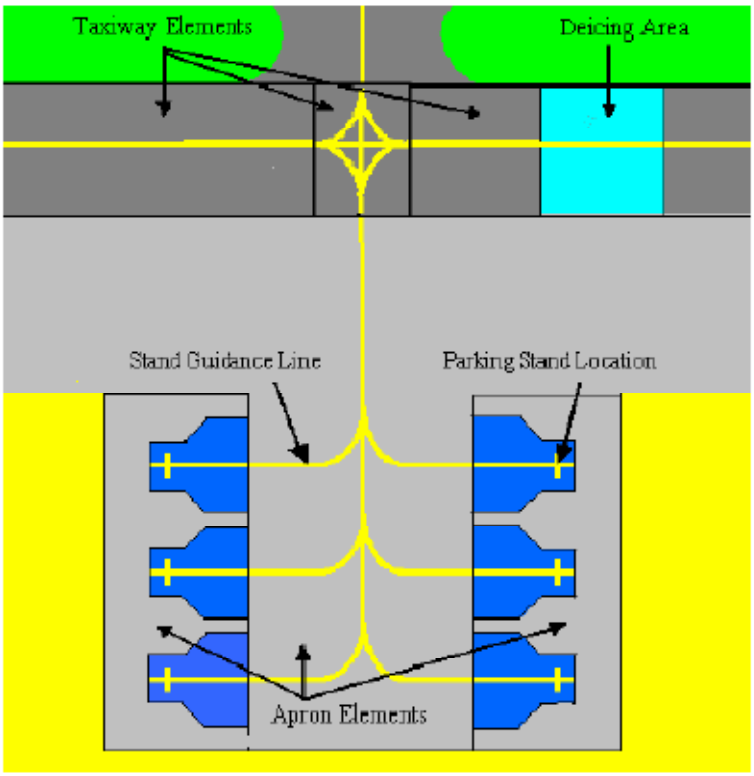

Figure 4-19. Aprons

Navigation Applications that use Aerodrome Mapping Data

Based on the availability of a standardized aerodrome mapping data set, a wide variety of applications can be envisioned. Twelve are described below and are listed and separated by user class. Note that several of the applications can be used by multiple user classes.

- *Pilots*
  - Chart information
  - Surveillance and conflict/runway incursion detection/alerting
  - Route/hold-short portrayal and deviation detection/alerting
  - Portrayal of digital ATIS information
  - Aerodrome surface guidance/navigation
  - Runway operations
  - Notices to Airmen (NOTAMs) and Aeronautical Data Overlays
  - Synthetic vision
- *Air Traffic Controllers*
- *Airline, Cargo, GA, and Business Aviation Operations*
  - Resource management
  - Training and High Fidelity Simulation
- *Vehicle Operators*
- *Aerodrome Operations*
  - Aerodrome facility management
  - Emergency and security service management
  - Aerodrome Asset Management

Charting Information
Operational Concept

For pilots, a graphical portrayal of the aerodrome site, including aerodrome movement/non-movement areas, is essential to safe and efficient navigation. Currently, this graphical portrayal is provided to flight crews by way of paper charts. An alternate or supplemental means, of graphically depicting aerodromes is by way of a flight deck electronic display. This would provide a tool for pilots to visualize their physical environment while on the aerodrome surface, or while planning an arrival to a specific aerodrome. This tool could also provide access to aerodrome-specific data that are also included in paper charts such as frequencies, operational constraints, and local procedures. In addition, such a display system could make use of a spatial database that included themes, or layers, that would allow pilots to assimilate specific displayed information types with the out-the-window scenes. These themes can include:

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Runways	Taxiways	Aprons
Shoulders	Service Roads	Stands
Hold Lines/Points	Paint Features	Jetways
Pavement Segments	Centerlines	Contour Lines
Hydrography	Building/Structures	Fences
Radar Sites	Elevation Models	Signage
Lighting	SMGCS Plans	Obstacles
Navigation Points	Survey Control Points	Concourses
Highways	Primary Roads	Secondary Roads
Land Use	De-Icing Pads	Land Fills

The above table presents a list of terrestrial physical features that can be surveyed and stored in a database. The database may also support multiple spatial models, or polygonal zones. Polygonal zones are
2-D and/or 3-D shapes used to provide spatial cueing or visualization of data by way of illustration. A list of themes that support various modeling constructs is presented in the following table:

Noise Contours	Incursion Zones	Movement Areas
Airspace Cylinders	Ground Water Models	De-Ice Solvent Plumes
Bird Strike Areas	ILS Hold Segments	Tower Field of View
Emergency Response Time/Distance Zones	Approach/Departure Corridors	Obstacle buffer zones

This application of aerodrome databases does not require any interfaces to real-time data and could operate on a “stand-alone” basis in the flight deck.

