

**3GPP PCG#10 Meeting  
Ottawa, Canada  
2 May 2002**

**3GPP\_PCG#10(03)26**

14 May 2003  
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**Source: Secretary**

**Title: Draft Summary minutes, decisions and actions from 3GPP PCG Meeting#10, Ottawa, 2 May 2003**

**Agenda item: All**

**Document for:**

Decision	X
Discussion	
Information	

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## 1 Opening of Meeting and Chairman's Remarks

Dr Chatterjee (PCG Chairman) opened the meeting and welcomed the participants to Ottawa. The list of participants is given at **Annex E**.

Thanks were expressed to Mr MacFee, TSACC, who had assisted with local administrative arrangements that had made the meeting possible at short notice.

It was noted that representatives from China had not been able to participate in this meeting due to travel restrictions. A note of sympathy was recorded for them together with regrets that it had not been possible to convene the meeting in China as had originally been planned.

## 2 Approval of Agenda

The draft Agenda for the meeting was discussed and approved. The approved Agenda is given at **Annex A [3GPP/PCG#10(03)1r2]**.

## 3 Approval of Report of PCG#9

The draft report of PCG#9, which had been revised to take account of comments received, was presented and approved [**3GPP/PCG#9(02)23r1**].

<b>Decision PCG10/1:</b> Report of PCG#9 approved [ <b>3GPP/PCG#9(02)23r1</b> ].
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### 3.1 Review of Actions

The status of the actions arising from PCG#9 were reviewed and the progress made in discharging them noted [**3GPP/PCG#10(03)03**]. The following comments arose from this discussion:

**A-PCG9/1** 3GPP MRPs to consider what action can be taken to improve the current perception of the stability of 3GPP technologies and to improve the accuracy of information reported by the Press.

It was agreed that this action should be kept ongoing.

**A-PCG9/2** TSG CN and TSG RAN to co-ordinate their updates provided to ITU-T and ITU-R to ensure consistent referencing by both sectors.

It was agreed that whilst some progress had been made this action should be kept ongoing.

**A-PCG9/3** TSG CN and TSG RAN, assisted by 3GPP MRPs, to provide less technical text for inclusion in the general sections of relevant ITU Recommendations.

It was noted that a conference call had been planned but that, regrettably, only one MRP took part. Since the update to the ITU has now been completed it was agreed that there was no value in keeping this action ongoing and that it should be considered as discharged.

All other action were considered as discharged.

## 4 Management Reports from TSGs

### 4.1 TSG SA

Mr Andersen (TSG SA Chairman) presented a report of the progress made by TSG SA [**3GPP/PCG#10(03)05**].

Arising from the report was a request for the funding of an activity to prepare a new ciphering and encryption algorithm, to be used in the unlikely event that the existing algorithm is compromised. An estimated 250kEUR would be required to complete the task.

Some questions were raised on the urgency for this funded task to be undertaken and whether or not a justified threat existed. It was noted that there was no historic record of previous GSM/UMTS encryption algorithms being compromised but that such an event could not be ruled out. In this context, the existence of a backup algorithm could be considered as an insurance policy.

After some further discussion it was agreed that the GSM Association was the body best placed to judge the need and urgency of this work. The Secretary was therefore requested to write to the GSM Association requesting that they analyse the case in question and provide their assessment of the need and urgency for the algorithm to be developed.

**Action PCG10/1:** Secretary to write to the GSM Association requesting that they provide an assessment on the urgency and need for an alternative 3G Ciphering and Encryption algorithm.

It was noted that TSG SA had discussed the existing arrangements for co-operation between 3GPP and OMA, that there appeared to be no impediments for that co-operation to continue and that no additional provisions were deemed to be necessary.

#### **4.2 TSG CN**

Mr Hayes (TSG CN Chairman) presented a report of the progress made by TSG CN [3GPP/PCG#10(03)06].

It was noted that meetings had been planned to take place in China in the near future that travel restrictions may prevent these meetings from being possible. The TSG CN Chairman reported that the schedule and host for future meetings was under review.

It was also noted that an informal workshop had been planned to take place during the next scheduled meetings of the CN working groups and SA2, which would involve 3GPP2 participation. Some sensitivity had arisen over the nature of the workshop and whether it had been convened with the agreement of 3GPP. It was confirmed that the planned workshop was an informal activity and that it was incumbent on the Chairmen involved to make clear on a case-by-case basis the status of convened meetings.

