

Status: approved

Place: Copenhagen
Date: 1986.06.09 - 13
Participants: see annex 1
Agenda: see annex 2
Documents: see annex 3
TMS meeting see annex 4

1 OPENING OF THE MEETING

Mr Kiel from the Danish Administration wished the delegates welcome to Copenhagen and the 11'th meeting of GSM. The awareness of mobile communications, said mr Kiel, is rapidly increasing among the public, and the work of GSM is therefore followed with great interest within the industries. It is thus an essential part of our task - and for this meeting in particular - to seek coordination with the industry. Mr Kiel wished the group a fruitful meeting.

2 APPROVAL OF THE AGENDA

The approved agenda appears as Annex 2 to this report.

During the regular GSM meeting, a special meeting with TMS took place. A brief summary of this meeting is given in Annex 4. A more extensive report on the discussion on the various items has been prepared by the TMS secretary and re-issued as GSM Doc 63/86. That reports also contains the list of delegates.

3 LISTING OF DOCUMENTS

(ref. annexes 2 and 3)

The documents to be considered during the meeting were GSM Doc 23/86 - 61/86. Annex 2 shows to which agenda item the documents belong.

4 REPORT FROM GSM MEETING No 10

The report was corrected and approved. The number of the document is 56/86.

5 REPORT OF CCH-MEETING 3 - 6 JUNE

Referring to Doc 24/86, the Chairman reported from the discussions in CCH of interest for GSM:

- The patent question: This problem needs to be brought to the T-Commission. For the time being GSM should follow the approach not to deal with proposals which do not have a royalty-free warranty such as the one proposed by Mr Natvig.
- The "European Industries" mentioned in the model statement by Mr Natvig should be understood as industries having significant manufacturing and development in any of the CEPT-countries.
- GSM is responsible for the decisions in overall quality matters, but also the Joint Groups should be involved.
- It has been proposed that the SSA-group will discontinue.
- The CEPT/CCH working area will be re-organized. The following groups have been established:

NA Network Aspects
 SPS Switching Protocols and Signalling
 TE Terminal Equipment
 TM Transmission and Multiplexing

This re-organisation means that the recommendations produced by GSM will be referred to as NA-Recommendations and TE-Recommendations. An ad-hoc group lead by Mr Bohren will work on a harmonized format for the recommendations.

6 WP 1 - ISSUES

Mrs Alverne presented the reports of WP1, Doc's 35/86 - 38/86, mentioning the amendments to the WP1 Recommendations. The decisions on several services and facilities have been postponed til after the evaluation phase, and the "Recommended Provision" of some of the services have been modified.

Further on it was noted that:

- WP1 is prepared to start working on a User Interface in the MS.
- WP1 is making a distinction between Quality of Service (as seen by the user) and Network Performance (evaluation criterion). Parameters relevant to Quality of Service have been identified.
- The coordination between WP1 and WP3 does not work. To solve the problem it was proposed to appoint a liaison or to give the task to the PN. No decision was taken.

- The Emergency Call will be regarded as a teleservice. It should be possible to place such calls without having a subscription card. Mr Failli suggested that the question of a card or not should be treated as a national matter.
- Regarding the use of different identities, WP1 has identified 3 different scenarios (Doc 37/86). WP1 recommends scenario 3 which means that both MS Id and Subscriber Id should be used in the system.

7 WP 2 - ISSUES

Mr Maloberti introduced two documents from WP2, Doc 44/86 and 45/86. The WP2 work has been divided into two phases:

- 1) Choice of access methods, and
- 2) Optimization

The activities during both phases were presented.

On a question put forward in Doc 49/86 on what is included in the "choice of access method", the meeting agreed that this choice comprises a decision whether TDMA or FDMA should be used, if frequency hopping will be used, and - in the case of TDMA - what bandwidth should be used for the radio carrier. Modulation, channel coding, formatting etc are not explicitly included in the choice although different access techniques are linked to different families of modulation and coding.

The question then arises whether the further optimization should be done, given firm and detailed decisions on the speech coding technique, or the other way around. Mr Maloberti claimed that the WP2-work should adapt to the conditions of the speech coding technique.

Doc 44/86, annex 7, page 2 lists 3 alternatives with respect to the use of sub-rate channels. The meeting agreed that alternative 3 is the one GSM is interested in. Mr Audestad said that from a signalling point of view this alternative does not cause any problem.

Mr Audestad wished to know from WP2 if the radio link will be able to support the LAP-D protocol on layer 2.

