GISFI & ITU
Telecommunications Standardization Sector

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Introduction to ITU

- Founded in **1865**, oldest specialized agency of the **UN**
- **Standards** making one of the ITU’s first activities
- **191 Member States, 780 private sector** entities
- **HQ Geneva**, 11 regional offices, 760 staff / 80 nationalities
- Named as one of the world’s ten most enduring institutions by **Booz Allen**

**Five elected officials:**
- Secretary-General
- Deputy Secretary-General
- Director of the Radio Bureau (BR)
- Director of the Telecommunication Standardization Bureau (TSB)
- Director of the Telecommunication Development Bureau (BDT)
ITU-T Working Structure

WTSA
World Telecommunication Standardization Assembly

Telecommunication Standardization Advisory Group

Focus Groups

Workshops, Seminars, Symposia…

Questions: Develop Recommendations

IPR ad hoc

31 May 2010
Global Standards essential in a complex world

- Essential for international communications and global trade
- Drive competitiveness, for individual businesses and world economy
- ITU standards are truly global because developed according to WTO principles:
  - Transparency
  - Openness
  - Impartiality and consensus
  - Effectiveness and relevance
  - Coherence
  - Addressing the concerns of developing countries
Member States: 191 governments

Sector Members: 565 private sector
   Membership fee: 31,800 CHF (~20k EUR)

Associates: 154 private sector
   (one Study Group only)
   Membership fee: 10,600 CHF (~7 kEUR)

Today, 95% of the work in ITU-T is done by the private sector
Strategic Objectives

1. Develop and publish timely global Telecom/ICTs standards
2. Cooperate and collaborate with other SDOs and ITU Sectors
3. Provide the most attractive forum for standardization in the interest of the membership
4. Provide support and assistance to the membership, in particular developing countries
5. Promote conformance to ITU-T Recommendations by maintaining an online “conformity DB”
6. Enhance interoperability by organizing events to prove interoperability of different vendors equipment
7. Enhance accessibility to ICT
8. Promote ICTs as an effective tool to combat climate change
9. Identify relevant areas for future standardization projects by involving academia
10. Disseminate information and know-how
Without ITU-T standards you couldn’t make a telephone call from one side of the world to another.

- **E.164** “International public telecommunication numbering plan”

Without ITU-T standards the Internet wouldn’t function.

- **G.991.x – G.999.x**
  “Recs on Access Networks”
ITU-T Revolutionary video standard

- Emmy award received on behalf of ISO, IEC & ITU on 25 August 2008
- Advanced Video Codec ITU-T Rec. H.264 | ISO/IEC 14496-10
- H.264 | MPEG-4 AVC recognized by US Academy of Television Arts & Sciences
Universal charger

- Approved **ITU-T Rec. L.1000** “Universal power adapter and charger solution for mobile terminals and other ICT devices”

- Delivers 50% reduction in standby energy consumption, eliminates 51,000 ton of redundant chargers, and cuts GHG emissions by 13.6 million ton CO₂ annually

- Current version covers charger for mobile terminals but will cover other ICT devices in future
ITU-T is fast

Start work:
within 1 day / few weeks

Develop work:
from weeks to 2-3 yrs

Approve work:
4(+) weeks (average 2 months)
for technical standards (95% of work)

Publish work:
within days after approval

(“pre-published” standard = non-edited version →
Edited version: typically a few months after approval)
Why ITU is Involving Academia?

- **To increase academic participation in ITU**
  - Students of today are the people who will shape the technology world of tomorrow

- **To capture new work** (innovations in ICT) for the standardization marketplace.
  - Universities and R&D institutions are an important pool of innovation

- **No specific ITU membership policy for universities**
  - proposal under discussion by ITU Council reduced fee for academia ~2’000 USD

**GISFI action:**
- promote innovation and research in India
- Facilitate academic participation in GISFI
Kaleidoscope 2010

Beyond the Internet?
Innovations for future networks and services
## Involving Academia in India

**Kaleidoscope 2010 - Total of 115 papers submitted**

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of papers</th>
<th>Percent</th>
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<td>48</td>
<td>42.24%</td>
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<td>Colombia</td>
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<td>USA</td>
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<tr>
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<td>5</td>
<td>4.31%</td>
</tr>
<tr>
<td>Brazil</td>
<td>4</td>
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<tr>
<td>Germany</td>
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<td>3.45%</td>
</tr>
<tr>
<td>Others</td>
<td>27</td>
<td>23.27%</td>
</tr>
</tbody>
</table>

Pune, India, 13-15 December 2010
World Standards Cooperation: ISO, IEC, ITU

- Established in 2001 to assist in avoiding duplication and overlap of work.
- Since then, regular formal and informal contact of ISO, IEC, ITU leadership.
- Goal: strengthen and advance the voluntary consensus-based international standards systems of ITU, ISO, and IEC.
- Joint initiatives: common text, common patent policy, joint workshops, joint education & training.

