



World Class Standards

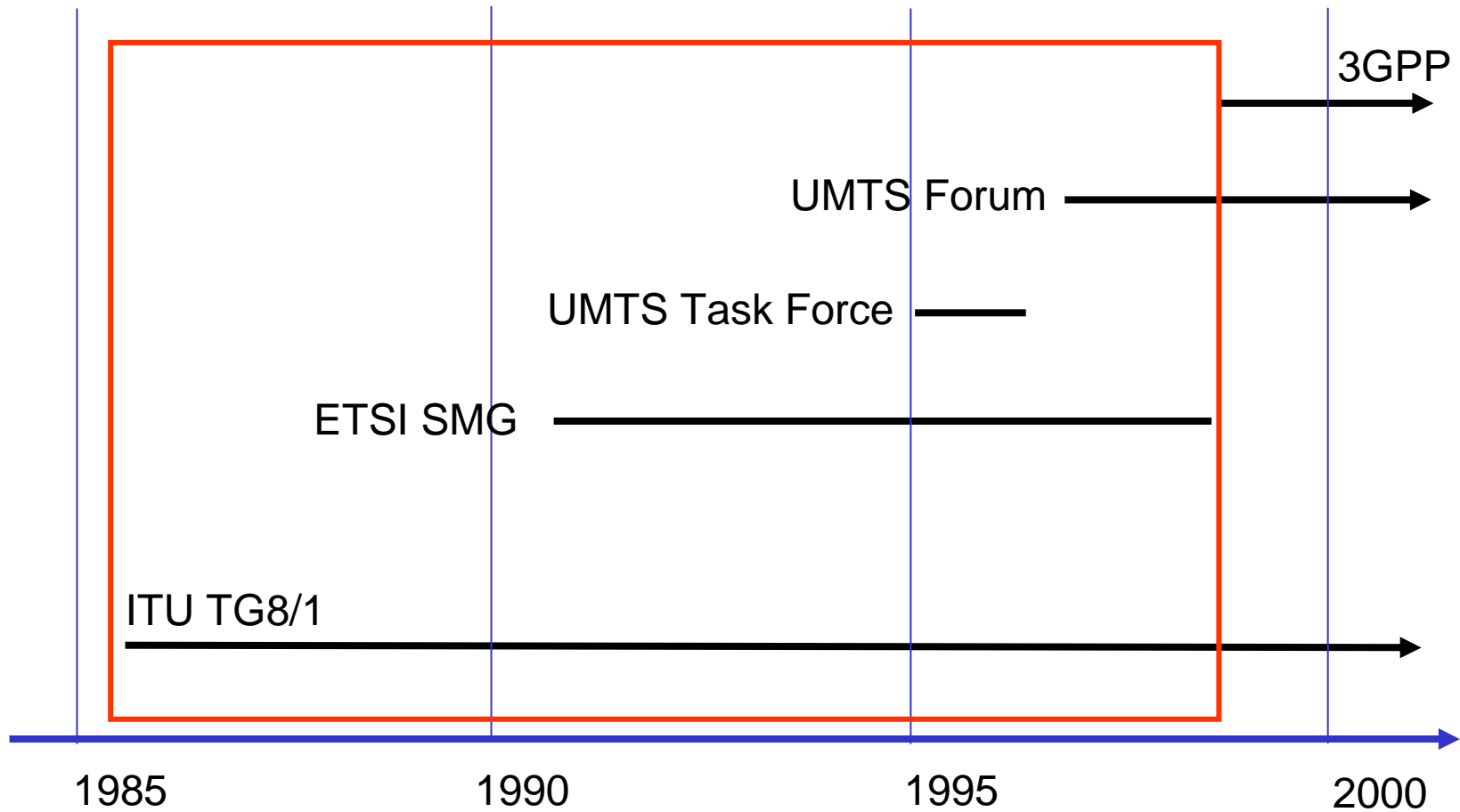
UMTS Vision & Basic Decisions in Standardization

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GSM...younger than ever

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Scope of the Presentation



A Turbulent Period – Political Environment

- ❑ Operators – before playing a combined role of operators and regulators – were split into two entities

- ❑ Competition was introduced on the operator arena. The openness and the mutual trust between operators ceased

- ❑ Organisations were redesigned
 - Some doors were opened, some doors were closed
 - New style organizations were formed
 - New members, new cultures
 - New communication gaps occurred

A Turbulent Period - Standardization

- ❑ **The style of international cooperation changed from something which resembled diplomatic relations to ordinary business relations**

- ❑ **Mobile communications called for a more strict end-to-end standardisation than fixed communications. Most standards bodies were not used to this and had to learn**

- ❑ **Standardisation became dominated by the manufacturing industry. Operators were forced into competition. Their former comfortable financial situation ceased. They had to cut down their R&D budgets and their ability to maintain the lead in standardisation ceased**

A Turbulent Period – Operator Business

- ❑ **The economical centre of gravity within operator companies moved gradually from fixed to mobile communications. Many operators had problems with oversized fixed-com departments**
- ❑ **The type approval regime was changed. Operators lost influence**
- ❑ **New regulatory initiatives popped up at an ever increasing rate, often causing confusion and uncertainty**

A Turbulent Period - Services

- ❑ The services developed from pure telephony into multimedia
- ❑ A totally new world of applications appeared behind the horizon
- ❑ New players – the applications designers and providers - had to be part of the game, the sooner the better