#### **4.3 TSG RAN**

Mr Courau (TSG RAN Chairman) presented a report of the progress made by TSG RAN [3GPP/PCG#10(03)07].

The TSG GERAN Chairman noted that TSG RAN were extending the spectrum in which UTRAN technology could be deployed but that these options were not available in all regions. TSG GERAN had set the principle of stating which frequency bands were possible to be used without stating which geographical regions those bands were applicable, thus leaving such a decision to national regulators. It was expected that TSG RAN would follow this same principle.

It was noted that some RAN working group meetings had recently been cancelled at very short notice and that this had caused some irritation, particularly for the hosts that incurred considerable financial penalties. It was believed that the discussion leading to the cancellations had been aggravated by some company representatives broadcasting their intent not to participate. This had led to a loss of critical mass and the eventual cancellations. The PCG concluded that the manner in which the cancellations had taken place were not a good model for the future and that some guidance should be prepared for Chairman on how to approach this subject. The TSG leaders agreed to prepare such guidance which could be approved by the PCG by correspondence.

<b>Action PCG10/2:</b> TSG Leaders to prepare guidance for Chairmen on the procedure to follow in the event that a 3GPP meeting may need to be cancelled. The guidance should be approved by the PCG by correspondence.
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The TSG RAN Chairman reported that a problem may be encountered in the need to specify measurement methods for GPS assisted location techniques. The need to specify measurement methods for determining the accuracy of location techniques had been rejected by 3GPP in the past but regulatory pressure may result in the need for such work to be done. TSG RAN would debate this subject at their next meeting.

TSG RAN had prepared a draft report on the use of OFDM technology in response to a previous PCG action and this report was presented for information [3GPP/PCG#10(03)19].

#### **4.4 TSG T**

Dr Park (TSG T Chairman) presented a report of the progress made by TSG T [3GPP/PCG#10(03)08].

There were no matters arising from this report.

#### **4.5 TSG GERAN**

Mr Andersen (TSG GERAN Chairman) presented a report of the progress made by TSG GERAN [3GPP/PCG#10(03)09].

There were no matters arising from this report.

### **5 Appointment of TSG Chairmen and Vice Chairmen**

Elections had taken place in all TSGs and the results were presented to the PCG [3GPP/PCG#10(03)15]. The PCG appointed all of the elected TSG officials.

It was noted that the list of elected officials was identical to the previous list and that specific provisions had been made on an exceptional basis for the number of terms of office to be extended. The need to find suitable candidates in time for the next TSG elections was well noted.

### **6 3GPP Progress and Current Status of Activities**

The TSG calendar of future meetings was presented for the information of the PCG [3GPP/PCG#10(03)11].

The TSG schedule indicated that the TSG meetings to take place in March 2004 were expected to take place in China. However, due to current travel restrictions for that region and the long lead time required for the preparation of TSG meetings, it was agreed that an alternative venue should be sought. It was agreed that Partners wishing to host the March 2004 TSG meetings should indicate their willingness to do so within 15 days. If no other offer to host in received then plans would be made for the meetings to be hosted in Europe. The Secretary agreed to take care of the final arrangements.

<b>Decision PCG10/2:</b> An alternative venue for the TSG meetings currently scheduled to take place in China, March 2004 to be found.
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<b>Action PCG10/3:</b> Partners wishing to host the March 2004 TSG meetings to indicate their willingness to do so within 15 days.
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<b>Action PCG10/4:</b> Secretary to co-ordinate the final arrangements for the March 2004 TSG meetings and to inform CWTS/CCSA of the decision to seek an alternative venue.
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## **6.1 Status and content of Release 5**

The Secretary presented a document which listed the final features contained within Release 5 and the progress that had been made in completing them [3GPP/PCG#10(03)13].

## **6.2 Plans for Release 6**

The Secretary presented a document that listed those features currently expected to be contained within Release 6 and beyond, and the progress that had been made in completing them [3GPP/PCG#10(03)14].

It was noted that the functional freezing of Release 6 was not expected to be achieved before December 2003 or March 2004. It was concluded that for communications purposes it was important not to raise expectations, and that the formal position is that no date has yet been set for the functional freezing of Release 6.