GISFI Action:

- Adopt the same patent policy, it will ease cooperation with the international SDOs.
- Participate in the ITU-T IPR ad hoc group.
ITU-T collaboration

44 formal partnerships

- World Standards Cooperation
  ISO – IEC - ITU
  - Patent policy & Joint events

- ITU-T and IEEE
  - MoU & Joint events

- Global Standards Collaboration
  - Supports ITU as preeminent global ICT standards organization.

- Management meetings with:
  - ETSI
  - IETF
  - ICANN
  - ISO/IEC JTC 1

- MoU on E-Business:
  IEC, ISO, ITU and UN/ECE
Global Standards Collaboration

- GSC-15, Beijing, China, 30 August - 2 September 2010, hosted by CCSA

- The mandate of GSC is to provide a venue for the leaders of the Participating Standards Organizations and the ITU to:
  
  - Exchange information on the progress of standards development...
  
  - Collaborate in planning future standards development to gain synergy and to reduce duplication.
  
  - To support the ITU as the preeminent global telecommunication and radiocommunication standards development organization.

**GISFI action:** join GSC-15 in China
Partnership and External Cooperation

Recommendation A.4
- Procedure to approve/establish communication process with Forums/Consortia

Recommendation A.5
- Procedure to qualify organizations for including references in ITU-T Recommendations
  GISFI action: to apply for A.5 qualification

Recommendation A.6
- Procedure to approve cooperation and exchange of information with national and regional standards development organizations
  GISFI action: to apply for A.6 qualification
MoU between ITU and ETSI

Considering:

- ITU as the intergovernmental and universal organization responsible for worldwide standardization of telecommunications
- ETSI as a regional organization “recognized by EU”

Allows

- Each organization to use the documents of the other in order to advance its own work
- Each will also be able to reference standards texts of the other
- Each organizations experts can participate in the others meetings

GISFI action: to consider a MoU with ITU
Addressing interoperability is one of the very reasons for founding ITU and for which Experts in ITU-T Study Groups are engaged in developing Recommendations and test suites.

While the ultimate objective is interoperability, conformance to standards is the first step to enable interoperability.
Conf. & Interop. Resolutions to reply to developing countries needs

- **WTSA-08 Resolution 76 (ITU-T)**
  “Studies related to conformance and interoperability testing, assistance to developing countries, and a possible future ITU mark programme”

- **WTDC-10 Resolution 47 (ITU-D)**
  “Enhancement of knowledge and effective application of ITU Recommendations in developing countries, including conformance and interoperability testing of systems manufactured on the basis of ITU Recommendations”
Current activities to address Res. 76

- **Conformity** to increase probability of interoperability
  - Created the voluntary based and free pilot *conformity database* to be populated

- **Interoperability** to solve connection problems
  - ITU-T will assist in the establishment of *test facilities in developing countries* as well as in enhancing capacity building in cooperation with the BDT
  - ITU-T is *organising a series of events*. Some events in partnership with relevant SDOs, forums and consortia.
  - Currently *IPTV* Interop events are planned *(next slide)*
  - Future events might include: Home Networking, VDSL2, GPON (Gigabit-capable Passive Optical Network) ... any other idea is welcome!
ITU Interoperability Events

ITU Interoperability Events in 2010 on **IPTV**:

- **Geneva (20-23, July)**
  - 20-21 July - Interoperability Testing
  - 22-23 July - Showcasing
- **Singapore (September)**
- **India (16-17, December)**
  - In collaboration with GISFI
  - Venue: Sinhgad Technical Education Society, Narhe Campus, Pune, India
  - Join the ITU Interop event contacting ITU at: **interop@itu.int**
  - details soon at **www.itu.int/interop**
How GISFI & ITU-T can assist India? (1/2)

(for example)

**Problem:** Inadequate deployment of telecommunication/ICT infrastructure in rural areas in developing nations

**Reason:** Existing mobile network systems are primarily defined for urban areas → do not meet the rural specific requirements:

- Shortage of Power
- Too expensive to maintain the power backup, which is usually Diesel (environmental unfriendly)
- Difficult terrain / Difficult access and transportation
- Lack of skilled man power / Very high operating costs
- Sparsely populated and scattered population clusters
How GISFI & ITU-T can assist India? (2/2)

Solution:

- New Study Question in ITU-T?
  “Rural communication (Setting up a low cost sustainable telecommunication infrastructure in rural areas of developing nations)”

- VNL is joining ITU-T to propose such a new Question under Study Group 5 framework. It will allow studying the generic system requirements for rural mobile networks systems including aspects related to deployment architecture, power consumption, power source, packaging, operation & maintenance etc.

