EVENT REPORT

Consultation Meeting on Cooperation Between ITU-T and Universities

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INTRODUCTION
The consultation meeting on cooperation between ITU-T (International Telecommunication Union Telecommunication Standardization Sector) and universities took place in Geneva on January 18 and 19, 2007. The meeting was attended by 40 delegates and was chaired by Mr. David Mellor (United Kingdom).

The director of the ITU-T Telecommunication Standardization Bureau (TSB), Mr. Malcolm Johnson, and ITU’s deputy secretary general, Mr. Houlin Zhao, welcomed the participants.

The contributions and other meeting documentation can be found at http://itu.int/md/T05-UNIVERSITIES-070118-C. The objectives of the meeting were to discuss how to increase the involvement of academia in the standardization process, the expectations from academic and research institutions, possible initiatives, and other topics of common interest.

DISCUSSIONS
After an introduction of ITU and the current activities in its three sectors, the various contributors presented their papers. A total of 32 input contributions were presented. The following is a summary of the most-relevant topics discussed.

Access to Documents
One of the requests from representatives of academia was access to ITU documentation, in particular, support material for preparing teaching courses and research projects.

The participants were informed about the ongoing trial that allows free download of ITU-T recommendations.

The issue of access to meeting documents was also discussed. This may be a sensitive area since contributions and temporary documents may contain information that is not yet discussed and finalized by ITU-T study groups (SGs). Therefore, selective access to meeting documents might be more appropriate.
**Participation Modalities**

TSB presented a list of the possible ways that non-members can directly participate in ITU-T meetings within the current participation rules, listing pros and cons of the different options:

- Experts can be invited by the chairman of a meeting as “invited experts.” However, access to documentation, submission of written proposals, and acknowledgement of the source of verbal contribution are usually very limited.
- Experts can attend meetings sponsored by existing members as part of a national or private-sector member delegation. There are no fees to be paid to the ITU, the (verbal or written) contribution source is acknowledged as coming from the member, and the individual author’s name may be included on the document as the contact for additional information. Additionally, the level of participation is subject to the particular national process or company rules.
- The organization to which an expert belongs can become an associate of a particular ITU-T study group. This will allow the contribution source to be properly acknowledged; however, participation is limited to a single ITU-T study group, and representatives of associates can have only a limited number of roles. The membership fee for associates currently is CHF 10,600 (approximately $8,300) per year. Organizations can also become sector members, which would allow them to participate in all ITU-T SGS and assume all types of roles; the sector member fee is three times that of the associate, currently CHF 31,800 per year.
- Experts can be admitted as members of some special groups: some focus groups (FGs; for example, the FG-IPTV²), joint groups with ISO/IEC (International Organization for Standardization/International Electrotechnical Commission) like JVT, interdisciplinary groups (PCP-TDR, ³ eHSCG⁴), coordination activity on networked identification, and so forth. Possibilities vary according to each group.
- Participation is open and free to workshops and seminars organized by ITU-T.
- A Web-based collaboration tool is available (e.g., the same as used by the ITU-T Technology Watch activity⁵), which could be explored to develop specific discussion forums.

It was highlighted that currently there are no provisions explicitly addressing participation from academia. The issue of a special membership category for universities was briefly discussed and it was noted that while it might help to increase participation, it would not be a solution to all cases. Furthermore, such a new category would need to be created by the Plenipotentiary Conference, the next one being scheduled for 2010. The meeting encouraged further discussion on the relevant topics in ITU toward making such a category a reality.

**PRESTANDARDS ENVIRONMENT**

In summary, a prestandards environment is a forum for advancing new technologies separate from the normal ITU-T SG environment to allow free exploration of the limits of technology without the normal scope limitations found in the established standardization activities.
The prestandards environment answers concerns expressed by both ITU-T’s membership and experts from academia about the participation of academia in the standardization work in ITU-T. It was reported that, on the one hand, ITU-T’s members expressed concern in the past that bringing in topics with a scope too wide might not fit well with the mainstream work items of the SGs and would end up slowing down consensus building and/or diverting energy, attention, and time of experts in the SGs. On the other hand, experts in academia, in particular those involved in research projects, are interested in pushing the limits of technology. Many times, the work items available in the standardization work offer less room for innovation than researchers would find attractive since many of the design decisions have been made, and stability (rather than radical innovation) is usually seen as the goal. Therefore, a prestandards environment could be a middle-ground solution to address both concerns.

