ITU-T Structure

Polidori Stefano

TSB – Telecommunication Standardization Bureau

Telecommunication Standardization Workshop

25-27 October 2006, Maputo, Mozambique

Outline

ITU-T

1) ITU International Telecommunication Union

- Administrative entities
- Structure

2) ITU-T (Standardization Sector of ITU)

- Administrative entities
- Mission
- Membership
- Structure
- Workshops
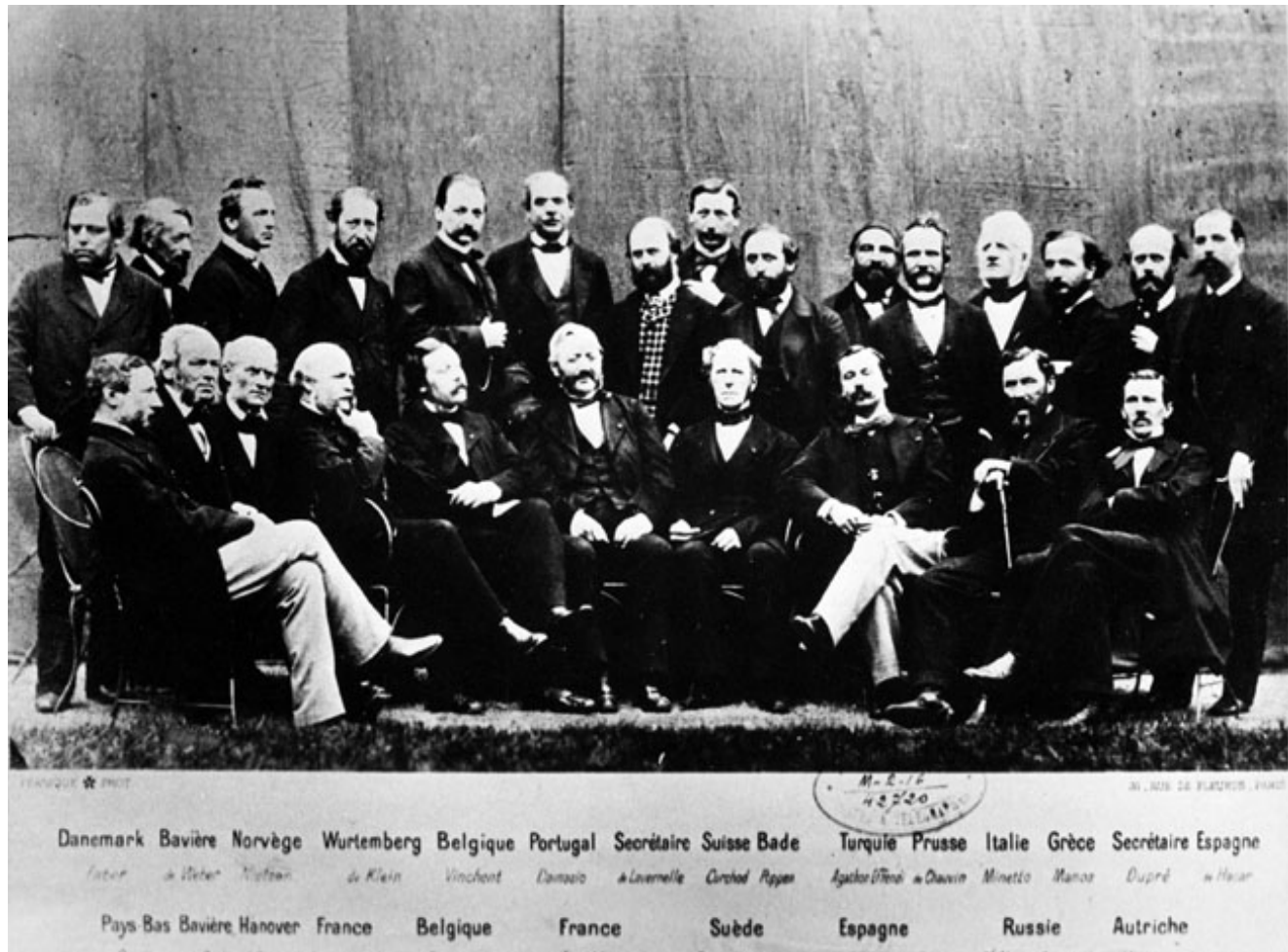- Intellectual property Rights (IPR)

ITU Landmarks

ITU-T

- **1837 Invention of the first electric telegraph**
- **1844 Samuel Morse sent his first public message over a telegraph line between Washington and Baltimore**
- *1865 Foundation of the International Telegraph Union by twenty States with the adoption of the first Convention. First Telegraph Regulations.*
- 1876 Alexander Graham Bell patents his invention of the telephone
- **1924 Paris - Creation of CCIF (International Telephone Consultative Committee)**
- **1925 Paris - Creation of CCIT (International Telegraph Consultative Committee)**
- **1927 Washington - Creation of the CCIR (Intl. Radio Consultative Committee)**
- *1932 Madrid - Plenipotentiary Conference. Telegraph Union changes name to International Telecommunication Union - ITU*
- **1947 ITU becomes a Specialized Agency of the United Nations**
- **1956 Geneva - CCIF and CCIT merged into CCITT (International Telegraph and Telephone Consultative Committee)**
- *1992 Geneva - Plenipotentiary Conference. Creation of 3 Sectors: ITU-T (CCITT), ITU-R (IFRB, CCIR), and ITU-D (TCD)*

1865 Foundation of the International Telegraph Union

Danemark Bavière Norvège Wurtemberg Belgique Portugal Secrétaire Suisse Bade Turquie Prusse Italie Grèce Secrétaire Espagne

Pays-Bas Bavière Hanover France Belgique France Suède Espagne Russie Autriche

ITU-T

International Telecommunication Union

- Founded in 1865, it is the oldest specialized agency of the United Nations system

- ITU is an International organization where governments, industries, telecom operators, service providers and regulators work together to coordinate global telecommunication networks and services

Help the world communicate!

- 190 Member States (Government), 650 Sector Members (private sector)

What does ITU actually do?

ITU-T

- Spectrum allocation and registration
- Coordinate national spectrum planning
- International telecoms/ICT standardization
- Collaborate in international tariff-setting
- Cooperate in telecommunications development assistance
- Develop measures for ensuring safety of life
- Provide policy reviews and information exchange
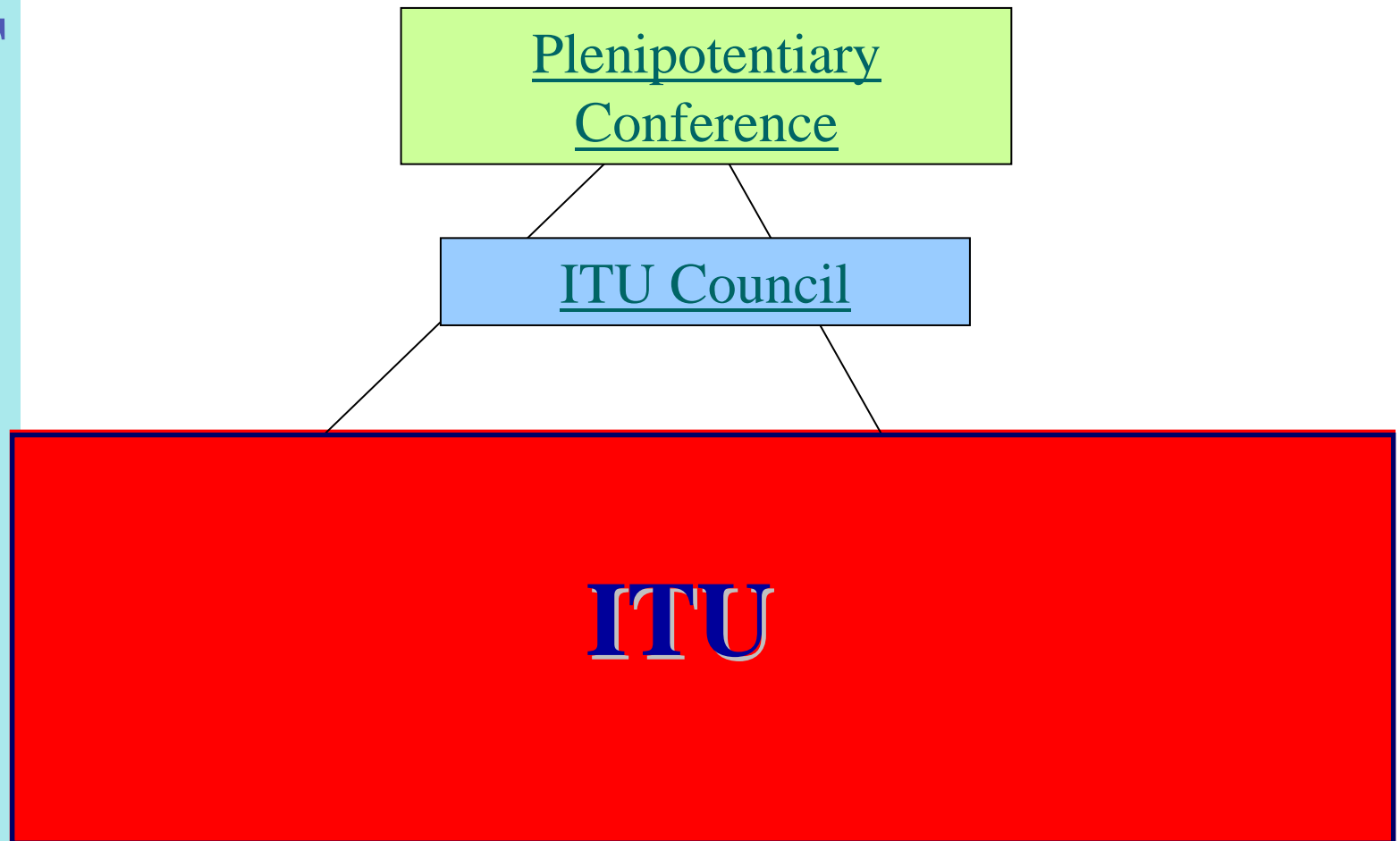- Insure and extend universal Telecom access