Mr Temple mentioned that UK has performed studies in the VLSI area. The conclusion of these studies are that a high spectrum efficiency is of great importance for the mobile station cost, more important than the complexity. (Higher spectrum efficiency -> larger production volumes -> lower VLSI costs). According to Mr Temple the critical production volume for the VLSI manufacturers is 1-2 million circuits per year. Since there was some doubt about that figure it was suggested that the PN should contact the relevant industries in order to investigate the matter further.

Doc 47/86, which suggests 1 MHz as the upper spectrum limit for a "least implementable part of GSM system" was introduced by Mr Jacobsen. Since such a late change of the criteria would rule out the CD 900 system, the proposal was not acceptable to France and FRG. Besides, the loss of trunking efficiency mentioned in Doc 47/86 applies also to narrowband TDMA-systems since they are implemented in clusters and the bandwidth of the clusters is significantly larger than that of the single radio carrier. The meeting finally agreed that the maximum required spectrum for a least implementable part of the GSM-system should be 5 MHz. This means that the CD 900 approach is still a candidate for the GSM radio subsystem, but scaled to 5 MHz.

Mr Temple proposed that the industry should be asked to carry out an analysis of the risks linked to the various access techniques which are under consideration. No decision was taken.

8 WP 3 - ISSUES

Mr Audestad introduced the report of WP3, Doc 32/86 and the Draft Rec's appearing in GSM Doc's 33/86, 41/86, 46/86 and 60/86. A number of items which need an analysis by WP1 were pointed out, and some problem areas were mentioned. Again, the attention was drawn to the differences between the WP1 Rec's and the WP2 Rec's with regard to supplementary services.

Ending the presentation, Mr Audestad called for a general comment to the draft Recommendations produced by WP3 so far, just to check that WP3 is "on the right track". Several delegates expressed their difficulty to deal with such comprehensive and specialized documents in the course of the GSM-meetings. As a solution to this it was suggested that the WP's should produce some sort of expansion paper, which could be used by the non-experts, explaining the matter in broader terms and also explaining the consequences of the solutions chosen. An alternative solution would be to spend one day explaining the Rec's. On this matter the meeting agreed that the comments to the Rec's are not time critical and that more time could be spent at the next GSM-meeting. All WP's were asked to make clear indications of the amendments of the Rec's. No Rec's will be finally adopted (by GSM) until a total overview is possible.

Mr Audestad wished to know which WP is responsible for the specification of the error protection mechanisms. Some delegates claimed this should be a WP2 matter. Mr Maloberti, however, wished to postpone the decision on the matter, claiming that it would be an advantage to have all FEC's working on the same layer. But since different services require different BER and allow different delay, it needs to be investigated if all system proposals offers this possibility.

Mr Beddoes made the comment that UK wish to have deregistration when a user leaves a card-operated MS (ref Doc 32/86, 4.1.5). He also questioned that a foreign, visiting MS should not have the possibility to chose PLMN in the case of several PLMN's covering the same area (ref Doc 32/86, 4.3.7).

The MS ID will be included in the next version of Doc 40/86, along the lines indicated in Doc 37/86 from WP1.

Finally Mr Audestad informed that the question of stability of the network (eg the consequences of a loss of location registers) are studied by both WP3 and STI-SIG.

9 PERMANENT NUCLEUS REPORT

Mr Mallinder reported on the developments of the Permanent Nucleus (Doc's 42/86 and 54/86). The PN has now 6 members + the coordinator. As a general observation, suitable persons for the work in the WP2 and the WP3 areas are available. However no fixed assignment of work has been done yet.

The PN members are:

Mr Hagedoorn	Netherlands
Mr Hansen	Norway
Mr Hasse	FRG
Mr Käll	Finland
Mr Mallinder	UK
Mrs Pautet	France
Mr Thiger	Sweden

Regarding the participation from industry people in the PN-meetings, it was agreed that the industry delegates could change from time to time, the only restriction being that they should be easily identifiable as industry delegates. In general, the contacts between the PN and the industry could be rather free and informal.

10 REPORT ON COST 207

Mr Failli gave a brief presentation of Doc's 29/86 (drawing special attention to paragraphs 4.1 and 4.3), 30/86, 31/86, 57/86 and 27/86. The documents were referred to the relevant Working Parties for study.

11 REPORT ON JOINT GROUP COST 207 / TR3

Mr Natvig introduced Doc 39/86 in which among other things 3 questions are put to GSM. The following answers were given:

1. The speech codec should be optimized for VLSI implementation.
2. The maximum allowable power consumption (for the speech codec only) is presently estimated to the order of 0.5 Watt. However, this question is related to the overall definition of a hand-held MS. It was therefore suggested that WP1 should define the concept of hand-held stations before giving a definite figure.

