

Status: approved

Place: Berlin  
Date: 1985.09.30 - 10.04  
Participants: see annex 1  
Agenda: see annex 2  
Documents: see annex 3

## 1 OPENING OF THE MEETING

Mr Uhlig opened the meeting by wishing the delegates welcome to Berlin. He also informed about the responsibilities of the Landespostdirektion Berlin, telling i a that due to the special political situation in Berlin, the Landespostdirektion acts very much as a directorate of its own. The number of telephone lines in the West Berlin area is around 1 million.

## 2 APPROVAL OF THE AGENDA

(ref. annex 2)

An agenda was proposed and approved. However in view of the documents available it was found appropriate to add a few extra agenda items later.

## 3 LISTING OF RELEVANT DOCUMENTS

(ref. annexes 2 and 3)

The documents to be considered during the meeting were GSM Doc 79/85 - 127/85. Annex 2 shows to which agenda item the documents belong.

## 4 REPORT FROM GSM MEETING No 8

The report was corrected and approved. The number of the document is 120/85.

## 5 TMS

The Chairman informed of a list of questions sent to TMS (Doc 84/85).

## 6 REPORTS FROM THE GSM WP ACTIVITIES

The GSM Working Parties are now entitled to have meetings between the regular GSM meetings. From these meetings the following was reported:

### WP 1 Services and Facilities

WP 1 met in Paris in september. A report of the meeting is contained in Doc 90/85 which was introduced by Mrs Alvernhe.

The group has now set up a structure of specifications for the GSM-system based on the CCITT ISDN-specification structure (Doc 91/85). The work on some of the specifications mentioned in that document has also started. Although the specification structure is new the contents of the specifications are based on earlier agreed GSM documents, in particular Doc 28/84 Rev2. GSM was asked to comment upon the use of this structure and the possible need for additional specifications.

From the discussion following the presentation it was noted that:

- Although the GSM security system affects various parts of the GSM-system and needs to be addressed in several specifications it will be useful to have a presentation of the overall concept somewhere in order not to lose the overview.
- It is the intention to utilize the results already achieved by other groups or bodies. This means that some of the specifications mentioned in the structure could be only a reference to an already existing specification.
- A specification of Remote Operation, Maintenance and Monitoring of mobile stations might be needed.
- The need to specify items to be included in the Mobile Station Users Instruction was discussed. Such regulations exist in the UK. The UK delegation offered to produce a contribution on this subject for the next meeting.
- The CCITT and CEPT recommendations on ISDN are not yet finalized. There is still an opportunity to add something to these recommendations in order to cover the aspects of mobile communications.
- "Engineering aspects" in section 03, covers aspects which are related to mobile communications only and not covered in other ISDN recommendations.

Finally the meeting agreed to follow the principle of having a specification structure as outlined in Doc 91/85. The WP's were asked to identify which of the specifications they felt were falling within their respective responsibility area, and to refine the details of the description of the specifications.

## WP 2 Modulation

WP 2 met in London at the end of September. The meeting was devoted to discussions of the criteria for comparison of candidate systems, including the refinement of the traffic model. A report of the meeting is contained in Doc 115/85. WP 2 is considering to include the distribution of costs (geographically) as a further evaluation criterion.

Two different models for the traffic distribution have been considered, namely an equally distributed traffic and a two-peak distribution. The WP did not reach any agreement on this issue. This question has an impact on the geographical cost distribution also.

## WP 3 Network Aspects

WP 3 has not met since the GSM Paris meeting. However the work has still progressed since CS-SIG has met in the actual period and has discussed GSM matters.

The attention was drawn to Doc 119/85 from EEC GAP on which GSM has been asked to comment.

## 7 REPORTS FROM ON-GOING EXPERIMENTS

Mr Dupuis introduced Doc 92/85 which tells that Italy has now joined the Franco-German experimental program. An agreement has been signed. This fact has no impact on the experiments themselves. However the evaluation of the experiments will now take place in all three countries.