ITU Administrative Entities

ITU-T

Plenipotentiary Conference

ITU Council

ITU

TSB
Telecommunication Standardization Bureau

ITU-T Structure and Working Groups

ITU Administrative Entities

ITU-T

Plenipotentiary Conference

ITU Council

ITU

General Secretariat

ITU-T
World Telecommunication Standardization Assembly

ITU-R
World Radiocommunication Conference Radiocommunication Assembly

ITU-D
World Telecommunication Development Conference

TSB
Telecommunication Standardization Bureau
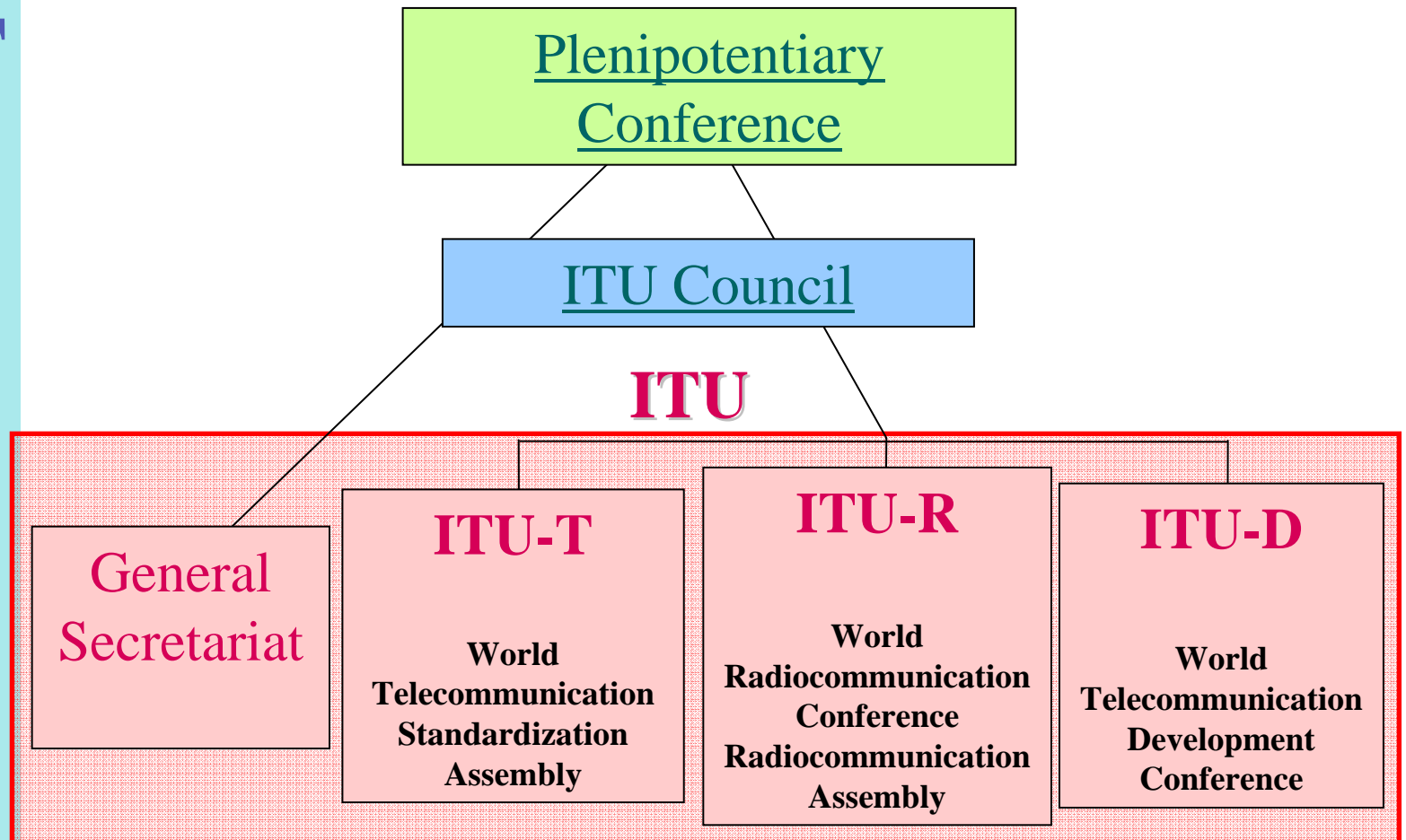
Plenipotentiary Conference

ITU-T

Key event, all ITU Member States decide on the future role of the organization

- Top policy-making body of ITU
- Held every four years (Previous Marrakesh 2002, next 6-24 November 2006 Antalya, Turkey)
- Sets the Union's general policies
- Adopts four-year strategic and financial plans
- Elects senior management team of the organization.

ITU Senior Management

ITU-T

Secretary-General

Deputy to the
Secretary-General

BR - DIRECTOR	TSB - DIRECTOR	BDT - DIRECTOR
Radiocommunication Bureau	Telecommunication Standardization Bureau	Telecommunication Development Bureau
ITU-R	ITU-T	ITU-D

ITU Council

The role of the Council is to consider, in the interval between Plenipotentiary Conferences, broad telecommunication policy issues to ensure that the Union's activities, policies and strategies fully respond to today's dynamic, rapidly changing telecommunication environment (held yearly)

- Prepares a report on ITU policy and strategic planning.
- Responsible for ensuring the smooth day-to-day running of the Union
- Facilitate the implementation of the ITU constitution, ITU convention and Plenipotentiary decisions
- Coordinate work programmes
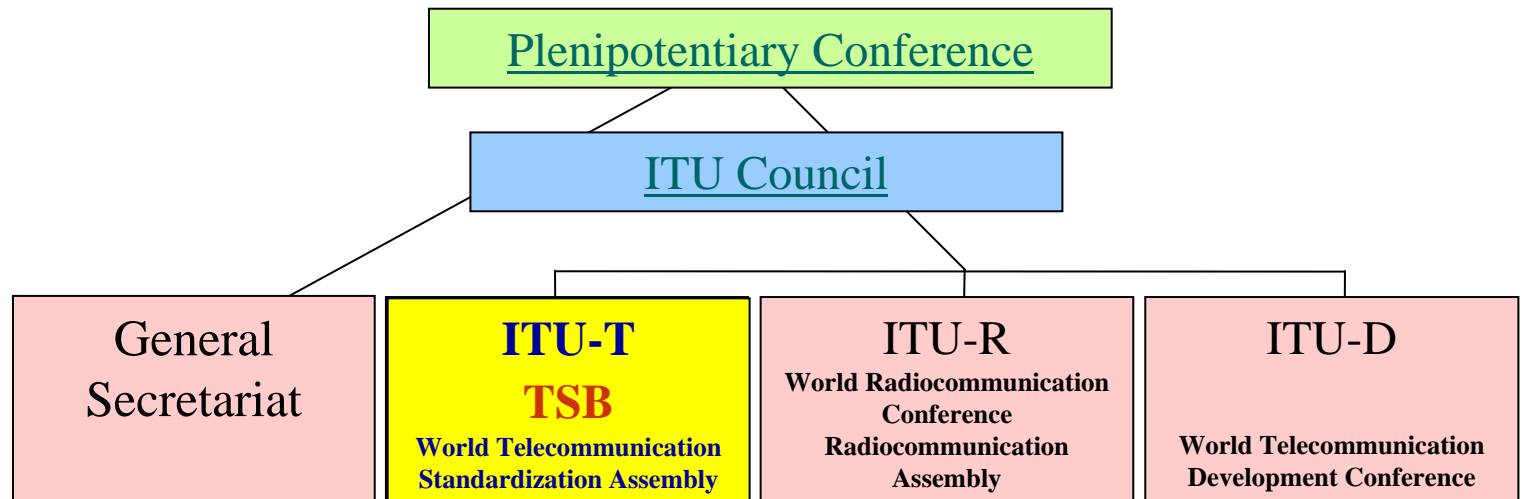- Approve budgets
- Control finances and expenditure