## **6.3 Plans beyond Release 6**

An early draft of the report being prepared by the Future Evolution activity within 3GPP was provided for information [3GPP/PCG#10(03)17]. It was noted that all 3GPP Individual Members were encouraged to contribute to this work and that a more mature version would be provided at a later stage for PCG discussion.

# **7 Approval of 3GPP Work Programme**

The Secretary presented a list of new Features that were proposed to be added to the 3GPP Work Programme and those which were proposed for deletion [3GPP/PCG#10(03)12r1]. The PCG approved these changes to the work programme.

<b>Decision PCG10/3:</b> Changes to the 3GPP Work Programme approved [3GPP/PCG#10(03)12r1].
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# **8 3GPP Support**

## **8.1 Report of MCC Activities**

The Secretary presented a report of the activities of MCC [3GPP/PCG#10(03)10].

Also presented was a summary of the results of the Chairmen's Satisfaction Survey that had been undertaken to identify areas for improvement within MCC [3GPP/PCG#10(03)20].

It was noted that the areas for improvement which had been identified within the Satisfaction Survey, were not just incumbent on MCC staff but also required assistance from the 3GPP community as a whole, particularly in the case of the 3GPP Work Plan where its content was largely derived by Individual members. It was also noted that changes would be considered to some of the processes in 3GPP, particularly those relating to the handling of Liaison Statements.

## **8.2 TSG Support in 2003 and effect of budget reductions**

Mr Hayes presented the consolidated results of a discussion that had taken place amongst the TSG Leaders on actions that could be taken to reduce cost within 3GPP [3GPP/PCG#10(03)24]. The TSG Leaders had considered the list of potential areas for cost savings that had arisen from the previous PCG meeting and had discussed in each case the likely savings that could be made. The result of the discussion was three recommendations that were presented to the PCG as follows:

**Recommendation 1**

*TSGs should look at the remaining 2003 schedule and see if any planned WG meetings can be eliminated. If they cannot be eliminated, then the WGs should be made aware that some meetings may not have MCC support. For 2004 and onward, the principle that "only one WG meeting is supported by the MCC per TSG meeting" should be used in planning WG meetings. TSGs can ask the PCG for an exception due to circumstances where the normal schedule is not sufficient (e.g. urgent Rel.99 implementation related work). Such exceptions could be for either a given number of extra meetings for 2004 or for a duration sufficient to complete a particular item of work.*

The PCG discussed this recommendation and agreed that for 2004 the principle of Working Groups holding one meeting between TSG meetings should be adopted. The TSG leaders agreed to pass this guidance to their Working Groups noting that if additional meetings are held then MCC support could not be guaranteed.

<b>Decision PCG10/4:</b> From 2004 onwards, 3GPP Working Groups should only plan to hold one meeting between successive meetings of their parent TSG.
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<b>Action PCG10/5:</b> TSG Leaders to communicate to their Working Groups the PCG guidance that for 2004 onwards, Working Groups should only hold one meeting between successive meetings of their parent TSG.
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**Recommendation 2**

*PCG tasks the TSG leaders with reviewing the current TSG/WG structure and providing a recommendation to the October PCG meeting.*

The PCG approved this recommendation.

<b>Decision PCG10/5:</b> Recommendation that the TSG leaders should undertake a review of the 3GPP TSG/WG structure agreed by PCG.
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<b>Action PCG10/6:</b> TSG Leaders to review the current TSG/WG structure and provide a recommendation to PCG#11.
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**Recommendation 3**

*PCG tasks the TSG leaders (in consultation with the MCC) to provide a concrete recommendation on a change to the 3GPP working procedures to the October PCG.*

The PCG approved this recommendation.

<b>Decision PCG10/6:</b> Recommendation that the TSG leaders should prepare proposals for changes to the 3GPP working procedures agreed by PCG.
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<b>Action PCG10/7:</b> TSG leaders (in consultation with the MCC) to provide a concrete recommendation on a change to the 3GPP working procedures to PCG#11.
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Dr Wee (TTA) requested further information on the cost savings that were expected to be made by implementation of the above recommendations, particularly those relating to changes in the 3GPP structure, and that this information should be provided in advance of the next PCG meeting. Mr Hayes agreed to provide that information when available but noted that such a short lead time would probably result in preliminary and rather unstable figures.