Mr Lawrenz gave a brief presentation of the S 900 D experimental system (Doc 85/85). The main features of this system are:

- Same number of channels (1000) for the entire CEPT-band as with conventional 25 KHz analogue channel spacing.
- Simplicity with respect to system structure.
- 128 kbit/s transmission links can be used between MSC and BS's.

Dr Spindler drew the attention to the footnote on the front page of the document, stressing that the "system" should be understood as an "experimental radio subsystem". This remark applies also to Doc 87/85 from France.

Mr Audestad asked the meeting to note that the experiment comprises both testing of access technique and a speech coding algorithm. At evaluation there is a risk that a poor speech codec might mask the result of a good access technique and vice versa. However Mr Ghillebaert claimed to have sufficient instruments to analyse each aspect of the system separately.

Mr Rast presented the experimental hybrid system MATS-D (Doc 86/85), saying that several advantages of this type of system have been claimed by the company conducting the trials but no evidence of this had been shown yet.

Mr Ghillebaert introduced Doc's 87/85 and 88/85 which did not cause any comments.

Mr Failli informed about the Italian R & D program (Doc 97/85). Mr Beddoes introduced Doc 116/85 which describes an experimental program carried out by Racal Vodafone Ltd, and which is based on measurements of the impulse response on a wideband channel combined with further computer simulations to assess various signal characteristics. It was told that measurements of this type are performed also within the framework of COST 207. Mr Beddoes declared that the results of the Racal experiments will be made available to COST.

Mr Odholm informed about the Swedish experimental system MAX. As a first step, MAX will be used to analyse the physical layer, but later the system will also be used for testing higher layer functions.

## 8 REPORT ON COST 207

Mr Failli introduced Doc 104/85, telling that the WG on Modulation Methods has decided to await the next meeting before they produce a more comprehensive technical report.

Turning to Doc 105/85 about cost, size and power factors in mobile stations a long discussion arose on the problem of how to find more, and more reliable information in this area. Various alternatives were proposed, such as:

- 1 A new GSM WP should be established, with the task to study available technology.
- 2 The views of the industry should be asked for, possibly through TMS.
- 3 The experiences from the Franco-German-Italian experimental program should be exploited. It was thought that the industries involved have a certain belief in their respective solutions and that they see some technological possibilities. Probably they have already started to think about the implementation aspects.
- 4 The Permanent Nucleus should be given the task to analyse this through contacts with the industry.

No decision on this question was taken. It was generally felt that the answers on the questions must come from the manufacturers, but several delegates claimed that GSM must have sufficient competence in this area to be able to evaluate the answers.

Regarding the Franco-German-Italian experiments Mr Ghillebaert informed that no attempts to implement VLSI-circuits are made now for reasons of time. Nevertheless he believed that information on the possibilities in this respect could be made available since this sort of analysis is one of the objectives.

On a question if COST 207 studies modulation methods for both narrowband and wideband systems, and for both time divided and continuous channel systems, it was told that up till now no contributions related to wideband channels have been received.

Mr Failli went on introducing Doc's 117/85 and 118/85. The meeting was told that COST 207 is now close to a definition of a wideband system simulator. The COST-TR3 Joint Expert Group will have a first meeting by the end of november. Its Terms of Reference is however not completed.

Finally Mr Failli informed about the workshop on mobile communications held in Bologna. The workshop was very successful and gathered a lot of people both from administrations and industry.

## 9 SYSTEM ASPECTS

Mr Fuhrmann introduced Doc 96/85 about evolution capabilities within the GSM standard. The document did not cause any discussions.

