



**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**SECONDARY SURVEILLANCE RADAR CODES  
ALLOCATION STUDY GROUP (SSRCASG)**

**FIRST MEETING**

*(Cairo, Egypt, 07-08 August 2007)*

The views expressed in this Report should be taken as those of the SSRCASG/1 and not of the Organization. This Report will, however, be submitted to the MIDANPIRG and any formal action taken will be published in due course as a Supplement to the Report.

Approved by the Meeting  
and published by authority of the Secretary General

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History of the Meeting

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## **PART I – HISTORY OF THE MEETING**

### **1. PLACE AND DURATION**

1.1 The first Meeting of the Secondary Surveillance Radar Codes Allocation Study Group (SSRCASG) was held at the ICAO Middle East Regional Office, Cairo, Egypt, 07-08 August 2007.

### **2. OPENING**

2.1 The meeting was opened by Mr. Jehad Faqir, ICAO Deputy Director, Middle East Regional Office on behalf of Mr. Mohamed R. Khonji, ICAO Regional Director. Mr Faqir welcomed all participants to Cairo and to the meeting, and expressed appreciation on the good attendance by the States as well as to EUROCONTROL for its continued support to the MID Region.

2.2 Mr. Faqir recalled that MIDANPIRG/10, in order to address the issue of SSR codes availability in the MID Region had decided to form the SSRCASG with the terms of reference as given. He emphasized on the importance of the objective of the Study Group and the job that lay ahead. Finally, Mr. Faqir wished all participant successful deliberations and a fruitful outcome.

### **3. ATTENDANCE**

3.1 The meeting was attended by a total of 17 participants from six (6) States (Egypt, Iran, Oman, Saudi Arabia, Syria and United Arab Emirates) and one (1) International Organization (EUROCONTROL). The list of participants is at **Attachment A** to the Report.

### **4. OFFICERS AND SECRETARIAT**

4.1 The Rapporteur of the meeting was Mr Saud Humaid Al-Adhoobi from Oman, and Mr. Seboeso M. Machobane, RO/ATM/SAR was the Secretary of the meeting. Mr. Jehad Faqir, Deputy Regional Director, from the ICAO Middle East Office supported the meeting.

### **5. LANGUAGE**

5.1 The discussions were conducted in English and documentation was issued in English.

### **6. AGENDA**

6.1 The following Agenda was adopted:

- |                |   |
|----------------|---|
| Agenda Item 1: | Adoption of the provisional agenda and election of the Rapporteur |
| Agenda Item 2: | Determination of the work programme                               |
| Agenda Item 3: | Review of current SSR Code allocation system situation            |
| Agenda Item 4: | Long term measures for MID Region SSR Code Allocation             |

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Agenda Item 5: Future Work Programme

Agenda Item 6: Any other business

**7. CONCLUSIONS AND DECISIONS – DEFINITION**

7.1 The MIDANPIRG records its actions in the form of Conclusions and Decisions with the following significance:

- a) **Conclusions** deal with matters that, according to the Group's terms of reference, merit directly the attention of States, or on which further action will be initiated by the Secretary in accordance with established procedures; and
- b) **Decisions** relate solely to matters dealing with the internal working arrangements of the Group and its Sub-Groups

**8. LIST OF CONCLUSIONS AND DECISIONS**

*DRAFT DECISION 1/1: REVISED TERMS OF REFERENCE OF THE STUDY GROUP*

*DRAFT DECISION 1/2: LIST OF TASKS FOR THE SSR CODE ALLOCATION STUDY GROUP*

*DRAFT CONCLUSION 1/3: MEASURES TO ADDRESS NON-SYSTEM SSR CODE ALLOCATION PROBLEMS*

*DRAFT CONCLUSION 1/4: APPLICATION OF THE ORIGINATING REGION CODE ASSIGNMENT METHOD (ORCAM) IN THE MID REGION*

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**PART II: REPORT ON AGENDA ITEMS**

**REPORT ON AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA**

1.1 The meeting reviewed and adopted the provisional agenda as at paragraph 6 of the history of the meeting.

1.2 The meeting acknowledged the agreement of the ATM/SAR/AIS SG/8 Muscat, Oman 20-23 November 2006, that Mr. Saud H. Al-Adhoobi from Oman will be the Rapporteur of the Study Group.

