IMT-2000 standards developments

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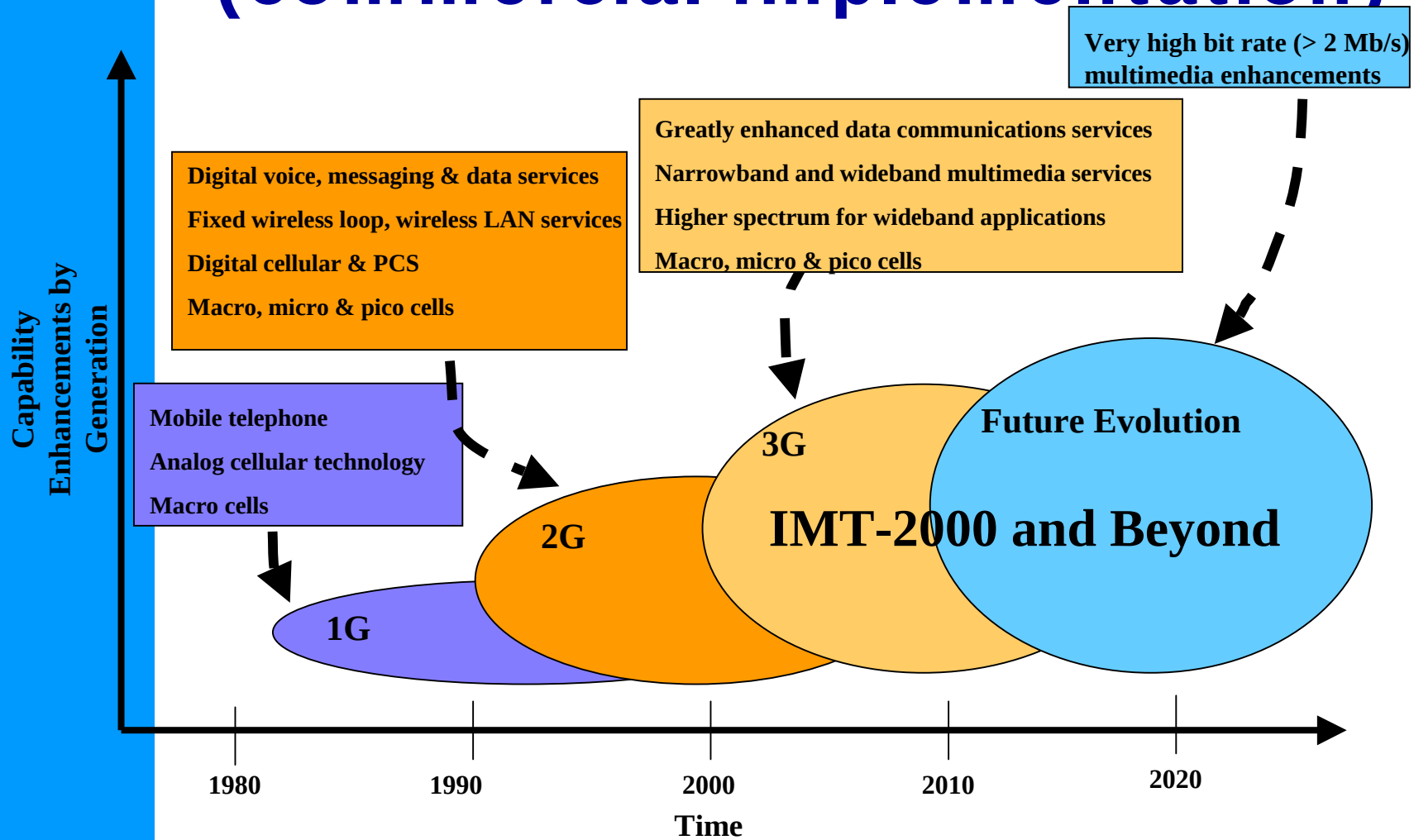
ITU Sub-Regional Seminar on IMT-2000
(Warsaw, 2-4 October 2001)

Overview

- Introduction
- ITU-T Special Study Group
- Study questions
- ITU-T SSG meeting schedule
- ITU-T SSG deliverables
- ITU-T SSG value-added

