Partnership on a Global Scale
Recipe for 3rd Generation Mobile Wireless

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Contents

3GPP organization/structure/scope

What is 3GPP ?

3GPP is:

A collaborative agreement between Standards Development Organizations (SDOs) and other related bodies for the production of a complete set of globally applicable Technical Specifications and Reports for:

- a 3G System based on the evolved GSM core network and the Universal Terrestrial Radio Access (UTRA), FDD and TDD modes;

- the Global System for Mobile communication (GSM) including GSM evolved radio access technologies
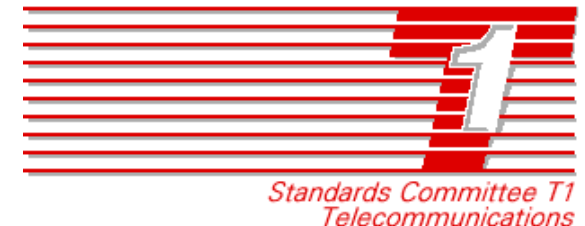
Organizational Partners

3GPP is:

- Open to all national/regional Standards Development Organizations irrespective of their geographical location *(Organizational Partners)*

CWTS

ETSI

ARIB

T1
Standards Committee T1
Telecommunications

TTC Telecommunication Technology Committee

TTA

A GLOBAL INITIATIVE

Organizational Partners

The Organizational Partners meet about twice a year. Discussion takes place electronically between meetings.

The OP meetings have no elected officials.

The chairmanship is the responsibility of the meeting host.

Delegations from the OPs have a nominated Head.

Market Representation Partners

3GPP is:

- Open to all organizations that can offer market advice and a consensus view of market requirements *(Market Representation Partners)*

Market Representation Partners

The Market Representation Partners do not hold formal meetings.

They do hold informal meetings to co-ordinate their views.

Interest has been shown by further potential MRPs

Observers

Observers are Standards Development Organizations (SDOs) who have the qualifications to become future Organizational Partners.

3GPP currently has three Observers:

- Telecommunications Industries Association (TIA)
- Telecommunications Standards Advisory Council of Canada (TSACC)
- Australian Communications Industry Forum (ACIF)

Individual Members

3GPP is:

- Open to the members who belong to each Organizational Partner
- Currently, more than 450 Individual Member companies are actively engaged in the work of 3GPP
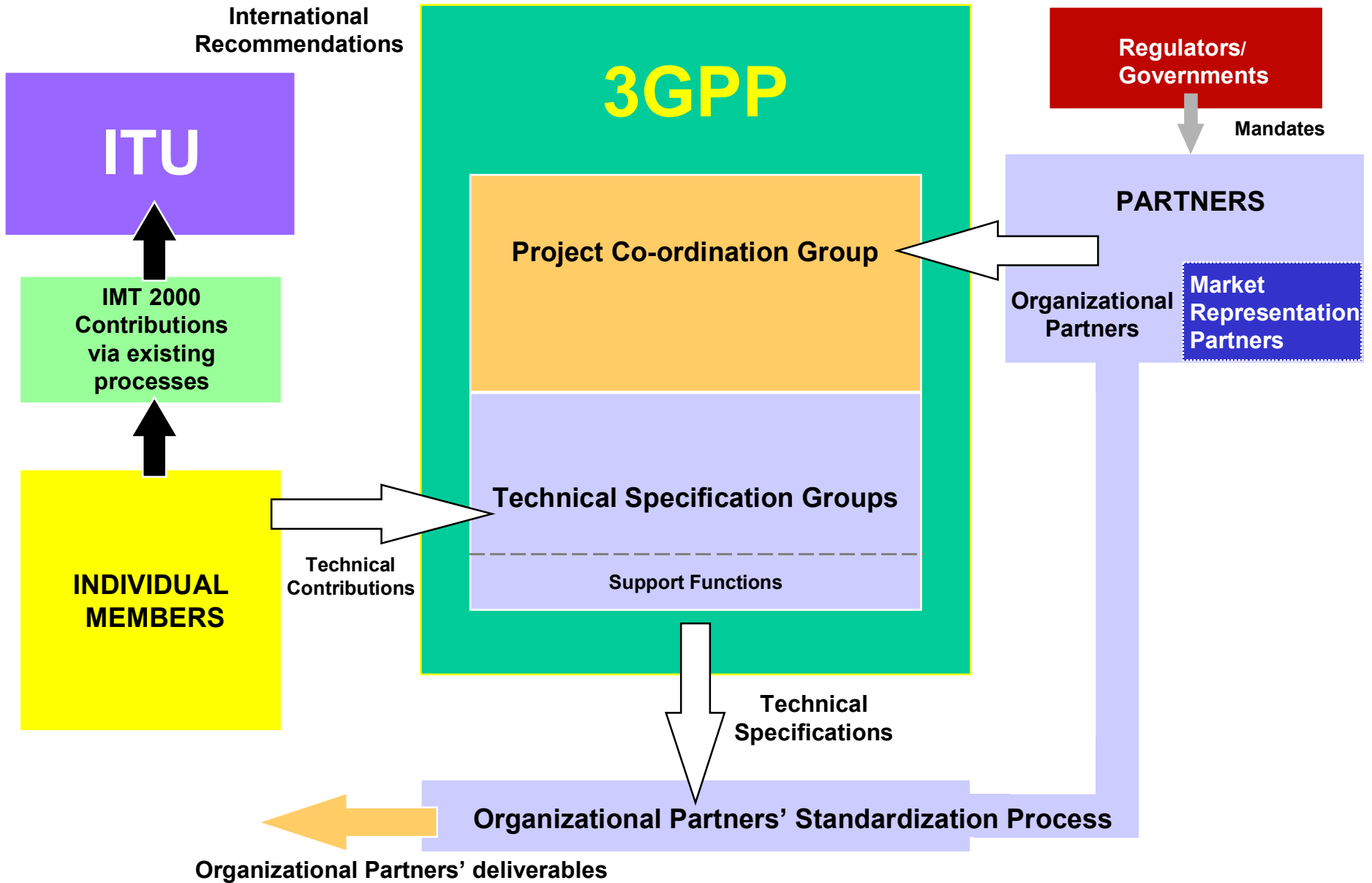
Legal status

3GPP has no legal status, but:

- The 3GPP results are jointly owned by the Organizational Partners
- The Organizational Partners transpose the results into their own deliverables (e.g. Standards)

What does 3GPP do ?

3GPP prepares Technical Specifications that:

- build on the success of the GSM Standard which currently serves over 550 Million users in more than 170 countries

- include an innovative wideband CDMA radio interface known as the "Universal Terrestrial Radio Access (UTRA)" which employs Time Division Duplex (TDD) modes and a Frequency Division Duplex (FDD) mode. The TDD modes include the low chip rate mode proposed by CWTS.

- form the basis of IMT 2000 family members

- define the evolution of the GSM platform

3GPP

International Recommendations

ITU

IMT 2000 Contributions via existing processes

INDIVIDUAL MEMBERS

Technical Contributions

Project Co-ordination Group

Technical Specification Groups

Support Functions

Regulators/ Governments

Mandates

PARTNERS

Organizational Partners

Market Representation Partners

Technical Specifications

Organizational Partners' Standardization Process

Organizational Partners' deliverables

How does 3GPP work ?

3GPP :