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SSRCASG/1  
Report on Agenda Item 2

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**REPORT ON AGENDA ITEM 2: DETERMINATION OF THE WORK PROGRAMME**

2.1 Under this agenda item, the meeting noted the concern that had been highlighted by the MIDANPIRG/9 meeting, Cairo, 11-15 April 2005 regarding impact of the sustained traffic growth in the MID Region and the need to manage the SSR codes assignment properly to avert a shortage of codes. The meeting also noted the MIDANPIRG/9 Decision 9/21 *ASSIGNMENT OF SSR CODES IN THE MID REGION*, which, inter alia, adopted an updated MID Region SSR codes assignment plan and assigned the ATM/SAR/AIS Sub-Group to review as appropriate the allocation of SSR codes in the MID Region in order to ensure that future requirements continued to be met.

2.2 The meeting noted furthermore that the MIDANPIRG/10 meeting, Doha 15-19 April 2007 had agreed that the ATM/SAR/AIS Sub-Group should, when reviewing the MID Region SSR code allocation, consider as necessary the possibility of implementing the basic principles of the Originating Region Code Assignment Method (ORCAM), which is currently applied in the EUR as well as in the MID Regions, including the establishment of Participating Areas (PAs). Accordingly, MIDANPIRG/10 had endorsed the following Decision:

*DECISION 10/44: ESTABLISHMENT OF A MID REGION SSR CODE STUDY GROUP*

*That, the MID Region SSR Code Study Group be established with the Terms of Reference as at **Appendix 5.3M** to the Report on Agenda Item 5.3.*

2.3 The meeting considered the terms of reference (TOR) of the Study Group, which had been revised by the Secretariat with the objective of aligning the language with actions that are feasible for the Study Group, without departing from its basic objective as endorsed by MIDANPIRG/10, and agreed on the revised TOR. In order to facilitate its work, the meeting also adopted a list of tasks to be achieved by the Study Group in support of the TOR, and accordingly adopted the following Draft Decisions:

***DRAFT DECISION 1/1: REVISED TERMS OF REFERENCE OF THE STUDY GROUP***

*That, the MID Region SSR Code Allocation Study Group revised Terms of Reference is adopted as at **Appendix 2A** to the Report on Agenda Item 2.*

***DRAFT DECISION 1/2: LIST OF TASKS FOR THE SSR CODE ALLOCATION STUDY GROUP***

*That, in order to meet the requirements of the Terms of Reference of the MID Region SSR Code Allocation Study Group, the list of tasks for the Study Group is adopted as at **Appendix 2B** to the Report on Agenda Item 2.*

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Appendix 2A to the Report on Agenda Item 2

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**SSR CODES ALLOCATION STUDY GROUP (SSRCASG)**

**TERMS OF REFERENCE**

*(Revised)*

- 1- Assess the SSR Code allocation system situation in the MID Region and the adjacent ICAO Regions.
- 2- Propose short term solutions to address the identified SSR Code allocation system problems
- 3- Evaluate the advantages/disadvantages of a single *Participating Area* (PA) versus multiple PAs.
- 4- Analyze the development of PAs taking into consideration the following:
  - Operational consideration for the definition of PAs (scope and number);
  - Volume of traffic;
  - Impact on adjacent FIRs/Pas;
  - National defense requirements;
  - Automation system limitations;
  - Duration of code usage within a particular area.
- 5- Analyze the application the *Originating Region Code Assignment Method* (ORCAM) in the MID Region.
- 6- Identify long term measures
- 7- The Study Group will have the mandate to discuss, within its TORs, with adjacent ICAO Regions without having to go through the ATM/SAR/AIS SG.
- 8- The Study Group will consist of the following MID States and International Organizations :

**STATES**

Egypt, Iran, Oman, Saudi Arabia, Syria and UAE.