Two documents (99/85 and 101/85) concerning the problem of processing delay in digital speech coding were presented by Mr Cheeseman. The document caused a lot of discussion from which the following was noted:

- The need for echo control devices in the mobile station, is dictated by the need to suppress acoustic feedback, since the MS will be fully four-wire, and thus, there will be no hybrid as in the fixed network.
- Some delegates claimed that echo control in a digital system is an inherent part of the speech coding algorithm and that the question is thus already taken care of by TR 3 which is fully aware of the problem. Thus there is no need for an other WP as proposed in Doc 99/85.
- The echo problem could be divided in two parts, namely echos generated in the MS and echos generated by the hybrid at the remote end, i e in the PSTN.
- The CCITT recommended maximum delay for equipment or networks connected to the PSTN is 50 ms, provided no echo control device. The 5 ms mentionned in Doc 101/85 is a national UK regulation.
- For several reasons it is not possible to define a maximum tolerable speech coding delay at this moment. One reason is that the important factor is the overall delay which includes the channel coding delay presently not known. Another reason is that a more extensive signal processing improves the speech quality at the same time as it prolongs the delay which deteriorates the speech quality. Thus a trade-off has to be done.
- The Franco-German-Italian experimental program includes conversational tests. The effects of delay will thereby be taken into account.

After some discussions on the need to send a letter to TR3 drawing the attention to the above mentionned problems, the meeting concluded that there was no need for such a letter. The meeting also agreed that if echo control devices will turn out necessary they could be located anywhere on the four-wire line between the MSC and the MS, but locating to the MS should be avoided if possible.

Mr Cheeseman introduced Doc 103/85 which is an extract from a far more comprehensive report resulting from a BT study contract with a private company. The figure of 2% for the blocking rate caused some discussion since it was found too low by some delegates. The reason for choosing such a low figure is that the radio channel blocking rate is only a contribution to an overall blocking rate which comprises also the PSTN. Regarding the saturation of the TACS-system (page 12) it was explained that the figure 100.000 subscribers comprises the number of users inside M25 only. Those users represent around 25% of the total. Furthermore saturation will be reached earlier locally within that area.

Mr Hillebrand introduced Doc 106/85 which proposes a reference model for the GSM-system. Up till now several different reference models have been used. The purpose of the paper is to encourage GSM to make up its mind on this matter.

On a question regarding the signalling to TMS's and IMS's Mr Hillebrand explained that the document does not address the signalling questions, but merely states that the signalling system should allow for service expansions for TMS's as explained in section 6.3 of the document.

Doc 110/85 was briefly introduced by Mr Klingler. No comments were made.

Mr Hovi introduced Doc 121/85 about personal numbers. Mr Lawrence told that similar systems already exist in FRG. Magnetic stripe cards are used now but in the future chip cards will appear. WP 1 was asked to consider the document.

## 10 OACSU

Doc 102/85 from the UK and Doc's 107/85 and 108/85 from FRG were introduced by Mr Cheeseman and Mr Fuhrman respectively. No discussion took place, but all of the documents were referred to the relevant Working Parties for further consideration.

## 11 SIGNALLING QUESTIONS

Very brief presentations of Doc's 79/85, 93/85, 95/85, 109/85, 113/85 and 114/85 were made.

Due to the specialized nature of the documents no discussion took place in plenary. The documents will all be considered by WP3.

## 12 SERVICES AND FACILITIES

Doc 112/85 from France was introduced by Mr Ghillebaert. The document presents a new structure of tables for describing the GSM Bearer Services.

### 13 POLICY QUESTIONS

The Chairman introduced Doc 82/85 which lists several items of policy nature which need to be discussed. For this purpose a special ad-hoc WP will be set up during this meeting.

As a comment to Doc 82/85 it was pointed out that BCR is a private company among several others in the USA and does not represent the US industries. This raised a question on how to deal with other US industry. The group agreed to deal with this question on a case-by-case basis.

The Chairman went on introducing Doc 80/85 coming from GAP. The further discussions on the document were referred to the ad-hoc WP.

The Chairman went on with Doc 89/85, which contains papers coming from ESA. The meeting found that it was not possible to express any opinion on those papers since they do not contain any precise proposals. Besides that, GSM is open to a dialogue with ESA keeping in mind the limitations of the GSM Terms of Reference. Mr Temple recalled the earlier discussions on the "far horizon perspective". According to him, Com-T has during the latest meeting in June opened the possibility for GSM to discuss matters of that kind.