ITU-T

ITU Structure

ITU-T

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                    ┌─────────────────────────────────────┐
                    │   Plenipotentiary Conference        │
                    └─────────────────────────────────────┘
                              │
                    ┌─────────────────────────────────────┐
                    │          ITU Council                │
                    └─────────────────────────────────────┘
```

General Secretariat	**ITU-T** **TSB** World Telecommunication Standardization Assembly	ITU-R World Radiocommunication Conference Radiocommunication Assembly	ITU-D World Telecommunication Development Conference

TSB

Telecommunication Standardization Bureau

ITU Structure
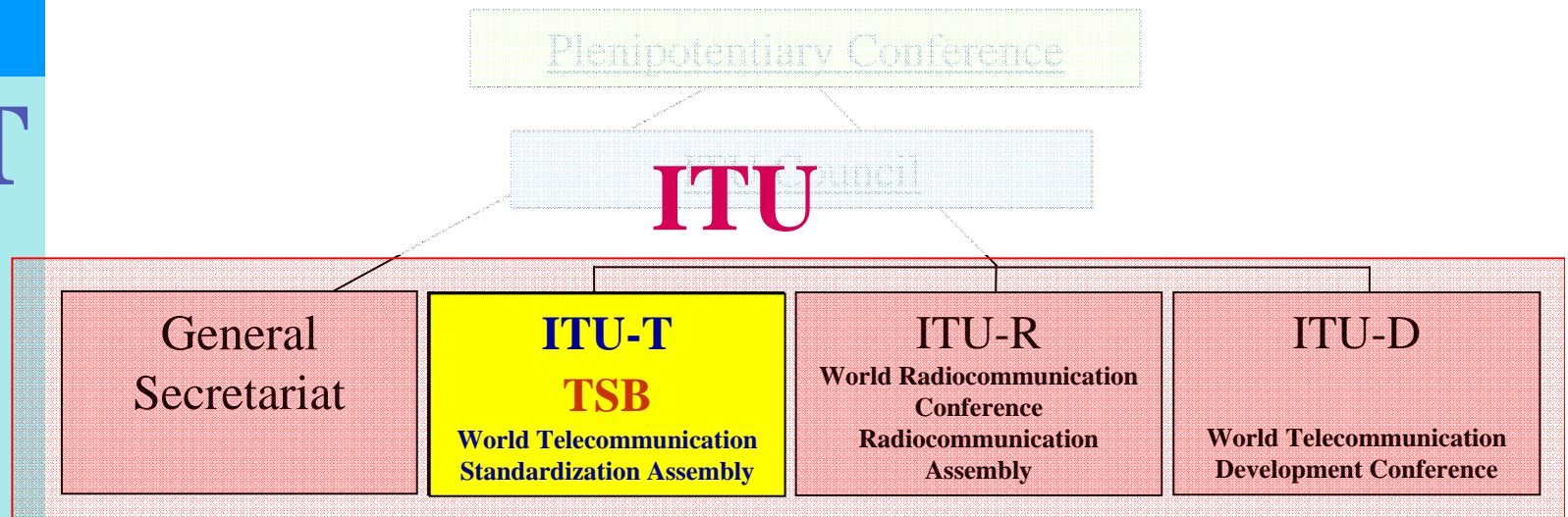
- **General Secretariat**: Coordinates and manages the administrative and financial aspects of the Union's activities *(provision of conference services, information services, legal advice, finance, personnel, etc.)*

- **ITU-R**: Coordinates radio communications, radio-frequency spectrum management and wireless services.

- **ITU-D**: Technical assistance and deployment of telecom networks and services in developing and least developed countries to allow the development of telecommunication.

- **ITU-T**: Telecommunication standardization on a world-wide basis. Ensures the efficient and on-time production of high quality standards covering all fields of telecommunications (technical, operating and tariff issues).
  (The Secretariat of ITU-T (TSB) provides services to ITU-T Participants)

TSB
Telecommunication Standardization Bureau

Telecommunication Standardization Bureau (TSB)

ITU-T

The **Telecommunication Standardization Bureau (TSB)** provides secretarial support for ITU-T and services for participants in ITU-T work (e.g. organization of meeting, publication of Recommendations, website maintenance etc.).

Disseminates information on international telecommunications and establishes agreements with many international SDOs.

For more details, please consult our website at:

http://www.itu.int/ITU-T/info/tsb/index.html

Contacting the TSB

International Telecommunication Union (ITU)
Telecommunication Standardization Bureau (TSB)
Place des Nations, CH-1211 Geneva 20
Tel. +41 22 730 5852 - Fax. +41 22 730 5853
E-mail: tsbmail@itu.int (central address)
URL: http://www.itu.int/ITU-T

Mission of ITU-T
Standardization Sector of ITU

ITU-T

- Helping people all around the world to communicate and to equally share the advantages and opportunities of telecommunication reducing the digital divide by studying technical, operating and tariff matters to develop telecommunication standards (Recommendations) on a worldwide basis.

main output

Recommendations

ITU-T Membership
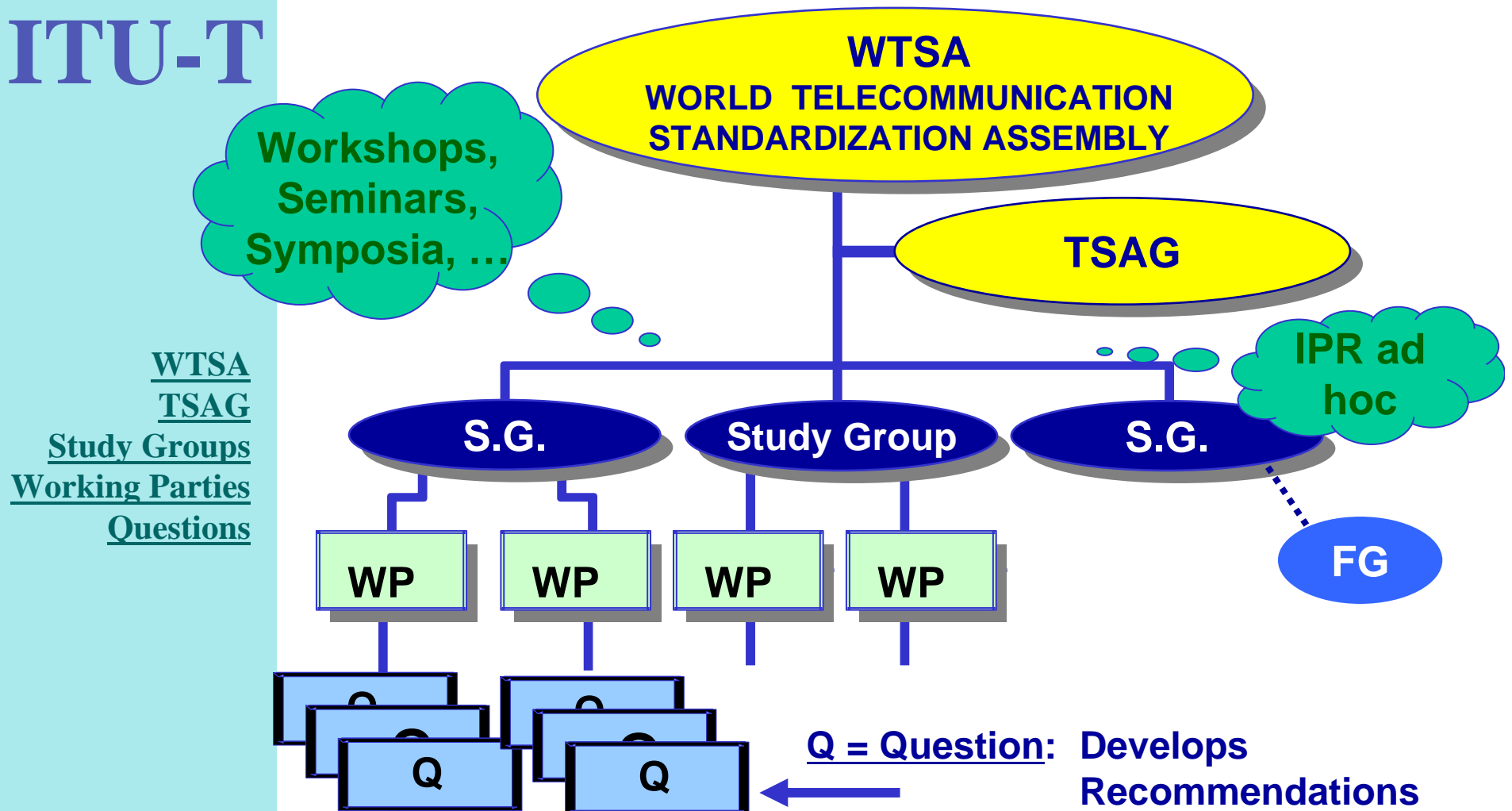## (as of 19-May-2006)

ITU-T

- **[190] Member States (Governments)**
- **[352] Sector Members:**
  - (157) Recognized Operating Agencies (ROA),
  - (147) Scientific or Industrial Organizations (SIO),
  - (48) Other entities dealing with telecommunication matters: Regulators, Regional and other international telecommunication, standards, financial or development organizations
- **[107] Associates:**

  Associate is a way for small entities or organizations to participate in the work of a single ITU-T Study Group at a reduced financial contribution.