- combines the best practices of traditional standards bodies with those of fora
- employs fast and efficient working methods
- has a very flat organizational structure
- empowers the technical groups to approve their own deliverables
- provides high level and detailed project management functions
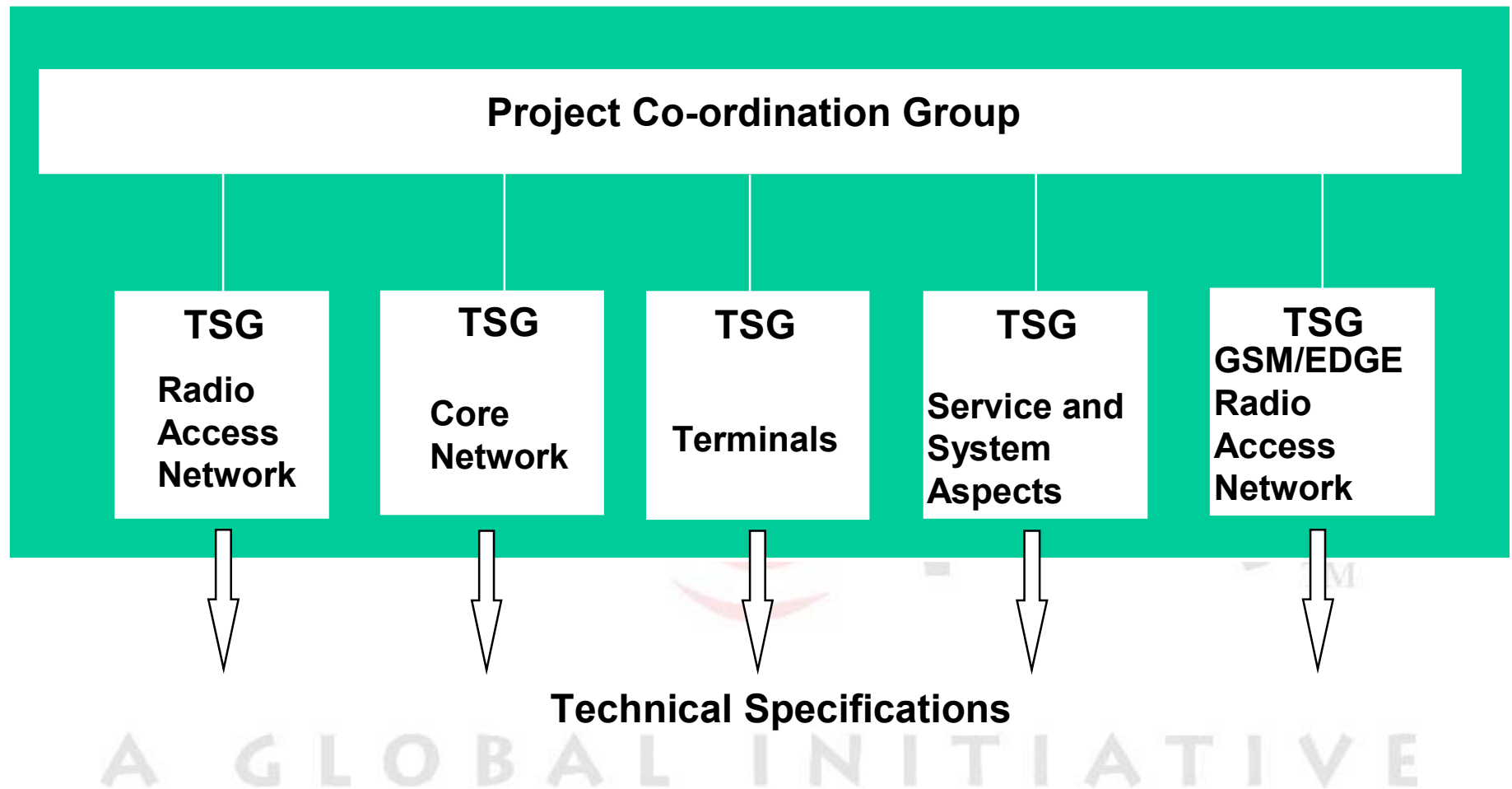- provides comprehensive project support by a permanent team of experts

Why work in this way ?

- Globalization from the outset

- Time to market

- Led by members and by market requirements

- Synergy between SDO and "forum like" approach

- Build on Global Standards Collaboration (GSC/RAST) experience

- Efficiency

- The future of Standardization is through <u>Partnerships</u>

How does 3GPP work ?

3GPP internal structure

Project Co-ordination Group

TSG	TSG	TSG	TSG	TSG
Radio Access Network	Core Network	Terminals	Service and System Aspects	GSM/EDGE Radio Access Network

Technical Specifications

The Project Co-ordination Group

The Project Co-ordination Group (PCG) meets about twice a year. Discussion takes place electronically between meetings.