Mr Audestad introduced Doc 81/85 which suggests a rough definition of the tasks of the Permanent Nucleus. In particular he emphasized that the main responsibility for the system design should stay with GSM, which obtained general endorsement.

It was told that the Netherlands had withdrawn their offer to host the Permanent Nucleus. Mr Dupuis said he regretted this, since France wished to have the PN located in a central point of Europe. The French Administration now offered to host the PN in Paris. The question of location and task of the PN will be discussed by the ad-hoc WP.

Mr Ghillebaert presented a proposal for organisation of the GSM-work (Doc 111/85). Essentially, the proposed organisation is the one already applied, but the proposal also attempts to solve the problem of too big GSM plenary meetings.

Some problems regarding WP 2 were discussed. Due to the big scope of WP 2 several Administrations find it difficult to know what experts to send to the WP 2 meetings. Mr Maloberti claimed that this is merely a problem of agenda and that specialized meetings would help. The delegation of UK proposed that considering the work load of WP 2 it should be divided somehow. This question also concerns the definition of the tasks for the Permanent Nucleus, which possibly could take over some of the tasks of WP 2.

No decisions were taken, but the questions were referred to the ad-hoc WP.

## WORKING PARTIES

The following Working Parties were set-up:

WP 1	Mrs Alvernhe	Services & Facilities
WP 2	Mr Maloberti	Low bit rate speech, encoding, modulation and multiple access techniques
WP 3	Mr Audestad	Network aspects
ad-hoc WP	Mr Haug	Policy Questions

### Report of WP 1

Mrs Alvernhe presented the report of the WP, Doc 123/85. Comments from GSM was asked for, in particular concerning emergency services and the need for a 64 kbit/s service. Some discussion also took place on the statements regarding sequential and simultaneous use of personal cards. GSM supported the view presented by WP 1. Furthermore the group discussed whether the volume control should really be a mandatory function in the mobile station. This discussion led to a decision to also incorporate "Barring of outgoing calls" among the mandatory functions.

### Report of WP 2

Doc 125/85 was introduced by Mr Maloberti. In this context a discussion arose on what body should work out the equipment specifications. The meeting agreed to send an invitation to WGR to carry out the task. In case WGR were to decline, the work would be allocated to the Permanent Nucleus.

The equipment specification for the MS has to be completed before mid 1987.

### Report of WP 3

Mr Audestad introduced Doc's 122/85 and 124/85. Doc 122/85 contains the proposed modifications to the specification structure pertinent to the WP 3 area. The document also suggests that a set of specifications for Operation and Maintenance should be worked out. This opinion was shared by the rest of GSM.

GSM decided that WP 1 should up-date the specification structure taking the proposals of the other WP's into consideration.

The concept of the mobile station as it appears in the WP 3 papers differs from that of WP 1. The reason for this is purely that WP 3 has not had time to up-date its documents. WP 3 agrees with the WP 1 concept.



In order to deal with the requirements of changing it is important that WG PGT is activated as soon as possible. The delegation of FGR was asked to contact the chairman of PGT informally to bring the matter to the attention.

#### **Report of ad-hoc WP**

The following was reported (Doc 126/85)

#### **BCR:**

Some very advanced system ideas had been presented by BCR during their visit. Some of them were of value to GSM, others did not fit into the time schedule.

#### **TMS:**

A preliminary reply to the questions of GSM has been received. (A written reply, Doc 2/86, was received shortly after the meeting). In the opinion of TMS, the questions of GSM were too broad.

#### **Document handling:**

See section 15 below

#### **WP-mandates:**

See section 14 below

#### **PN-mandate:**

The structure and Terms of Reference of the Permanent Nucleus is described in Annex 2 of Doc 126/85. This annex gave rise to a long discussion on the footnote (page 2), during which it was claimed by some Administrations that the PN should not be allowed to initiate work by itself without having it approved by GSM. Other Administrations ment that the PN could do this in order to save time and to avoid bureaucracy. The problem was solved by adding the words "..in agreement with GSM Chairman,....".