ITU-T Structure

ITU-T

WTSA
TSAG
Study Groups
Working Parties
Questions

WTSA
WORLD TELECOMMUNICATION STANDARDIZATION ASSEMBLY

Workshops, Seminars, Symposia, …

TSAG

IPR ad hoc

S.G. | **Study Group** | **S.G.**

WP | **WP** | **WP** | **WP**

FG

Q | **Q**

Q = Question: Develops Recommendations

ITU Environment

- The Telecoms MARKET became GLOBAL because of

  - Liberalization of telecom industry
  - Development of Internet:
    (anyone can set up a service)
  - Success of mobile telephony
  - Rapid technological developments

- A GLOBAL Telecoms Market require standards

  - About 500 forums and SDOs … compete & cooperate
  - and new technologies will bring new forums

- Competition in ICT $tandardization and Market pressure forced and continues to force, ITU-T to adapt to stay competitive

Characteristics of ITU-T

ITU-T

1. Work (mostly) done in Study Groups (13 of them)
2. ITU-T Product: Recommendations (= "standards")
   - Example: G992.1 (ADSL), G993.1 (VDSL)
3. Unique partnership of private sector (Sector Members) & government (Member States)
   - Today, 95% of work is done by private sector
     - (Strong participation from Asia, esp. China)
   - Remaining 5% if regulatory impact
4. Truly global
5. Consensus decisions
6. Very flexible
7. Fast procedures, transparent procedures
8. Brand name
9. IPR Policy and copyright

ITU-T is fast

ITU-T is <u>fast</u> to:

- **<u>Start</u>** work: 1 day / few weeks
- **<u>Develop</u>** work: from weeks to 2-3 yrs
- **<u>Approve</u>** work: 2 months
    "Speedy Gonzalez approval procedure" (= AAP)   for technical standards (=95% of work)
- **<u>Publish</u>** work: couple of days after approval

ITU-T Recommendations to become available online for free

ITU-T

ITU Council 2006 decided to run a trial from January to Sept 2007:
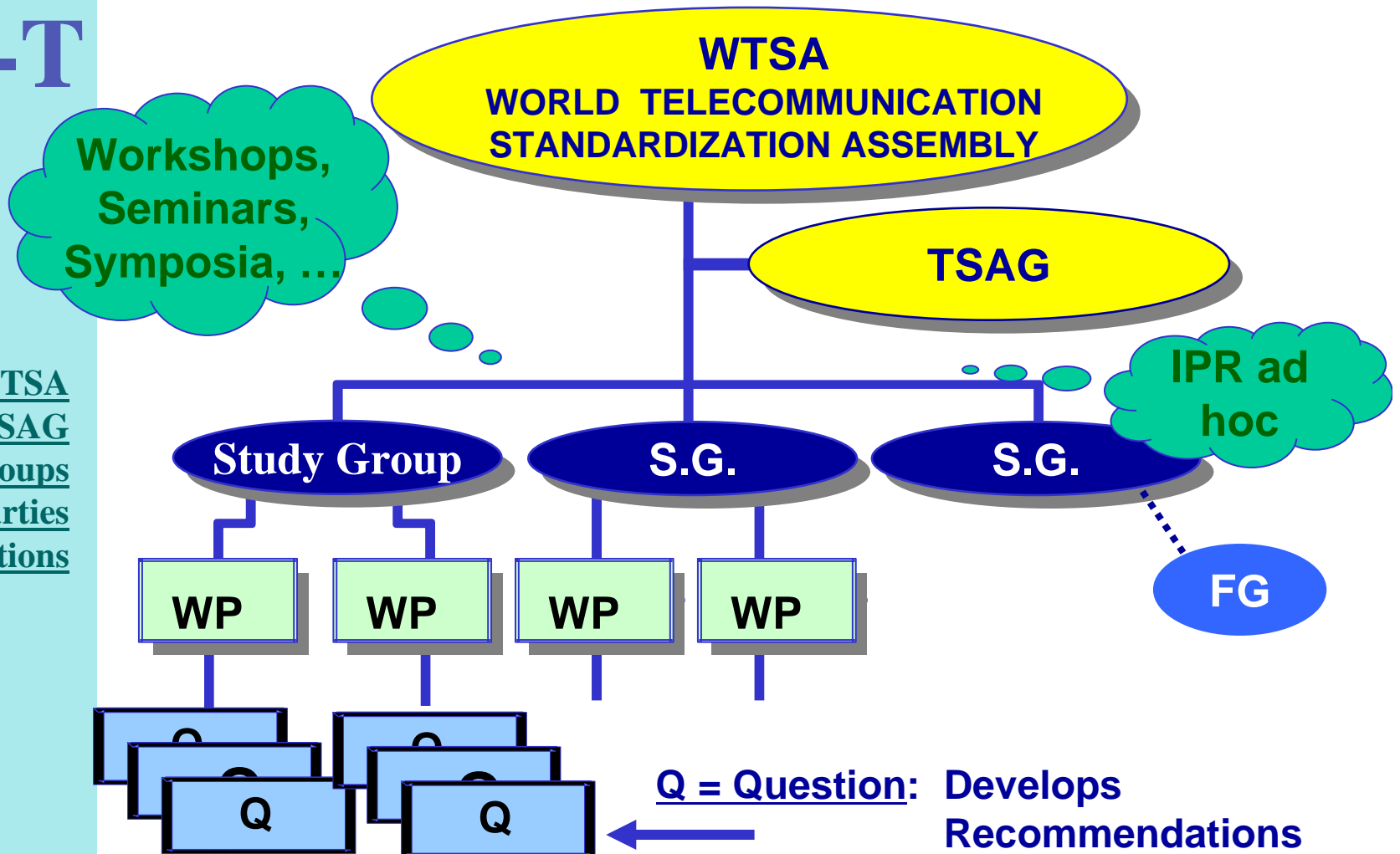
- Whole world will have access to ITU-T Recs online for free (finally edited version, pdf)

- ITU-T members to have access also to pre-published version (pdf, winword)

ITU-T Structure
(Administrative Entities)

ITU-T

WTSA
TSAG
Study Groups
Working Parties
Questions

Workshops, Seminars, Symposia, …

WTSA
WORLD TELECOMMUNICATION STANDARDIZATION ASSEMBLY

TSAG

IPR ad hoc

Study Group

S.G.

S.G.

FG

WP **WP** **WP** **WP**

Q **Q**

Q **Q**

Q = Question: Develops Recommendations

ITU-T Structure
(Administrative Entities)

ITU-T

WTSA
WORLD TELECOMMUNICATION
STANDARDIZATION ASSEMBLY

TSAG

Administrative entities
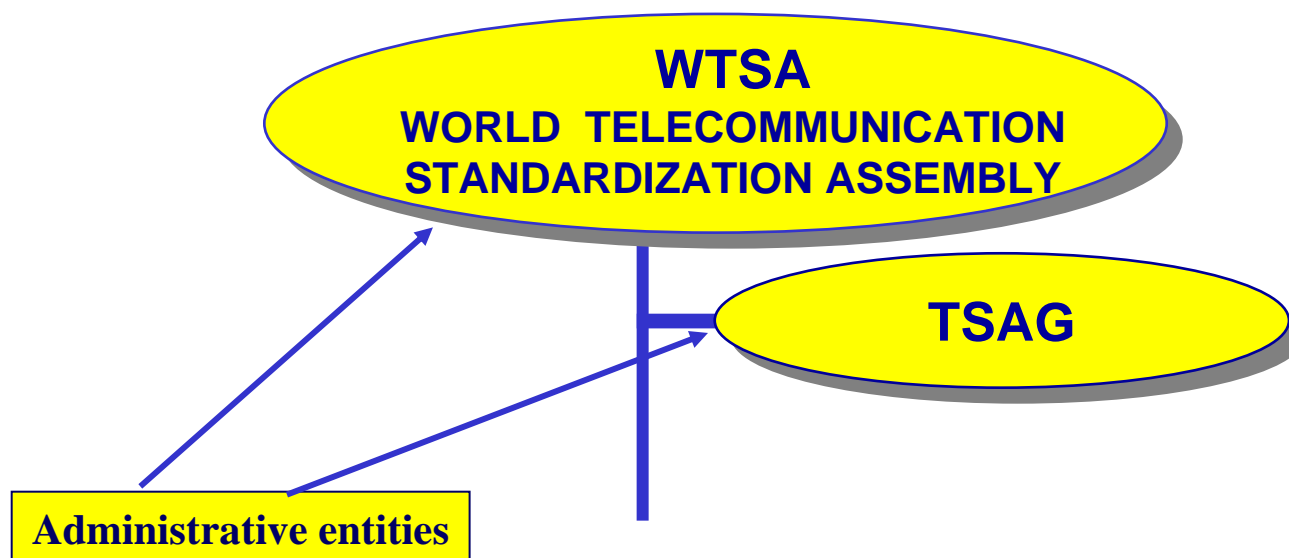
WTSA

World Telecommunication Standardization Assembly

ITU-T

WTSA sets the overall direction and structure for ITU-T, meets every four years and for the next four-year period:

- Defines the general policy for the Sector
- Establishes the study groups (SG)
- Approves SG work programmes
- Appoints SG chairmen and vice-chairmen.

An output of WTSA is a set of Resolutions which are freely available at:

www.itu.int/opb/publications.aspx?lang=en&parent=T-RES&selection=1&sector=2

TSAG

Telecommunication Standardization Advisory Group

ITU-T

TSAG provides ITU-T with flexibility between WTSAs, and reviews priorities, programmes, operations, financial matters and strategies for the Sector (meets ~~ 9 months)
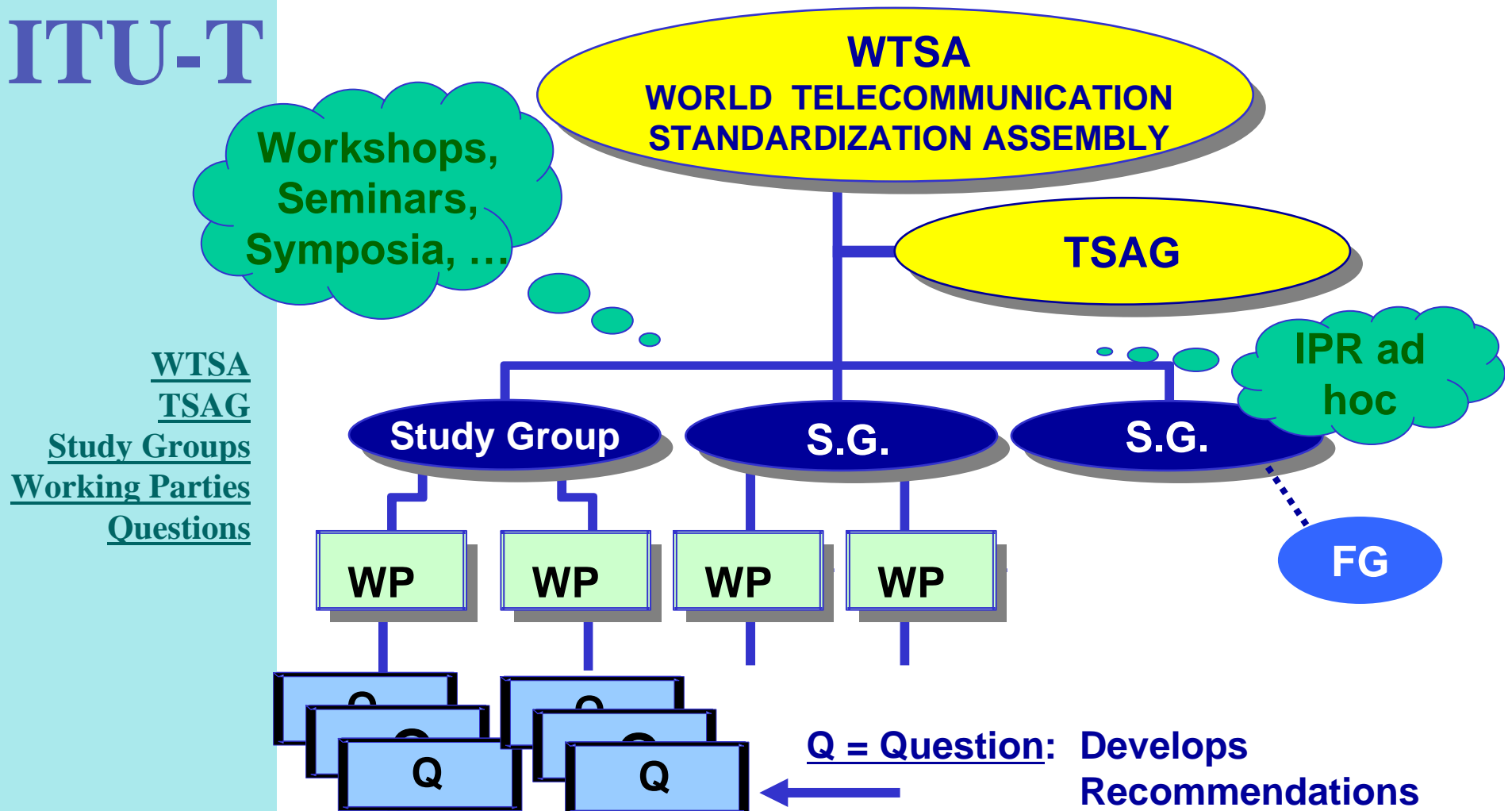