Benefits

In addition to the graphical portrayal of the aerodrome layout, spatial and tabular information included in the database could be utilized as a source of Aerodrome/Facility Directory data, NOTAM data, communications frequencies, procedures, and other textual annotation information overlaid on graphics/maps that have customarily been included in the charts/manuals. Information could be made available in electronic format eliminating the need for paper copies of maps and charts in most instances. For pilots, this would reduce cockpit clutter and workload during surface operations and ease flight planning activities. This electronic charting information may also be used by other aerodrome users to support:

- Aerodrome operations and facilities management
- Planning, e.g., environmental, noise, construction, etc.
- Leases, pavement utilization, utilities, snow removal, etc.
- Airline/Cargo/GA resource management
- ATC and apron control, routing, dispatch, and decision support tools
- Efficient routing of aircraft and vehicles; conflict detection and alerting
- Emergency response and security operations

Finally, an electronic data-driven chart, distributed to the pilot/user community on electronic media and/or via network (or the world-wide web) connectivity, can be maintained and disseminated in an efficient and cost-effective manner.

Surveillance and Conflict (Runway Incursion) Detection and Alerting Operational Concept

In today's operations, flight crews maintain traffic awareness on the surface by way of frequent visual scans and, in some cases, radio communications with ATC to obtain traffic advisories. Except for a few rare runway/taxiway geometries (obtuse-angled intersections) and high-workload situations, this method of surveillance is adequate during VMC. However, as weather conditions deteriorate (i.e., IMC), at night, or under high workload conditions, maintaining awareness of traffic on the aerodrome surfaces can become increasingly difficult. In these types of situations, uncertainties can arise that, in the best case, reduce traffic flow rates, and in the worst case, increase the likelihood of a runway incursion and/or surface accident.

Runway incursions and potential surface collisions can be detected and presented in the cockpit using a graphical portrayal of the aerodrome once surveillance data and an aerodrome mapping database are available. Once detected, alerts can be issued to either ATC (via data link) or directly to the flight crew. This detection and alerting can be functionally similar to the approach taken by AMASS and/or TCAS. This runway incursion alerting concept has undergone flight simulation testing at NASA and flight testing at the Dallas-Ft. Worth International Aerodrome

Benefits

For pilots, access to a Cockpit Display of Traffic Information (CDTI) during surface operations at controlled and uncontrolled aerodromes can increase traffic awareness while decreasing the uncertainties associated with available visual cues and radio communications14. This increased awareness can:

- Reduce the likelihood of runway incursions and surface accidents
- Reduce the likelihood of navigation errors on the surface
- Enable tighter separations on the surface and higher taxi speeds
- Enable strategic planning to avoid departure queues
- Enable strategic planning by choosing an optimum runway exit
- Reduce the amount of radio communications required

Airline, cargo, GA, and business aviation operations centers could also benefit from real-time surveillance data depicted on a graphical aerodrome mapping database. This capability would enable operations that are more efficient. For example, apron controllers can make more informed decisions about controlling the movement of aircraft and vehicles in the apron areas to avoid conflicts and to reduce delays. In addition, scheduling and managing service vehicle operations (e.g., fuel, baggage, etc.) can be improved by tracking the location of vehicle and aircraft locations.

Aerodrome Facility Management - Operational Concept

There are six primary categories of activities that come within the scope of aerodrome facility management:

- Planning
- Aerodrome design
- Facility design
- Construction

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- Environmental
- Administration

Each of these activities can benefit from the availability of aerodrome mapping information. To ensure consistency across the applications, a GIS layered database structure with attribute data can be utilized. Every aerodrome implementation will be unique. It is anticipated that the primary repository for this database will be some form of an aerodrome operational control center. Secondary repositories, with full functionality, may be located at maintenance control centers, aerodrome engineering centers, and aerodrome movement area control centers.

The current problem at most aerodromes is the establishment of "data islands" within each organization established within one aerodrome. Consequently, the practice has been to develop databases for a specific need. The result has been duplicated databases with inconsistent key fields and an environment where no standards exist. Many aerodrome departments use incompatible vendor-specific formats that lead to inefficiencies and low performance, as well as high costs and low quality. Storing data in a GIS database structure can result in tremendous efficiencies being realized.

Benefits

The benefits for aerodrome facility management are categorized as:

- Reduced staff time for analysis
- Quick response to questions
- Ability to address complex issues
- Ability to provide better information to the decision makers
- Reduced cost to develop applications
- Creation of a basic framework to administer geospatial data

Another benefit of such a database is the capability of data to retain its natural spatial information. For example, data can be visualized as in the real world and thus, can create a common language for the aerodrome organization to use. In addition, spatial queries will serve to broaden the information that is available, and users will want to use the system because it is user-friendly and intuitive. Some of the benefits of standard data are:

- Ease of processing and integrating data into various applications
- Longevity given to the data
- Assistance given in maintaining links to the legacy systems
- Ensured compatibility between systems
- Cooperation facilitated between database application developers
- Opening to additional external sources of data

Runway Operations - Operational Concept

Using a robust position sensor (e.g., augmented GNSS), a display (either auditory or graphical), and an adequate aerodrome database, guidance can be provided in real-time to pilots so that they can effectively manage aircraft speed and location during take-off and during landing roll-out and turn-off from the runway.

