



*International Civil Aviation Organization*

**Seventh Meeting of CNS/MET Sub-Group of APANPIRG and  
Tenth Meeting of CNS/ATM IC Sub-Group of APANPIRG**

Bangkok, Thailand, 15 – 21 July 2003

---

**Agenda Item 22: Future Work Programme**

**1) Review Task List of the CNS/MET/SG**

**TERMS OF REFERENCE AND TASKS LIST OF THE  
CNS/MET SUB-GROUP**

(Presented by the Secretariat)

**SUMMARY**

This paper presents the Terms of Reference and an updated Subject/Tasks List of the CNS/MET Sub-Group for review.

**1. INTRODUCTION**

1.1 The Thirteenth Meeting of APANPIRG held in Bangkok from 9-13 September 2002 reviewed the Subject/Tasks List of the CNS/MET Sub-Group. The Meeting in its Decision 13/33 adopted the updated Tasks List as the Work Programme for CNS/MET Sub-Group. Terms of Reference and the Tasks List of the Sub-Group is provided in Attachment.

**2. DISCUSSION**

2.1 The APANPIRG/13 while adopting the proposed changes to the Subject/Tasks List noted that of the 38 Tasks, 28 Tasks were completed. The Sub-Group is expected to review the Tasks List at each meeting to update the information, and to indicate progress and to propose new task, if any.

**3. ACTION BY THE MEETING**

3.1 The meeting is expected to:

- a) note the Terms of Reference of the CNS/MET Sub-Group; and
- b) review priority, target dates, action proposed and/or in progress including the overall status of the Subject/Tasks List and propose changes, as required.

**Terms of Reference and Subject Tasks List in CNS/MET Fields**

---

**TERMS OF REFERENCE OF THE  
COMMUNICATIONS, NAVIGATION, SURVEILLANCE/METEOROLOGY  
(CNS/MET) SUB-GROUP OF APANPIRG**

**TERMS OF REFERENCE**

1. Ensure the continuing and coherent development of the ASIA/PAC Regional Air Navigation Plan and the ASIA/PAC Regional Plan for the New CNS/ATM Systems in the CNS/MET fields.
2. Review and identify deficiencies that impede the implementation or provision of efficient CNS/MET services in the ASIA/PAC Region.
3. Monitor CNS/ATM systems research and development, trials and demonstrations in the fields of CNS/MET and facilitate the transfer of this information and expertise between States.
4. Make specific recommendations aimed at improving CNS/MET services by the use of existing procedures and facilities and/or through the evolutionary implementation of CNS/ATM systems.
5. Review and identify inter-regional co-ordination issues in the fields of CNS/MET and recommend actions to address those issues.

### SUBJECT/TASKS LIST IN THE CNS/MET FIELDS

The priorities assigned in the list have the following connotation:

A = Tasks of a high priority on which work should be expedited;

B = Tasks of medium priority on which work should be under taken as soon as possible but not to the detriment of Priority "A" tasks; and

C = Tasks of medium priority on which work should be undertaken as time and resources permit but not to the detriment of priority "A" and "B" tasks.

TOR = Terms of Reference of the Sub-Group

No	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
1	RAN/3 C.8/6	Subject: Shortcomings in volcanic ash colour codes  Task: Aviation volcanic ash color code		Study proposal by IFALPA to modify the aviation volcanic ash code.	COM/MET IFALPA	Completed
2	RAN/3 C.14/24	Subject: Relevance of the content of the table of navigation and surveillance services  Task: a) To provide information for the update of the ANP taking into account required additions and deletions. b) Provide the above information in an informal document that can also be used as a planning instrument for action o other tasks.		a) Undertake a comprehensive review of the table of radionavigation aids at appropriate intervals in consultation with States and international organisations  b) Develop a document to indicate the current ANP requirements, the implementation status of those requirements and future planning requirements  Task completed: Review completed On-going review mechanism established	NAV/SUR	Completed
3	RAN/3 R.9/3b)	Subject: Procedures for exchange of METARS between regions  Task: Exchange of METARS to support operations between ASIA/PAC and other regions.		Establish procedures for exchange of METARS between ASIA/PAC and other regions with a view of developing appropriate proposals to amend the ANP.	COM/MET	Completed
4	RAN/3 R.9/4	Subject: Designation of International OPMET data banks  Task: Designation of international OPMET data bank to serve the Asia and Pacific Regions.		Recommend an international OPMET data bank or banks to be designated to serve the ASIA/PAC region.	COM/MET	Completed
5	RAN/3 C.10/12	Subject: Standard Protocols  Task: Harmonization of ground-ground data links.		Consider harmonization of ground-ground data link protocols and procedures that will be inter-operable with the ATN.	COM/MET AFTN Mgmt. TF	Completed