The following elements were suggested to the participants for consideration in defining such groups in an ITU-T context:

- They must be structured under thematic discussions to ensure they are geared toward implementations that will be capable of providing concrete input to the future work in the ITU-T study groups and/or focus groups.
- Participation is open on an individual basis to anyone working in the field, including universities, R&D (research and development) centres, and start-up companies.
- Working methods should be flexible and based on the principles of openness and transparency.
- They need not necessarily be connected to a particular SG since the work area might be new, and/or it might not be clear which SG would be the best place to host it.
- They are distinct from ITU-T focus groups since a parent SG might not be needed, the scope of the work could be broad, or it might have a long time frame.
- A prestandards group should be tasked with the production of a well-defined type of output or deliverable, the content of which would vary according to the group.
  - Complete rough or prototype solutions to problems
  - Requirements for new services, systems, protocols, equipment, and so forth
  - Identification of viable candidate technologies
- The prestandards environment groups will be financially independent and will define their own financing model. The possibility of TSB support for secretariat and infrastructure functions will be assessed on a case-by-case basis.
- Prestandards environment groups will be structured according to their specific needs, but should as much as possible work using electronic collaboration methods. When physical meetings are needed, collocation with possibly related SGs is encouraged. Many working modalities are possible: academic conferences (for early development work), workshops, projects, or more focused production styles (such as working groups similar to rapporteur meetings for more consolidated technologies).
- The following interfaces to the standards environment should be considered.
o Selective access to SG or FG meeting documents
o Participation in ITU-T meetings, and the participation of SG and FG experts in the prestandards environment groups (colocation for physical meetings would be useful in this respect)
o Input of documents into SGs and FGs

There was no substantive discussion of the concept, which should be further developed. It was suggested that trials would be useful as a proof of concept. A number of possible topics were identified in the various contributions to the meeting.

ITU-T/Academia Steering Committee
The participants discussed the idea of creating a steering committee tasked with helping to increase the cooperation between ITU-T and academia and research communities, focusing on scouting out new areas for future standardization. The following could be tasks of the ITU-T/Academia Steering Committee (IASC):

- Oversee the establishment of a prestandards environment
  o Define terms of reference (ToR) for new prestandards environments and groups
  o Define the first trial group
- Discuss the viability of an ITU-T academic journal
- Prepare an action plan for educational initiatives
- Support the preparation of a promotion plan for ITU-T activities (workshops, meetings, etc.) in the academic environment, which should be coordinated with existing ITU-T promotion initiatives
- Spawn and monitor other activities (conferences and workshops, and identify opportunities for journals, articles, courses, tutorials)
- Identify opportunities for cooperation with other SDOs (standards development organizations) in promoting increased cooperation with academia
- Identify ITU working methods suitable to ITU-T and academia interaction

The participants felt it would be difficult to agree at the consultation meeting to create IASC, but agreed that this should be further discussed taking into consideration the ideas above.

ITU-T Technical Journal
Many of the contributions at the meeting mentioned the usefulness of the creation of an ITU-T journal. However, it was also recognized that this is a difficult task, in particular because of the resources required as well as because there are already many well-established journals.

Clearly, more discussion is needed to assess the viability of such an endeavour. Some requirements were mentioned at the meeting.

First and foremost, any such journal would need to have a clear distinguishing feature since mimicking existing publications would probably lead to failure. Some ideas in this direction are the following:

- The journal should build on ITU membership assets and interests to provide a unique mix of themes, articles, and depth.
- ITU’s diversity should be reflected in a journal with a strong multidisci-
plenary feature, bridging nontechnical issues such as policy, regulatory, and economic discussions with technology. These papers should be in-depth and of very high quality.

- It could also provide regular updates on advances on standards developments and new research projects.

The journal would probably aim at a low periodicity but at high quality for its feature papers, which would be assured by a rigorous editorial peer review of submitted papers. Submissions to the journal should be open to all.

It was recognized that this is a very difficult initiative, and that if initiated, it would take some time to build up the journal’s reputation and hence have it be recognized by the scientific community. On the other hand, it was mentioned that the editorial market is undergoing many changes, and innovative publication methods could be considered.