During take-off, access to sufficient runway information can allow a guidance profile to be generated based on conditions that may be changing dynamically. This guidance can be provided on either the personal flight display, navigational display, HUD, or any other available display in the flight deck.

Further, important situational information could be provided, such as where on the runway the aircraft is projected to reach specific V speeds and where the flight crew would need to consider a take-off abort. Finally, alerts could be generated to warn the pilot if there is insufficient runway remaining to either perform a take-off abort or to lift-off.

Similarly, during the last stages of landing (e.g., the flare) and during landing roll-out and runway exit, sufficient runway information could enable guidance profiles to be generated to aid the pilot's decision making in these critical stages. This guidance could be tailored to provide several functions:

- Warning if landing fast or long
- Guidance to optimal touchdown point
- Flare guidance
- Optimal guidance to desired exit
- Runway remaining guidance
- Warning of potential overrun
- Deceleration guidance to ensure passenger comfort and reduce brake wear

Finally, in conditions of low visibility or at night, this application could help the pilot ensure that he is maintaining an appropriate track, both laterally and longitudinally, during take-off roll, landing roll-out, and normal taxi. In conditions of good visibility, this is done using visual references such as center lines/lights, runway edge lines/lights, and other relevant runway signs. An aerodrome moving map could be used to prevent runway excursions, whereby the landing gear exits the runway or taxiway, leading to aircraft shutdown, and tow.

Benefits

Potential benefits of this application for take-offs include:

- Reduced number of take-off aborts
- Reduced likelihood of take-off accidents
- Optimized aircraft performance during departure roll
- Improved fuel efficiency

Potential benefits of this application for approach and landings include:

- Reduced number of overruns
- Reduced number of go-arounds
- Reduced/predictable roll-out times in any visibility or weather condition
- Reduced brake wear
- Optimized aircraft performance
- Fewer runway excursions

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Agenda Item 6: Administrative matters

6.1 **Terms of Reference, Work Programme and Composition of the AGA/AOP/SG, with a performance based approach**

6.1.1 The Secretariat presented to the Meeting a preliminary version of the Terms of Reference, Work Programme and Composition of the Aerodromes and Ground Aids / Aerodrome Operational Planning Subgroup (AGA/AOP/SG) for revision and comments by the Meeting, the same that are oriented to performance-based approach of the NAM/CAR Air Navigation Regional Implementation Plan.

6.1.2 Also, he expressed that the Terms of Reference, Work Programme and Activities of the Tasks Forces should be reviewed and updated with periodicity for the improvement and efficiency of the activities of the AGA/AOP Subgroup.

6.1.3 The issues proposed by the Secretariat are included in the actual version of the Terms of Reference and work programme, which were considered in the AGA/AOP/SG/6, which was held in San José, Costa Rica, from 23 to 27 June 2008. However, it is necessary that the same TOR be carefully analyzed and reviewed in this Meeting in order to the AGA/AOP Subgroup be able to produce the expected results for the CAR/SAM Regions, principally in respect to operational safety of airports/aircrafts.

6.1.4 The actual version was examined and agreed among participants to the Meeting, and made it possible to determine de Terms of Reference, Work Programme, Composition, Description of the Task Forces and the Work Schedule of Aerodromes and Ground Aids / Aerodrome Operational Planning Subgroup (AGA/AOP/SG), which are included in Appendixes A, B, C to this paper, respectively.

6.1.5 In order to reflect the changes in the terms of reference, the names of the Task Forces have been modified as follows:

Runway Strips and Runway end Safety Areas (RESA)	***Without change***
Airport Demand/Capacity	***Without change***
Planes de Emergencia y centro de operaciones de emergencia (COE)	***Response Capacity to Emergency***
AGA Aeronautical Studies	***Without change***
Adecuacy of airport infrastructure	***Management of Movement Area***
Slippery Runways (Coefficient of Friction, runway decontamination and remotion of rubber)	***Measurement and Evaluation of Friction Conditions on Runways***

6.1.6 The Rapporteur of the Ad hoc Working Group on AGA performance objectives of the NAM/CAR Regional Air Navigation Implementation Plan based in performance, after her presentation, she recommended the creation of at least 4 task forces to attend requirements.

6.1.7 After discussing the proposal presented by the Ad hoc Group, which is included in Agenda Item 3.5 of this report, the Meeting agreed the following:

a) Task No. AGA/AOP/7
   - To reformulate the text of the task of performance objective c) to read… decreasing visibility due to meteorological conditions at night by darkness or when traffic …
   - The title of the task of performance objective e) should be modified to describe correctly its purpose. The new title should be Separation of taxiways and improvement of the situational awareness in the movement area. Replace the word lack of attention by lack of follow up.
   - It is not necessary the creation of a particular task force since its content is included in the Management of Movement Area Task Force

b) Task No. AGA/AOP/11
   - In the section of expected results, remove the phrase dispersion method.
   - this task is part of the work being developed by the CARSAMPAF group and it does not require the conformation of a new task force.

c) Task No. AGA/AOP/12
   - The task can be incorporated within the Aerodromes Demand/capacity Task Force.

d) Task No. AGA/AOP/13
   - The task can be incorporated within the Aerodromes Demand/capacity Task Force.

e) Task No. AGA/AOP/10
   - By recommendation of the ad hoc group this task can be included within the AGA/AOP/7, therefore this can be incorporated within the Management Movement Area Task Force.