3. The applicability of the speech coding standard for other systems is desirable provided that it does not delay the work. Regarding an application in INMARSAT it was pointed out that the INMARSAT market is small compared to GSM. The value of a harmonization should thus not be overestimated.

ISDN will be able to transfer 2.4 kbit/s voiceband data. This capability is thus interesting for GSM. WP3 is anxious to know if this capability will prevail.

Mr Beddoes introduced Doc 50/86 in which critical remarks concerning the decision of the Athens meeting to allocate a maximum of 65 ms delay contribution to the speech codec. This decision has caused very negative reactions in the UK. During the discussion on this topic the views were expressed that the delay is not critical below certain values provided good echo-cancellors, and that the delay could not be used as an evaluation criterion since speech quality vs delay is basically a step function.

The meeting finally agreed that TR3 should be asked (via Mr Audestad) to study the overall delay, emphasizing the aspects of echo-control. The present allocation of 65 ms remains unchanged.

12 REPORT ON JOINT EXPERT GROUP ON SECURITY

The Chairman gave a summary of the proceedings of the Joint Expert Group on Security. A written report has not yet been produced but will be in mid June. This will be circulated to the members of GSM.

From the presentation the following was noted:

- The former definition of security levels (3 levels) has been replaced by a definition comprising only 2 levels.
- The group does not feel competent to deal with the questions of physical security mentioned in draft Rec 01.01.
- For the authentication procedure, two options are under consideration, one based on a secret key algorithm and the other on a public key algorithm.
- For the data confidentiality, three options are considered, all based on bit per bit conversion algorithms.

13 REPORTS FROM EXPERIMENTS

Mr Cheeseman reported that the results of the UK Top-Down Study will be made available during July. Regarding the Test Bed, the integration of the hardware is starting right now. A report on this will be finalized soon. In mid September a report containing the results of the measurements can be expected.

14 ACTION PLAN

The Action Plan - Doc 23/86 - will need continuous revision by GSM. The present Action Plan will be up-dated by Mr Hillebrand and later by the Permanent Nucleus. (This task refers to the editorial up-dating based on earlier decisions by GSM).

Mr Maloberti presented an action plan for phase 1 of the WP2-work, Doc 55/86. Some discussions arose on the possibility to use only one fading simulator and to carry out the measurements at the same time. Mr Maloberti claimed this was not possible considering that each measurement would take up to 3 weeks. Besides, some Administrations wish to run their experimental system in the simulator themselves before the comparative measurements.

The meeting concluded that the PN and WP2 should together work out a detailed program for the period September 15 - October 31. The measurements should take place at the CNET premises under supervision of the WP2-chairman and the originator of the respective experimental system.

15 TRAFFIC MODELS

Mr Geus introduced Doc 51/86, stressing the need that all Administrations up-date the figures on the number of MS's in the various countries. The attention was drawn to the fact that MS's belonging to manual systems are not included in the figures for the Nordic countries. This should be indicated by a note.

Dr Spindler introduced Doc 53/86 which did not cause any comment.

16 OPERATION AND MAINTENANCE

Mr Mallinder introduced Doc 43/86. On a question regarding the "Fault Management Centre" he explained that this equipment is ment to be a central which is in charge of handling the dialogue between the participating networks with respect to Operation and Maintenance. (It should not be confused with the facilities for technical maintenance which could be several centres for each network.)

The meeting concluded that it was necessary to make use of the experience gained in the operation of earlier systems. Mr Nilakantan offered to compile information on the Nordic systems and to draft a first report.

Mr Mallinder will organize an ad-hoc meeting on O&M-matters. This meeting will take place after the GSM Madrid meeting.

17 PATENT QUESTIONS

Mr Natvig presented the results of his enquiry on patent matters, Doc 48/86. Mr Temple added that the UK parties involved have now decided to support the proposal on royalty free use in the CEPT countries. Mr Fremin added that the Swedish position in this matter was not finally settled. The Administration of Denmark responded by presenting Doc 59/86.

After some discussion on this subject the meeting concluded that alternative B in Doc 48/86 Section 3.ii seemed to be the majority view of the Administrations, and that GSM should base the future work on that assumption. A "Draft Patent Letter" - Doc 51/86 - was drafted by Mr Natvig. For the time being this document will be used in the contacts with the industry when dealing with patent matters.