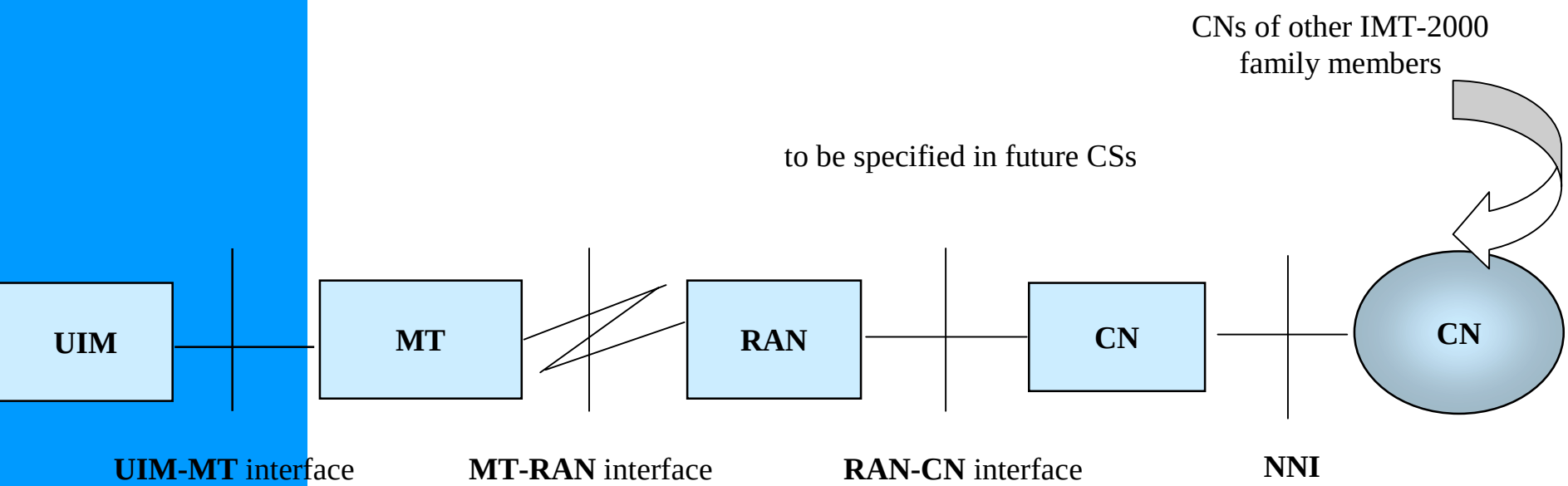
Mobile communications evolution (commercial implementation)



World Telecommunication Standardization Assembly (WTSA-2000), Montreal

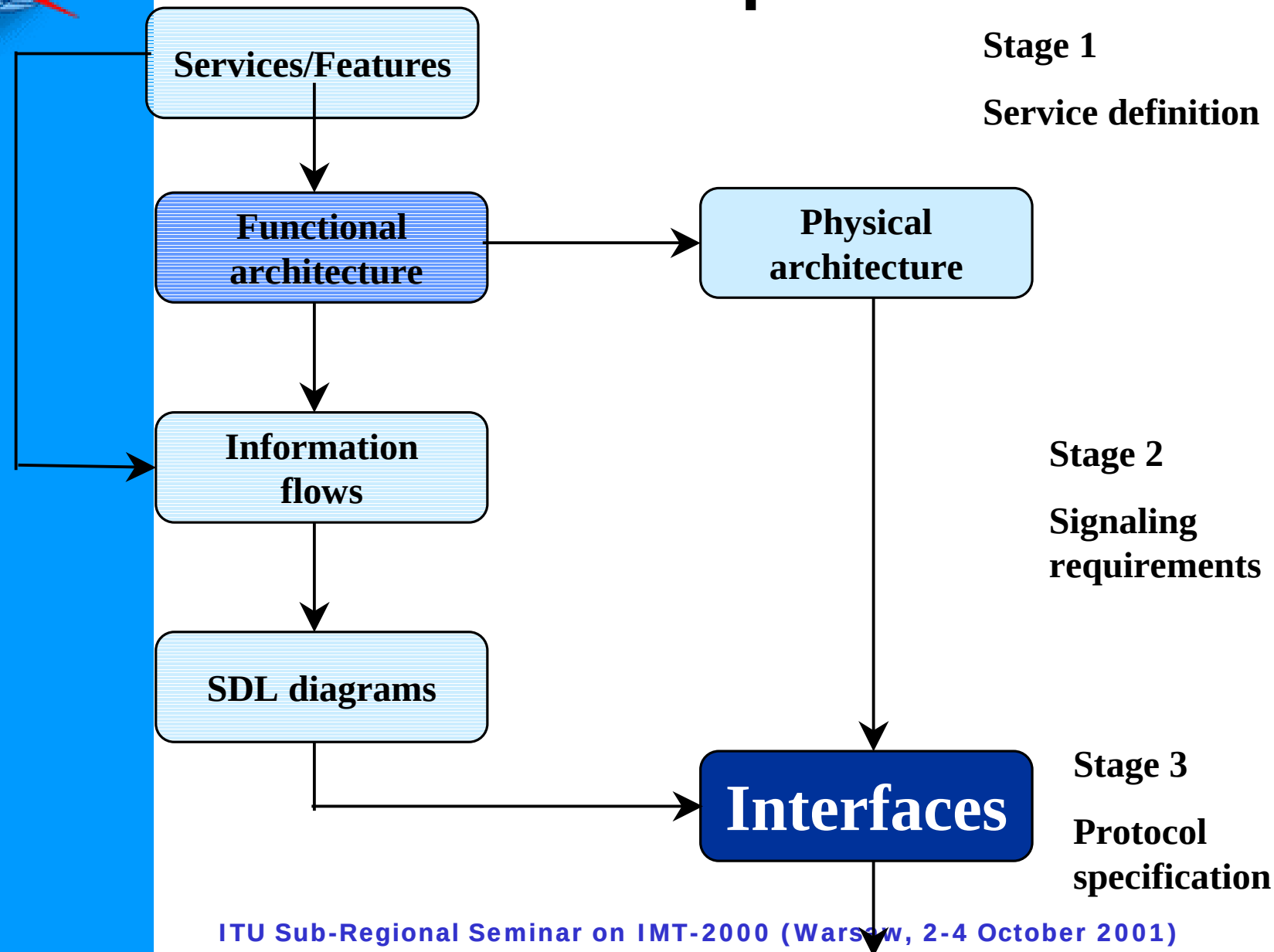
- Approved new AAP
- Established a Special Study Group (SSG) on “IMT-2000 and Beyond”
- A new Recommendation A.9 for SSG
- Resolution 18 for coordination between ITU-R and ITU-T Sectors