6.2 **Next Meeting Site and Dates**

6.2.1 According to proposals of the different participants, Colombia expressed its interest in hosting the next Meeting on December 2010. Also, the representatives of Haiti and Costa Rica expressed their interest in being the host State of the Meeting.

APPENDIX A

AERODROMES AND GROUND AIDS/AERODROME OPERATIONAL PLANNING SUBGROUP (AGA/AOP/SG)

1. **Terms of Reference**

a) To promote development of the CAR/SAM and NAM Air Navigation Plans and other relevant regional documentation, in compliance with ICAO SARPs, as required.

b) To facilitate the implementation of air navigation systems and services as identified in the CAR/SAM Air Navigation Plans.

c) To promote implementation of initiatives and associated technologies to improve safety, increase operational and economic efficiency and/or aerodrome capacity.

d) To harmonize implementation of performance objectives related to air navigation services with regard to the GPIs of Doc 9750.

e) To carry out permanent co-ordination with GREPECAS Contributory Bodies in order to ensure appropriate integration of all tasks contributing to the implementation of the CAR/SAM ANP.

f) To review the requirements of the AOP Part of the CAR/SAM Regional Air Navigation Plan with a view to developing any changes required to comply with new technological developments including environmental impact aspects and performance based objectives...

2. **Work Programme**

TASK NUMBER	TASK DESCRIPTION	PRIORITY	DATE	
			START	END
AGA/AOP/2	Review and update the Table AOP 1 of the AOP Part of the ANP/FASID CAR/SAM at regular intervals based on greater demands imposed to airports in relation to air traffic growth and the accommodation of aircraft with more onerous physical requirements	B	1st Meeting	8th Meeting

TASK NUMBER	TASK DESCRIPTION	PRIORITY	DATE	
			START	END
AGA/AOP/3	Review and follow-up the implementation of corrective actions for AGA deficiencies that have direct impact on the ANP including: · ▪ Objects and depressions in runway strips, principally in the graded areas ▪ Runway and taxiway separations ▪ Runway and taxiway slopes ▪ Obstacles ▪ Secondary power supply ▪ Visual aids ▪ Fencing and perimeter roads ▪ Rescue and fire-fighting services ▪ Aerodrome emergency plans ▪ Runway surface conditions ▪ Runway strips and runway end safety areas Refer urgent (U) priority deficiencies, with proposed corrective actions, to the Aviation Safety Board.	A	1st Meeting	8th Meeting
AGA/AOP/6	Review demand/capacity problems at airports and develop options for alleviating airport congestion.	B	1st Meeting	Goes to ATM/CNS Decision ACG 6/1
AGA/AOP/7	• Implementation of action plans for runway incursion and excursion prevention. • Coordinate the implementation of initiatives with the seven components of Doc. 9854, (AOM, DCB, AO, TS, CM, AUO, ATM, SDM) as appropriate.	A	Dec 2009	Dec 2010
AGA/AOP/8	• Implement the Airport airside Capacity analysis, Enhancement and planning (ACE) procedure. • Minimizing the Effects of Weather conditions on Airport Operational Capacity.	A	7th Meeting	9th Meeting
AGA/AOP/9	• Implement Collaborative Decision Making (CDM). • Implement Collaborative Decision Making (CDM) recovery of adverse conditions procedure. • Implement the t Collaborative Decision Making Turn-Round process.	A	8th Meeting	10th Meeting
AGA/AOP/10	Implement Advanced Surface Movement Guidance and Control System (A-SMGCS)	A	9th Meeting	10th Meeting
AGA/AOP/11	Minimizing adverse meteorological conditions in the airports operational capacity	A	7th Meeting	9th Meeting
AGA/AOP/12	• Implement the Collaborative Decision Making (CDM), prioritizing the following aspects: o Recovery of procedures on adverse conditions o Determination of service time in apron o Variable taxiing time o Apron congestion	B	8th Meeting	10th Meeting

3. **Priority**

A High priority tasks, on which work should be speeded up.

B Medium priority tasks, on which work should commence as soon as possible, but without detriment to priority **A** tasks.

C Tasks of lesser priority, on which work should commence as time and resources allow, but without detriment to Priority **A** and **B** tasks.

4. **Composition**

Argentina, Barbados, Bolivia, Brasil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Haiti, Honduras, Mexico, Paraguay, Peru, Trinidad and Tobago, United States, Uruguay, Venezuela, ACI, ALACPA, CARSAMPAF, IATA, IFALPA and IFATCA.

5. **Chairpersons**

Chairman	George Legarreta (United States)
Vice-Chairman	Sergio Gallo (Chile)

NOTE: The Chairman and Vice-Chairman were elected for the period 2009-2011.

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* States that missed two consecutive AGA/AOP/SG meetings.

**State to be incorporated in the AGA/AOP/SG depending upon the confirmation of interest by its Administration and the indication of the representative.

