

CEPT-CCH-GSM  
Report from meeting no 2.

Status: approved

Place: PTT Headquarters, The Hague  
Date: 1983.03.23-26  
Participants: see annex 1  
Agenda: see annex 2

## **1 OPENING OF THE MEETING**

Mr Verwoerd welcomed the delegates to The Hague and wished the GSM delegates a successful meeting.

Information about the practical arrangements and facilities during the meeting was given.

## **2 APPROVAL OF THE AGENDA** (ref. annex 2)

The proposed agenda was adopted with the following comments:

Item

- 7 This item should include a review on the present situation regarding earlier 900 MHz systems in the various countries.

## **3 LISTING OF RELEVANT DOCUMENTS**

The chairman presented the GSM-documents available at the beginning of the meeting.

## **4 REPORT FROM THE GSM MEETING No 1**

The meeting went through the draft report from meeting no 1. Some amendments were made, specially regarding the wording under sections 7.1 and 7.n which caused lengthy discussions.

The statements regarding the need for earlier systems operating in the 900 MHz-band for the countries not present at meeting no 1, were verified or corrected by the delegates now present.

## 5 REPORT FROM THE COST-MEETING IN ROME, JANUARY 1983

Mr Failli reported from the COST meeting in January 1983.

A precise Program of Work has been elaborated which takes the recommendations of the GSM into consideration.

The following study items are now included in the COST program:

- Wave propagation in the 900 MHz-band
- Modulation techniques
- Base band processing

Studies within the analogue field were not considered necessary.

A report and a project description is available.

A further decision on the project will be taken during April 1983 by the Technical Advisory Committee.

Mr Failli accepted to be a liaison between GSM and COST on a provisional basis.

## 6 TRAFFIC MODEL

Doc 18/83 was introduced by Mr Dupuis. The document draws the attention to the non-voice services which are not taken into account in Doc 10/82.

In order to clear out a misunderstanding, Mr Melis explained that Doc 10/82 shows the expected distribution of the traffic in the Netherlands, not the cell sizes of a system. Doc 10/82 should be considered as an example.

The meeting concluded that although there is a need to take the non-voice services into account there is no experience available today neither in fixed networks nor in mobile networks that makes it possible to predict the future use of non-voice services, what the traffic volume will be and to what extent it will substitute the ordinary voice traffic. Some delegates claimed that the non-voice services will probably remain a smaller part of the total traffic and recommended the group not to put too much emphasis on these services. Other delegates claimed that digital services and especially message-switched services are particularly well suited for the mobile radio channel.

The meeting agreed on the importance of limiting the cost for the network, keeping the mobile stations as simple as possible but still allowing flexibility with respect to the choice of service and traffic type. It was stressed that users are not concerned about how and where in a network a particular service is provided. Thus, according to some delegates, by designing the mobile unit as a terminal for the ISDN with standardized interfaces for external equipment and functions for adaption to the signalling on the radio path, it would be possible to provide a variety of services implemented in the ISDN while still keeping the costs for the mobile network under control.

Doc 21/83 was introduced by Dr Spindler. The following clarifications were given:

- Section 9 shows the estimated increase in capacity resulting from a proposed time limitation. (The time limitation function is not implemented in the system). The effects of some subscribers trying to call again are not taken into account.
- The call set-up time is included in the calculations.
- The system does not have a roaming function.
- The mobile station is sometimes used as a paging receiver. (This explains the low answering rate for incoming traffic).
- The traffic loads (section 7) is the carried load, not the offered load.
- The ringing signal can be heard by the A-subscriber if the (mobile) B-subscriber station is switched on. If not, an announcement is given to the A-subscriber.

The ratio of incoming/outgoing calls is typical for manual systems according to an inquiry recently carried out by CCITT. For automatic systems this relationship is more even.

The Swiss system uses a time limitation of 3 minutes.

The chairman invited the administrations to submit further contributions on the traffic parameters of existing systems including necessary background information.

In order to simplify the work of summarizing the contributions on the subject it was decided to elaborate a common format for the information. This format was drafted during the meeting (Doc 30/83). Due to lack of time the document was not discussed. Comments on Doc 30/83 should be sent to Mr Verhulst for further revisions.