**ORGANIZATIONS (AS OBSERVERS)**

IATA, ICAO and, EUROCONTROL (on *ad-hoc* basis).

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SSRCASG/1  
Appendix 2B to the Report on Agenda Item 2

**SSR CODES ALLOCATION STUDY GROUP**

**LIST OF TASKS**

<b>Task No.</b>	<b>Strategic Objectives</b>	<b>Tasks</b>
1	A, D	Assess the SSR Code allocation system situation in the MID Region and the adjacent ICAO Regions: a) Review the current Code allocation system and i. identify any systemic (code allocation system) potential problems likely to be experienced in the short term (up to 2010) ii. identify any capacity issues that may have to be addressed before long term measure become effective b) Identify problems recently experienced or being experienced in the current Code allocation system: systemic and non-systemic
2	A	Propose short term solutions to address the identified SSR Code allocation system problems: c) solutions to systemic (code allocation system) d) solutions to other problems
3	A, D	Evaluate the advantages/disadvantages of a single versus multiple Participating Areas (PAs);
4	A, D	Analyze the development of PAs taking into consideration the following: a) Operational consideration for the definition of PAs (scope and number); b) Volume of traffic; c) Impact on adjacent FIRs/PAs; d) National defense requirements; e) Automation system limitations; f) Duration of code usage within a particular area.
5	A, D	Identify long term measures Draft proposals including implementation plan;
6	D	Discuss and coordinate within the scope of the Study Group TORs, with adjacent ICAO Regions;
7	A, D	Draft proposals regarding long term measure including implementation plan;
8	A, D	Draft proposal for amendment of the MID ANP FASID Document;
9	D	Undertake follow-up action as necessary on the Decisions and Conclusions of the Study Group;
10	D	Report progress to the ATM/SAR/AIS Sub-Group.

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SSRCASG/1  
Report on Agenda Item 3

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**REPORT ON AGENDA ITEM 3: REVIEW OF CURRENT SSR CODE ALLOCATION SYSTEM  
SITUATION**

3.1 Under this agenda item, the meeting noted the action taken by MIDANPIRG regarding the MID Region SSR code allocation since the LIM MID RAN (COM/MET/RAC) Meeting in 1996, leading to the current MID Region Code Allocation Plan (CAP), which was adopted by the MIDANPIRG/9 meeting Cairo, 11-15 April 2005.

3.2 The meeting noted specific SSR code allocation problems that had been experienced in the MID Region including the duplication of codes between the Baku area control centre (ACC) (Azerbaijan) and Tehran ACC, and problems experienced in the Muscat FIR involving flights which were coordinated with SSR codes that were not accepted by the Muscat ATC system, due to not being in Oman's assigned list of codes. Other problems experienced in the Muscat FIR had involved flight plans originating in the Asia Pacific Region, which contained SSR mode A code in the aircraft identifier box (item 7). These entries had the potential of being identified and used by automated systems, which could create conflicts. Syria mentioned that they were also having problems with the Bagdad FIR on assignment of SSR codes. A formal letter on this regard was sent to the Iraq civil aviation authority. No response had been received from the Iraqi authorities and the problem persisted.

3.3 The meeting recognized that largely, the above-mentioned problems were related to coordination and technological incompatibilities, and that they were addressed through communication and coordination between the MID Regional Office and the MID States concerned, and with the relevant ICAO Regional Offices, and that similar measures could be used in the future.

3.4 The meeting was of a strong view that the inappropriate use of codes, such as the use of domestic code on international flights, was exacerbating the problem of code shortage, and unless this was effectively addressed by the States, even new measures to increase availability would have limited success. The meeting noted that some problems could be related to education and training of relevant personnel.