Physical interfaces of an IMT-2000 Family Member system

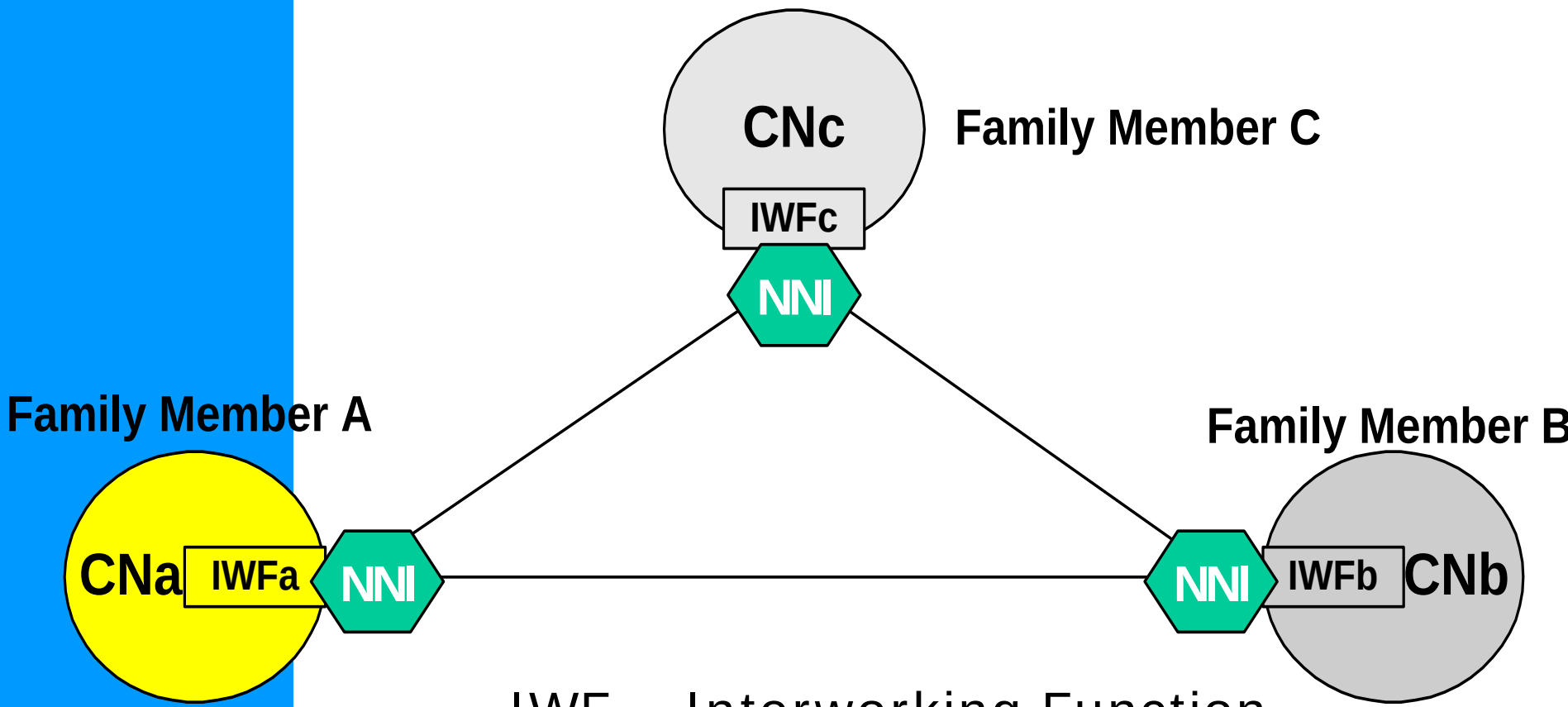


UIM – User Identity Module
MT – Mobile Terminal
RAN – Radio Access Network
CN – Core Network
NNI or CN–CN – Network-to-Network Interface