The UK delegation offered to contribute on a traffic model for packet switched networks at the next GSM-meeting.

## 7 DISCUSSION ON TOPICS RELATED TO THE SPHERE OF ACTIVITY OF R, SF, CD, CS, TR, GSI AND ELT

The following working groups of CEPT/T were represented during the meeting:

R	Not represented (several delegates were however familiar with the work of the group)
SF	Mr Wallingford
CD	Mr Coolen
CS	Mr Remeijsen
TR	Not represented (Mr Failli was familiar with the work of the group)
GSI	Mr Remeijsen
ELT	Not represented

## **Review of the situation regarding interim systems in the 900 MHz band**

The present situation is as follows:

Belgium: A firm decision on political level has been taken to introduce a system in the 450 MHz-band. This system will allow for international roaming in the Netherlands and in Luxembourg.

France: Discussions on a 900 MHz system are going on, but no decisions have been taken. A cooperation with Germany is also discussed. This assumes that Germany is willing to implement the 900 MHz-band earlier than previously foreseen. The new system is likely to start during 1986.

Germany: Considered the proposed collaboration with France the situation in Germany has now changed dramatically. If this collaboration will come to reality, the 450 MHz band presently assigned for the C-450 system might be used for private closed networks.

Italy: The situation is the same as reported during GSM-meeting no 1.

Netherlands: The situation is the same as reported during GSM-meeting no 1.

Denmark, Finland, Norway and Sweden: A firm decision has now been taken to implement the NMT-system in the 900 MHz-band. The present specifications which are applicable for the 450 MHz-band will be issued in a 900 MHz-version by the end of 1983.

The total number of NMT-subscribers (all Nordic countries, March 15, 1983) is 39 000. The migration from the manual systems is small.

The expected gain by introducing small-cells was discussed. The administration of Denmark offered to submit a contribution on this subject for the next meeting. A frequency plan for the Copenhagen area including the southern parts of Sweden has been elaborated, but the small-cell gain is a bit complicated to evaluate since two countries, both having manual systems in the same frequency band, are involved.

Spain: Two automatic systems exist: One in 150 MHz (600 subscribers, coverage in Madrid and Barcelona) and the 450 MHz system (150 subscribers). There is no need for an early 900 MHz system.

Switzerland: The situation is in principle the same as reported during the GSM-meeting no 1.

United Kingdom: The final choice of system and system operators has now been made. The second system operator (in addition to BT/Securicore) will be a consortium formed by Racall, Hambros Bank and Millicom. The system will be a modified version of the AMPS system named TACS (Total Access Communications System). The operational start will be January 1 1985. A draft specification already exists.

The following information about the TACS system was given by the UK-delegates:

- Signalling speed 8 kbit/s
- Complete compatibility in the air interface between the two networks.
- Channel spacing 25 kHz.
- Automatic handover between competing companies
- Queuing will not be applied initially
- Intersystem registration will be applied
- Off-air call set up will not be applied
- The mobile stations need not be operator owned
- The competing companies will probably both have nationwide coverage
- 600 channels will be allocated. Each of the system operators will have dedicated channels at disposal.

An information document on the TACS-system will be elaborated as soon as possible. This will be focused on the aspects of relevance for frequency compatibility.

#### **Matters related to the activity of the R-group**

Doc 11/83 was introduced by Mr Fisher. The document contains a proposal for how to handle the problems of frequency compatibility between the GSM system and the early 900 MHz systems.

It was agreed that the concept of frequency compatibility in this context should not be limited to a compatibility at the band edges, but be understood as the capability of several systems to coexist in the same band.

Several delegates expressed support for the ideas of Doc 11/83. The general opinion seemed to be that the so-called "interim systems" would probably turn out to be large, important systems, representing great investments, and that consequently they will have a considerable life length. Shifting the frequencies of those systems will probably not be possible.

The meeting decided to invite Working Group R to consider the strategy for frequency compatibility proposed in Doc 11/83, and to issue recommendations to ensure the agility of the interim systems in this respect. Some delegates claimed that recommendations on the maximum amount of spectrum for those systems should also be issued.