APPENDIX B

AERODROME AND GROUND AIDS/AERODROME OPERATIONAL PLANNING SUBGROUP (AGA/AOP/SG)

COMPOSITION

Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Honduras, Mexico, Paraguay, Trinidad and Tobago, United States, Uruguay, Venezuela, ACI, ALACPA, CARSAMPAF, IATA, IFALPA and IFATCA.

Member State/Organisation	**Representative**
Argentina	José Alberto Palermo / Marcelo Clivio
Barbados	David Broomes
Bolivia	Daniel Navajas
Brazil	Doris Vieira de Costa / Marcos Pezaña
Chile	Sergio Gallo Rosales / Juan Luis Rodríguez
Colombia	Aldemar Pinzón
Costa Rica	Luis Gustavo González Trigo
Cuba	*To be defined by the Civil Aviation Authority*
Dominican Republic	Francia Peña
Ecuador	Rafael Roman
Guatemala	*To be defined by the Civil Aviation Authority*
Haiti	Jacques Boursiquot
Honduras	Geovany Sauceda
Mexico	Gilberto Vázquez Alanís
Paraguay	Francisco Méndez Maldonado / Emilio Rodríguez
Peru	*To be defined by the Civil Aviation Authority*
Trinidad and Tobago	*To be defined by the Civil Aviation Authority*
United States	George Legarreta
Uruguay	Fernando Maurente / Arturo Forteza
Venezuela	Edgar Garanton
ACI-LAC	Eduardo Flores
ALACPA	William Fullerton
CARSAMPAF	Roberto Cardoza
IATA	Manuel Gongora
IFALPA	Heriberto Salazar
IFATCA	Cedric Murrell

APPENDIX C

AERODROMES AND GROUND AIDS / AERODROME OPERATIONAL PLANNING SUBGROUP (AGA/AOP/SG)

TASK FORCES

RUNWAY STRIPS AND RUNWAY END SAFETY AREAS (RESAs)

1. **Terms of Reference**

a) Analysis of case studies submitted by States on airports with land constraints for the provision of runway strips and RESAs and provide guidelines;

b) Analyze annually the runway strip and RESA deficiencies and present the results to the AGA/AOP/SG Meetings.

c) At States level, analysis of local materials capable to absorb aircraft breaking energy to be used in EMAS.

2. **Work Programme**

Task Force to report results at the Meetings of the Aerodromes and Ground Aids / Aerodrome Operational Planning Subgroup (AGA/AOP/SG).

3. **Composition**:

STATE/ORGANIZATION	Name	E-mail
Argentina	Jorge Rixon	jrixon@anac.gov.ar
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IATA	*To be determined*	
IFALPA	Heriberto Salazar	dirtecnico@aspa.org.mx

AIRPORT DEMAND/CAPACITY

1. **Terms of Reference**

Provide assistance to States/Territories on:

a) Elaboration of procedures oriented to minimizing the effects of the adverse meteorological conditions; and

b) Implementation of Aerodromes Collaborative Decision Making process on the following aspects:

2. **Work Programme**

a) Collect data on available procedures regarding operations with visibility;

b) Propose methodology and referential guidance.

3. **Composition:**

STATE/ORGANIZATION	Name	E-mail
Brazil	Franklin Juarez Gobeia	franklinjfg@cgna.gov.br
	Claudio Beschizza Ianelli	claudio.ianelli@anac.gov.br
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Uruguay	*To be determined*	
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IATA	*To be determined*	
IFALPA	Heriberto Salazar	dirtecnico@aspa.org.mx
IFATCA	Alfonso Cruz	evpama@ifatca.org

RESPONSE CAPACITY TO EMERGENCY

1. **Terms of Reference**

a) To carry out activities to assist States in the evaluation of infrastructure requirements, equipment and staff for responding adequately to emergencies.

b) Evaluating the training conditions with fuel at pressure and homologation of emergency processes, count with a training centre or centres for the CAR/SAM Region.

c) Carry out activities in support to States on evaluation of best operational practices for the adequate attention to emergencies.

d) Include concepts SMS in documents and operations, related to emergency.

Evaluate standardized low cost requirements of ARFF vehicles for categories SEI 1, 2, 3 and 4.

e) Specific definition of responsibilities of SEI services.

2. **Work Programme**

Elaborate the work programme for the Task Force

3. **Composition**

STATE/ORGANIZATION	Name	E-mail
Argentina		
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IFALPA	Santiago García Verde	

AGA AERONAUTICAL STUDIES

1. **Terms of Reference**

a) Provide technical material to AGA/AOP members to identify, in accordance with Annex 14 and Doc 9774 (Aerodromes Certification) and ICAO Document 9137, Part 6, the subjects that might require aeronautical studies in the AGA field, mainly in terms of obstacles, etc.; and

b) Provide the AGA/SOP/SG the necessary mechanisms to establish the required interphases between the different areas that must participate in the AGA aeronautical studies, mainly in view of SMS implementation.