Three-stage process for interface specification



Common NNI in the IMT-2000 Family Member interconnection model



IWF – Interworking Function

SSG: IMT-2000 and Beyond

- Responsible for studies relating to network aspects of International Mobile Telecommunications 2000 (IMT-2000) and Beyond, including wireless Internet, convergence of mobile and fixed networks, mobility management, mobile multimedia functions, internetworking, interoperability and enhancements to existing ITU-T Recommendations on IMT-2000.
- Lead Study Group on IMT-2000 and Beyond and for mobility.

SSG Management Team

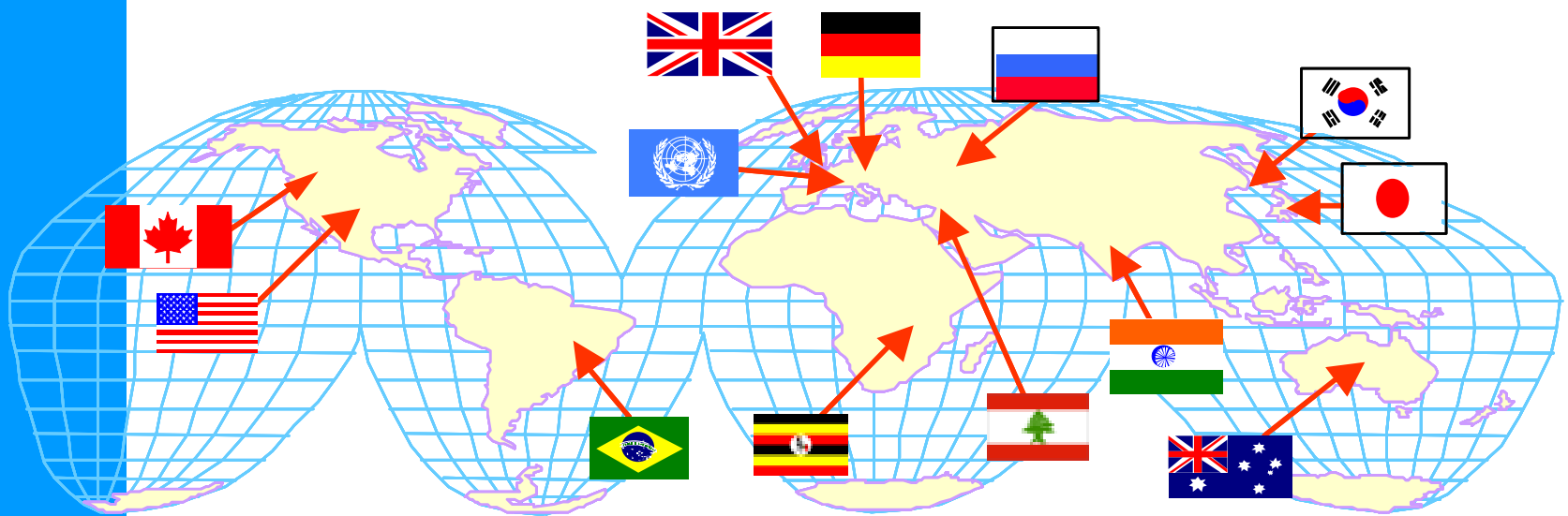
Chairman: Mr. J. Visser (Nortel Networks, Canada)

Vice Chairmen:
Mr. M. Ghazal (Lebanon)
Mr. M. Briggs (British Telecom, UK)
Mr. K. Lathia (Siemens, Germany)
Mr. L. Graf (Ericsson, Australia)
Mr. Y.K. Kim (Samsung, Korea)
Mr. H. Nakamura (NTT DoCoMo, Japan)
Mr. B. Ramos (Anatel, Brazil)
Mr. Y. Trofimov (Russia)
Mr. S. Husain (Motorola, USA)
Mr. P.F. Masambu (Uganda)
Mr. K.K. Sirohi (India)

TSB Engineer: Mrs. T. Tchaika

SSG management team

- larger than usual
- Strength in diversity:
  - viewpoints from vendors, operators and regulators
  - viewpoints from developed and developing countries