As a result from the above discussions a letter to the chairman of Working Group R was drafted (Doc 28/83 Rev 1). Lengthy discussions on the terminology regarding the early 900 MHz systems took place. The implications on the task of GSM by the fact that those systems probably will be long-lived was thoroughly discussed. This might be considered as a change of the bases of the work. The meeting decided to continuously keep an eye on the relevance of the presumptions of the work as stated in Doc 2/82 and if necessary bring the question to the attention of CCH.

Mr Abouardham expressed disappointment that the letter to Working Group R did not call for a reconsideration of the allocation of 1 MHz to the cordless telephone service.

Doc 1/83 was introduced by Mr Jacobsen. The document defines the concept of portable stations from an operational point of view and proposes some technical characteristics of them.

The impact of portable stations on the system design (cell sizes, power control, grade of service, need for special signalling procedures, etc.) was discussed. The administration of Germany declared that they were not prepared to support the idea of having portable stations in the system until the impact on the spectrum efficiency has been fully analysed. The new system should in the first place satisfy the need for communication in cars where no alternative to a radio system exists. The system should in their opinion not seek to replace fixed coin-box telephones or cordless telephones.

The possibility of using a cordless telephone in combination with a car mobile telephone was also discussed, as well as the need for mobile LAN's (Local Area Networks). Interest for both types of services seemed to exist although problems with the frequency management can be expected, particularly with the combination of mobile stations and cordless telephones. It was stressed that the system must not put any restrictions on the administrations' possibilities to choose their own approach with respect to this type of use.

The chairman concluded that it would be premature to take any decisions on those questions and encouraged the delegates to submit further contributions on the subject.

#### **Matters related to the activity of the SF-group**

Doc 8/83 was introduced by Mr Melis. The meeting asked working group SF to study the effects of limitation of call duration. The listening-in function needs to be further defined. Two different types of listening-in exist, ordinary listening-in and listening-in with tone.

It was proposed to use the term "maintenance monitoring" instead of listening-in.

Doc 10/83 was introduced by Mr Mallinder. The figure for blocking should be understood as the probability of loss during busy hour in a system without queue.

It was noted that Minimized Air-time Call Set Up (MACSU) is not a user requirement but a possible requirement from the administration and that the reliability of hand-off is composed by two independent elements, 1) the possibility of finding a free traffic channel, and 2) the reliability of the switch-over process.

The working group SF was invited to contribute particularly on the subjects of speech quality, call set up time, announcements and the parameters relevant to hand-off (frequency of hand-off and hand-off break).

The attention was also drawn to the specific requirements of operator assisted calls and reverse access calls.

Doc 14/83 was introduced by the chairman. The document contains a list of definitions on services and facilities relevant to a mobile service. Some of the definitions are taken from the SF-handbook, others are proposed definitions made up by the administration of Sweden on the basis of the discussions during meeting no 1. The definitions taken from the SF-handbook are applicable for the fixed network services in the first place. Some definitions do not fit with the mobile service.

Working group SF was invited to revise the definitions of the list. Since the meeting did not have time for an exhaustive discussion on Doc 14/83 the meeting agreed to present this document to SF as a contribution from the administration of Sweden.

In addition to this SF was also asked to consider the procedures for activation and deactivation of the services. The meeting agreed that different definitions and procedures for the facilities in the fixed network and in the mobile network should be avoided.

SF2 will meet in Helsinki by the end of May 83. Some work on the above subjects will be done during this meeting.

#### **Matters related to the activity of the CD-group**

Doc 9/83 was introduced by Mr van der Arend.

The meeting agreed that the question of encryption is of crucial interest for a mobile radio service. This question is studied within working group CD, presently however not very intensely.

Considering the specialized nature of the problem the meeting decided to refer the question to suitable expert groups. The need for clear distinctions between protection of the call handling signalling on one hand, and the communication on the other was particularly stressed.

The general opinion was that protection of the call handling should be a mandatory function in the GSM system while protection of the communication could remain optional.

A letter to the chairmen of working groups CD, CS and SF was drafted (Doc 29/83). In this connection, extensive discussions on the degree of protection, protection vs. security, and the use of credit card type of technique took place.

The meeting also discussed the use of credit cards or debit cards for billing purposes. It should be noted however that this is rather a question of an operational facility, and quite separate from the problem of protection.

#### **Matters related to the activity of the CS-group**

Mr Remeijns informed about the activities going on within CS. CS is working on the inter-exchange signalling. Also the D-channel protocols are under elaboration. These protocols will be bit rate independent.