Asok Chatterjee (T1) appointed as PCG Chairman for 2002

Karl Heinz Rosenbrock (ETSI) and Kyu-Jin Wee (TTA) appointed as PCG Vice-Chairmen for 2002

The Technical Specification Groups

The Technical Specification Groups meet in series/parallel (TSGs CN, RAN, T in parallel followed by TSG SA). They meet four times per year: in March, June, September and December.

TSG GERAN has its own schedule.

The TSGs have the authority to approve their own specifications.

TSG SA undertakes a co-ordination role across all TSGs.

Modern working methods

3GPP uses the following modern working methods:

- extensive use of email discussion lists (currently more than 70 discussion lists)
- 100% paperless meetings at the TSG level
- portable LAN installed for TSG meetings, for document distribution and parallel discussion groups
  - wired and radio LANs
  - *only* radio LANs from March 2002
- CD ROMs used as alternative document distribution media

Note: some TSG meetings treat more than 10000 document pages per meeting

The Mobile Competence Centre

3GPP has a Mobile Competence Center (MCC) providing comprehensive project support

MCC:

- is located at the ETSI HQ in Sophia Antipolis, France
- has 27 full time personnel
- is an International team of 14 nationalities from 4 continents
- has an annual budget of about 6 Million US dollars
- is ISO 9002 compliant