ITU positioning

Intergovernment

ITU

(ITU-T and ITU-R)

Task Force

IETF

NGOs

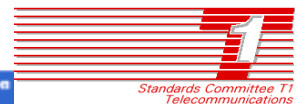
ISO,IEC,
IEEE, ETSI, ECMA
TTC, Committee T1,
ARIB, TIA, SCTE

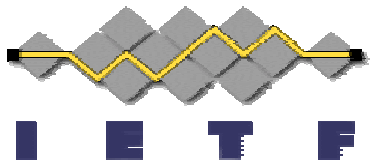
Forums & Consortia

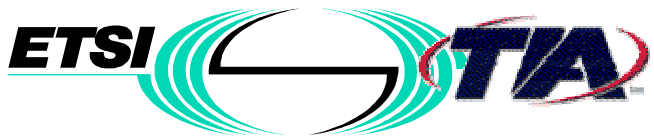
1394TA	3GPP	3GPP2	AIM	AMF	AMI-C
AOEMA	AOW	ATMF	BINTERMS	Bluetooth	Cable Modems
CBOP	CDG	CIF	CII	CommerceNet	CommerceNet J
COS	CTFJ	DHF	DISA	DOPG	DSLF
ECE	ECHONET	ECOM	ECTF	EDIFICE	EEMA
EIDX	EMA	EMF	ERTICO	EWOS	FCIA
FCIA-J	FIPA	FRF	FSAN	GSM Assoc.	HNF
Home API	HomePNA	HRFWG	IDB Forum	IFIP	IFSA
IMTC	IMWA	IrDA	ITS America	ITS UK	JAVA
JCTEA	JECALS	JEDIC	JEMA	JICSAP	JIMM
JMF	LONMARK	MCPC	MDG.org	MITF	MMCF
Mobile Web	MOPA	MPLSF	MSForum	MWIF	OASIS
ODVA	OIF	OMG	OSGi	PCCA	PCISIG
PCMCIA	PHS MoU	PICMG	POF	Salutation	SCF
SDR	SSIPG	STA	TINA-C	TMForum	TOG
TSC	UMTS	USBIF	UWCC	W3C	WAP
WDF	Web 3D	WfMC	WIN Forum	WLIF	XTP Forum

Relationships

- ITU-R
- ITU-D
- 3GPP
- 3GPP2
- IETF
- Regional SDOs
- Other relevant forums
  - OHG
  - 3G.IP
  - MWIF
  - etc.



