My involvement in GSM

❑ **1981-1988   Délégué aux Télécommunications Mobiles in DGT**

> ➢ **1982-1988   Head of the French delegation in CEPT / GSM**
>
> ➢ **1983-1987   French coordinator for the Franco-German and quadripartite (F, G, UK, It) cooperation**
>
> ➢ **1988 (6 months)   Chairman GSM MoU group of signatories**

❑ **1989-1996   Independant Consultant**

> ➢ **1992-1996   Chairman ETSI TC SMG**

What was so different in 1982 ?

❑ **Operators**

➢ **In general they were :**

- **National monopolies**
- **Government owned**
- **Combined operators / regulators**
- **Protecting their national telecom equipment manufacturer(s)**

➢ **Evolution towards a competitive environment was however about to start in the UK**

❑ **Manufacturers**

➢ **Lived on protected national markets**

➢ **A few exceptions however such as Philips & ITT**

A summary of operators cooperation

- ❑ **1982**   **At the CEPT/COM T the Nordic and Dutch operators propose the creation of GSM**

- ❑ **1982-1987**   **Operators from 13 countries cooperate in GSM**
  - ➢ **to define the objectives and architecture of a pan-European mobile telecom system**
  - ➢ **to reach a decision on the basic technologies**

- ❑ **1984-1987**   **The quadripartite operators provide decisive contributions**
  - ➢ **to the selection of the basic technologies within GSM**
  - ➢ **to the building of the political consensus**
  - ➢ **to the establishment of the GSM MoU**

After 1987 manufacturers join operators in ETSI to produce the detailed specifications and ensure their maintenance and evolution

The 1987 Madeira battle : the issues

❑ **Operators have seen the « light »**

➢ **They expect big benefits from a single open digital mobile standard : (1) Economies of scale and (2) International roaming**

➢ **They are jointly selecting technical solutions in GSM**

❑ **French and German manufacturers slowly come to the « light »**

➢ **In 1983 they proposed to develop a new Franco-German analog standard, to resist non-invented-here (NIH) standards such as NMT and TACS**

❑ **Conflict between 2 methods of standardisation**

➢ **Development of « committee designed » specifications**

• **GSM propose to build on the work done in WP2**

➢ **Adoption of pre-existing specifications by a committee**

• **Alcatel promote a « ready-made » radio technology, developed in Germany, which provides good results but is « proprietary » to a significant extent**

The 1987 Madeira battle : chronology (1/2)

- [ ] **December 1986- Field testing of various radio demonstrators**
  January 1987 by CNET in Paris
  - ➢ **Including 4 commissioned within the FG cooperation**
- [ ] **January 1987 Based on the results obtained GSM/WP2 produce a report outlining 2 possible solutions**
  - ➢ **Narrow Band TDMA with Slow Frequency Hopping (SFH)**
    - • **The solution to which most participants have contributed**
  - ➢ **Wide Band CDMA with Direct Sequence spectrum spreading**
    - • **The solution proposed by Alcatel**
- [ ] **February 1987 At the GSM #13 meeting in Funchal all**
  (16-20) delegations are in favour of NB-TDMA except France and Germany who support WB-TDMA
  - ➢ **It is however agreed to progress the work on the air interface on the basis of 2 different « working assumptions »**

The 1987 Madeira battle : chronology (2/2)

❑ **March-April 1987** **DGT and DBP make all efforts to join the European majority**

- ➢ **DGT-DBP-Alcatel working level meeting (Paris, 18 March)**
- ➢ **Franco-German DG meeting (Paris, 25 March)**
- ➢ **SEE seminar (Brussels, 7-8 April)**
- ➢ **Alcatel internal meeting (Brussels, 9 April)**
- ➢ **Quadripartite DG meeting (Bonn, 22-23 April)**

At the same time GSM/WP2 refines the NB-TDMA working assumption !

❑ **19 May 1987** **« Peace treaty » signed in Bonn by the quadripartite ministers**

- ➢ **Confirming the choice of NB-TDMA**
- ➢ **Insisting on the implementation of SFH (at the request of France)**
- ➢ **Calling for the establishment of a GSM MoU (at the request of the UK)**

❑ **June 1987** **GSM #14 meeting in Brussels; specification work starts, coordinated by the GSM Permanent Nucleus established in Paris at the end of 1986**

How to produce a successful international standard (1/4)

❑ **Lesson 1   All sector actors must believe in the benefits of a single open international standard**

❑ **Lesson 2   Make friends**

➢ **It is more efficient to work with people you know well and trust**

➢ **Work is also more efficient in a multi-cultural environment**

❑ **Lesson 3   Do not expect too much from politicians**

➢ **The CEC did not help much**

- **They were supporting the idea of a single European standard, but…**
- **Their experts**
  - **had a vision different from us,**
  - **thought the GSM group would not succeed to reach a consensus and**
  - **questioned the feasibility of a digital technology**

➢ **Some politicians however had sympathy for the GSM**

- **Christian Schwarz-Schilling, Jacques Dondoux, Pekka Tarjanne**

How to produce a successful international standard (2/4)

❑ **Lesson 4   Make sure there is a large enough initial market**

➢ **This was one of the major objectives of the GSM MoU**

➢ **In addition, the opposition of French and German manufacturers to the implementation of NMT or TACS for an interim analog network resulted in the mobile market remaining « untapped » in both countries, as well as the 900 MHz spectrum**

How to produce a successful international standard (3/4)

- ❑ **Lesson 5   Do not compromise on technology**
  - ➢ **An example : The adoption of Slow Frequency Hopping**
    - • **In 1985 the development contract on SFH could only be awarded after a long argument in the French DGT**
    - • **It eventually proved the feasibility and benefits of NB-TDMA with SFH. In this particulat case :**
      - • **SFH solves the case of the stationary mobile**
      - • **SFH achieves an averaging of interferers**
    - • **Most delegations being afraid of the complexity, the Madeira meeting had ruled that SFH would be used at the operator's option, which implied that all mobile terminals had the SFH capability built-in.**
    - • **To make sure this requirement would not be questioned later a special mention of SFH was introduced in the quadripartite « peace treaty ».**

    There are good reasons to think that,without SFH, GSM would have soon been superseded by CDMA and we would have much less to celebrate now !

How to produce a successful international standard (4/4)

- ❑ **Lesson 6   God is in the details**
  - ➢ **It took 3 years to write the 6 000 pages of specifications needed to build the first operational networks**

- ❑ **Lesson 7   There is no end to the story**
  - ➢ **A standard requires maintenance**
  - ➢ **An evolution of the standard is required to accommodate :**
    - • **New market requirements**
    - • **Technology advances**

Wishing GSM a bright future !