- follows up on accomplishment of the work programme
- restructures and establishes ITU-T study groups
- provides guidelines to the study groups
- advises the TSB Director
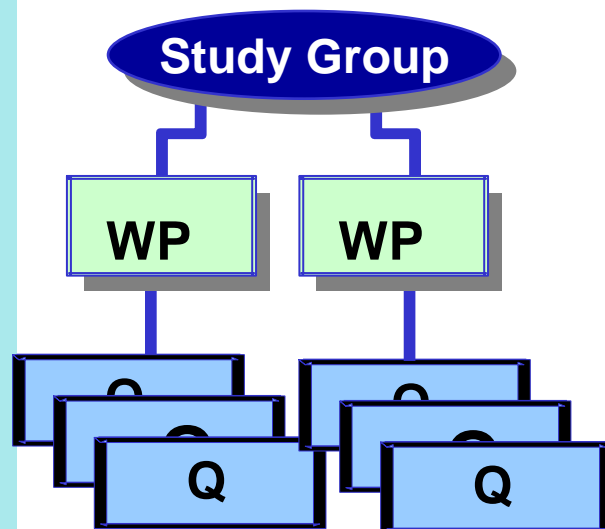- produces the A-series Recommendations on organization and working procedures freely available at:
  http://www.itu.int/rec/T-REC-A/e

ITU-T Structure (SG)

ITU-T

Workshops, Seminars, Symposia, …

**WTSA
WORLD TELECOMMUNICATION
STANDARDIZATION ASSEMBLY**

TSAG

**WTSA
TSAG
Study Groups
Working Parties
Questions**

IPR ad hoc

Study Group **S.G.** **S.G.**

WP **WP** **WP** **WP**

FG

Q **Q**
Q **Q**
Q **Q**

Q = Question: Develops Recommendations

ITU-T Structure (SG)

ITU-T

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        ┌─────────────────┐
        │  Study Group    │
        └────────┬────────┘
           ┌─────┴─────┐
        ┌─────┐     ┌─────┐
        │ WP  │     │ WP  │
        └──┬──┘     └──┬──┘
           │           │
        ┌─────┐     ┌─────┐
        │  Q  │     │  Q  │
        │  Q  │     │  Q  │
        │  Q  │     │  Q  │
        └─────┘     └─────┘
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Study Groups

Study Groups

- The responsibility and mandates of each Study Group is set out by WTSA (e.g SG 2 mandate is "Operational aspect of service provision, networks and performance") *(see Resolution. 2 "ITU-T S.G. responsibility and mandates")*

- Study Questions adopted by WTSA and/or the relevant SG to prepare draft Recommendations

- TSAG may review priorities, programmes, and provide guidelines for the work of the Study Groups.

ITU-T Study Groups (1/5)

ITU-T

- **Study Group 2: Operational aspects of service provision, networks and performance**
  - *Lead Study Group on Service definition, Numbering and Routing*
  - *Lead Study Group for Telecommunication for Disaster Relief/Early Warning*

- **Study Group 3: Tariff and accounting principles including related telecommunication economic and policy issues**

- **Study Group 4: Telecommunications Management**
  - *Lead Study Group on Telecommunication Management.*

ITU-T Study Groups (2/5)

ITU-T

- **Study Group 5:** Protection against electromagnetic environment effects

- **Study Group 6:** Outside Plant and related indoor installations

- **Study Group 9:** Integrated broadband cable networks and television and sound transmission
  - *Lead Study Group on integrated broadband cable and television networks.*

ITU-T Study Groups (3/5)

ITU-T

- **Study Group 11: Signaling requirements and protocols**
  - *Lead Study Group on signalling and protocols*
  - *Lead Study Group on intelligent networks*

- **Study Group 12: Performance and Quality of Service**
  - *Lead Study Group on Quality of Service and performance*

- **Study Group 13: Next Generation Networks**
  - *Lead study group for NGN and satellite matters*

ITU-T

- **Study Group 15: Optical and other Transport Network Infrastructures**
  - *Lead Study Group on Access Network Transport and on Optical Technology*

- **Study Group 16: Multimedia Terminals, Systems and Applications**
  - *Lead Study Group on multimedia terminals, systems and applications*
  - *Lead Study Group on ubiquitous applications ("e-everything", such as e-health and e-business)*

ITU-T Study Groups (5/5)

ITU-T