No	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
6	RAN/3 R.10/18	Subject: WAFS satellite coverage in Asia Region  Task: Areas to be covered by World Area Forecast System (WAFS) satellite broadcast.		Co-ordination with WAFS satellite broadcast provider States to ensure access for States in western part of Asia/Pac Region completed.	ICAO WAFS provider State	Completed
7	RAN/3 C.10/20	Subject: Alpha numeric data on WAFS satellite broadcast  Task: Inclusion of alphanumeric data on ASIA/PAC World Area Forecast System (WAFS) satellite broadcast.		Consider inclusion of alphanumeric format OPMET and AIS messages on WAFS satellite broadcast.	COM/MET WAFS provider States	Completed
8	RAN/3 C.11/9	Expansion of Communication Tables Legends.		Develop terminology and legends to represent elements used in ATN.	COM/MET	Completed
9	APANPIRG C.2/27	Subject: Frequency congestion on SEA-1 network  Task: Aeromobile Communications Improvements - resolution of deficiencies		Identify aeromobile communications deficiencies in the region and develop appropriate solutions	ICAO States	Completed
10	APANPIRG C. 3/15	Subject: Regional radar data exchange  Task: Standardize radar data formats		1) Gather information on formats used in the Region 2) Encourage the use of standardized and automated exchange of radar cross FIR boundaries 3) Consult with Eurocontrol on the use of ASTRIX 4) Consider ATN/ADS compatability issues	NAV/SUR  ICAO US	Completed
11	RAN 3 C. 12/1	Minimum value of field strength for NDB's		Action on this subject completed.	NAV/SUR C.2/2	Completed

No	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
12	RAN/3 C. 12/6	Subject: Provision of cost effective and operationally acceptable approach and landing guidance  Task: 1) ILS/MLS transition planning 2) Action on the outcome of the Spec. om/Ops		Develop an ILS/MLS transition plan taking into account; 1) cost benefit studies conducted by states in the Region 2) studies and trials on MLS development and other relevant systems 3) progress achieved on technical and operation issues on MLS 4) progress in ILS/MLS transition planning in other regions 5) current plans of individual States in the Region on ILS/MLS an 6) outcome of the COM/OPS Div 95 Meeting.  Task completed: ILS/MLS transition issues resolved by outcome of Spec. Com/Ops Div95 Meeting. Regional strategy review completed.	NAV/SUR	Completed
13	APANPIRG D.7/28	Subject: Non-implementation of carriage of ACAS in ASIA/PAC region  Task: To examine the application of ACAS in the ASIA/PAC region and to develop a time-table for implementation		Review the benefits to be gained through carriage of ACAS in the region and develop a programme of implementation of carriage of ACAS	COM/MET/NAV/SUR	Completed
14	RAN/3 C.14/4  RAN/3 C.5/2  (TOR 1)	Development of detailed description for the contents of the ASIA/PAC Facilities and Services Implementation Document (FASID)  Ensure harmonised Regional Com/Met/Nav/Sur plan development		Develop detailed format and content for the COM/MET/NAV/SUR part of the Facilities and Services Implementation Document (FASID) as a matter of priority. Take into account global CNS/ATM plans as adopted by APANPIRG.	COM/MET/NAV/SUR  AFS MGT TF  NAV/SUR TF	Completed
15	RAN/3 C.8/17  (TOR 3)	Subject: Lack of WAFS data for long-haul operations  Task: WAFS support to long-haul operations		1) Study the development of interim arrangements to provide WAFS support to long haul operations. 2) India to rebroadcast WAFS charts received from Tokyo RAFC. 3) WAFC Washington provide wind/temp charts for 36 hours range.	COM/MET  USA	Completed  Completed