Annex 3 to Doc 126/85 was approved after a minor amendment.

## **14 WP MANDATES**

The approved Terms of Reference of the Working Parties are contained in Annex 1 of Doc 126/85.

From now on the Working Parties will no more meet during the GSM main group meetings, but in special meetings. The WP Chairmen should all attend the GSM main meetings.

## 15 HANDLING OF GSM DOCUMENTS

Doc 94/85 from CCH regulates the procedure to be used for sending certain documents to bodies outside GSM. These rules should be used from now on.

GSM decided that documents should be classified in 4 categories as follows:

- Class 1 CEPT-approved documents
- Class 2 Orientation type documents
- Class 3 Input documents (from Adm. and WP's)
- Class 4 Confidential documents

Class 1 and 2 documents will be distributed to outside bodies by GSM. Examples of such documents are (class 1) 2/82 and 73/85, and (class 2) 28/85 Rev 2.

Documents will be defined as class 4 only if requested by an Administration.

Regarding contributions to the WP-meetings it was decided that those documents should be sent to all Administrations. They should however not be sent to the GSM main group.

A standard format for the GSM contributions was proposed by the UK delegation. The proposal appears as Annex 4 to this report.

## 16 TRAFFIC MODELS

Mr Cheeseman introduced Doc '100/85. The document shows the need to modify the parameter values of the present traffic model.

## 17 TARIFF STRUCTURE

Due to lack of contributions no discussion on this item took place.

**18 ANY OTHER BUSINESS**

The Chairman introduced Doc 83/85 which did not cause any comments.

The Chairman will arrange a trip to Nuremberg to study the MATS-E concept. The trip will take place in January 1986. About 12 persons were interested in this trip.

A meeting in the expert group on security will take place in November.

The Chairman informed that Com-T has decided that all CEPT-meetings should provide simultaneous interpretation unless otherwise is agreed in advance before each individual meeting. For the next GSM-meeting, the group decided that interpretation was not necessary.

**19 NEXT MEETING**

The following meeting schedule was agreed:

Meeting no 10:	1986.02.17--21, in Athens
Meeting no 11:	1986.06.09--13, in Denmark
Meeting no 12:	October 1986 (preliminary)

**20 CLOSING OF THE MEETING**

The Chairman thanked the German Administration and the secretariat for their excellent work and impressive arrangements. He also thanked the delegates for their cooperative and constructive attitude during the meeting.

The meeting was closed.

CEPT-CCH-GSM  
Meeting no 9  
Berlin, 1985.09.30 - 10.04

### List of participants

Chairman:	T. Haug
Secretary:	T. Beijer
Belgium:	L. Taghon
Denmark:	M. Jacobsen G. Nilakantan H. H. Olsen Mr Ström
Finland:	M. Hovi M. Pasanen E. Joensuu
France:	P. Dupuis B. Ghillebaert M. Alvernhe A. Maloberti C. Vernhes M. Mouly
FRG:	K. Spindler F. Hillebrand F. Pernice W. Fuhrmann H. W. Lawrenz H.R. Rast
Ireland:	Mr Downing
Italy:	R. Failli M. Sentinelli
Netherlands:	M. van Beveren
Norway:	B. Loeken P. Blikrud J. Audestad
Portugal:	O. Reis Luis

Spain:	de Teran Martinez
Sweden:	G. Fremin A. Heidermark C. Odmalm H. Lundström Ö. Mäkitalo
Switzerland:	R. Klingler Mr Gfeller
United Kingdom:	S. S. Temple R. Stewart D. M. Barnes D. S. Cheeseman J. Pearce E. W. Beddoes