- **Study Group 17: Security, Languages and Telecommunications Software**
  - *Lead Study Group on Telecommunication Security*
  - *Lead Study Group on Languages and Description Techniques.*

- **Study Group 19: Mobile telecommunication networks**
  - *Lead Study Group on mobile telecommunication networks and for mobility.*

SG Working methods

- **Face-to-face meetings:**
  - **When?** Each ~9 months
  - **Where?** Geneva (ITU premises) or any other venue in an inviting country for host the meeting
  - **What happen?** Debate on contributions, agreements on reports, approval of Recommendations, Creation of Focus Groups for urgent matters

- **Decision:** Consensus→ unopposed agreements
  (absence of sustained opposition)

- **Contributions driven:**
  The debates or the progress of the work occur if a contribution is submitted to the meeting!
  (contributions, temporary documents)

Documentation

ITU-T

Meeting documents

- **Contributions**
- **Temporary Documents**
- **Reports**

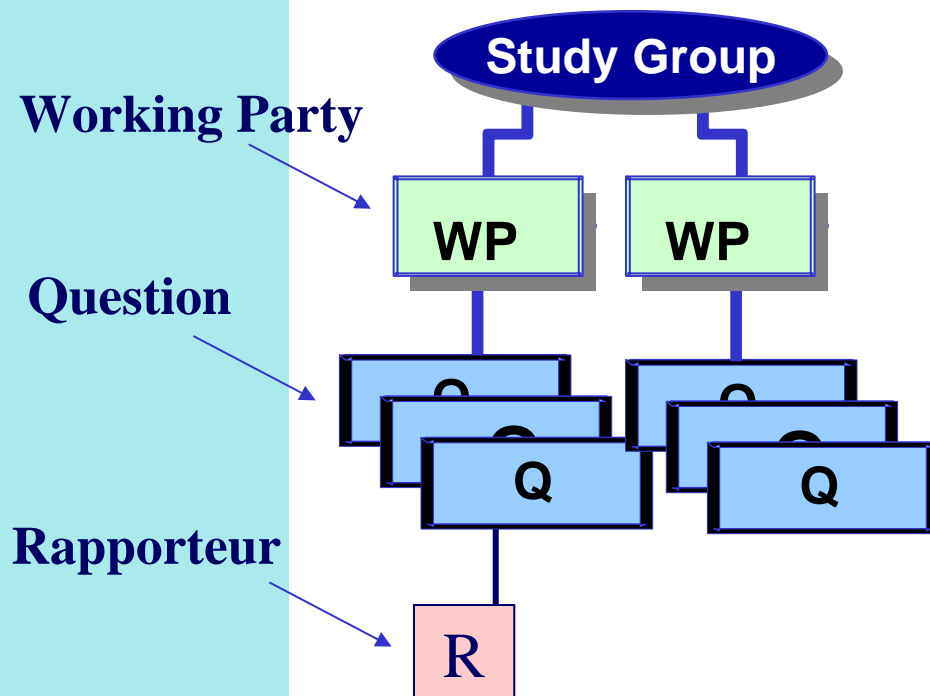## Administrative documents

- **Circulars**
- **Collective-letters**
- **AAP Announcements**

SG Management Team

ITU-T

SG Chairman, Vice-Chairmen, WP Chairman (sometimes also the Vice-Chairmen) **TSB Engineer/Counsellor**

Working Party

Question

Rapporteur

Study Group

WP   WP

Q

Q

Q   Q

R

Example:

Study Group 16
  Multimedia terminals, systems and applications
Working Party 3
  Media coding
Question 6
  Video coding
Rapporteurs:
  Mr Gary SULLIVAN
  Mr Thomas WIEGAND
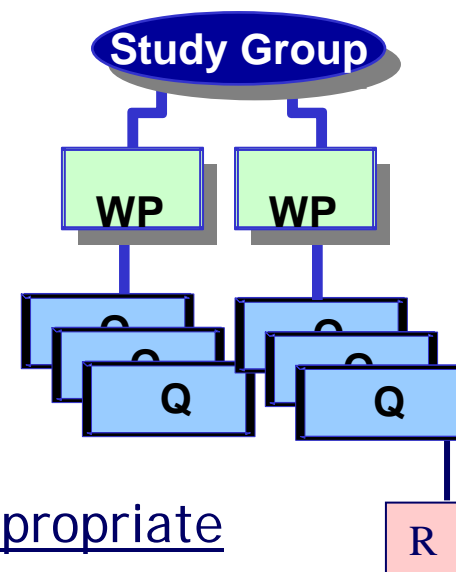
SG Management Team

ITU-T

- **Composition of MT**
  - SG Chairman, Vice-Chairmen
  - WP Chairman (sometimes also the Vice-Chairmen)
  - TSB Engineer/Counsellor

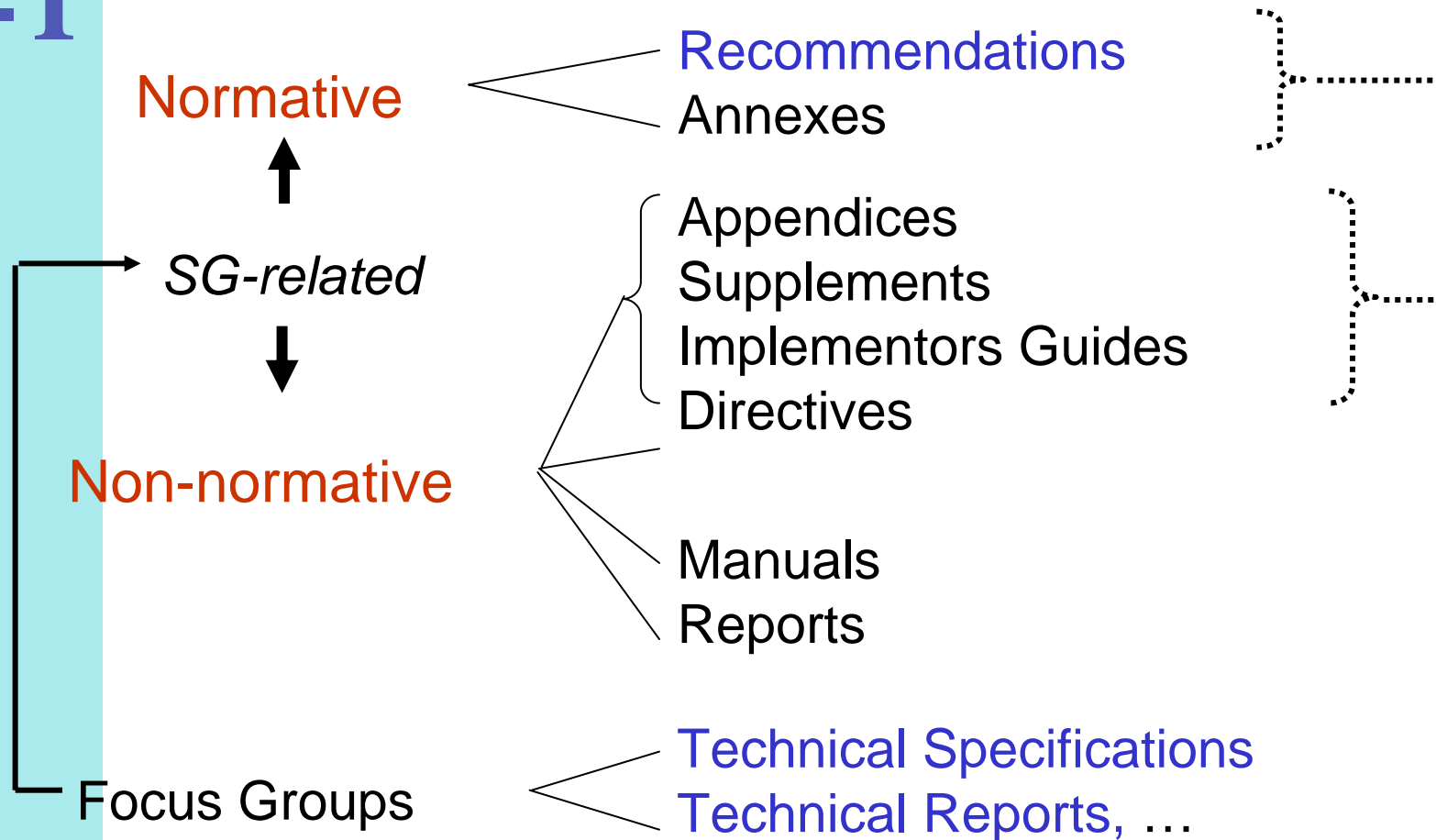- **Role of MT**
  - Within the SG, <u>establishment of an appropriate structure</u> for the distribution of work
  - Provide <u>coordination and planning of meetings</u>, prepare <u>meeting agenda, documents assignment to WPs/Qs, chair meetings, develop a report, etc.</u>
  - <u>Promote the Study Group activities</u> coordinating with TSB (providing materials for Press Release, ITU-T e-flash, etc.

Study Group — WP, WP — Q, Q — R

ITU-T Products

ITU-T

Normative ——< Recommendations
                               Annexes

SG-related

Non-normative ——< Appendices
                              Supplements
                              Implementors Guides
                              Directives

                              Manuals
                              Reports

Focus Groups ——< Technical Specifications
                              Technical Reports, …

ITU-T Recommendations

ITU-T

- Developed by 13 <u>Study Groups</u> divided into themed series (A, B, C… ect.)

- e.g. <u>A-Series</u> cover the Organization of the work of ITU-T

- e.g. H-series covers Recommendations on "Audiovisual and multimedia systems"

- All downloadable from various sites depending on the subscription (free from Jan. 2007!)

- Currently <u>Free download</u> up to three Recommendations per email address per year

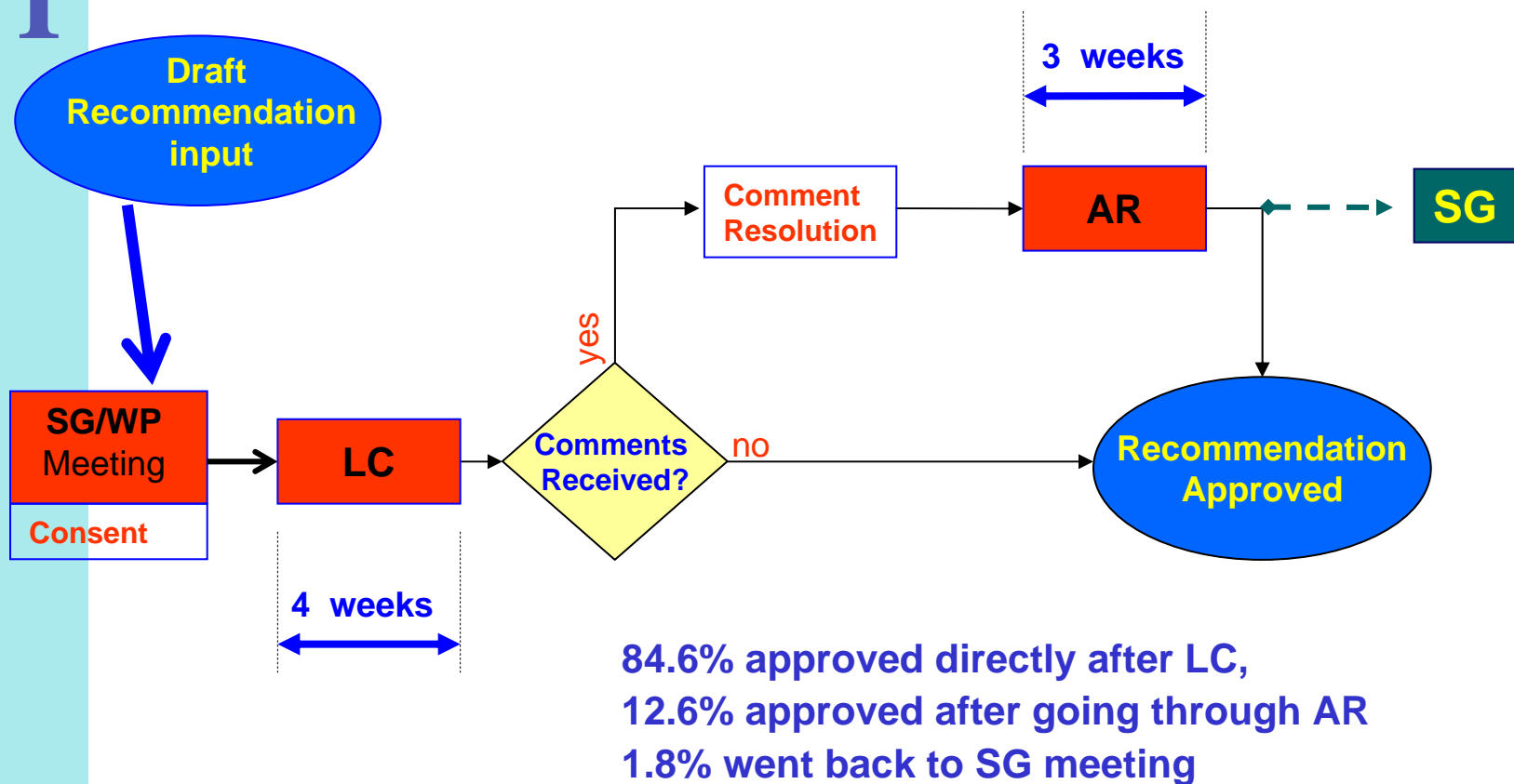**Bookshop**

Catalogue of Publication

Publication on CD-Rom

Approval Process

ITU-T

- **<u>Traditional Approval Process</u>** (TAP)

  For Recommendations subject to policy or regulatory implications