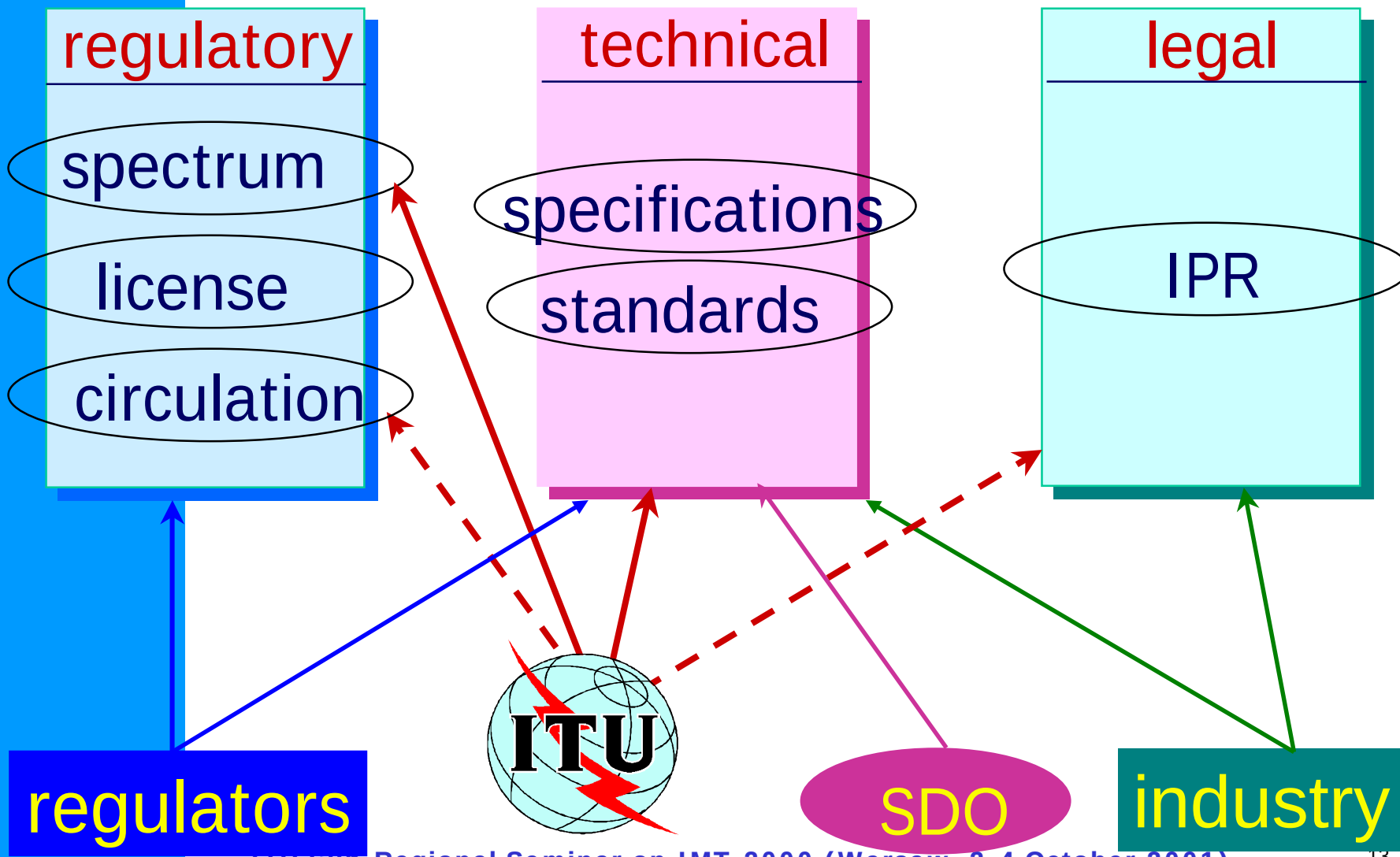




IMT-2000 Framework & Participants

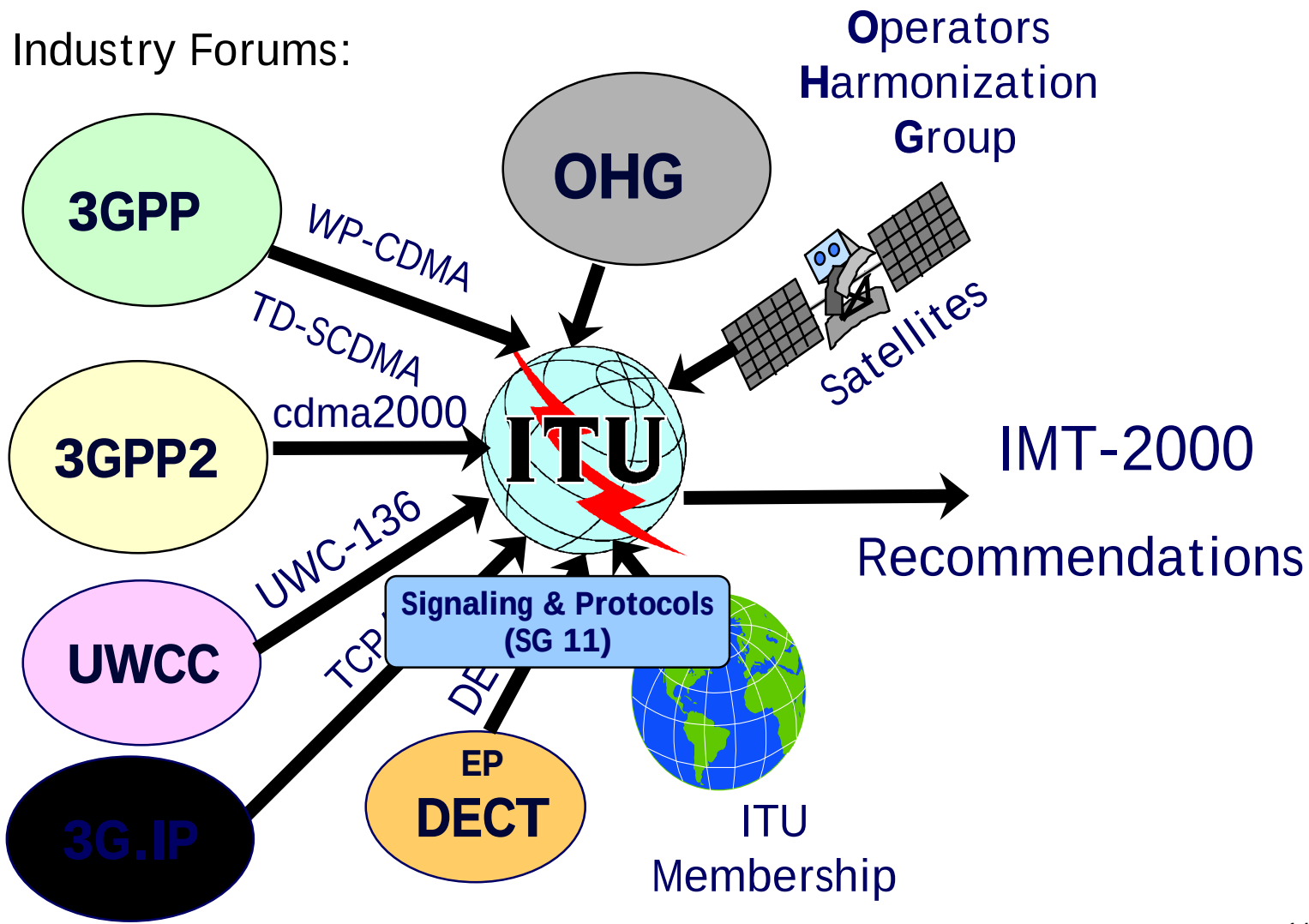
Frameworks

Participants



Global Collaboration

3G Partnership Projects



ITU-T Recommendations

- Q.1701 (03/99) - Framework for IMT-2000 Networks
- Q.1711 (03/99) - Network Functional Model for IMT-2000
- Q.1721 (06/00) - Information Flows for IMT-2000 CS-1
- Q.1731 (06/00) - Radio Technology Independent Requirements for IMT-2000 Layer 2 Radio Interface
- Q.1751(06/00) - Internetwork Signalling Requirements for IMT-2000 Capability Set 1
- Supplement 30 (12/00) to Series Q Recommendations - Supplement to ITU-T Recommendation Q.1701: Specifications of International Mobile Telecommunications-2000 (IMT-2000)

Q.1/SSG
Service and Network capability requirements and network architecture

- establish a clear vision for future mobile services and network capability requirements for "beyond IMT-2000 systems"

Q.2/SSG
NNI mobility management protocol (Stage 3)

- define new mobility management signalling application protocols, or enhancements to existing protocols, needed to support IMT-2000 services to enable global roaming between different IMT-2000 family systems.
  - An explanation of the 3 Stage process may be found in Recommendation I.130.

Q.3/SSG
Identification of existing and evolving IMT-2000 Systems

- identify architectures, detailed specifications and releases which have been and will be produced by recognized SDOs which make up existing and evolving IMT-2000 systems.

Q.4/SSG
Interworking functions to be used with existing and evolving IMT-2000 systems

- identify (and define if not done elsewhere) interworking functions to facilitate appropriate interworking between existing and evolving IMT-2000 family members, PSTN/ISDN and Packet Data Networks

Q.5/SSG
Preparation of a Handbook on IMT-2000