Dr Spindler drew the attention to Doc 11/86 from the previous GSM-meeting, in which Administrations are asked if they are willing to include a special clause on patents in their study contracts with the industry. The meeting agreed that answers to the question should be given before the beginning of September. Mr Cheeseman said that as engineers and administrators we were not well qualified to resolve this question. He suggested a meeting of intellectual property experts of the participating Administrations.

18 FUTURE MEETINGS

The following meeting schedule was agreed:

Meeting no 12:	29/9 - 3/10 1986, Madrid
Meeting no 13:	16/2 - 20/2 1987
Meeting no 14:	9/6 - 12/6 1987 (preliminary)
TMS meeting:	4/3 - 5/3 1987 should be reserved

For the next GSM meeting the group decided that interpretation from English was not necessary.

19 ANY OTHER BUSINESS

GAP report on mobile communications

Mr Richter from EEC/GAP made a presentation of the study carried out by GAP on mobile communications, mentioning that the report will be proposed as a Recommendation to the EEC-Council, after the comments of GSM have been taken into account. GSM went through the conclusions of the report. The comments of GSM are summarized in Doc 62/86, drafted after the meeting. Doc 62/86 will be sent to GAP.

Invitation from MOBIRA

The GSM-members are invited to visit Mobira in Finland. (Doc 26/86). In view of the on-going development of hand-held equipment at Mobira, several delegates were interested in such a visit. The Chairman undertook to organize a visit which should take place at the beginning of September.

Equipment for the mobile environment

SWG TR2 has shown interest in working with matters concerning ruggedized data equipment for the mobile environment. The Chairman will write a letter to TR2 inviting them to proceed on the matter.

ELT report

Doc 58/86 from SWG ELT will be discussed at the next GSM-meeting.

Symposium at ESA

A discussion on the workshop on mobile communications arranged recently by ESA, will take place at the next GSM-meeting.

IWP 8/13

Postponed to the next meeting.

CT-2

No discussion on Doc 34/86 took place. However, the attention was drawn to the potential problem of interference from medical and industrial equipment, which are known to transmit with extremely high power and bad frequency tolerances. Mr Stewart offered to draft a letter on this matter to be sent via the Chairman to WG R.

20 CLOSING OF THE MEETING

The Chairman thanked the Danish Administration and the secretariat for their excellent work and generous meeting arrangements.

The meeting was closed.

CEPT-CCH-GSM
Meeting no 11
Copenhagen, 1986.06.09 - 13

List of participants

Chairman:	T. Haug
Secretary:	T. Beijer
Belgium:	L. Taghon
Denmark:	M. Jacobsen G. Nilakantan A. Foxman H. K. Andersen B. Clausen
Finland:	M. Pasanen
France:	P. Dupuis B. Ghillebaert M. Alvernhe A. Maloberti
FRG:	K. Spindler F. Hillebrand F. Pernice E. Hasse
Greece:	T. Thanopoulos
Ireland:	J. P. Moran
Italy:	R. Failli M. Sentinelli
Netherlands:	J. Geus B. Wajer
Norway:	P. Blikrud J. Audestad J. Natvig
Portugal:	O. Reis Luis

Spain:	C. Lluch
Sweden:	G. Fremin H. Thiger
Switzerland:	R. Klingler P. Gfeller
United Kingdom:	S. S. Temple B. Mallinder R. Stewart D. M. Barnes D. S. Cheeseman E. W. Beddoes A. K. Cox

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AGENDA

Applicable documents (/86)

1	Opening of the meeting	
2	Approval of the agenda	
3	Listing of documents	
4	Report from GSM meeting no 10	56
5	Report of CCH-meeting 3-6 June	24
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7	WP 2 issues	44 45 47
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9	Permanent Nucleus Report	42 54
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16	Operation and Maintenance	43
17	Patent Questions	48 59 61
18	Future meetings	
19	Any other business	26 34 52 58
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EXTRACT FROM GSM DOCUMENT LIST

<u>Doc No</u>	<u>Title</u>	<u>Source</u>
23/86	GSM Action Plan	GSM
24/86	Report to CCH concerning the work of GSM	GSM
25/86	TMS views on interface configurations for public land mobile communications	TMS
26/86	Letter to GSM regarding an invitation from Mobira	Mobira
27/86	Impact of switched diversity on modulation performance	COST 207
28/86	GTMF Modulation: Performance Summary	COST 207
29/86	Report of the sixth meeting of COST 207/WG2	COST 207
30/86	Seventh report of the Working Group on propagation	COST 207
31/86	6'th report of COST 207 WG3 Modulation Methods	COST 207
32/86	Report from the second meeting of WP3	GSM WP3
33/86	Draft Recommendation GSM 03.03	GSM WP3
34/86	Letter from the chairman of WG R on Cordless Telephones	WG R
35/86	Report of WP 1 (the Hague)	GSM WP1
36/86	Report of WP 1 (London)	GSM WP1
37/86	GSM WP1 Report on mobile station and subscriber identities	GSM WP1
38/86	Comments of WP1 on emergency calls	GSM WP1
39/86	Report on progress of the work	COST/TR3