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Berlin, 1985.09.30 - 10.04

## AGENDA

### Applicable documents ( /85)

1	Opening of the meeting	
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### EXTRACT FROM GSM DOCUMENT LIST

<u>Doc No</u>	<u>Title</u>	<u>Source</u>
79/85	Signalling in narrowband TDMA systems	Norway
80/85	Strategic issues concerning the work of GAP in the area of mobile radio systems	GAP
81/85	Proposal for the establishment of a GSM Permanent Nucleus	Denmark Finlar Norway, Sweder
82/85	Subjects to be discussed in meeting no 9 of GSM	GSM Chairman
83/85	Letter from chairman of R22 to chairman of R	SWG R22
84/85	Questions to TMS	GSM Chairman
85/85	Description of the Experimental System S 900 D for Digital Radiotelephone	FRG
86/85	Description of the Experimental Hybrid System MATS-D for Digital Radiotelephone	FRG
87/85	Description of the experimental system CD 900 for digital 900 MHz radiocommunication	France
88/85	Description of the LCT experimental system for digital 900 MHz radiocommunication	France
89/85	Letter from Chairman of PTC SAT to chairman of GSM	PT SAT
90/85	Report of WP1 meeting in Paris September 1985	GSM WP 1
91/85	Proposed structure of GSM Recommendations	GSM WP 1
92/85	Cooperation between the Federal Republic of Germany, France and Italy i the field of digital cellular radiocommunications	FRG, France Italy

<u>Doc No</u>	<u>Title</u>	<u>Source</u>
93/85	Link layer specification for the D <sub>m</sub> channel	Norway
94/85	Relations with external organisations to CEPT	CCH
95/85	Comments concerning signalling on the radio path	Norway
96/85	Proposal for a concept of evolution capabilities within the GSM-standard	FRG
97/85	Experimental activity in the field of digital mobile radio carried out in Italy by CSELT and SIP	Italy
98/85	Report from the ongoing test with MAX, a narrowband TDMA digital mobile telephone system	Sweden
99/85	Echo control	UK
100/85	GSM Traffic model: Parameter values	UK
101/85	Delay considerations in speech coding	UK
102/85	Off-Air Call Set-Up; Further study in the UK	UK
103/85	Assessment of digital mobile radio telephone systems	UK
104/85	4th report of COST 207 working group 3 Modulation methods	COST 207
105/85	Cost, size and power consumption factors in analogue and digital radio telephones	COST 207
106/85	Reference configuration for a GSM PLMN and types of mobile stations	FRG
107/85	Alternative call set-up sequences (OACSU)	FRG
108/85	Interworking aspects of OACSU procedures	FRG
109/85	Comments on "Signalling on the radio path"	FRG
110/85	Spread spectrum and mobile radio	Switzerland
111/85	Organization of the work within GSM	France
112/85	Comments on the draft recommendation on services	France
113/85	Link layer protocols comparison for the D <sub>m</sub> channel	France
114/85	Signalling protocols on the radio link in a slow frequency hopping system	France



<u>Doc No</u>	<u>Title</u>	<u>Source</u>
115/85	Report of WP2-meeting in London	GSM WP 2
116/85	Analysis of wideband channel characteristics relevant to 900 MHz digital cellular radio	UK
117/85	Digital land mobile radio communications Fifth report of the Working Group on propagation	COST 207
118/85	Report of the fourth meeting of COST 207 WG 2 (Base band processes)	COST 207
119/85	Public land mobile network architecture	GAP
120/85	Report from GSM meeting no 8 (Paris)	GSM
121/85	Implementation of personal number in the GSM system	Finland
122/85	Proposed structure of GSM recommendations. Amendments to Doc 91/85	GSM/WP3
123/85	Report of WP 1 (Berlin-meeting)	GSM/WP1
124/85	Report of WP 3 (Berlin-meeting)	GSM WP3
125/85 Rev 1	Report of WP 2 (Berlin-meeting)	GSM WP2
126/85	Report of ad-hoc WP for policy questions	GSM
127/85	GSM Permanent Nucleus	Danmark, Finland, Norway, Sweden

CEPT-CCH-GSM

GSM Doc XX/86  
Classification of document: XX

From: XXXXXXXXXX  
Date: XXXXXXXXXX

Title: XXXXXXXXX XXXX XXXX XXXXXXXX XXXXXXXXXXXXXXX XXXX

Abstract: XXX  
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