A separate group is working on the question of maintenance, particularly the maintenance of the subscriber lines.

Doc 4/83 was introduced by Mr Audestad. The document contains information of interest both for working group SF and working group CD (a report from CCITT WP XI/1 and a draft recommendation for a numbering plan).

Mobile services have been considered as urgent matter in the CCITT, but up till now the maritime satellite applications have dominated. The interest for land mobile services is now increasing.

Doc 6/83 was introduced by Mr Beveren who offered to keep the document updated in the future. Due to the difficulty of assessing the relevance to GSM and to keep track of delayed documents as well as the contributions from special rapporteurs, some help is needed.

Mr Audestad therefore offered to assist Mr Beveren with the documents of CCITT SG's II, VII and XI. Mr Barnes will do the same with CCIR SG 8A and Mr Haug with CCITT SG XVIII.

In order to avoid delays it was proposed to consider the draft recommendations instead of waiting for decisions at plenary meetings.

#### **Matters related to the activity of the TR-group**

Doc 16/83 deals with questions related to working group TR. Due to lack of time the document was however not introduced and discussed.

The chairman proposed that some administration encourage subgroup TR3 to start up studies in the field of low bit rate digital speech coding.

#### **Matters related to the activity of the ELT-group**

The GSM-group noted the existence of Doc 5/83 without discussions.

### **Matters related to the activity of the GSI-group**

In connection with the discussions on the CD and the GSI-activities, Mr Coolen and Mr Remeijns gave a very useful briefing on the concept of the OSI-model and the ISDN. A number of documents were distributed for information. Because of the complexity of the topic this briefing is not related in this report. Reference is made to relevant documents, which are:

For the OSI-model: CCITT Rec. X200

For the ISDN: Doc T/CCH(82) 30 "ISDN in Europe"  
and Doc T/GSI(82)72

According to the delegates familiar with the OSI and ISDN concepts this philosophy is highly applicable for the future GSM network and enables cost effective solutions, as expressed in Doc 2/82. Using this approach the GSM-work could be focused on the network dependent layers 1, 2 and 3, whereas the application oriented higher layers, and the equipment and procedures for those layers, will be developed outside GSM.

The ISDN-concept foresees the need for bit rate adaption in various points in the network. Also the need for a hybrid channel structure (i.e. 1 analogue channel + 1 digital channel) is foreseen.

The chairman concluded that the OSI-model is a valuable tool for structuring our problem and our work. He also welcomed more contributions on the above subjects, in particular contributions focused on a mobile application.

A contribution from the administration of Norway can be expected at the next meeting.

## **8 INFORMATION ON NATIONAL TARIFF STRUCTURES**

The contributions were not discussed during the meeting. Mr Klingler offered to elaborate a summary on the subject based on the available documents.

## **9 REPORT TO CCH**

Due to lack of time, the report required by the chairman of CCH was not discussed during the meeting.

The meeting agreed that the chairman could draft a report and send it to the participants of the meeting for comments before sending it to the chairman of CCH.

The chairman informed about an agreement between CCH and EUCATEL about sending reports on the progress of GSM. These reports will not necessarily be the same as the reports of the GSM-meetings.

The same reports might be sent to ECREEA.

## 10 ANY OTHER BUSINESS

The need for a separate meeting aiming to review the methods of work of the GSM-group was discussed. The meeting decided that the delegates in favour of such a meeting would either provide an early contribution on the subject before the next meeting, or contact the chairman directly, preferably before mid April, by sending a written proposal, in which case the chairman would assemble a meeting.

It was proposed that the meetings in the future would also discuss the agendas for the meeting coming next.

Mr Failli reminded of the Recognized Private Operating Agencies of CEPT, which should also receive copies of the GSM reports and documents.

## 11 NEXT MEETING

The next meeting will be held on October 11-14. The place of the meeting will be decided later.

## 12 CLOSING OF THE MEETING

The chairman thanked the delegates for their participation and the administration of Netherlands for their kind hospitality and excellent arrangements.

The meeting was closed.