- work with the D and R sectors, coordinate T sector input for a handbook on IMT-2000 to assist developed and developing countries

Q.6/SSG
Harmonisation of evolving IMT-2000 Systems

- define interface requirements and network architectures for harmonization of existing and evolving IMT-2000 systems to provide seamless global roaming for IMT-2000 future Capability Sets (that include high speed packet data, multimedia, and IP-based services)

Q.7/SSG
Convergence of fixed and existing IMT-2000 systems

- Describe the principles and requirements for the convergence of fixed and IMT-2000 networks
- Identify and study network architecture and interface issues which will facilitate evolution of existing public fixed networks towards converged core networks

Q.8/SSG
Special Study Group working procedures

- considering the provisional working procedures for the SSG (Rec. A.9), develop further working procedures (including new output document types as appropriate) to ensure that the SSG can respond rapidly to the requirements of Member States and Sector Members.

SSG meetings (1/2)

Full SSG (2000)

- **Dec 11-15 Geneva Inaugural**

Rapporteurs

- **Feb 12-13 Stockholm Q.3/SSG**
- **Feb 14-16 Paris Q.1/SSG**

Full SSG (2001)

- **May 7-11 Geneva**
- Aug 30–Sept 5 **Rio de Janeiro**, with seminar

SSG Chairman's Correspondence

SSG Chairman's Correspondence

Address OHG Correspondence

SSG meetings (2/2)

Electronic Meeting

- Q.1/SSG 23-31 July 2001

Conference Calls

- Q.6/SSG 20 June 2001
- Q.7/SSG 28 June 2001
- Q.3/SSG 8 August 2001

Electronic meetings

- Q.1/SSG 31 October - 13 November 2001
- Q.6/SSG Middle of November 2001, duration - 1 week
- Q.1/SSG (Editor's Meeting) 28 November - 5 December 2001
- Q.7/SSG Early December 2001
- Q.1/SSG 9 - 22 January 2002
- Q.1/SSG (Editor's Meeting) 7 - 13 February 2002