2. **Work Programme**

a) Indicate methodology and parameters necessary for aeronautical studies in the AGA field;

b) Indicate the relationship between different matters leading to the aeronautical study;

c) Indicate steps for an aeronautical study;

d) Provide an example of an aeronautical study on the AGA area; and

e) Elaborate a guide on aeronautical studies for application in the AGA field, in accordance with ICAO Annex 14 and Doc 9774, with interfaces with other related areas that affect the aerodromes operations, to evaluate the obstacles around aerodromes, so as to, in a specific situation when possible and there is a difference with the Annex, present areas and surfaces that enable instrument procedures in accordance with critical aircraft. Annex 14 and Doc 9136, Part 6, are basic material and, it should serve as guidelines in the study.

3. **Composition**

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Venezuela	Edgar Garantón	e.garanton67@yahoo.com

MANAGEMENT OF MOVEMENT AREA

1. **Terms of Reference**

Advice States/Territories on:

a) Design, construction and modification of taxiways that contribute to safer and more efficient airport operations;

b) Optimization of visual aids systems and their positioning (lights, signals);

c) Standardization of taxiways designation

d) Identification, publication and seeking solutions for hotspots (taxiway layouts that cause difficulties).

e) Runway incursions

2. **Task**

Prepare the Work Programme for the Task Force.

3. **Composition**

STATE/ORGANIZATION	Name	E-mail
Argentina	Jorge Rixon	jrixon@anac.gov.br
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IFALPA	Heriberto Salazar	dirtecnico@aspa.org.mx

MEASUREMENT AND EVALUATION OF FRICTION CONDITIONS IN SLIPPERY RUNWAYS

1. **Terms of Reference**

a) Advice States/Territories on:

- Quantity, model and characteristics of the CFME equipment in the Region.
- Parameters affecting measurement results. .
- Study of requirements for the installation of calibration centres CFMEs in the Region.
- Revision of the use of macrotexture results as a complement of the friction coefficient results measuring obtained through CFME equipment.
- Standardization of publications on runway surface conditions;
- The different methods and frequencies in cleaning and decontamination of the runway; and
- Methods and frequencies in the measurement of friction coefficient (FCT), with the participation and advice of ALACPA and ACI-LAC.

b) Make appropriate coordination with ALACPA, ACI-LAC and IFALPA.

2. **Task**

Prepare the Work Programme for the Task Force.

3. **Composition**

STATE/ORGANIZATION	Name	E-mail
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Agenda Item 7: Other matters

7.1 The Secretary presented to the Meeting the proposal related to the "Feasibility study on the development of PANS-AGA", document which is currently for the consideration of the Air Navigation Commission and was presented by the Director of the Air Navigation Bureau. He initially referred to Annex 14, Volume I, which contains the standards and recommended practices (SARPS) that specify the physical characteristics, the obstacle limitation surfaces and some facilities, and essential technical services for the operation of an aerodrome. Nevertheless, the mentioned Annex, even though it provides some requirements for aerodrome operations, such as emergency plans, is used for aerodrome design and is not oriented towards aerodrome operational management in itself, aspect which acquired relevance as regards aerodrome safety and efficiency.

7.2 Therefore, the need to draft an ICAO document providing guidelines for aerodrome operational management was recognized upon as one of the greater challenges faced by aerodromes today as regards the operational part, mainly when it requires accommodating large aircraft and/or the development of the aerodrome that is confronting certain restrictions.

7.3 The Secretariat mentioned that most of the aerodromes in the world were built without following current Annex 14 design standards and, in some cases, it is very difficult for these aerodromes to re-adequate the infrastructure in accordance with the design standards established in said Annex. In order to obtain safety assurance and improve aerodrome operational efficiency, operational procedures should be provided and be taken under consideration in the aerodrome certification process.

7.4 In addition, he expressed that there will be need to differentiate between the certification of a new aerodrome and an existing one. As regards aeronautical studies, the need to provide uniform requirements on procedures for the conduct and review of the aeronautical studies to ensure an acceptable level of safety in aerodrome operations is very important.

7.5 Finally, the Secretariat concluded its presentation urging the Meeting to examine the **Appendix** to this part of the Report, which provides information on the activities developed and the subjects to be included in the first version of the PANS-AGA.

APPENDIX

International Civil Aviation Organization

AN-WP/8379
9/2/09

WORKING PAPER

AIR NAVIGATION COMMISSION

AN Programme No. A1-SMP-ACT: Manage hazards and risks
AN Programme No. D1-ANS-ADO: Aerodrome design and operations

FEASIBILITY STUDY ON THE DEVELOPMENT OF PANS-AGA

(Presented by the Director of the Air Navigation Bureau)

SUMMARY

This working paper presents a feasibility study on the development of PANS-AGA.

Action by the Air Navigation Commission is in paragraph 6.

COORDINATION

ACR, AIG, ATM, CNS/AIRS, FLS, ISM, LEB, MED, MET/AIM, SOA

REFERENCES

AN-WP/8222
DP No. 1 related to AN-WP/8322
∗DP No. 2 related to AN-WP/8322
∗AN Min. 179-4
∗AN Min. 178-10
Annex 4
Annex 14, Volumes I and II
Annex 15
Doc 8168, PANS-OPS
Doc 4444, PANS-ATM

This working paper relates to Strategic Objectives A and D.