It was also suggested that one could try to team up with well-established publications to produce joint issues on themes of common interest, for example, for the proceedings of the first Kaleidoscope Event.

**EDUCATIONAL INITIATIVES**

The meeting highlighted the importance of integrating standardization as a regular subject in postsecondary syllabi, and that the participation of SDOs would be of great assistance in elaborating relevant and up-to-date education for future engineers and decision makers. Assistance in helping professors and teachers to better network amongst themselves at the national and regional level, as well as with internationally recognized experts in the industry, was mentioned as useful, in particular in identifying the profile of professionals that could assist in specific teaching and training tasks.

The low visibility of ITU activities and products in the academic environment was mentioned as a major problem, and actions should be organized to counter this deficiency.

The idea of elaborating an action plan for joint educational initiatives between ITU-T and academia to address the issues above was welcomed. The following are some elements to be taken into consideration in this task:

- Avoid duplication with activities already in place (e.g., in ITU-D, ISO and IEC)
- Identify higher education institutions interested in standardization activities under ITU’s mandate
- Identify selective access to documentation (meeting documents, reports, Recommendations)
- Elaborate online courses eligible for credits in graduate and undergraduate courses
- Prepare basic material for teaching on standardization matters
- Define criteria for internships (e.g., for visiting professors, students, researchers) and pursue initiatives that will allow brokering contacts with possible research project sponsors
- Promote the use of Webcasting (audio, video) of meeting sessions, workshops, and so forth
- Develop a roster of speakers for specific talks or courses
- Identify opportunities for sponsorship of these activities
• Facilitate closer cooperation of national and regional networks of universities and R&D centres
• Facilitate access to ITU-T recommendations for increased visibility, for example, support national initiatives for translation into other languages than the official languages of the union
• Develop reference Web sites with information on relevant lead activity

The idea of organizing a regular event aiming at bridging the ITU-T standardization activities and academia, nicknamed Kaleidoscope Events, was welcomed by those at the meeting. The events would aim at the following:

• Bridging standardization activities in ITU-T and research activities, and exploring future-looking topics not yet covered in ITU-T work items
• Being a place where the prestandard environment can find an opportunity to mix up and share different opinions, experiences, and views
• Inviting professors, scientists, engineers, students, journalists, writers, and science visionaries
• Establishing a yearly Innovation in Telecommunications and Information Technology prize

The first Kaleidoscope Event would be focused on innovation in NGN and should bring together new and visionary ideas on the future of NGN. Some guiding principles for its organization are as follows:

• It should build on existing standards work on NGN, from ITU as well as other sources, highlighting ITU-T’s current and possible future roles, and then focus on future innovations that can be made possible by NGN within a mid- and long-term perspective.
• It should be peer-reviewed by a high-level organizing and technical review committee.
• It should organize a call for papers well-disseminated in the academic environment.
• Its target date is around May 17, 2008.

Next Steps
The meeting endorsed the creation of an informal group to discuss in more detail the various issues raised at the meeting, including the following:

1. Creation of IASC
2. Establishment of a prestandards environment trial
   a. It would be managed by IASC, which would be tasked with defining the ToR of each prestandards group, the deliverables, and the communication mechanisms with ITU-T SGs and FGs.
   b. The theme could be one of those mentioned at this consultation meeting after a brief study of areas that could have critical mass (associated with the stocktaking initiative; see below).
3. Implications concerning the creation of an ITU-T journal
4. Preparation of promotion plan for ITU-T activities (workshops, meetings, etc.) in the academic environment (coordinated with other ITU-T promotion initiatives)
5. Development of an action plan for educational initiatives
6. Identification of opportunities for the organization of workshops and sym-
posia, possibly colocated with ITU-T meetings and harmonized with the ITU-T workshop and seminar programme.

The meeting also agreed that the following issues should be addressed:

- Acknowledgement of authorship in ITU-T work, for example, in Recommendations, manuals, handbooks, and other ITU-T products
- Free selective access to working documents and ITU-T Recommendations granted on a case-by-case basis to professors, for example, as support for preparing graduate and undergraduate courses and for supporting research projects
- Definition of a new membership category to allow easier participation of academia in the work of ITU-T
- Promotion of the mechanisms that allow participation of members of academia as experts in ITU-T activities with no or very limited financial engagement

It was agreed that all interested parties could take part in the discussions, which will be chaired by Mr. David Mellor. As next steps, the initial members of the informal group will be identified and a chronogram of conference calls was defined.