**Action PCG10/8:** TSG leaders to provide indications of the cost savings that were expected to be achieved by implementation of the above recommendations, and to deliver that information in advance of PCG#11.

### **8.3 New TSG Funding Requests for Specific Tasks**

## **9 Working Procedures and Working Methods**

There were no proposals received for changes to the 3GPP Working Procedures.

Mr Rosenbrock (ETSI) stressed the importance of IPR calls being made at the start of every 3GPP meeting. It was noted that the making of such calls had become an essential part of 3GPP Agenda templates and that MCC staff were vigilant in ensuring that the proper procedures were followed.

## **10 Matters Arising from ITU**

Mr Visser (ITU-T) presented a contribution which called for SDOs to pre-authorize the ITU-T to copy extracts from their transpositions of the 3GPP specifications in the same manner as has been done for Recommendations Q.1741.1 and Q.1741.2 to date [3GPP/PCG#10(03)23]. This would allow the ITU-T SSG to rapidly progress new Recommendations for new 3GPP Releases as they occur while minimizing administrative overhead for all concerned. In the discussion that followed some concern was expressed that publishing extracts from specifications could be dangerous and that perhaps such authorization should be restricted to scope clauses only. It was agreed that the proposal required further consideration by the SDOs (with the assistance of the TSG Leaders) before any conclusion could be drawn.

**Action PCG10/9:** SDOs (with the assistance of TSG Leaders) to consider the proposal made by Mr Visser for pre-authorization to use extracts from 3GPP specifications [3GPP/PCG#10(03)23].

A report of the progress made by ITU-T SSG IMT2000 and Beyond was provided for information [3GPP/PCG#10(03)25].

Mr Hayes (TSG CN Chairman) presented for information the list of Release 5 specifications that should be notified to ITU-T by 3GPP SDOs [3GPP/PCG#10(03)21].

## **11 Matters Arising from MRPs**

The Secretary presented a contribution that had been provided by GSA, that informed PCG of the launch of the Global Mobile Dialogue™ Newsletter, the publication of a new video "The GSM Evolution", and the creation of a new website for the EDGE Operators Forum [3GPP/PCG#10(03)18]. The PCG noted with pleasure the proactive work being undertaken by GSA.

Mr Best (GSMA) reported on the organizational changes taking place within the GSM Association, and the effort now being placed on preparing a market dossier on services and technologies. This would enable GSMA to set priorities which would provide useful input to 3GPP. Also reported was the importance placed on the stability of Release 99 and the need to demonstrate full interoperability between different vendors products. It was also noted that the GSMA were about to launch a marketing exercise for W-CDMA.

Mr Bienaimé (UMTSF) reported on work taking place within the UMTS Forum, where an evolution paper had just been completed. Other reports that had recently been completed were also believed to be of value to 3GPP, particularly in the area of social shaping. The UMTS Forum were also active in working with the investor community where it was important to promote their confidence in UMTS.

## **12 External Relations and Liaisons**

### **12.1 OMA**

Correspondence had been received from OMA that included a proposed framework within which 3GPP and OMA could co-operate [3GPP/PCG#10(03)16]. It was noted that it was not the intention for both parties to sign the framework document although a reading of the text implied that it did place some obligation on both parties.

In the discussion that followed, the TSG leaders again stated that no specific provisions were needed for 3GPP to co-operate fully with OMA and that in this context the conclusions already drawn during PCG#9 were still valid. This implied that a framework document was not required. However, there was full recognition that the ongoing liaison activity that had already begun should be actively pursued and that there was no intention to prevent a full co-operation between both parties.

In conclusion, the Secretary was requested to write to the OMA representatives repeating 3GPP's position that a co-operation agreement or framework document was not believed to be necessary but inviting further dialogue to overcome any outstanding concerns.

The Co-operation Framework as presented to this PCG meeting was noted.

**Action PCG10/10:** Secretary to write to OMA representatives repeating the 3GPP view that no specific provisions were required for 3GPP and OMA to co-operate effectively.

### **12.2 Others**

There were no matters raised under this Agenda item.

## **13 A.O.B**

There were no matters raised under this Agenda item.

## **14 Closing of Meeting and Next Meeting Dates**

There being no further business the meeting was closed.