No	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
16	APANPIRG D. 9/31	Problem : Revision of GNSS RAS  Task : Development of an alternative strategy for the provision of GNSS RAS	A	Review the existing strategy and an alternative strategy be developed with a view to focus on ensuring appropriate service provision from the space-based system and alternative technology available	COM/MET/NAV/ SUR SG	Completed
17	RAN/3 C.14/19  (TOR 3)	Subject: Lack of AIDC procedures  Task: Development of on-line data interchange procedures and table for use in the Region	B	1) Develop on-line data-interchange procedures to support CNS/ATM applications. (AFTN AIDC) 2) Develop a logical connectivity table for the exchange of flight data information using the ATN. (ATN AIDC Table)	ICD Task Force  COM/MET/NAV/SUR (ATN Trans. TF)	Completed  Completed
18	APANPIRG D. 4/46  RAN/3 C.12/3  APANPIRG 5/33  (TOR 3)	Subject: Provision of adequate COM/NAV/SUR services  Task: Monitor the development and implement new com/nav/sur services eg ATN,GNSS, ADS with minimal transitional impact	A	1) Encourage States to conduct R&D, Trials & demonstrations of new com/nav/sur services eg. ATN, GNSS, ADS 2) Monitor global developments that may have beneficial impact on regional planning activities eg. ATN, WADGNSS, LADGNSS 3) Consolidate information on new capabilities in the CNS/ATM system, eg. FANS 1 avionics package, oceanic display systems etc. for the Sub-Groups review and action 4) Serve as a focal point for review of ongoing work of Regional formal and informal working groups that is relevant to Com/Nav/Sur eg RNP compatibility 5) Provide for co-ordinated training/seminars to keep all States informed on developments of trials and demonstrations 6) Establish a GNSS Task Force to develop a Regional Strategy for GNSS augmentation 7) Develop transition planning consistent with Regional requirements	COM/MET/NAV/SUR	Completed      Completed  Completed

No	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
19	RAN/3 C.9/7  (TOR 3)	Subject: Lack of adequate procedures for Exchange of OPMET data between regions  Task: Exchange of OPMET data between the ASIA/PAC and other Regions.	A	1) Develop procedures and delivery scheme for exchange of OPMET data between ASIA and EUR regions Via Singapore ODREP. 2) Develop a draft proposal for amendment of the ANP and arrange amendment of the ROBEX handbook to reflect the new arrangements. 3) To develop procedure to make OPMET information available at Washington and London.	COM/MET/NAV/SUR  OPMET WG	Completed  Completed Completed
20	C.9/12  (TOR 3)	Subject: The need for SIGWX charts to be available in London and Washington for WAFS dissemination  Task: Exchange of WAFS SIGWX charts.	A	1) Plan for the exchange of SIGWX charts between all relevant RAFCs and the London and Washington WAFC.  2) Develop transition plan for transfer of responsibilities from the RAFCs to WAFCs.  3) Coordination between RAFCs and the respective WAFCs be effected to meet time table for production of test high level SIGWX forecasts and the dates when the charts are expected to be considered operational	COM/MET/NAV/SUR  WAFS Task Force States	Completed  Completed Completed
21	RAN/3 R.10/19  (TOR 3)	Subject: Technical data not available for WAFS satellite broadcast implementation  Task: Dissemination of World Area Forecast System (WAFS) products by satellite broadcast.	A	1) WAFS satellite broadcast provider States to advise ICAO of VSAT receiving equipment details. 2) ICAO to relay information to States in the region. 3) Develop draft proposal to amend the ANP as necessary. 4) States to install WAFS satellite receivers.	UK & US  ICAO COM/MET States	Completed  Completed Completed Completed
22	COM/MET /NAV/SUR /SG  (TOR 2)	Subject: Protection of radio frequency spectrum to ensure safety and efficiency of aeronautical services.  Task: Take steps to protect the aeromobile spectrum from unauthorised interference.  Task: Support ICAO position on various Agenda at WRC including protecting GNSS spectrum for aeronautical use.	A	1) Encourage States to monitor and co-operatively resolve unauthorized intrusion into aeronautical HF bands,  2) Work actively with State Telecommunications Authorities to ensure ICAO positions are supported and aviation views are included in WRC deliberations.	ICAO  States	Completed  Completed