In parallel, TSB agreed to pursue the following:

1. It would aim to organize a regular event to bring together academia, research organizations, and ITU-T members in Kaleidoscope Events: Bridging Standardization and Research. The first event is presumed to be held over the week of May 12, 2008, and will focus on innovation in NGN, as outlined above.
2. TSB is open to consider co-organizing joint events with academic organizations.
3. TSB will initiate a stocktaking of academic organizations interested in standardization and facilitate networking of these organizations with potential sponsors. As a second step, TSB will identify opportunities to increase ITU-T presence in the academic environment.
4. It will coordinate similar activities with the other ITU sectors and SDOs, in particular ISO and IEC, to avoid duplication of actions.
5. TSB will identify opportunities for internship for professors, students, and researchers.

ENDNOTES

1 See http://itu.int/ITU-T/IPTV.
2 JVT is the joint video team between ITU-T SG16 and ISO/IEC JTC1 SC29/WG11; see http://itu.int/ITU-T/studygroups/com16/jvt.
3 PCP-TDR is the Partnership Coordination Panel on Telecommunications for Disaster Relief and Mitigation; see http://itu.int/ITU-T/special-projects/pcptdr.
4 eHSCG is the E-Health Standardization Coordination Group; see http://www.ehscg.org.
5 The ITU-T Technology Watch is an open electronic forum for technology discussions; see http://itu.int/ITU-T/techwatch/general.asp.
Simão Ferraz de Campos Neto joined the secretariat of the ITU Standardization Sector (ITU-T) in 2002 and is the counsellor for ITU-T Study Groups 6 (for outside plant and indoor installations) and 16 (for standardization work on multimedia services, protocols, systems, terminals and media coding). He also organized several ITU-T workshops, was the TSB Coordinator for the 2003 Informal Forum Summit, and acted as editor of the first version of the ITU-T Security Manual. Prior to joining ITU in 2002, Campos worked as a scientist in COMSAT Laboratories performing standards representation and quality assessment for digital voice coding systems. A senior member of the IEEE, Campos authored several academic papers and position papers, and served in the organizing and review committee of IEEE-sponsored conferences.

David P Mellor has worked in the telecommunications industry for over 40 years with experience of manufacturing, the service industry, mobile networks and has been employed at all levels from technician to a member of the executive board of directors. Mellor’s experience is not limited to the United Kingdom since his work has taken him to over 100 countries, including all continents. In recent years he has been an active member of several International organisations and he was chairman of the Telecommunications Development Advisory Group of the International Telecommunications Union. Working with governments and universities Mellor has designed a number of academic programmes, which specifically address the shortfalls in knowledge of human resources as they progress to the emerging liberalised communications organisations. With Cable & Wireless’s support Mellor developed an on-line Academy and a number of e-Education and e-Training programmes were made available via the Internet. Scholarships have been made available to the USTTI, UKTA and ITU. Scholarship support was also available to study full-time at a number of Universities specialising in the issues of communications management. On behalf of the ITU a Master of Regulation & Policy was specified and this has been developed and delivered by The University of the West Indies. The intention is that the UK designed master’s degrees will shortly be delivered in China, India and Rwanda. Mellor is currently a visiting professor of Telecommunications to Coventry University and also SWUN and BUPT (Beijing University of Posts and Telecommunications) in the Peoples Republic of China. Moreover Mellor delivers modules of the Master of Communications Management as a visiting professor at KIST, Rwanda. Mellor’s work with the British Government in respect of innovative scholarship schemes was recognised in the Queens Birthday Honours in 2003 where he received the OBE.
EVENT REPORT

INTEREST: Integrating Research and Standardisation

Stephan Gauch, Fraunhofer Institute for Systems and Innovation
Research in Karlsruhe, Germany

The final workshop of the INTEREST project (Integrating Research and Standardisation) took place on November 9, 2006, in Brussels. It was entitled Future Opportunities for Research and Standardisation. Over 30 experts from companies, academia, and policy-making institutions attended. The workshop was split into two parts. The first part comprised more formal talks. These included first an invited speech by Peter Hatto, director of research at IonBond Ltd. and chairman of UK NTI/1 and the ISO (International Organization for Standardization) TC 229 Nanotechnologies Standardisation committees on the challenges of nanotechnology standardisation. Subsequently, two draft manuals produced by the INTEREST project were presented. These manuals, on the one hand, aim at providing guidelines and best practices for research organisations, largely aiming at companies’ R&D (research and development) labs, and also at addressing research and technology organisations (RTOs) and universities. On the other hand, advice for standards-setting bodies (SSBs) was provided.