PCG#11: 02 October 2003, Boston, US

PCG#12: 14-15 April 2004, in Europe

PCG#13: 6-7 October 2004 (to be confirmed)



**Annex A    Adopted agenda**

		<b>Documents</b>
<b>1</b>	Opening of Meeting and Chairman's Remarks	
<b>2</b>	Approval of Agenda	<b>1r2</b>
<b>3</b>	Approval of Report of PCG#9 3.1    Review of Actions	<b>PCG#9(02)23r1</b> <b>3</b>
<b>4</b>	Management Reports from TSGs 4.1    TSG SA 4.2    TSG CN 4.3    TSG RAN 4.4    TSG T 4.5    TSG GERAN	5 6 7, 19 8 9
<b>5</b>	Appointment of TSG Chairmen and Vice Chairmen	<b>15</b>
<b>6</b>	3GPP Progress and Status of Activities 6.1    Status of Release 5 6.2    Plans for Release 6 6.3    Plans beyond Release 6	11 13 14 17
<b>7</b>	Approval of 3GPP Work Programme	<b>12r1</b>
<b>8</b>	3GPP Support 8.1    Report of MCC Activities 8.2    TSG Support in 2003 and effect of budget reductions 8.3    New TSG funding requests for specific tasks	10, 20 <b>24</b>
<b>9</b>	Working Procedures and Working Methods	
<b>10</b>	Matters Arising from ITU	21, <b>23</b> , 25
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<b>13</b>	A.O.B	
<b>14</b>	Closing of Meeting and Next Meeting Dates	

**Annex B List of Decisions**

N°.	DECISION
D-PCG10/1	Report of PCG#9 approved [3GPP/PCG#9(02)23r1].
D-PCG10/2	An alternative venue for the TSG meetings currently scheduled to take place in China, March 2004 to be found.
D-PCG10/3	Changes to the 3GPP Work Programme approved [3GPP/PCG#10(03) 12r1].
D-PCG10/4	From 2004 onwards, 3GPP Working Groups should only plan to hold one meeting between successive meetings of their parent TSG.
D-PCG10/5	Recommendation that the TSG leaders should undertake a review of the 3GPP TSG/WG structure agreed by PCG.
D-PCG10/6	Recommendation that the TSG leaders should prepare proposals for changes to the 3GPP working procedures agreed by PCG.

**Annex C List of Actions**

N°.	RESPONSIBLE	ACTION
A-PCG10/1	Secretary	To write to the GSM Association requesting that they provide an assessment on the urgency and need for an alternative 3G Ciphering and Encryption algorithm.
A-PCG10/2	TSG Leaders	To prepare guidance for Chairmen on the procedure to follow in the event that a 3GPP meeting may need to be cancelled. The guidance should be approved by the PCG by correspondence.
A-PCG10/3	Partners	Partners wishing to host the March 2004 TSG meetings to indicate their willingness to do so within 15 days.
A-PCG10/4	Secretary	To co-ordinate the final arrangements for the March 2004 TSG meetings and to inform CWTS/CCSA of the decision to seek an alternative venue.
A-PCG10/5	TSG Leaders	To communicate to their Working Groups the PCG guidance that for 2004 onwards, Working Groups should only hold one meeting between successive meetings of their parent TSG.
A-PCG10/6	TSG Leaders	To review the current TSG/WG structure and provide a recommendation to PCG#11.
A-PCG10/7	TSG leaders (in consultation with the MCC)	To provide a concrete recommendation on a change to the 3GPP working procedures to PCG#11.
A-PCG10/8	TSG leaders	To provide indications of the cost savings that were expected to be achieved by implementation of the above recommendations, and to deliver that information in advance of PCG#11.
A-PCG10/9	SDOs (with the assistance of TSG Leaders)	To consider the proposal made by Mr Visser for pre-authorization to use extracts from 3GPP specifications [3GPP/PCG#10(03)23].
A-PCG10/10	Secretary	To write to OMA representatives repeating the 3GPP view that no specific provisions were required for 3GPP and OMA to co-operate effectively.