No	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
23	APANPIRG D. 10/13	Problem : Revision of Strategy for PA Landing System  Task : Development of an up-dated strategy	A	Review the current strategy and develop an up-dated strategy taking into account : 1) standardized GBAS and SBAS 2) feasibility of GBAS to support CAT II and III operations 3) development and deployment of MMR 4) the definition of RNP for approach, landing and departure operations and 5) human, environmental and economic factors.	COM/MET/NAV/ SUR SG	Completed
24	APANPIRG D. 10/14	Problem : Lack of a general strategy for implementation of GNSS  Task : Development of a more general strategy for implementation of GNSS.	A	A more general strategy for the implementation of GNSS navigation capability in the ASIA/PAC region taking into account : 1) RNP for all phases of flight 2) standardization of GNSS by ICAO through SARPs, PANS-OPS guidance material 3) human, environmental and economic factors.	COM/MET/NAV/ SUR SG	Completed
25	APANPIRG C. 8/21	Problem : Transition to the final phase of WAFS  Task : Planning for transfer of responsibilities of the RAFCs to the WAFCs London and Washington.		Develop WAFS Transition Plan and Procedures and planning for Implementation of transfer of the RAFCs responsibilities to the WAFCs London and Washington.	COM/MET/NAV/ SUR SG WAFS Transition TF	Completed



No.	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
26	RAN/3 C.11/8  (TOR 1)	Subject: Planning of ground-ground communications required for implementation of ATN  Task: Integration of ground -ground communications necessary for the implementation of the aeronautical telecommunication network.	B	Plan ground to ground communications for implementation of ATN, taking into account the work of the ATNP.  1) Development of ATN Routing architecture 2) Transition Plan	ATN Trans. TF/3	Completed
27	RAN/3 C.10/11  (TOR 3)	Subject: Inadequate Ground-ground data coms.  Task: Aeronautical Fixed Telecommunications Network (AFTN) management.	A	1) Develop procedures for the establishment operation and management of databases.  2) Review AFTN loading, develop possible circuit improvements and routing changes.  3) Develop alternate routing coordination procedures to take into account address stripping procedures.  4) Plan changes to the AFTN with due account to transition to ATN.	COM/MET/NAV/SUR  ATN Trans. TF  COM/MET/NAV/SUR	Completed  <del>On-going</del> Completed  Completed  Completed
28	APANPIRG C.2/23  (TOR 2)	Subject: Lack of implementation of ATS voice circuits  Task: Aeronautical Fixed Service (AFS) - resolution of deficiencies	A	Identify AFS deficiencies in the region and develop appropriate solution	CNS/MET  States concerned	<del>On-going</del> Completed  <del>On-going</del> Completed

No.	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
29	APANPIRG C. 9/29	<p>Problem : Lack of procedures for OPMET exchange to support the ISCS and SADIS broadcasts.</p> <p>Task : Planning for dissemination of ASIA/PAC OPMET data to the WAFCs London and Washington</p>	A	<p>Develop procedures for dissemination of OPMET data to the WAFCs for uplink on the satellite broadcasts.</p> <p>Planning an implementation of the procedures for OPMET exchange to support the ISCS and SADIS broadcasts.</p> <ul style="list-style-type: none"> <li>- Develop the new procedure for dissemination of OPMET messages, as listed in Annex 1 to the SADIS User Guide, to the WAFCs London and Washington to meet IATA requirements.</li> <li>- Planning for implementation of the new procedures</li> </ul>	CNS/MET SG with assistance of OPMET WG	<p>Completed</p> <p>Completed</p> <p><del>2002</del> 2003</p> <p>on-going</p>
30	RAN/3 C.11/10  (TOR 1)	<p>Subject: Ensure effective transition to sat. coms.</p> <p>Task: Planning for the implementation of satellite communications.</p>	B	<p>In planning for the implementation of CNS/ATM take into account:</p> <ol style="list-style-type: none"> <li>1) Requirements for an effective transition,</li> <li>2) Time frame for implementing changes,</li> <li>3) HF requirements after implementation of satellite communications,</li> <li>4) Human factors (staffing, retraining).</li> </ol>	CNS/MET	On-going
31	RAN/3 C.11/11  (TOR 1)	<p>Subject: Lack of com facilities to support aircraft access to Met Data-bank(s)</p> <p>Task: Communications facilities to support aircraft access to a MET data bank(s) and automation of meteorological information for aircraft in flight (VOLMET) broadcasts.</p>	B	<p>In planning CNS/ATM implementation consider com facilities to support direct access to OPMET data bank(s) and automation of VOLMET broadcast.</p>	CNS/MET	2003
32	RAN/3 C.8/14  (TOR 3)	<p>Subject: Inadequate implementation of procedures for advising aircraft on volcanic ash</p> <p>Task: Regional planning for implementation of international airways volcano watch (IAVW)</p>	A	<p>Plan implementation of IAVW procedures to ensure provision of timely information on volcanic ash to aircraft.</p>	<p>CNS/MET</p> <p>Task Force Volcanic Ash</p>	On going