  Initiated by an SG or WP meeting and completed, for final approval, at the subsequent SG meeting (<u>§9 Res.1</u>)

- **<u>Alternative Approval Process</u>** (AAP)

  For Recommendations without policy or regulatory implications

  (since January 2001 → over 1000 Recs approved)

  Once the text is considered sufficiently mature, it is submitted for AAP by an SG or WP meeting (<u>Rec. A.8</u>)

Simplified AAP flow chart

ITU-T

Draft Recommendation input

SG/WP Meeting
Consent

LC

4 weeks

Comments Received?

yes

no

Comment Resolution

AR

3 weeks

SG

Recommendation Approved

84.6% approved directly after LC,
12.6% approved after going through AR
1.8% went back to SG meeting

LC = Last Call: " four weeks"	**SG** = Study Group
AR = Additional Review: " three weeks"	**WP** = Working Party

ITU-T Structure (FG)

ITU-T

WTSA
WORLD TELECOMMUNICATION
STANDARDIZATION ASSEMBLY

Workshops, Seminars, Symposia, …

TSAG

IPR ad hoc

Study Group   **S.G.**   **S.G.**

FG

WP   **WP**   **WP**   **WP**

Q   **Q**

Q   **Q**

<u>**Q = Question**</u>: **Develops Recommendations**
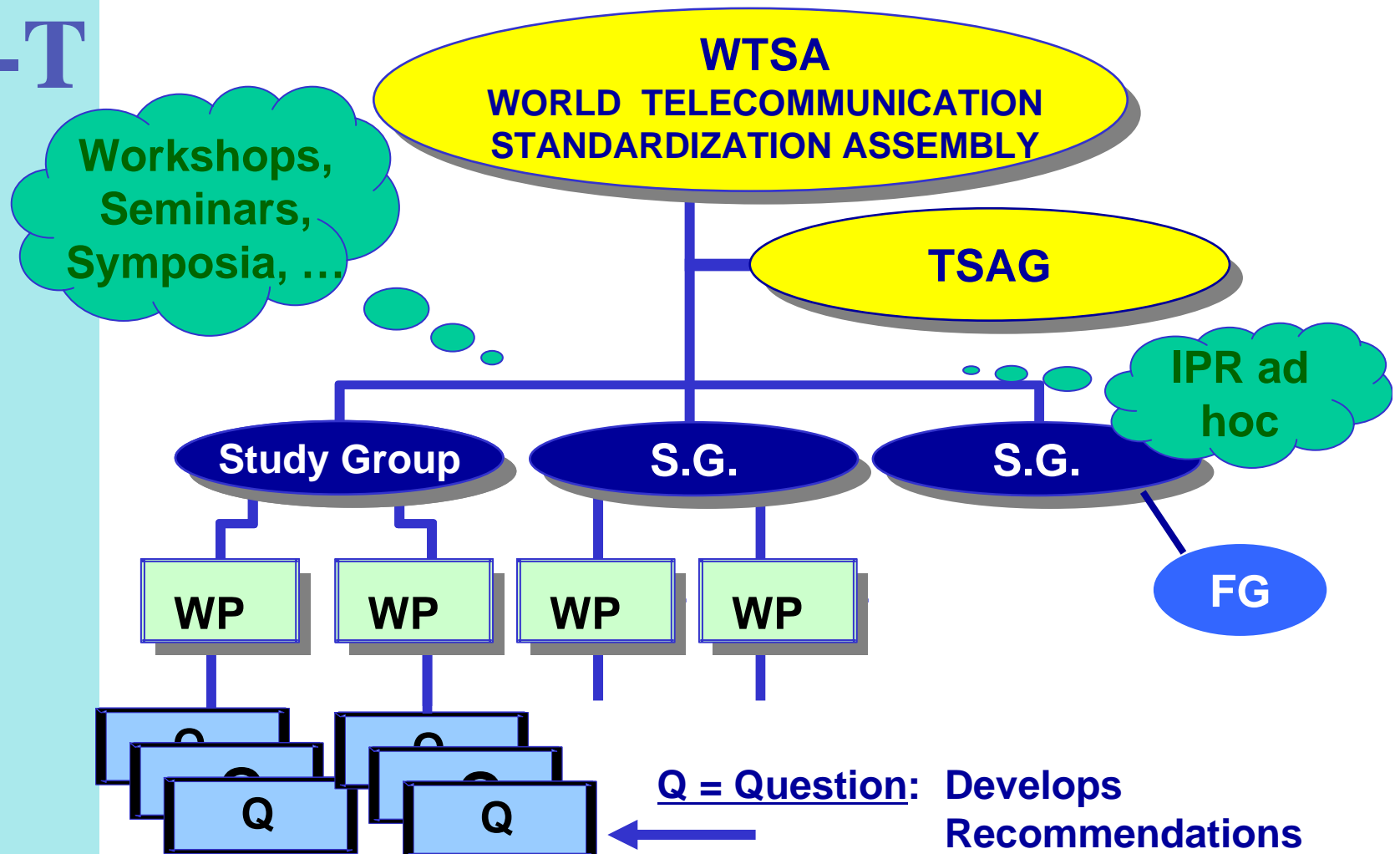
ITU-T Structure (FG)

ITU-T

Parent Study group

S.G.

FG
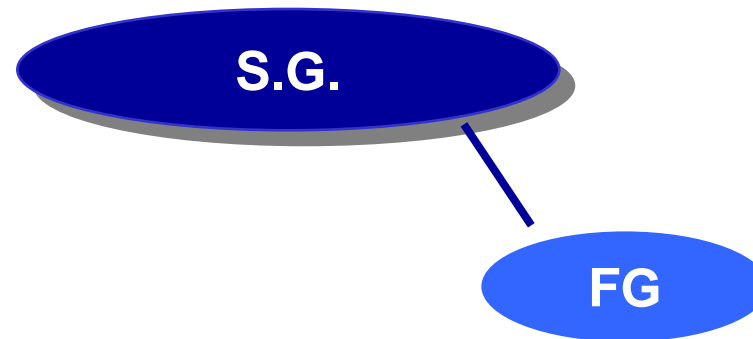
Cannot develop Recommendations
Outputs = Technical reports

Focus Group
well defined ToR
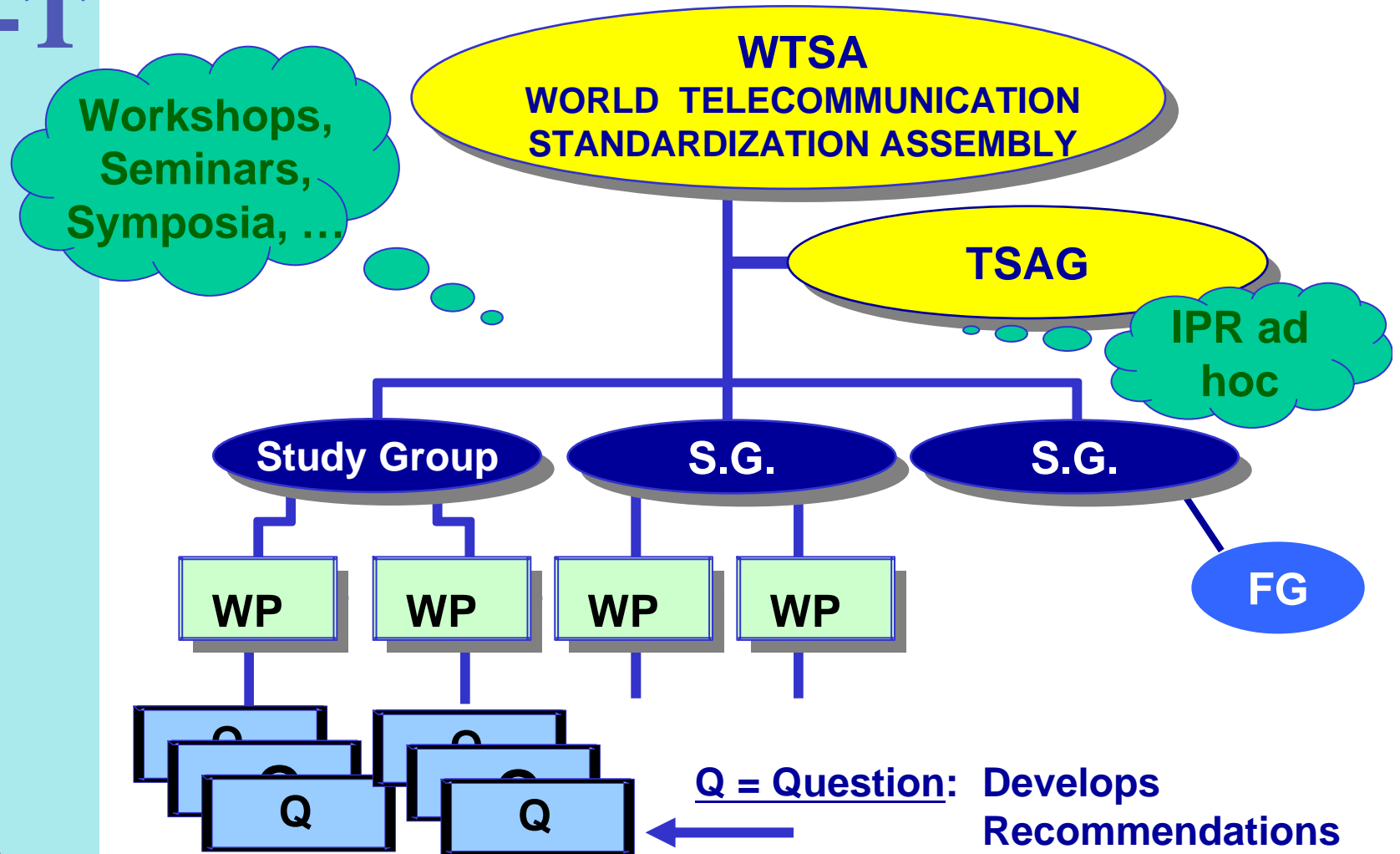**assigned timeframe**

ITU-T's Focus Group Concept:

ITU-T

- Create forum-like entities as an "arms-length" organization under ITU-T Study Group
- Work on a well-defined topic, scheduled for completion at a specific time
- Goal: encourage participation of non-members / members of other organizations (fora)
- Focus group has lots of freedom to establish its own rules
  - can keep own brand name and at the same time benefit from ITU's branding
  - Non-ITU members can participate
- Recent examples:
  - IPTV Focus Group
  - NGN Focus Group
  - NGN Management Focus Group
  - OCAF Focus Group = Open Communications Architecture Forum

ITU-T Structure (JCA)
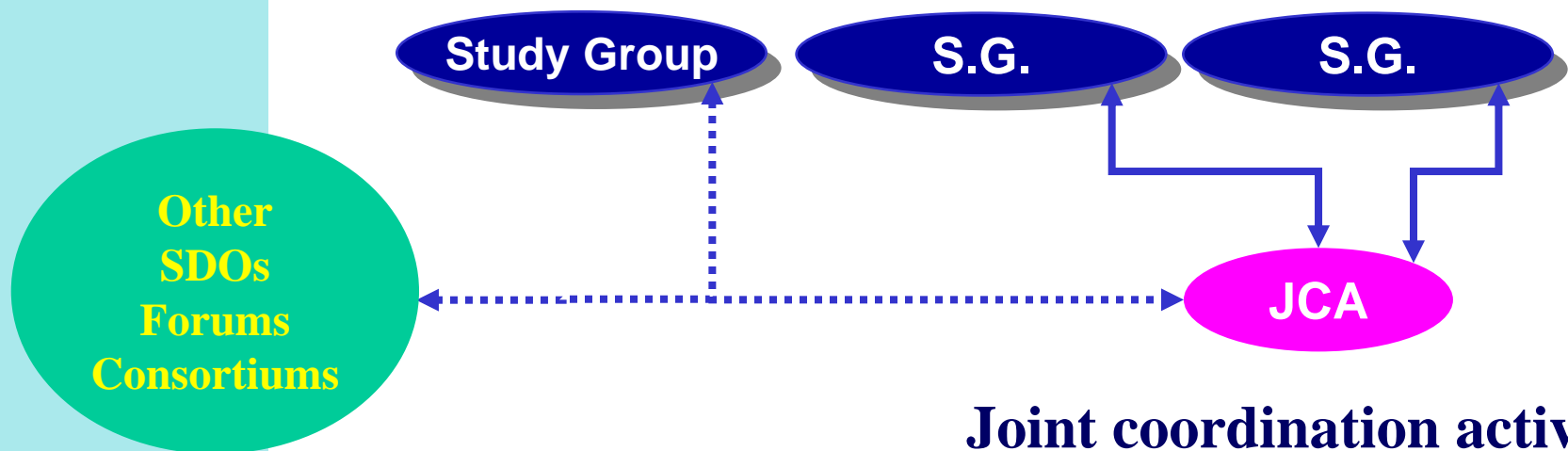
ITU-T

Workshops, Seminars, Symposia, …

WTSA
WORLD TELECOMMUNICATION STANDARDIZATION ASSEMBLY

TSAG

IPR ad hoc

Study Group — **S.G.** — **S.G.**

WP | **WP** | **WP** | **WP**

FG

Q **Q** **Q** **Q**

Q = Question: **Develops Recommendations**

ITU-T Structure (JCA)

ITU-T

Joint Coordination Activity (JCA) groups
Coordinate a broad study by more than one study group.
They **do not** perform **technical studies** nor **write Recs**.
Very important activity to **avoid duplication of work**.
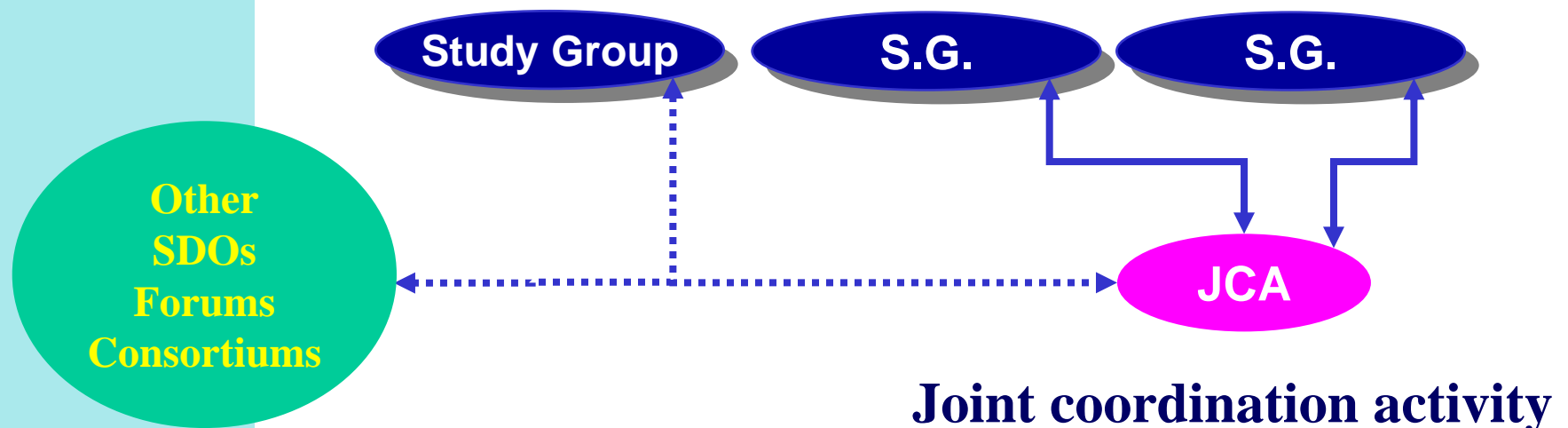

Joint coordination activity

ITU-T Structure (JCA)

ITU-T

Examples of current JCA in ITU-T

NGN-JCA (Next Generation Networks)

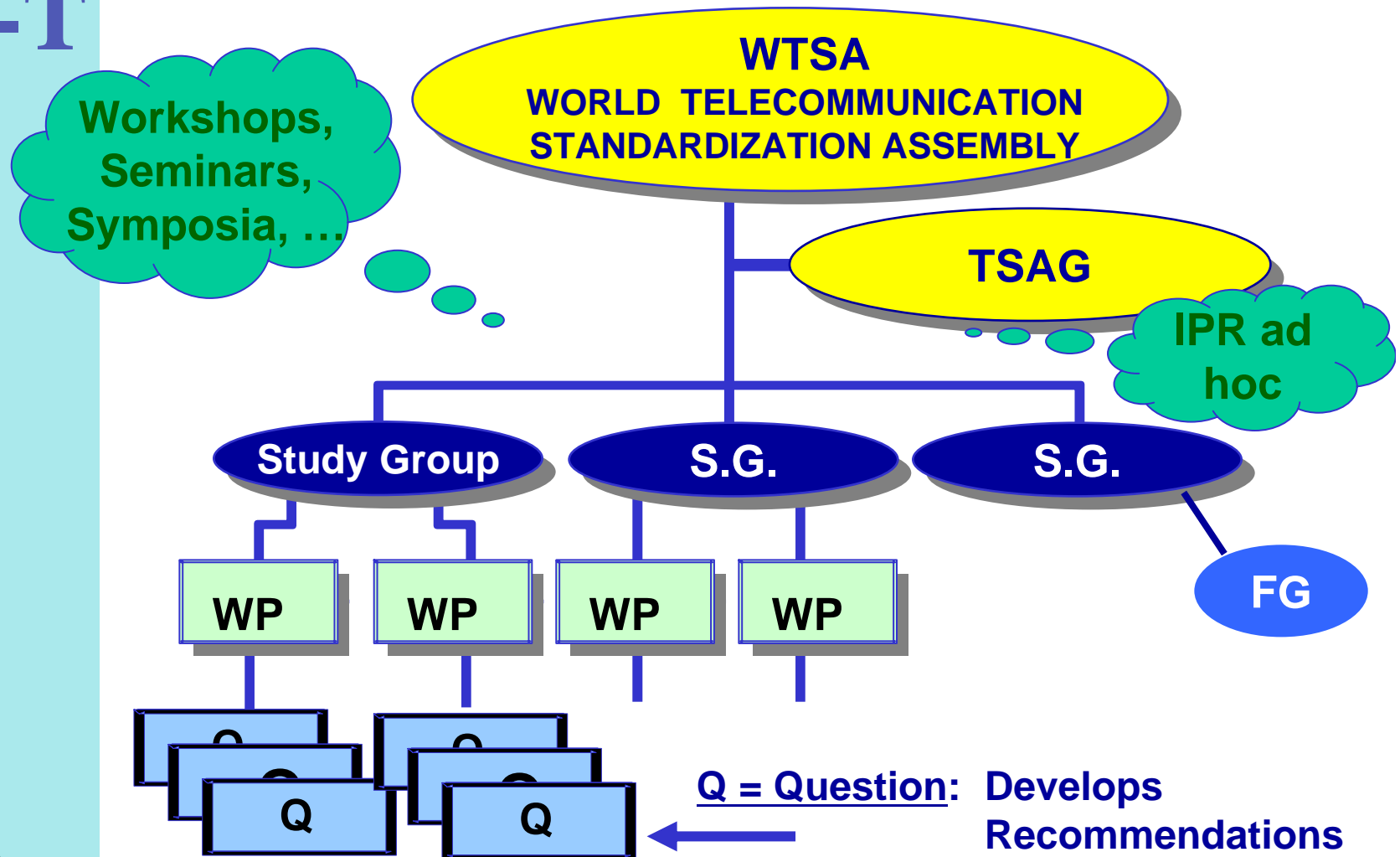**JCA-HN** (Home Networking)

IPTV-JCA (Internet Protocol TV)

JCA-NID (Network aspect of IDentification systems, including RFID)

Study Group   S.G.   S.G.

Other SDOs Forums Consortiums

JCA

Joint coordination activity

ITU-T Structure (Workshops)

ITU-T

Workshops, Seminars, Symposia, …

WTSA
WORLD TELECOMMUNICATION
STANDARDIZATION ASSEMBLY

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IPR ad hoc

Study Group **S.G.** **S.G.**

WP **WP** **WP** **WP**

FG

Q Q

Q **Q**

<u>**Q = Question**</u>: **Develops Recommendations**

ITU-T Structure (Workshops)

ITU-T