ITU – Timing

- Started it ITU CCIR SG8 already in 1985
- All resources focused on 1st and 2nd Generation at that time
- Weak business interest at this early stage

ITU – Services and Architecture

- Problems to find outstanding selling features compared to 2nd Generation besides global roaming and higher data rates**
- Still a telecom oriented service approach**
- Internet services and IP- technology had still not affected the service philosophy and the architecture**

ITU – Achievements

- The Generic Communicator was invented, going beyond the ordinary POTS - style mobile phone. Visionary thinking!**

- The target 2 Mbit/s data rate criterion got established**

- Significant contributions with regard to spectrum analyses and the need for new spectrum**

The European Scene in 1990-1998

- ❑ **Growing awareness of UMTS**
- ❑ **A difficult period with many conflicts and clashing interests**
- ❑ **Very slow progress, mainly due to**
 - **Insufficient business orientation**
 - **Poor understanding of migration needs**
 - **Organizational confusion**

MoU PMT

MoU Personal Mobile Telecommunications

- German initiative, started in 1993
- Never got strong outside Germany
- Extremely ambitious work plan (lack of focus.....?)
- Closed in early 1997, work on market analyses transferred to the UMTS Forum

The RACE Program

- ❑ European Commission driven research program
- ❑ RACE 1043: entirely focused on UMTS, started in 1989
- ❑ “Revolutionary” approach both wrt radio and core network
- ❑ Orientation towards B-ISDN
- ❑ Ambitions beyond pure technical research

ETSI Activities

- ❑ **First start in 1991**

- ❑ **Organizational disputes, SMG vs RES**

- ❑ **SMG5 formed**
 - **Slow start in the first years**
 - **SMG5 inspired by RACE**
 - **SMG Plenary still heavily occupied with the GSM releases**

- ❑ **Major improvements in spring 1997**
 - **UMTS issued raised to SMG Plenary level**
 - **SMG5 closed, work transferred to the traditional SMG STC's**

The FMC Discussions

FMC = Fixed Mobile Convergence

- Contentious issue among operators
- Aiming for integration of mobile and fixed networks
- Based on fixed core network technologies
- Proposal that UMTS core network be developed by ETSI NA

GMM - Global Multimedia Mobility

- ❑ **Program Advisory Committee (PAC)**
 - To review the ETSI work program and organisation

- ❑ **GMM Report (1996): Proposals**
 - a totally new radio network, designed to interconnect to both
 - a Core Network based on an enhanced GSM CN and MAP
 - a Core Network based on B-ISDN and INAP

- ❑ **With GMM ETSI managed to**
 - ETSI abandoned the monolithic system thinking
 - Managed to resolve an organisational problem by allowing several STCs to work on the same matter to serve different business interest

- ❑ **Inspired by NII (National Information Infrastructure)**

The IMT2000 Family

- ❑ In the late 90ies TG 8/1 still had the ambition to specify one single complete worldwide system

- ❑ **Obstacles to the one single system:**
 - Differences wrt spectrum situation
 - Legacy systems
 - Regulatory aspects (technology competition)
 - Differences of business interests in general

- ❑ **The IMT2000 Family Concept (summer 1997):**
 - Framework (=performance criteria) to be done by TG8/1
 - Detailed standards to be done by regional standards bodies
 - Evaluation of candidates to be done by TG8/1

- ❑ **A precursor invented by FAMOUS (Future Advanced Mobile Universal System)**

UMTS Task Force - Mission

- ❑ **To propose a European strategy towards of UMTS, with consideration of**
 - **user and service requirements**
 - **the path to UMTS**
 - **European ITU representation**
 - **frequency allocation philosophy**
 - **regulatory and licensing issues**
 - **and other critical strategy matters**

UMTS Task Force - Recommendations

□ Some of the UMTS TF Recommendations

- UMTS will offer a path from existing Second Generation digital system, GSM 900, DCS 1800 and DECT
- GSM 900, DCS 1800 and DECT should be enhanced to achieve their full individual and combinational commercial potential
- UMTS regulatory framework (services and spectrum) must be defined by the end of 1997 to reduce the risks and uncertainties for the telecommunications industry and thereby stimulate the required investment
- Establishment of a UMTS Forum as a central body charged with the elaboration of requirements towards regulatory framework and spectrum based on an industry wide consensus

UMTS Forum

- ❑ Created during 1996, following the UMTS TF recommendations

- ❑ Still unclear purpose in spite of the UMTS Task Force Report
 - Several other Fora around at this time, most (all?) dealing with technical matters including standardisation
 - The UMTS Task Force talks about “.....*the establishment of the UMTS Forum as the central body charged with the elaboration of European policy.....*”
 - Many different expectations, some skepticism

UMTS Forum - activities

- ❑ **Regulation**
 - **Licensing, licence conditions**

- ❑ **Spectrum**
 - **Estimation of spectrum need, minimum spectrum/operator**
 - **WARC contributions**
 - **UMTS Forum relieved SMG from all tasks related to spectrum**

- ❑ **Market Analysis**
 - **Focus on services, business potential and success factors**

- ❑ **Technical Vision and Global Promotion**
 - **Lobbying activities aiming to raise the awareness of multimedia applications and to promote GMM and the IMT 2000 Family Concept.**
 - **Engagement in the initial building of 3GPP**

SUMMMARY - The Way out of the Mist

GMM

- Because it resolved a technical architecture problem and an associated political problem

IMT2000 Family

- Because it created realistic goals for global standardization

3GPP

- Because it resolved an urgent organisational problem associated with global standardization