GISFI Action:

- GISFI could coordinate and address similar Indian specific issues to ITU-T Study Groups
Inviting ITU-T meetings and workshops in India

- Hyderabad, few weeks ago, WTDC (world telecommunication development conference)
- Pune, 13-15 December 2010, Kaleidoscope
- Pune, 16-17 December 2010, IPTV Interoperability event
- Pune, 13-17 December 2010, IPTV-GSI (Internet Protocol Television - Global Standards Initiative)

GISFI action:
Continue inviting, through Government, ITU events in India to maximize local participation
Conclusion

GISFI could/should:

- become ITU-T Sector member (done 😊)
- aim at being fast (see ITU-T AAP)
- coordinate Indian participation to international standardization
- apply for ITU-T A.5 qualification (procedure to reference GISFI’s standards in ITU-T Recommendation)
- Apply for ITU-T A.6 qualification (procedure to establish a liaison mechanism with ITU-T)
- Consider a MoU between GISFI and ITU
- Adopt ITU-T’s IPR patent policy to comply also with ISO and IEC – participate to IPR ad hoc group
- Continue inviting ITU-T meetings in India to maximize Indian participation to ITU-T work
- Exploit ITU-T Sector Membership and address specific issues to ITU-T Study groups through direct contribution
- Participate to WTSA and TSAG
Thank you very much!
Additional Slides
ITU-T in a Nutshell

- ITU-T Product: **Recommendations** (= “standards”)
  - **Freely** available to the public
- Work (mostly) done in **Study Groups** (10 of them)
- **Unique partnership** of private sector (Sector Members) & government (Member States)
  - Truly **global**
  - **Consensus** decisions
- Very **flexible**
- **Fast** procedures, **transparent** procedures
- **Brand** name
- Committed to **Collaboration** and **Cooperation**
- Supportive to **Developing Countries**
Work in Study Groups

- SG Face-to-face meeting cycle every 6 – 9 months
  - Paper-less meetings (electronic working methods)
  - Encourage remote participation (web-conferencing, email)

- More frequent meeting are:
  - Rapporteur meetings to deal with specific Questions (electronic or face-to-face meetings as frequently as once a month)
  - Working Parties meetings
ITU Secretariat Services

- Dedicated “Counsellor” per SG:
  - Provide administrative support with technical knowledge (engineer)
  - Manager of meeting logistics
  - Responsible of quality of the Recommendations (ITU is publishing house)
  - Responsible of Website (part of it in 6 languages)
  - Organizes SG related Workshops (technical programme)
Current Study Groups 1/4

- **SG2 - Operational aspects of service provision and telecommunications management**
  - Service definition, numbering and routing
  - Telecommunication for disaster relief/early warning
  - Telecommunication management

- **SG3 - Tariff and accounting principles including related telecommunication economic and policy issues**

- **SG5 - Environment and climate change**
  - Electromagnetic compatibility and electromagnetic effects
  - Harmful Effects of radiation
  - ICTs and climate change
  - Recycling and e-waste
Current Study Groups 2/4

- SG9 - Television and sound transmission and integrated broadband cable networks
  - integrated broadband cable and television networks

- SG11 - Signalling requirements, protocols and test specifications
  - Signalling and protocols
  - Intelligent networks
  - Test specifications

- SG12 - Performance, QoS and QoE
  - quality of service and quality of experience
Current Study Groups 3/4

- SG13 - Future networks including mobile and NGN
  - Future networks and NGN
  - Mobility management and fixed-mobile convergence

- SG15 - Optical transport networks and access network infrastructures
  - Access network transport
  - Optical technology
  - Optical transport networks
Current Study Groups 4/4

- **SG16 - Multimedia coding, systems and applications**
  - Multimedia coding, systems and applications
  - Ubiquitous applications ("e-everything", such as e-health)
  - Telecommunication/ICT accessibility for persons with disabilities

- **SG17 - Security**
  - Telecommunication security
  - Identity management (IdM)
  - Languages and description techniques
Work in Focus Groups

- Works on a **well-defined topic**
- Work in a scheduled **time-frame**
- Establish **its own working methods**
- **Non-ITU Members** can participate

**Output → “ITU-T Specification”**
(not Recommendations!)

- However, output of FG can be input to a study group to make it an ITU-T Recommendation
Current Focus Groups

- Focus Group on **Car Communication** (FG CarCOM)
  - focus is on sub-system level requirements, in car communication and requirements/testing of frontends used for speech recognition in cars (In operation since 2009-11)

- Focus Group on **Future Networks** (FG FN)
  - Discussion to ensure global common understanding about Future Networks – participation of researchers on future internet