∗Principal references

AN-WP/8379

1. INTRODUCTION

1.1 On 9 October 2008, the Air Navigation Commission (179-4) conducted its final review of the proposed amendments to Annex 14 — *Aerodromes*, Volume I — *Aerodrome Design and Operations* and Volume II — *Heliports* and consequential amendments to Annex 4 — *Aeronautical Charts* and Annex 15 — *Aeronautical Information Services* in light of comments from States and international organizations. During the discussion related to code letter F specifications in Annex 14, Volume I, it was recognized that review of the aerodrome design provisions in Annex 14, Volume I would not resolve all of the safety and efficiency challenges facing existing aerodromes worldwide in their day-to-day operations. Therefore, it was considered that it would be beneficial to develop a *Procedures for Air Navigation Services – Aerodrome Operations* (PANS-AGA) document to address aerodrome operational issues.

1.2 The Commission agreed that the Secretariat should further study the feasibility of developing a PANS-AGA, the structure of the document, and the way and timeframe of progressing the work, and report to the Commission in the 180th Session with a detailed proposal for a plan of action, taking into account the resource requirements.

1.3 Subsequently, the Secretariat conducted a feasibility study taking into account worldwide introduction of the new larger aircraft operations, e.g. Airbus A380, previous discussions on the subject and information on the audit results of the ICAO Universal Safety Oversight Audit Programme (USOAP) under the comprehensive systems approach. Consultation was also made through two working group meetings of the Aerodromes Panel (AP), i.e. the sixth meeting of the Aerodrome Design Working Group (ADWG/6, Paris, France, 21 to 24 October 2008) and the sixth meeting of the Aerodrome Operations and Services Working Group (AOSWG/6, Montreal, Canada, 18 to 21 November 2008).

2. NEED FOR PANS-AGA

2.1 Annex 14, Volume I contains Standards and Recommended Practices (SARPs) that prescribe the physical characteristics and obstacle limitation surfaces to be provided for at aerodromes, and certain facilities and technical services normally provided at an aerodrome. Although the Annex provides some general requirements on aerodrome operations such as aerodrome emergency planning, it is mainly used as a design document and does not sufficiently address aerodrome operational management which is equally important for aerodrome safety and efficiency. Therefore there is increasingly a need to develop an ICAO document that addresses procedures for aerodrome operational management as many challenges that aerodromes face today are of an operational nature, particularly where larger aircraft need to be accommodated and/or the development of the aerodrome is constrained.

2.2 As of 19 September 2008, 105 States had been audited through the USOAP under the comprehensive systems approach. A summary of the audit results reveals that a large number of the States audited have not yet certified or established a process for the certification of aerodromes. Many States have neither developed nor issued guidance to regulatory staff and aerodrome operators on the use of aeronautical studies and their evaluation in relation to granting exemptions or exceptions to requirements. Most States have not ensured that aerodrome operators implement a safety management system (SMS) as part of their aerodrome certification process. The provisions relating to runway friction, runway end safety areas, pavement use and the periodic testing and review of aerodrome emergency plans show a lack of compliance by a high percentage of the audited States. Other high percentages of non-satisfactory

questions stem from weaknesses in a State's surveillance programme, including a lack of formal inspection procedure used for the continuing surveillance of aerodrome certificate holders and a lack of expertise in highly specialized areas such as rescue and fire fighting and wildlife/bird hazard control. Furthermore, many States have not provided sufficient guidance to regulatory staff and aerodrome operators on obstacle control and management.

2.3 The above areas where the findings were identified in the audits of many States are more related to aerodrome operational management. Annex 14, Volume I includes SARPs in these areas providing, in most cases, only general requirements; however, there is a lack of global operational procedures that would assist States to achieve compliance with the SARPs.

2.4 For example, Annex 14, Volume I provides SARPs for obstacle limitation surfaces and general requirements for obstacle removal but not for procedures on how to manage and control obstacles in the vicinity of aerodromes. The USOAP audits indicate that at many aerodromes worldwide, there is a lack of procedures on how to inspect and identify obstacles in the vicinity of aerodromes, initiate action to deal with obstacle control, coordinate with different stakeholders and find resolutions for the sake of safety and efficiency. A similar situation exists in many other aspects of aerodrome operational management, including wildlife/bird hazard management, winter operations, work in progress at aerodromes, maintenance and aerodrome surveillance inspections.

2.5 Annex 14, Volume I specifies general requirements for certification of aerodromes. The Annex requires that aerodromes be certified in accordance with the specifications contained in the Annex as well as other relevant ICAO specifications through an appropriate regulatory framework. However, it does not address operational procedures dealing with existing aerodromes. In reality, many existing aerodromes worldwide were not built to the full design standards specified in the existing Annex 14, Volume I and, in certain cases, it is impossible or impracticable for those aerodromes to render their infrastructure to be in accordance with the Annex design Standards. This mainly relates to physical characteristics of an aerodrome, including different separation distances. This situation is highlighted by the introduction of the A380 operations at a number of existing aerodromes. In order to ensure safety and enhance aerodrome operational efficiency, operational procedures should be put in place and should be taken into consideration in the aerodrome certification process. There might be a need to distinguish between the certification of newly-built aerodromes and that of existing aerodromes.