3.5 EUROCONTROL highlighted that there were interface problems between the MID and EUR Region, however, it was a problem that could in the short term be addressed with an agreement between the adjacent FIRs. It was hoped however, that for the long term, the adoption of multiple Participating Areas (PAs) by the MID Region would facilitate a solution. Egypt mentioned that it was already experiencing a shortage of codes but had further been requested by the EUR ORCAM User Group not to use codes in the 23 series for flights to Europe. EUROCONTROL offered to work with Egypt to address its codes requirements.

3.6 The meeting noted that there were other code allocation problems which involved States in the AFI Air Navigation Plan (ANP), which had to be considered in addressing the EUR/MID interface challenges, for example, the codes which the ORCAM User Group requested Egypt not to use were being used by Libya.

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Report on Agenda Item 3

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3.7 Based on the above, the meeting adopted the following Draft Conclusion:

**DRAFT CONCLUSION 1/3:       MEASURES TO ADDRESS NON-SYSTEM SSR CODE  
ALLOCATION PROBLEMS**

*That,*

- a) States are urged to undertake necessary coordination with adjacent States/FIRs to address identified SSR Code Allocation problems or potential problems with such adjacent FIRs; and*
- b) in cases where identified Code Allocation conflicts are beyond the ability of States' bilateral or multilateral initiatives to address, the ICAO MID Regional Office be notified as soon as practical, in order to take necessary action.*

3.8 The meeting acknowledged that it was important to understand the impact of technological differences in assigning the codes and that more automation permitted flexibility and accuracy. To this effect, the MID Regional Office could request this information from the States. The meeting was apprised on the already high and increasing demand of SSR codes in the Jeddah FIR. EUROCONTROL highlighted that the current three (3) hour code occupancy/protection applied in the MID Region could be reduced and this would increase codes' availability. By comparison, the occupancy/protection in the EUR Region was two (2) hours, or less if other protection was provided.

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Report on Agenda Item 4

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**REPORT ON AGENDA ITEM 4: LONG TERM MEASURES FOR MID REGION SSR CODE  
ALLOCATION**

4.1 Under this agenda item, the meeting recalled that the MIDANPIRG/9 in April 2005 had noted that the assignment of SSR codes in Europe was being addressed within the framework of the Originating Region Code Assignment Method (ORCAM) Users Group, and that the EUR Region was also considering several other options, including the establishment of a Centralized SSR Code Assignment and Management System, the possibility of extending some EUR PAs to cover adjacent States in the AFI and the MID Regions or to conclude bilateral agreements.

4.2 The meeting noted that the Second Inter-Regional Coordination Meeting between ICAO APAC, EUR/NAT and MID Regional Offices (IRCM/2) was of the opinion that the MID Region, in order to solve the problems of SSR codes allocation, should as matter of urgency, exploit the basic principles of ORCAM including the establishment of Participating Areas (PAs) in the MID Region. The meeting also recalled that the ATM/SAR/AIS SG/8 meeting in November 2006, agreed that the Study Group would consider the possibility of implementation of multiple PAs in accordance with the ORCAM principles. Furthermore, the ATM/SAR/AIS SG/8 meeting was of view that in studying the concept of multiple PAs, the Study Group had to take into consideration the following:

- That the introduction of multiple PAs would increase the number of Transit codes required for assignment to aircraft. It should be noted that in addition to international departures, which require Transit code assignment, the number of flights entering an FIR from another PA require a Transit code, whereas an overflight entering the airspace from an FIR within the same PA and exiting to an FIR outside the PA does not require code changes.
- That the de-correlation in association with code change will interfere with arrival management systems for busy airports and can only be avoided through substantial and costly system upgrades.
- Major areas of traffic flows should be taken into consideration. In this regard, UAE had requested that, in case the concept of multiple PAs is to be implemented in the MID Region, UAE should be in the same PA with Bahrain, Iran and Oman.