No.	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
33	APANPIRG D. 9/21	Problem : SADIS strategic assessment  Task: SADIS strategic assessment of data/information to be included in the satellite broadcast.		Review requirements for SADIS broadcasts and maintain the SADIS strategic assessment tables.	CNS/MET SG	On-going
34	APANPIRG  (TOR 3)	Subject: Lack of procedure for application of MET data in ADS messages  Task: Use of MET data from ADS messages	A	1) Review MET information transmitted with ADS messages Presentation of the WP on the subject to the CNS/MET/SG/6  2) Develop procedures for utilization of the available MET data by operational units, MET offices and WAFCS	CNS/MET New Zealand  CNS/MET	2003 <del>2002</del> Completed  2004
35	(TOR 3)	Subject: To facilitate regional implementation of CNS/ATM  Tasks: a) coordinate training/workshops to allow States to develop and implement new CNS/ATM procedures b) encourage States to participate in the evaluation and training of new CNS/ATM systems c) progress the adoption of WGS-84 co-ordinate system and introduction of high integrity systems for the management of the co-ordinate data	A	1) identify topics for training, develop syllabi and plan training programme  2) encourage States in the evaluation and training of new CNS/ATM systems  3) co-ordinate with States and monitor progress  4) collect information and suggest methods of resolving problems commonly faced by States	CNS/MET   CNS/ATM IC SG	On-going  On-going  On-going  On-going

No.	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
36	APANPIRG D. 4/46  RAN/3 C.12/3  APANPIRG 5/3  (TOR 3)	Subject: Provision of adequate CNS/MET services  Task: Monitor CNS/ATM systems research and development, trials and demonstrations in the fields of CNS/MET and facilitate the transfer of this information and expertise between States.	A	<ul style="list-style-type: none"> <li>Encourage States to conduct R&amp;D, trials &amp; demonstrations of new CNS/MET services</li> <li>Monitor global developments that may have beneficial consequences on regional planning activities</li> <li>Consolidate information on new capabilities in the CNS/ATM system, for the Sub-Groups review and action</li> <li>Serve as a focal point for review of ongoing work of Regional formal and informal working groups that is relevant to CNS/MET</li> <li>Provide for coordinated training/seminars to keep all States informed on developments of trials and demonstrations</li> </ul>	CNS/MET	On-going
37	C 12/24	Subject : Transition to the final phase of WAFS  Task : Implementation of the transition to the final phase of WAFS	A	<p>1) Development of guidelines for the use of BUFR and GRIB codes for the production of WAFS products.</p> <p>2) Planning and coordinating the transfer of SIGWX and WIND/TEMP charts from the current T4 facsimile format to BUFR and GRIB format.</p> <p>3) Development of a regional training programme for the operational use of BUFR and GRIB.</p> <p>4) Participate in the development and implementation of an adequate WAFS back-up system for dissemination of WAFS products in the Asia/Pacific Regions.</p>	CNS/MET SG  WAFS Transition Task Force	<del>2002</del> Completed  2004  2003  2004
38	C12/36	Subject : Lack of ATM requirements for MET components of the ASIA/PAC CNS/ATM Plan.  Task : Developing the MET Chapter for the ASIA/PAC CNS/ATM Plan.	A	<ol style="list-style-type: none"> <li>Development of the initial draft of the MET Chapter.</li> <li>Development of the MET components of the CNS/ATM concept/strategy.</li> <li>Inclusion of ATM requirements for MET information in the CNS/ATM Plan.</li> </ol>	CNS/MET SG with assistance of MET WG on CNS/ATM Plan  CNS/MET SG with assistance of the METATM TF	Completed  <del>2003</del> Completed  2004