2.6 Currently, Annex 14, Volume I specifically provides for aeronautical studies to be conducted in respect of taxiway minimum separation distances, certain parts of obstacle limitation requirements and visual aids for navigation and for obstacles. As reflected in the USOAP audit results, there is a need to provide uniform requirements on procedures for conducting and reviewing aeronautical studies to ensure an acceptable level of safety in aerodrome operations.

3. STATUS OF PANS-AGA

3.1 The status of a PANS document is described in the Foreword of *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444) and *Procedures for Air Navigation Services - Aircraft Operations* (PANS-OPS, Doc 8168). Based on the principles in these documents, PANS-AGA would be complementary to the SARPs contained in Annex 14, Volume I. PANS-AGA would be approved by the Council and recommended to Contracting States for worldwide application.

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3.2 While PANS-AGA might contain material which may eventually become SARPs when it has reached the maturity and stability necessary for adoption, as such, it could also comprise material prepared as an amplification of the basic principles in the corresponding SARPs and designed particularly to assist the user in the application of those SARPs. PANS-AGA could present coverage of operational practices that are beyond the scope of SARPs but with respect to which a measure of international uniformity is desirable.

3.3 PANS do not carry the status afforded to Standards adopted by the Council and, therefore, do not fall under the obligation imposed by Article 38 of the Convention to notify differences in the event of non-implementation. The attention of States, however, should be drawn to the provision of Annex 15 and Assembly Resolution A36-13, Appendix D, Associated Practice 3, related to the publication in Aeronautical Information Publications of significant differences between national procedures and the related ICAO procedures.

3.4 It should be noted that, since SARPs and PANS are complementary and not contradictory, a need could arise in the development of PANS-AGA to amend certain provisions in Annex 14, Volume I. For example, new provisions might be needed in Annex 14, Volume I to allow for the application of operational procedures at existing aerodromes in the process of aerodrome certification. Similarly, a need might arise to transfer some detailed provisions from Annex 14, Volume I to PANS-AGA.

3.5 It is envisaged that part of the PANS-AGA would derive from material already in Annex 14, Volume I as well as the manuals. Since PANS-AGA would be of a higher status than guidance material contained in the manuals, there might be a need to amend/revise some of the existing AGA-related technical manuals, including the *Airport Planning Manual* (Doc 9184), *Aerodrome Design Manual* (Doc 9157) and *Airport Services Manual* (Doc 9137) in order to be consistent with the PANS-AGA.

4. SCOPE AND CONTENTS OF PANS-AGA

4.1 PANS-AGA would specify, in greater detail than in the SARPs, the operational procedures to be applied by aerodrome operators to ensure aerodrome operational safety and to enhance aerodrome operational efficiency. PANS-AGA would also specify procedures to be applied by both aerodrome regulators and operators for initial aerodrome certification and continuing aerodrome safety oversight.

4.2 Subject to further modifications, a draft Table of Contents of PANS-AGA is proposed in the appendix, which outlines the major areas that this document would address.

4.3 It should be noted that the PANS-AGA would be a living document. New contents would be added as operational issues arise in the future. The first edition of the document would focus on high-priority issues such as operational procedures at existing aerodromes, as well as other operational management issues where most States need guidance as revealed by the USOAP audits.

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5. ORGANIZATION AND SCHEDULING OF WORK ON THE DEVELOPMENT OF PANS-AGA

5.1 It is proposed that a Study Group on PANS-AGA (PASG) be established by the Secretariat to carry out the work on the development of a PANS-AGA document.

5.2 The work could be divided into the following phases:

a) Phase I, establishment of the PASG (September 2009);

b) Phase II, first draft of the document (December 2011);

c) Phase III, review of the document by the Secretariat (June 2012);

d) Phase IV, review of the document by the Commission (December 2012);

e) Phase V, approval by the Council (March 2013); and

f) Phase VI, revision of selected manuals affected by PANS-AGA (2015).

5.3 Given the resources available in the AGA Section of the Secretariat and taking into account the work programme of the AP, it is proposed that certain items of the AP be deferred until the completion of the development of PANS-AGA. These would include the development of new SARPs and guidance material on aerodrome certification, as these provisions, especially those for the existing aerodromes, would also be addressed in the development of PANS-AGA.

6. ACTION BY THE AIR NAVIGATION COMMISSION

6.1 The Air Navigation Commission is invited to:

a) note the feasibility study on the development of PANS-AGA;

b) agree that a PANS-AGA document be developed to address procedures for aerodrome operational management;

c) agree that the PASG be established by the Secretariat to undertake the work on the development of PANS-AGA;

d) note the proposed scheduling of work on the development of PANS-AGA; and

e) agree that items in the work programme of the AP on aerodrome certification be deferred as a result of the scheduling of the work on the development of PANS-AGA.

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Appendix

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