Work program & management

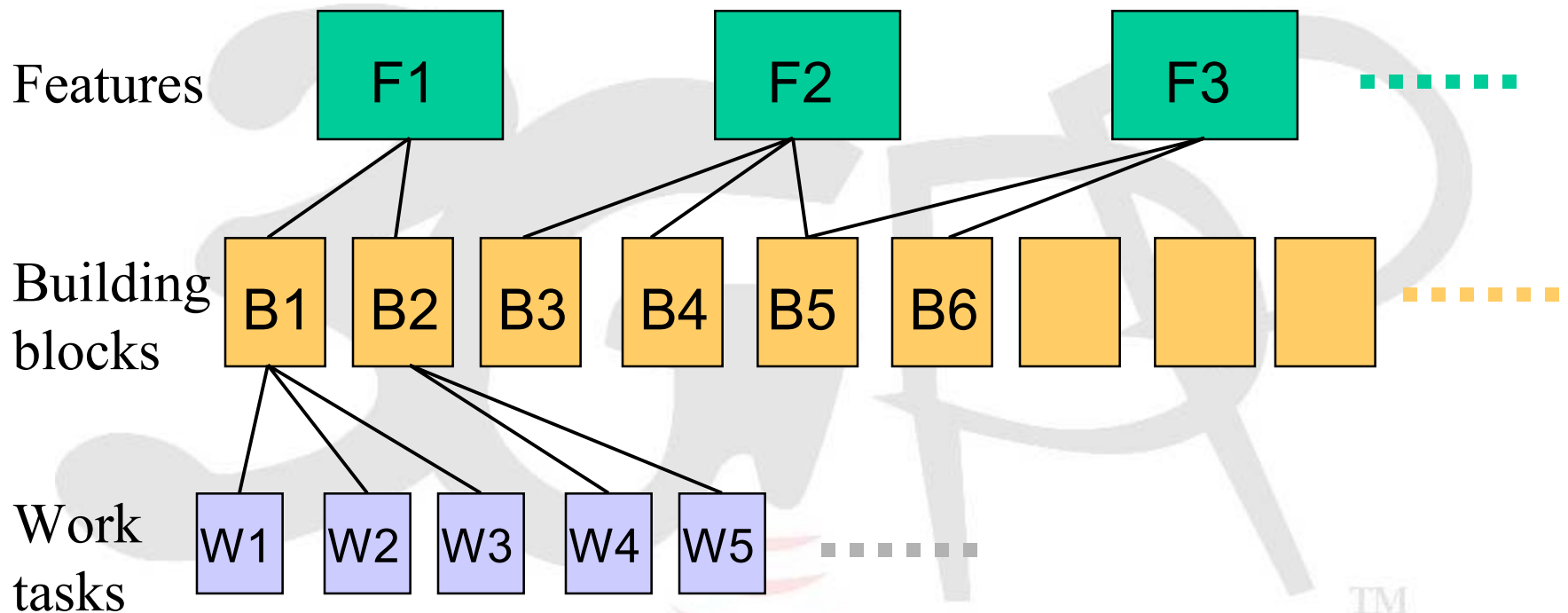# 3GPP Work Item Management

3GPP project management is based upon a concept of …

- **Work items:**
  - Feature
  - Building block
  - Work task

3GPP Work Item Management

Features   F1   F2   F3

Building blocks   B1   B2   B3   B4   B5   B6

Work tasks   W1   W2   W3   W4   W5

Project plan

- All Features, Building Blocks and Work Tasks are contained in the 3GPP Project Plan

- Plan based on Microsoft Project

- Gantt presentation available on 3GPP web site

- Open access – everyone can view the plan

http://www.3gpp.org/3G_Specs/wi_management.htm

Project planning and monitoring

- Need to show feature definition timescales:
  - When will a particular feature be fully defined?
  - When will its test specifications be available?
- Manufacturers need to know:
  - When is it safe to introduce products to the market?
- Network operators need to know:
  - When will equipment be available to start trials?
  - When will products be available for commercial supply?