CEPT-CCH-GSM  
Meeting no 2  
The Hague, 1983.03.23-25

### List of participants

#### Belgium

L Taghon  
Regie T.T.  
Dep. TR  
Paleizenstraat 42  
B 1030 BRUXELLES  
Belgium

tel	+32 2 2134270
fax	
telex	29154

#### Denmark

Tage Iversen  
Post- og telegrafvesenet  
Radioteknisk Tjeneste  
Nørrebrogade 10  
DK-2200 KÖPENHAMN N  
Denmark

tel	+45 1 393711 212
fax	+45 1 393711/215
telex	22289 RACOM DK

Marius Jacobsen  
Post- og telegrafvaesenet  
Radioteknisk Tjeneste  
Islands Brygge 83 C  
DK-2300 KÖPENHAMN S  
Denmark

tel	+45 1 544796 202
fax	+45 1 544796
telex	31100 RACOM DK

J L Nielsen  
Radio Communications Office  
Nørrebrogade 10  
DK-2200 KÖPENHAMN N  
Denmark

tel	+45 1 393711
fax	+45 1 393711/215
telex	22289 RACOM DK

#### Finland

Matti Makkonen  
Post- och telestyrelsen  
Radioavdelningen  
Box 511  
SF-00101 HELSINGFORS 10  
Finland

tel	+358 0 6966478
fax	+358 0 6966410
telex	124545 RADOS SF

## France

Pierre Abouharham  
PTT  
DGT/DAII/SAI/CII  
Tour Maine Montparnasse  
33 Avenue du Maine  
F-75755 PARIS Cedex 15  
France

tel +33 1 5661200  
fax  
telex GENTEL PARIS 200773

M Alvernhe  
PTT  
DGT/DAII/SAI  
Tour Maine Montparnasse  
33 Avenue du Maine  
F-75755 PARIS Cedex 15  
France

tel +33 1 5661137  
fax  
telex GENTEL PARIS 200773

J de Brito  
CNET  
PAA/RDS/RCM  
F-92131 ISSY LES MOULINEAUX  
France

tel +33 1 6384593  
fax +33 1 6384003  
telex CNETLEC 200773 F

Philippe Dupuis  
DGT/DTM  
246 rue de Bercy  
F-75584 PARIS Cedex 12  
France

tel +33 1 8062428  
fax  
telex 250315 INTELFRA X PA

Didier Verhulst  
CNET  
PAA/RDS  
38-40 rue du Général Leclerc  
F-92131 ISSY LES MOULINEAUX  
France

tel +33 1 6386233  
fax  
telex CNETLEC 250317 F

## F. R. of Germany

Frieder Pernice  
Fernmeldetechnisches Zentralamt  
PO Box 5000  
D-6100 Darmstadt  
FRG

tel +49 6151 832440  
fax +49 6151 834791  
telex 419511 FTZ D

Dr. K Spindler  
Bundesministerium für das Post- und  
Fernmedlewesen  
Adenauerallee 81  
D-5300 Bonn 1  
FRG

tel +49 228 742260  
fax  
telex 8661110

## Italy

R Failli  
SIP DIREZIONE GENERALE  
Via Flaminia 189  
I-00196 ROMA  
Italy

tel +39 63 6882569  
fax  
telex 610 467 I

## Netherlands

P C J van der Arend  
Dr. Neher Laboratories of PTT  
St Paulusstraat 4  
P.O. Box 421  
2260 AK LEIDSCHENDAM  
Netherlands

tel +31 70 756180  
fax  
telex 31236 DNL NL

M van Beveren  
PTT CENTRALE DIRECTIE  
PO Box 30 000  
2500 GA DEN HAAG  
Netherlands

tel +31 70 754033  
fax  
telex 31111

L A A A Coolen  
Dr. Neher Laboratories of PTT  
St. Paulusstraat 4  
2264 XZ LEIDSCHENDAM  
Netherlands

tel +31 70 755898  
fax  
telex 31236 DNL NL

A de Jong  
Dr. Neher Laboratories  
St. Paulusstraat 4  
2264 XZ LEIDSCHENDAM  
Netherlands

tel +31 70 755613  
fax  
telex 31236 DNL NL

L Melis  
PTT CENTRALE DIRECTIE  
Kon. Julianaplein 15  
2595 AA DEN HAAG  
Netherlands