**Annex D List of documents**

<b>Doc. No.</b>	<b>Title</b>	<b>Source</b>	<b>Agenda Item</b>
<b>PCG9_23r1</b>	Draft Revised Summary Minutes, Decisions and Actions from 9 <sup>th</sup> 3GPP PCG Meeting	Secretary	<b>3</b>
<b>PCG10_01r2</b>	Proposed Draft Revised Agenda	Chairman	<b>2</b>
<b>PCG10_02</b>	List of Documents	Secretary	<b>2</b>
<b>PCG10_03</b>	Actions Status List	Secretary	<b>3.1</b>
<b>PCG10_04</b>	List of Participants	Secretary	<b>All</b>
<b>PCG10_05</b>	TSG SA Management Report	TSG SA Chairman	<b>4.1</b>
<b>PCG10_06</b>	TSG CN Management Report	TSG CN Chairman	<b>4.2</b>
<b>PCG10_07</b>	TSG RAN Management Report	TSG RAN Chairman	<b>4.3</b>
<b>PCG10_08</b>	TSG T Management Report	TSG T Chairman	<b>4.4</b>
<b>PCG10_09</b>	TSG GERAN Management Report	TSG GERAN Chairman	<b>4.5</b>
<b>PCG10_10</b>	Report of MCC Activities since PCG#9	Secretary	<b>8.1</b>
<b>PCG10_11</b>	TSG Calendar of Meetings	Secretary	<b>6</b>
<b>PCG10_12r1</b>	Work Programme changes since PCG#9	Secretary	<b>7</b>
<b>PCG10_13</b>	Status and Content of Release 5	Secretary	<b>6.1</b>
<b>PCG10_14</b>	Status and Content of Release 6	Secretary	<b>6.2</b>
<b>PCG10_15</b>	PCG Appointment of TSG Chairmen	Secretary	<b>5</b>
<b>PCG10_16</b>	OMA Co-operation Framework with 3GPP	Secretary	<b>12.1</b>
<b>PCG10_17</b>	Evolution of 3GPP System (3GPP TR 21.902 V0.2.0)	TSG SA Chairman	<b>6.3</b>
<b>PCG10_18</b>	GSA promotion of 3GPP work	Secretary	<b>11</b>
<b>PCG10_19</b>	Consideration of OFDM modulation in 3GPP	TSG RAN Chairman	<b>4.3</b>
<b>PCG10_20</b>	Results of Chairman's satisfaction survey	MCC	<b>8.1</b>
<b>PCG10_21</b>	Co-ordination of SDO input to ITU-T Q.1741.3	TSG CN	<b>10</b>
<b>PCG10_22</b>	WITHDRAWN		
<b>PCG10_23</b>	Towards simplifying referencing of OP transposed specifications	ITU-T SSG Chairman	<b>10</b>
<b>PCG10_24</b>	Recommendations and Considerations on 3GPP Cost Savings	TSG Leaders	<b>8.2</b>
<b>PCG10_25</b>	Summary of recent progress in ITU-T SSG	ITU-T SSG Chairman	<b>10</b>

**Annex E List of Participants**

Dr. Asok Chatterjee	Chairman
Mr. Adrian Scrase	Secretary

Mr Peter Darling	ACIF
Mr. Kohei Satoh	ARIB
Mr. Kunio Watanabe	ARIB
Mr Yukitsuna Furuya	ARIB
Mr. Karl Heinz Rosenbrock	ETSI
Mr. Alistair Urie	ETSI
Mr. Bill Best	GSM Association
Mrs. Haruko Horino	Interpreter
Mr. Tom Eskildsen	Interpreter
Mr. John Visser	ITU-T
Dr. Charles Bailey	T1
Mr. Marc Grant	T1
Mr. Peter Musgrove	T1
Mr Mark Younge	T1
Mr. Henry Cuschieri	TIA
Mr. Jim MacFie	TSACC
Mr. Kue Wong	TSACC
Mr. Stephen Hayes	TSG CN Chairman
Mr. Ian David Chalmers Park	TSG CN Vice Chairman
Mr. Kunihiro Taya	TSG CN Vice Chairman
Mr. François Courau	TSG RAN Chairman
Mr. Donald E. Zelmer	TSG RAN Vice Chairman
Mr. Niels Peter Skov Andersen	TSG SA Chairman/TSG GERAN Chairman
Mr. Gary Jones	TSG SA Vice Chairman
Mr. Hiroshi Nakamura	TSG SA Vice Chairman
Mr. Seung-Keun Park	TSG T Chairman
Mr. Ed Ehrlich	TSG T Vice Chairman
Mr. Kevin Holley	TSG T Vice Chairman
Mr. Byoung-Moon Chin	TTA
Dr. Kyu-Jin Wee	TTA