<u>Doc No</u>	<u>Title</u>	<u>Source</u>
40/86	Identification of mobile subscribers/ Mobile stations	WP3
41/86	Draft Recommendation GSM 09.06	GSM WP3
42/86	Contacts with industry	GSM PN
43/86	System management and operations	GSM PN
44/86	Record of WP 2 meeting no 3	GSM WP 2
45/86	Comparison of mobile radio subsystems	GSM WP 2
46/86	Draft Recommendation GSM 03.01	GSM WP 3
47/86	Maximum contiguous bandwidth required by a single implementable part of the GSM system	Denmark
48/86	Responses to the patent letter	COST/TR3
49/86	Definition of access method	Sweden
50/86	Echo and delay aspects of the GSM DMR system	UK
51/86	Update of the growth of MS's in Europe	Netherlands
52/86	Letter to the chairman of CCIR SG 8	IWP 8/13
53/86	Status of Public Radio Telephone Services in Germany	FRG
54/86	Report from the PN	GSM PN
55/86	Draft Action Plan for Phase 1	GSM WP2
56/86	Report from GSM meeting no 10 (Athens)	GSM
57/86	COST 207/WP3: Modulation Methods	COST 207
58/86	Traffic in Public Mobile Phone Systems	CEPT/ELT
59/86	Industrial Property Conditions	Denmark
60/86	Draft Recommendation GSM 03.02 Network architecture	GSM WP3
61/86	Draft patent letter	GSM

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SUMMARY OF THE MEETING WITH TMS

The meeting started with presentations of the activities of the GSM and the TMS groups. After the presentations the meeting went on discussing various topics. The main points were:

- GSM questionnaire (GSM Doc 84/85) and TMS reply (TMS Doc 30/85)
- Patent rights
- Industrialization policy
- Improved co-operation

Regarding the first point, the questions originally put to TMS were gone through one by one, the idea being to seek the opinions of individuals, not necessarily agreed TMS views. Many details, not contained in TMS Doc 30/85, were presented by the delegates (as reported in GSM Doc 63/86), in order to further explain the situation, but there was no deviation from the agreed answers in TMS Doc 30/85.

It was clearly stated by the various industries that they would not be particularly interested in development contracts that would not result in production, even if the development work would be fully paid for.

The industries were unanimously in agreement that the development time for the system would be 3 to 5 years from the time the specifications are finalized.

As for the question of patent rights, it was stressed by the Chairman that the question was not one of costs, ie the purpose in going for solutions for which an agreement for royalty-free use could be obtained, was not to save money, but to avoid giving one particular country or company an important advantage. At the moment, speech encoding was an area in which this problem existed. The chairman of JWG COST 207-TR3, Mr Natvig, produced a proposal for a statement to be signed for the candidate solutions that were to be evaluated.

The parties agreed that further study was required in this field, and that the problem was particularly complicated because of the fact that many essential patents were held by non - European companies.

Regarding industrialization policy, ie how to come from specifications to an operational system, this was found to be a question of national policy rather than a GSM responsibility. Various Administrations presented their views concerning this, and it was concluded that further work was required. GSM must alert the Administrations that there are important problems to be solved in this area.

TMS and GSM were in agreement that the methods for co-operation up to now were too slow and inefficient. The present meeting was an attempt to improve the exchange of views.

The feeling of several delegates was that this type of meeting was useful for common understanding on broad directions, and therefore ought to be repeated. It would not be necessary to have frequent meetings, however, on this level. More specialized technical questions could be taken up with the PN in some form. Direct participation in the WP's or PN was not yet clear.

The need for more information through documents was stressed strongly by the TMS Chairman.

Finally, it was agreed that a meeting GSM - TMS (the full groups) would not be required until after the February 1987 meeting of GSM, in which major decisions on access methods would be taken. However, there was an interest expressed in discussions between GSM and individual companies or consortia concerning the candidate solutions for the access methods in connection with the October 1986 meeting of GSM. The Chairman would send out invitations to the companies concerned.