tel +31 70 757863  
fax  
telex 33068 mbfcd nl

G Remeijssen  
Dr. Neher Laboratories  
St Paulusstraat 4  
2264 XZ LEIDSCHENDAM  
Netherlands

tel +31 70 755423  
fax  
telex 31236 DNL NL

## Norway

Jan Audestad  
Televerkets Forskningsinstitutt  
Boks 83  
N -2007 Kjeller  
Norway

tel +47 2 739246  
fax +47 2 730076  
telex 19672 RETEL N

Kåre Gustad  
Teledirektoratet  
Postboks 6701  
N-OSLO 1  
Norway

tel +47 2 487699  
fax +47 2 488720  
telex 71203 GENTEL N

## Spain

J A Hernandez  
Compania Telefonica Nacional de Espana  
Dep. de Normalizacion y Homologacion  
Seccion Radio  
C/Lerida 43  
MADRID 20  
Spain

tel +34 1 455 00 00  
fax  
telex

## Sweden

Thomas Beijer  
Swedish Telecommunications Administration  
Room I18:26  
S-123 86 FARSTA  
Sweden

tel +46 8 7133102  
fax +46 8 7134226  
telex 14970 GENTEL S

Gunnar Fremin  
Swedish Telecommunications Administration  
Room IB8:28  
S-123 86 FARSTA  
Sweden

tel +46 8 7132054  
fax +46 8 7134226  
telex 14970 GENTEL S

Thomas Haug  
Swedish Telecommunications Administration  
Room C541  
S-123 86 FARSTA  
Sweden

tel +46 8 7131526  
fax +46 8 7133318  
telex 14970 GENTEL S

Östen Mäkitalo  
Swedish Telecommunications Administration  
Room IB7:29  
S-123 86 FARSTA  
Sweden

tel +46 8 7132170  
fax +46 8 7134226  
telex 14970 GENTEL S

## Switzerland

R Klingler  
GD PTT, Abt. VD 21  
Technisches Zentrum  
CH-3030 BERN  
Switzerland

tel +41 31 624859  
fax  
telex 30261 VPTT

M A Rothen  
Generaldirektion PTT  
Sektion Teilnehmeranlagen  
Viktoriastrasse 21  
CH-3030 Bern  
Switzerland

tel +41 31 623032  
fax  
telex

M O Zehnder  
Generaldirektion PTT  
Radio- und Fernseh Abteilung  
Speichergasse 6  
CH-3030 Bern  
Switzerland

tel +41 31 623315  
fax  
telex 91 10 25 RATV CH

## United Kingdom

D M Barnes  
Department of Industry  
Room 333  
Ashdown House  
123 Victoria Street  
LONDON SW 1  
Great Britain

tel +44 1 212 0713  
fax  
telex 881314

K Fisher  
Home Office  
Directorate of Radio Technology  
Waterloo Bridge House  
Waterloo Road  
LONDON SE1 8UA  
Great Britain

tel +44 1 2753363  
fax  
telex 261969 HOWBHL

Bernard Mallinder  
British Telecom  
BTE/S.3.2.1.  
23 Howland Street  
LONDON W1P 6HQ  
Great Britain

tel +44 1 6312320  
fax  
telex 24370

Peter Mountain  
British Telecom Research Labs  
Martlesham Heath  
IPSWICH IP 57 RE  
Great Britain

tel +44 473 644786  
fax  
telex

J F Wallingford  
British Telecoms. NS1.1  
Williams National House 341  
11-13 Holborn Viaduct  
LONDON EC1A 2AT  
Great Britain

tel +44 1 357 4653  
fax +44 1 357 4595  
telex 883051  
1 236 64 33

CEPT-CCH-GSM  
Meeting no 2  
The Hague 1983.03.23-26

**AGENDA**

- 1 Opening of the meeting
- 2 Approval of the agenda
- 3 Listing of relevant documents
- 4 Report from GSM meeting no 1
- 5 Report from the COST-meeting  
in Rome, January 1983
- 6 Traffic model
- 7 Discussion on topics related  
to the sphere of activity of  
R, SF, CD, CS, TR, GSI and ELT
- 8 Information on national tariff  
structures
- 9 Report to CCH
- 10 Any other business
- 11 Next meeting
- 12 Closing of the meeting