  - When can we introduce service?

Project planning and monitoring

- "Freezing" a Release
    - When all new functionality is defined.
    - Does NOT imply that all specs are actually available!
    - But remaining specs are scheduled to be completed within a "reasonable" time.

Project planning and monitoring

- "Freezing" a Release
  - Typically, specs will be stable within three to six months of the Release freeze date (as announced by the TSGs).
  - But test specs and O&M specs may be six months later still.

3GPP releases

3GPP Releases

- **Specifications are grouped into "Releases"**

  – A mobile system can be constructed based on the set of all specifications which comprise a given Release

  – A Release differs from the previous Release by having added functionality introduced as a result of ongoing standardization work

  – Specifications pertaining to a given Release are distinguished by the first field of the version number ("x" in x.y.z)
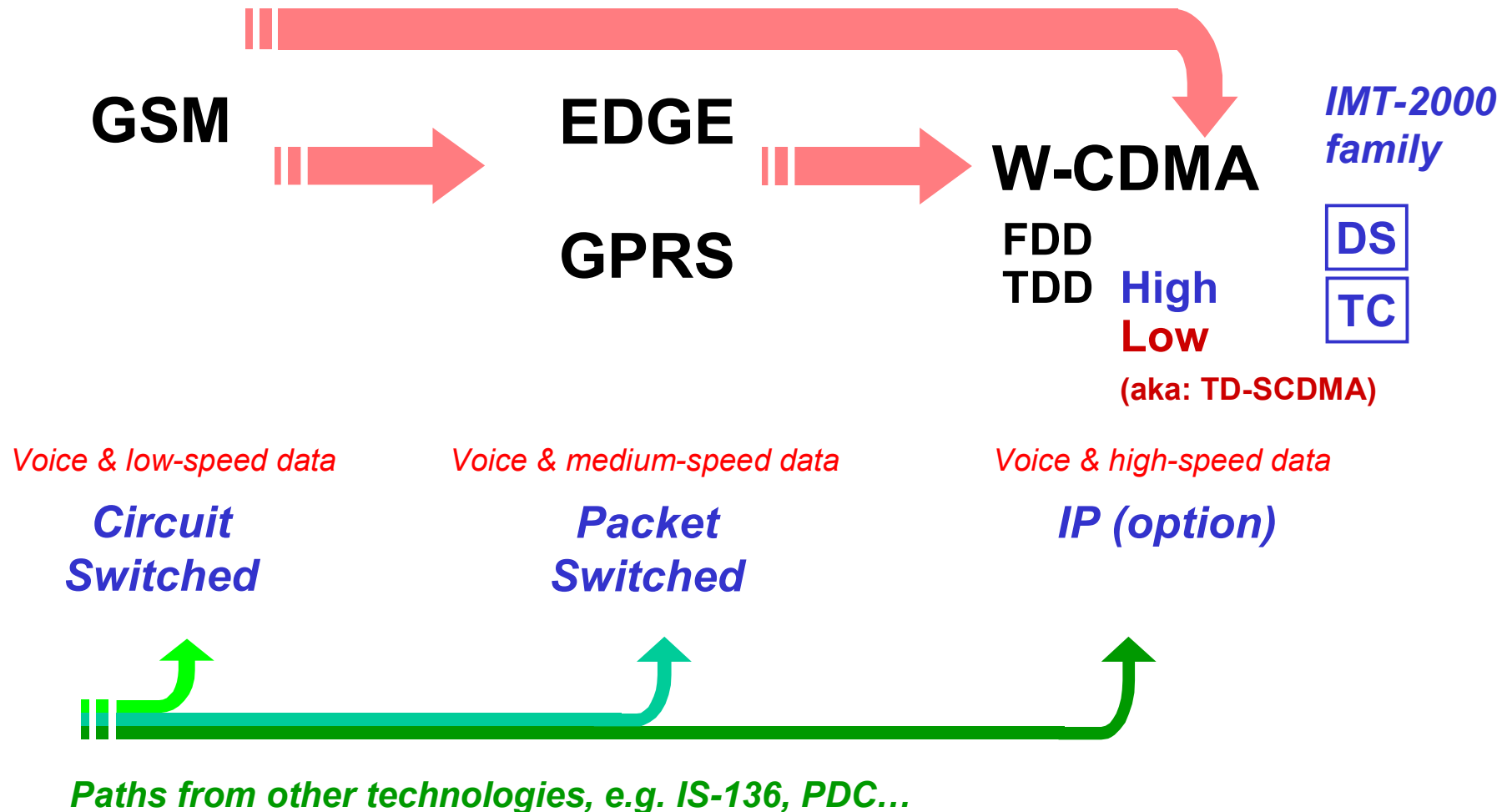
The 3GPP Releases so far