- Recently established **new** (TSAG 02/10):
  - Focus Group on **Smart Grid**
  - Focus Group on **Cloud Computing**
Joint Coordination Activities

- Currently **nine** JCAs ([www.itu.int/ITU-T/jca](http://www.itu.int/ITU-T/jca))

- **Management tool** when subject spans more than one study group

- **For coordination** and planning,
  - Technical work done by the study groups

- **External organizations** can join a JCA
Current Joint Coordination Activities

- ICT and climate change (JCA-ICT&CC)
- Telecom Management (JCA-Mgt)
- Accessibility and Human factors (JCA-AHF)
- Identity Management (JCA-IdM)
- *Network Aspects of Identification Systems (including RFID) (JCA-NID)*
- IPTV (JCA-IPTV)
- Conformance and Interoperability Testing (JCA-CIT)
- Home Networking (JCA-HN)
- Next Generation Networks (JCA-NGN)
Technology Watch

- **Technology Watch** surveys the ICT environment for new study topics

- **Technology Watch Briefing Reports** provide an up-to-date assessment of promising new technologies. Recent papers:

1. Biometrics and Standards (December 2009)
3. ICTs and Climate Change (December 2007)
4. Ubiquitous Sensor Networks (February 2008)
5. Remote collaboration tools (March 2008)
7. NGNs and energy efficiency (August 2008)
10. The Future Internet (April 2009)
11. ICTs and Food Security (July 2009)
12. Biometrics and Standards (December 2009)
Intelligent Transport Systems

- ITU, ISO and IEC and Geneva Motor Show
  - Annual Event

- New work:
  - Wideband communication in cars
  - Vehicle gateway protocol

5th edition
PALEXPO, Geneva, 3 - 4 March 2010
How academia has participated so far

- Discrete participation in SG activities
  - Some individuals from academia have leadership roles in ITU-T (Editors, Rapporteurs, chairs of technical committees)
- Some participation in Focus Groups and Technology Watch
- Some participation in ITU-T workshops
- Some important regional activities (e.g. ITU Centres of Excellence)
- No specific ITU membership policy for universities
  - proposal under discussion by ITU Council
  - reduced fee for academia ~2’000 USD
Why Involving Academia?

- New Ideas
- New Topics for SGs
- New Membership
- Increased Participation
- ITU-T Relevance

- News
- Workshops
- Tech-watch
- Promotion

Academia
R&D
Industry
Other SDOs
Regulators
Kaleidoscope Events

- Series of academic conferences
  - International Organizing Committee (10-20 experts)
  - Call for Papers
  - International Programme Committee (more than 100 Experts)
  - Paper review process → double-blind / peer-review
  - IEEE Com Soc (technical co-sponsor)
  - Proceedings distributed via IEEE Xplore
  - 3 best papers award (10’000 USD) event sponsors

- Bridging academia, research & ITU-T standardization activities for discussion on technological innovation and its socio-economic implications
Kaleidoscope 2008
“Innovations in NGN”

- Geneva, **Switzerland**, 12-13 May, 2008
- Paper proposals: **141**
- Accepted papers: **32** lecture, **22** poster sessions
- **223** attendees, **48** countries
- **Practical outcomes** → Focus Group on Future Networks (FG-FN) created in Jan 2009 inspired on a paper from the conference (**Aoyama**)  
- **Sponsors:** Cisco Systems, Intel; ICF (Japan); Sun Microsystems

- Programme, presentations, etc: [http://www.itu-kaleidoscope.org/2008](http://www.itu-kaleidoscope.org/2008)
Kaleidoscope 2009
“Innovations for Digital Inclusion”

- Mar del Plata, **Argentina**, 31 Aug – 1 Sep 2009
- Paper proposals: **83**
- Accepted papers: **20** lecture, **12** poster sessions
- **120** attendees, **24** countries
- **News** → Local University Exhibition (6 Latin American Universities exhibited their activities/projects)
- **Sponsors:** Cisco Systems, Nokia

- Programme, presentations, etc: [http://www.itu-kaleidoscope.org/2008](http://www.itu-kaleidoscope.org/2008)
Kaleidoscope 2010 (1/2)

- **Beyond the Internet? Innovations for future networks and services**
- **Pune, India, 13-15 December 2010**
- Kind invitation of Indian Government

- Hosted by:

- Supported by:

- Partnership with: Technical co-sponsored by
Kaleidoscope 2010 (2/2)

- Call for papers → Deadline: 30 April 2010
- 115 papers submitted from all over the world
- Local University Exhibition
- Best paper awards **10’000 USD**
- Proceedings → IEEE Xplore

**News:**
- Standards Corner (tutorial)
- Jules Verne’s Corner (SF writers and dreamers)