4.3 The meeting considered a proposal presented by Oman, to apply the ORCAM methodology with multiple PAs in the MID Region. To this effect, the meeting expressed appreciation on the input from Oman, and considered the three options splitting the Region into two (2) groups of States, and one option with a system of three groups of States, in the proposal.

4.4 The meeting agreed that splitting the MID Region into multiple ORCAM participating areas (PAs) would enable the simultaneous use of many codes and thus availability of codes would increase. After evaluating the options, the meeting agreed in principle on three PAs for the MID Region. The meeting agreed that more data regarding, inter alia, traffic patterns and volume, and requirements in adjacent ICAO Regions, was necessary in order for the Study Group to reach finality

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Report on Agenda Item 4

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on the structure of the PAs and codes allocated to the PAs. Consequently, the meeting agreed to study this option further after acquiring more data. EUROCONTROL offered to assist with the analysis of traffic patterns for those routes on which data was available at EUROCONTROL, and with input in developing the necessary questionnaire to obtain the necessary data related to Flight Data Processing Systems' (FDPS) capabilities from States.

4.5 There was recognition that the increase in PAs would entail an increase in cockpit workload, however, as opposed to two PAs, the three PA options would, in addition to availing more codes, have the benefit of having one PA as a buffer with the EUR Region, which would be significant in addressing the inter-regional interface challenges.

4.6 The meeting also noted that in addition to benefits that may be brought about by the application of PAs, technological system upgrades and compatibilities were important, since, for example, directional assignment of codes could be achieved, thereby necessitating smaller buffers between simultaneously assigned codes.

4.7 Based on the above, the meeting agreed to the following Draft Conclusion:

***DRAFT CONCLUSION 1/4: APPLICATION OF ORIGINATING REGION CODE  
ASSIGNMENT METHOD (ORCAM) IN THE MID  
REGION***

*That,*

- a) the MID Region adopts application of Originating Region Code Assignment Method (ORCAM);*
- b) the MID Region will consider three ORCAM Participating Areas (PA);*
- c) the number of PAs be further studied as more data regarding traffic patterns and volume, and requirements in adjacent ICAO Regions became available; and*
- d) The ICAO MID Regional Office take necessary action to obtain data from States and other ICAO Regions for the SSR Code Allocation Study Group to complete its work.*

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Report on Agenda Item 5

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**REPORT ON AGENDA ITEM 5: FUTURE WORK PROGRAMME**

5.1 Under this agenda item, the meeting noted that ICAO initiated the development of a Business Plan along with performance measures for the Organization. The Business Plan is designed to translate the six Strategic Objectives of the Organization into action plans and ensure a link between planned activities, organizational cost and performance assessment. Accordingly, the meeting had adopted the list of tasks as at **Appendix 2B** to the Report on Agenda Item 2. Furthermore, in order to facilitate performance monitoring, the meeting developed a draft follow-up Action Plan as at **Appendix 5A** to the Report on Agenda Item 5.

5.2 The meeting agreed that it's next meeting should tentatively be in the first quarter of 2008 for a duration of two (2) days and the tentative agenda as at **Appendix 5B** to the Report on Agenda Item 5. The venue will be the MID Regional Office in Cairo, unless a State shows interest in hosting the meeting. The meeting acknowledged that the final arrangements regarding the dates and venue would be determined by the MID Regional Office after taking into account the necessary considerations.

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Appendix 5A to the Report on Agenda Item 5