Workshops, Seminars, Symposia, ...

Workshops and other groups

ITU-T

- ## Workshops/Seminars

  Cover the most important topics in modern telecommunication technology and applications.

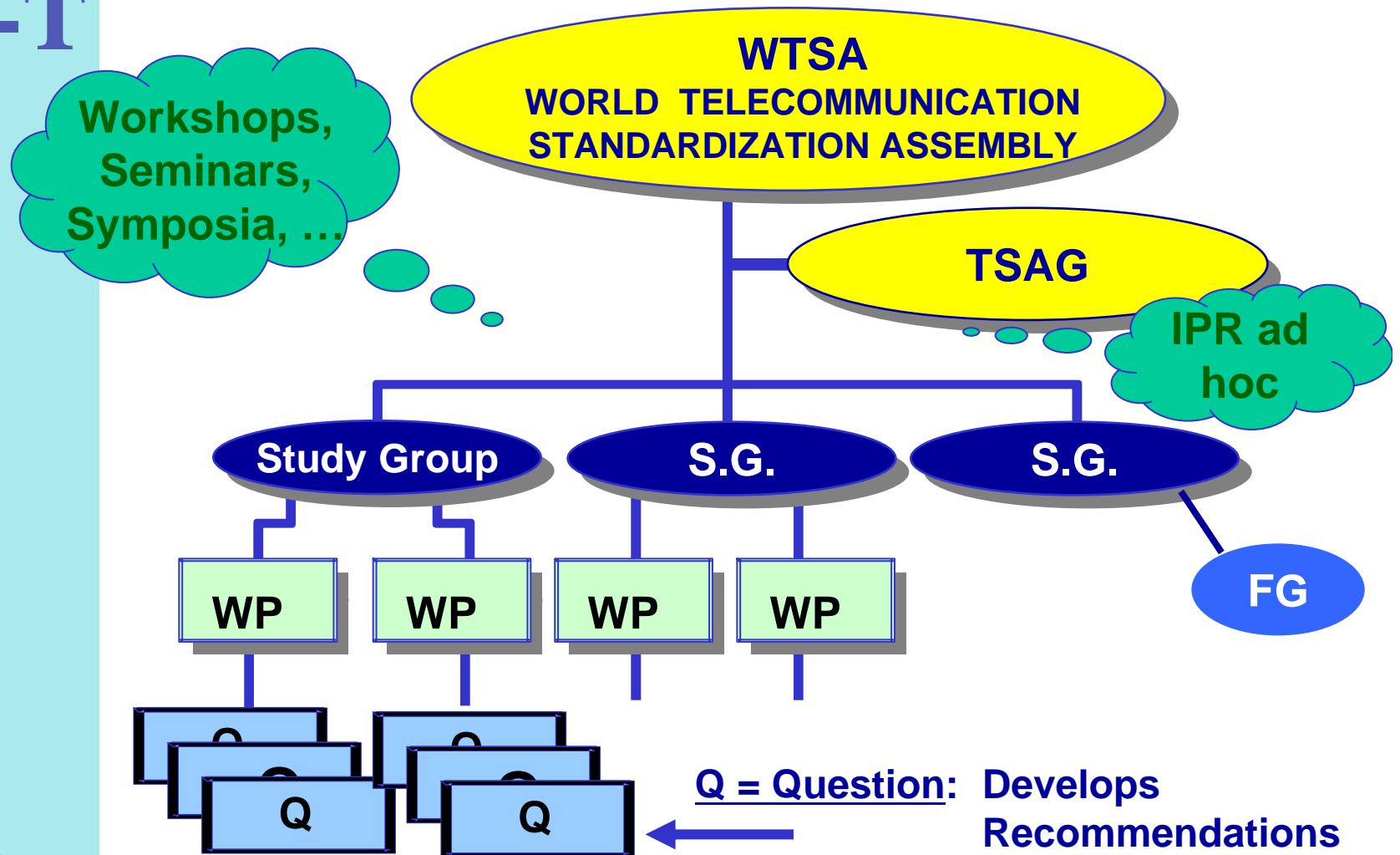 Speakers are renowned telecommunication experts.

  Usually free of charge and open to public

October 2006	Workshop title	Location
3-5	ITU-T/ITU-D "Standardization and Development of Next Generation Networks"	Dar es Salam, Tanzania
12-13	ITU-T "IPTV GLOBAL TECHNICAL WORKSHOP"	Seoul, Republic of Korea
19-20	Joint ITU-T/ OASIS "Workshop and Demonstration of Advances in ICT Standards for Public Warning"	Geneva, Switzerland
23-24	ITU-T/OGF "Workshop on Next Generation Networks and Grids"	Geneva, Switzerland

ITU-T Structure (IPR)

ITU-T

Workshops, Seminars, Symposia, …

WTSA
WORLD TELECOMMUNICATION STANDARDIZATION ASSEMBLY

TSAG

IPR ad hoc

Study Group   **S.G.**   **S.G.**

WP   **WP**   **WP**   **WP**

FG

Q   **Q**
Q   **Q**
Q   **Q**

Q = Question: Develops Recommendations

ITU-T Structure (IPR)

ITU-T

IPR ad hoc

Intellectual Property Rights

ITU-T Patent Policy

ITU-T

ITU-T Patent Policy

Code of practice:

The fullest available information on any known patent should be disclosed to TSB during Recommendation approval.

Three Options for the patent holder:

1) Free license to everybody

2) Paid for license granted on reasonable terms and conditions on a world-wide non-discriminatory basis

3) Unwillingness to grant a license (No Rec. approved)

Either of 1, 2 or 3, the patent holder has to submit to TSB the ITU-T "Patent Statement and Licensing Declaration" form

Available on line:

Patent Statement and Licensing Declaration database

TSB Director's Ad Hoc Group on IPR (IPR-AHG)

Role:	Provide guidance to the TSB Director on IPR related matters: patents, copyrights, marks
Chairman:	Mr Houlin Zhao (TSB Director)
Members:	Open to ITU Member States, Sector Members, Associates + invited participants
Participants include:	AT&T, BT, France Télécom, Fujitsu, HP, Intel, KDDI, Lucent, Microsoft, Nortel Networks, NTT, Polycom, Psytechnics, Qualcomm, Siemens, ANSI, ETRI, ETSI, ISO, TTC, etc
Meeting :	Around every 9 months
Next meeting:	Geneva, 20 - 21 February 2007

Copyright

§ 3.1.5 Rec. A.1:

"Material such as text, diagrams, etc., submitted as a contribution to the work of ITU-T is presumed by ITU to have no restrictions in order to permit the normal distribution of this material for discussions within the appropriate groups and possible use, in whole or in part, in any resulting ITU-T Recommendations which are published. By submitting a contribution to ITU-T, authors acknowledge this condition of submission. In addition, authors may state any specific conditions on other uses of their contribution."

Summary

ITU-T

1) ITU International Telecommunication Union

- Administrative entities
  - → Plenipotentiary conference
  - → ITU Council
- Structure → ITU-T, ITU-R, ITU-D

2) ITU-T (Standardization Sector of ITU)

- Administrative entities → WTSA, TSAG
- Mission → Develop Recommendations
- Membership → MS, SM, Associates
- Structure
  - → Study Group (SG)
  - → Focus Group (FG)
  - → Joint Coordination Activity (JCA)
- Workshops
- Intellectual Property Rights (IPR)

Thanks for the attention!

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