The second part of the workshop consisted of a plenary session including selected experts who had been provided with a draft version of both manuals. The plenary members were selected to represent stakeholders from R&D and standardisation, as well as policy makers. Policy makers were represented by Ian Perry, the scientific officer of this project, and by Martin Grabert representing the European COST initiative. The corporate R&D domain was represented by Josef Kaltwasser from Heusch Boesefeldt GmbH, a German SME (small to medium-sized enterprise) specialising in transport telematics systems with a strong focus on innovative solutions in this area. Finally, standardisation organisations were represented by John Ketchell and Kamal Hossain representing CEN/STAR (Comité Européen de Normalisation [European Committee for Standardization]). Additionally, Simão Campos-Neto from ITU-T (International Telecommunication
Union Telecommunication Standardization Sector) presented current activities of ITU-T regarding an initiative to attract more university researchers to standardisation at ITU-T.

The workshop concluded with an open discussion of the manuals. Here, it was noted that it should be made clear in the manuals that the project’s survey findings reflect the subjective experience of the respondents; that is, activities to optimise the link between research and standardisation by SDOs (standards development organisations) are sometimes not perceived by the relevant communities. Still, it was agreed that this also reflects parts of a broader awareness problem. Also, it was observed that some of the mechanisms proposed in the manual for SSBs are already being tested in some SSBs, with ITU-T’s initiative to improve relations with universities being a case in point.

A number of topics were touched upon in the discussion. One such general observation was that the lobbying for standardisation both at the European Commission and in the member states has been reduced in the last decade.

In order to promote the issue of standardisation in national and European research programmes, it was proposed to establish a network consisting of both standards researchers and standards setters who could be recruited for future evaluations of project proposals submitted for the Seventh European R&D Framework Programme, as well as national research programmes. It was also suggested to develop manuals for R&D programme managers in order to better integrate the standardisation dimension in the research programmes.

The incentives for researchers to become actively involved in standardisation need to be identified and communicated (and possibly created first). Also, the benefits of standards as such and of active participation in the standardisation process itself need to be distinguished (and also communicated appropriately).

Furthermore, it should be stressed that researchers need to align their personal motivations with the strategic position of their employers (which is not necessarily always the case). This holds primarily, but not exclusively, for IPR (intellectual property right) issues.

Within companies there are severe problems regarding managerial awareness of the strategic importance of standards and how they can be used strategically. The same holds for the coordination of standardisation activities within a company. This holds even for the ICT sector that strongly depends on interoperability standards.

At present, research and standardisation remain distinct realms. A long-term perspective will require additional focus on the (tertiary) educational system by introducing courses on standardisation and standards. Along similar lines, researchers need to be educated about the strategic benefits of standards. The major problem here is the lack of standardisation researchers and of professors who are in a position to teach the topic. Also, researchers might not see the point in participation when resources are scarce, benefits are unclear, and most SSBs are bound by a legacy of institutional rules that are hard to reshape to meet the inherent interests of researchers. The question remains: Who is able and willing to take the first step?
Stephan Gauch is a social scientist with a background in quantitative sociology. His research interests are the sociology and economics of innovation, technology and science with a special focus on standardisation issues. Currently he is working on his PhD thesis on the interaction of research and standardisation at the Fraunhofer Institute for Systems and Innovation Research in Karlsruhe (Germany).
Event Report

Final Workshop: Cooperation Platform for Research and Standards

Bart Brusse, ConTeSt Consultancy, Brussels

The Cooperation Platform for Research and Standards (COPRAS) started early-February 2004 as a 3-year project initiated by the three European standards organisations CEN (Comité Européen de Normalisation, European Committee for Standardization), CENELEC, and ETSI, together with W3C (World Wide Web Consortium) and the Open Group. Its objective was to support projects in the Sixth European R&D (Research and Development) Framework Programme (FP6) in their interfacing with standards organisations, and to provide tools and recommendations for improving research and standards interfacing in subsequent R&D framework programmes. Thus, to a certain extent, COPRAS adopted a European approach. However, many of its findings and recommendations will also be relevant for non-European R&D projects, as well as for standards bodies and policy makers.