Rapporteurs meetings

- Q.3/SSG 3 - 4 December 2001 Helsinki, Finland (hosted by Nokia)
- Q.8/SSG 12 - 14 March 2002 Mount Buffalo, Australia (hosted by Ericsson Australia)
- Q.5/SSG 14 March 2002 Mount Buffalo, Australia (hosted by Ericsson Australia)
- Q.1/SSG 18 - 22 March 2002 TBD

Working party and Study Group meetings

- WP2/SSG February 2002 (half day) Geneva, Switzerland
  - First draft new Recommendation for AAP consent: Q.1741.1 - "GSM evolved UMTS core network with UTRAN access network"
- SSG meeting and Seminar: late May 2002 Ottawa, Canada
- SSG meeting: early November 2002 Republic of Korea

SSG deliverables (2001)

- New type of output, **Q.6: Degree of harmonisation of existing IMT-2000 systems**

- Rec. A.9, **revised, Q.8: "Provisional working procedures for the SSG on IMT-2000 and beyond" (new types of outputs)**

SSG deliverables (2002, 1/4)

- Tech. Report, Q.1: Summary of a gap analysis on the current status and trends in customer user needs, technology, market and standardization requirements
- New Rec. Q.SCFN, Q.1: Aspects of service capability requirements, including VHE
- New Rec., Q.LTVN, Q.1: ITU long-term vision (focused around year 2010) on systems beyond IMT-2000 for future mobile service and network capabilities requirements
- Tech. Report, Q.2: New protocols for Common Mobility Management and Global Roaming

SSG deliverables (2002, 2/4)

- New Rec. Q.1741.1, Q.3: "GSM evolved UMTS core network with UTRAN access network"
- New Rec. Q.1741.2, Q.3: "GSM evolved UMTS core network with UTRAN access network" (Release 4)
- New Rec. Q.1742.1, Q.3: "ANSI-41 evolved core network with cdma2000 access network"
- New Rec. Q.1743.1, Q.3: "ANSI-41/GPRS evolved core network with UWC-136 access network"

SSG deliverables (2002, 3/4)

- New Rec., Q.4: Functions required to interwork between IMT-2000 family members developed by SDOs
- New Rec., Q.4: Functions required to interwork between IMT-2000 family members and PSTN/ISDN
- New Rec., Q.4: Functions required to interwork between IMT-2000 family members and Packet Data Networks

SSG deliverables (2002, 4/4)

- Handbook on IMT-2000 deployment, Q.5
- New type of output, Q.6: Harmonisation issues relating to existing IMT-2000 systems
- New type of output, Q.6: Harmonisation proposals for evolving IMT-2000 systems
- New Rec., Q.7: Principles and requirements for convergence of public fixed networks and IMT-2000 networks
- Rec. A.9, revised, Q.8: “Provisional working procedures for the SSG on IMT-2000 and beyond” (new working methods)

SSG deliverables (2003)

- New Rec., Q.1: Long-term high-level network architecture for beyond IMT-2000 systems
- New Rec. , Q.1: Network capabilities requirements
- New Rec., Q.2: Requirements for new Mobility Management protocols to support Global Roaming in IMT-2000 and beyond
- New Rec., Q.7: Network architecture and interface requirements facilitating evolution of existing public fixed networks towards converged core network, supporting IMT-2000 capabilities
- New Rec., Q.7: Access network interface requirements for utilizing IMT-2000 radio access technologies as FWA with existing public fixed networks

SSG deliverables (2004)

- Tech. Report**, Q.2: Identification of the mobility management features and studies the protocol to interoperability, transport layers and mobility management**

- New Rec., **Q.7: Architectural and network interface requirements for converged core network to facilitate services transparency to users across different access arrangements, including migration path for network convergence**

Value added to IMT-2000 standardization by ITU-T (1/2)

- Leadership through coordination, consensus building, and collaborative working arrangements
  - **with 3GPPs, SDOs, other relevant forums**
- Facilitating adoption of appropriate external specifications as ITU-T Recommendations
  - **act as a single source for IMT-2000 and related standards**
- Development of requirements and architectural framework Recommendations as needed and appropriate
  - **provide context and structure for IMT-2000 related specifications**

Value added to IMT-2000 standardization by ITU-T (2/2)

- Identifying emerging industry needs for global standards
  - **propose efficient and coordinated work planning and sharing arrangements with external forums to meet needs**
- Facilitating interoperability and interworking between IMT-2000 family members for global roaming, seamless service delivery
  - **provide interworking specifications if not done elsewhere**

For more information please visit our web site

ITU-T SSG web page

http://www.itu.int/ITU-T/ssg

and IMT-2000 web pages:

1. Network aspects
   http://www.itu.int/ITU-T/imt-2000
2. Radio aspects
   http://www.itu.int/imt