- **Release 99**
  - content frozen December 1999
- **Release 4**
  - content frozen March 2001
- **Release 5**
  - content to be frozen in March 2002

Technical evolution GSM – EDGE – W-CDMA

The paths to W-CDMA

GSM → **EDGE** / **GPRS** → **W-CDMA**

W-CDMA
FDD
TDD **High**
Low
(aka: TD-SCDMA)

IMT-2000 family

DS
TC

Voice & low-speed data
Circuit Switched

Voice & medium-speed data
Packet Switched

Voice & high-speed data
IP (option)

Paths from other technologies, e.g. IS-136, PDC…

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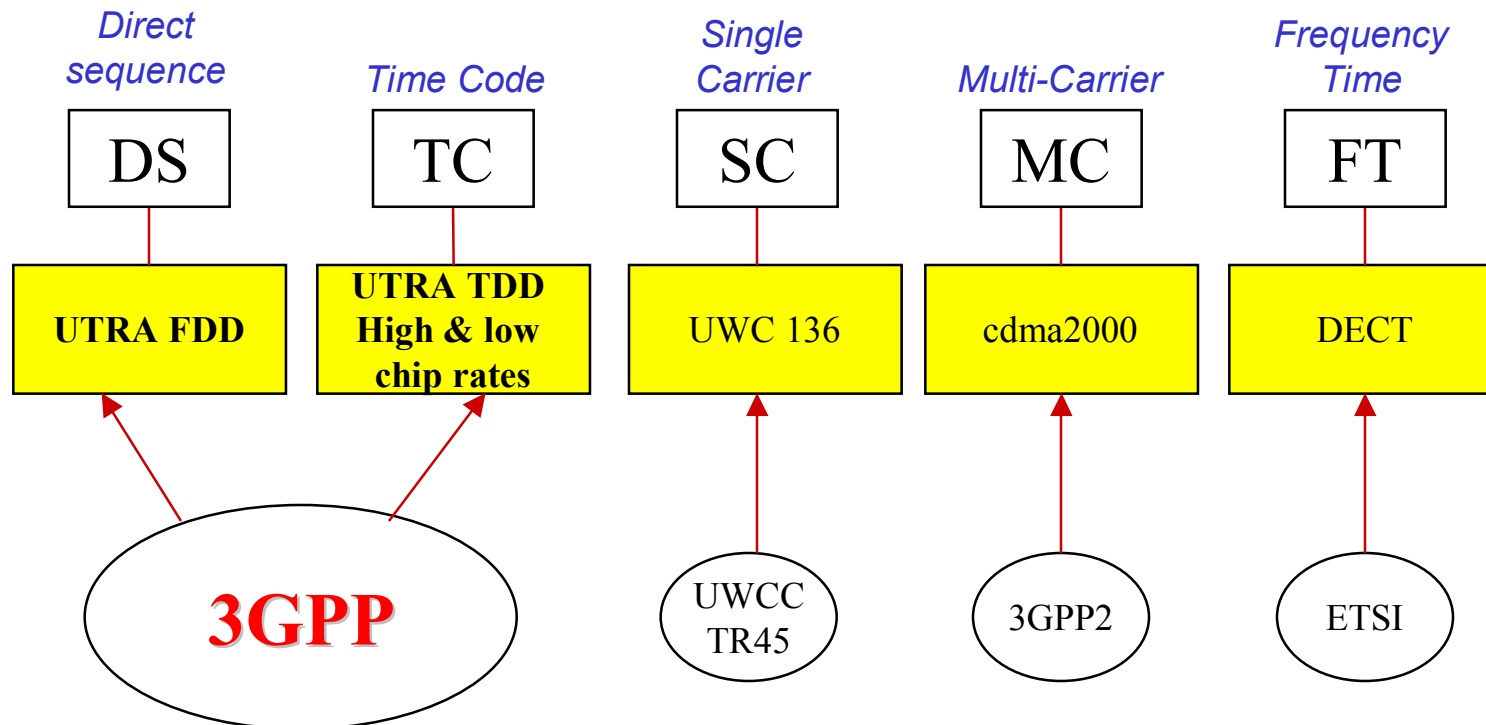# Role of ITU & interfaces to 3GPP – IMT-2000 family concept & goals

IMT-2000

The 5 IMT 2000 terrestrial interfaces agreed by ITU-R

What is the relationship between 3GPP and ITU ?

ITU-R

3GPP contributes to the ongoing ITU Rec M.1457 (IMT.RSPC) activity:

- specification work is performed in the Partnership Project
- the resulting specifications are transposed by the Organizational Partners (OPs)
- the OPs provide inputs to update Recommendation M.1457
  - according to the OPs' individual working arrangements (e.g. input to ITU-R via Individual Members)
  - according to the ITU timetable

ITU-T

- Special Study Group "IMT-2000 and Beyond"
- 3GPP liaises closely and contributes to ITU-T IMT-2000 "road map"

ITU is invited to PCG meetings

External relations

Other bodies with whom 3GPP liaises

- GSM Association
- Internet Engineering Task Force (IETF)
- Voice eXtensible Mark-up Language (VXML) Forum
- World Wide Web Consortium (W3C)
- Sun Micro Systems
- European Radiocommunications Committee (ERC)
- Wireless Application Protocol (WAP) Forum
- CISPR
- 3GPP2
- UWCC

- TIA / TR45
- SDR Forum
- IrDA
- RSA Laboratories
- TeleManagement Forum (TMF)
- IDB Forum
- ISO-ITU expert group
- Java in Advanced Intelligent Networks (JAIN)
- Object Management Group (OMG)
- SyncML Initiative
- Digital Video Broadcasting (DVB) Project
- The Parley Group
- ISO MPEG

Conclusions

Conclusions

- 3GPP is well established

- 6 OPs representing Europe, Asia and North America

- 8 MRPs (vendors, operators) provide consolidated market requirements

- Results are of an unprecedented volume and speed

- Release '99 firmly established
    - more than 300 Technical Specifications and Reports
    - an unprecedented achievement in standardization!

- Release 4 stable (March 2001)

- Stable plans for Release 5 (March 2002)

- Releases 4 and 5 include use of Internet Protocols plus numerous other features and enhancements

- 3GPP is the principal driver in IMT 2000

http://www.3gpp.org