SSRCSG/1  
FOLLOW-UP ACTION PLAN TEMPLATE

CONC/DEC No. --- STRATEGIC OBJECTIVE	TITLE OF CONCLUSION/DECISION	TEXT OF CONCLUSION/DECISION	FOLLOW-UP ACTION	TO BE INITIATED BY	DELIVERABLE	TARGET DATE
DEC 1/1  D	REVISED TERMS OF REFERENCE OF THE STUDY GROUP	<i>That, the MID Region SSR Code Allocation Study Group revised Terms of Reference is adopted as at Appendix X to the report on Agenda Item 2.</i>	Revise Terms of Reference	ICAO MID Office	Report of SSRCASG/1	Aug 2007
DEC 1/2  D	LIST OF TASKS FOR THE SSR CODE ALLOCATION STUDY	<i>That, in order to meet the requirements of the Terms of Reference of the MID Region SSR Code Allocation Study Group, the list of tasks for the Study Group is adopted as at Appendix X to the report on Agenda Item 2.</i>	List tasks for the Study Group, to support TOR	ICAO MID Office	Report of SSRCASG/1	Aug 2007
CON 1/3  A & D	MEASURES TO ADDRESS NON-SYSTEM SSR CODE ALLOCATION PROBLEMS	<p><i>That,</i></p> <p>a) <i>States are urged to undertake necessary coordination with adjacent States/FIRs to address identified SSR Code Allocation problems or potential problems with such adjacent FIRs; and</i></p> <p>b) <i>in cases where identified Code Allocation conflicts are beyond the ability of States' bilateral or multilateral initiatives to address, the ICAO MID Regional Office be notified as soon as practical, in order to take necessary action.</i></p>	<p>State Letter to urge States to coordinate</p> <p>Coordinate &amp; report to ICAO MID Office</p>	<p>ICAO MID Office</p> <p>States</p> <p>States</p>	<p>Improved code management</p>	<p>Sep 2007</p> <p>Ongoing</p> <p>Ongoing</p>

CONC/DEC No. --- STRATEGIC OBJECTIVE	TITLE OF CONCLUSION/DECISION	TEXT OF CONCLUSION/DECISION	FOLLOW-UP ACTION	TO BE INITIATED BY	DELIVERABLE	TARGET DATE
<p><i>CON 1/4</i>  <i>A &amp; D</i></p>	<p><i>APPLICATION OF THE ORIGINATING REGION CODE ASSIGNMENT METHOD (ORCAM) IN THE MID REGION</i></p>	<p><i>That,</i>  <i>a) the MID Region adopts application of Originating Region Code Assignment Method (ORCAM);</i>  <i>b) the MID Region will consider three ORCAM Participating Areas (PA);</i>  <i>c) the number of PAs be further studied as more data regarding traffic patterns and volume, and requirements in adjacent ICAO Regions became available; and</i>  <i>d) ICAO take necessary action to obtain data from States and other ICAO Regions for the SSR Code Allocation Study Group to complete its work</i></p>	<p>Obtain data from States and other ICAO Regions</p>	<p>ICAO MID Office</p>	<p>Report of SSRCASC/2</p>	<p>March 08</p>

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**MID REGION SECONDARY  
SURVEILLANCE RADAR CODES ALLOCATION STUDY GROUP (SSRCASG)**

**SECOND MEETING**

**PROVISIONAL AGENDA**

- Agenda Item 1: Adoption of the provisional agenda
- Agenda Item 2: Review of SSRCASG/1 Conclusions/Decisions
- Agenda Item 3: Review of recommended measures to address issues associated with current SSR Code Allocation System
- Agenda Item 4: Review of long term measures for MID SSR code allocation
- Agenda Item 5: Future Work Programme
- Agenda Item 6: Any other business

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SSRCASG/1  
Report on Agenda Item 6

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**REPORT ON AGENDA ITEM 6: ANY OTHER BUSINESS**

6.1 In adjourning the meeting, the ICAO Deputy Regional Director (DEPRD), Mr. Jehad Faqir, on behalf of Mr. Mohamed R. Khonji, Regional Director, expressed his gratitude to the participants for their inputs, and the commitment of their States/Organizations in making them available to the meeting. He expressed appreciation to EUROCONTROL for its continued support to the SSRCASG and the Region in general. The Rapporteur and a number of participants echoed the words of the DEPRD and expressed gratification with regard to the outcome of the meeting.

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SSRCASG/1  
Attachment A to the Report

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