In order to discuss its findings and deliverables with its main groups of stakeholders, COPRAS organised a conference on research and standardisation: FP7. The conference featured invited speakers as well as delegates from all constituencies (e.g., the research and standards communities, larger companies and SMEs [small and medium-sized enterprises], and the European Commission), and was held on January 17, 2007, in Brussels. In total, around 140 people attended.

The 12 invited speakers addressed a variety of issues that have to be taken into account in considering the relationship between research and standards. They were structured into four sessions.

- RTD and standards interfacing in FP7
- Research and standards interfacing as a tool for industrial and societal progress
- Seizing the opportunities in standardisation as a research project
- The perspective for the near future regarding what can be done to help research projects benefiting from interfacing with standardisation in FP7

In addition, a discussion between the conference audience and a panel of representatives from all stakeholders of the research and standards interfacing process.
revealed a number of further issues that should be addressed by research projects, the standards community, or the European Commission.

A number of general conclusions can be drawn from the presentations and the audience’s feedback. The following paragraphs group these conclusions into five categories, focusing on the improvements that could be made to processes, as well as on challenges different groups of stakeholders are facing.

- **Benefits of standardisation:** Standards and standardisation provide clear benefits to users as well as producers of standards; with respect to the latter, technology transfer and cross-fertilisation are important, but probably most relevant is the fact that standardisation provides the bridge between research results and their implementation in innovative, marketable products. Standardisation therefore establishes an essential component for boosting innovation, and prevents de facto standards generating barriers to trade.

- **Timing and process speed:** Standards processes are often initiated too late, and starting research and standards interfacing at an early point in time during a project’s life span is strongly recommended. The right timing is therefore important, and projects that create a framework preparing their participation in standardisation clearly have a better chance to be successful. However, starting too early without a clear market demand underlying a proposed standard may lead to a loss of resources. Also, the current pace of technological development requires accelerating the development of standards, which at the moment is taking too much time. Therefore, standardisation and research should proceed in parallel.

- **Barriers for projects participating in standards work:** Participating in standards processes can be quite expensive, and for a project, it is not always clear whether there will be a tangible return on investment in standardisation. Membership fees often establish a barrier for projects, specifically for SMEs and universities among their consortium partners. There is cross-fertilisation between standardisation and research, but time, effort, and resources are often underestimated. Moreover, finding the right standards organisation can be complicated, and there is not much clarity on the different backgrounds and working methods of the organisations; more coordination and tools are clearly required here. Also, experience teaches that it is difficult for a project to participate in standards processes if it does not already have representatives working in the targeted standards organisations among its project partners.

- **Challenges for (European) standards organisations:** Competition between standards organisations, in Europe as well as between different regions (China, United States), is a reality, also where input from research projects is concerned. Standards organisations therefore have to put more effort into marketing, specifically toward the SME community, to increase participation in their processes and usage of their products. In addition, issues like IPR (intellectual property right) rules, confidentiality of drafts, and membership rules and fees could be evaluated

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to make them friendlier to the ICT research community.

- **Challenges for FP7:** Interfacing with standardisation remains an important aspect in FP7. However, additional measures are needed to address the resource issues projects run into when organising their cooperation with standards organisations. Also, supporting actions are necessary to address crosscutting standards work involving multiple projects and multiple standards organisations. The continuation of COPRAS’s efforts to bring European research and standardisation closer together is a necessity to turn more research results into global standards and reinforce Europe’s position as a leading provider of technologies for the global information society, and thus capitalise on the good track record Europe has in ICT research.

COPRAS’s results and deliverables represent an important first step in educating research projects and other stakeholders about the research and standardisation interfacing process, and how improvements can be made to this process. Follow-up actions will clearly be necessary. To this end, the following recommendations can be made.

1. COPRAS’ activities have generated knowledge, results, and guidelines that, when implemented, can support the improvement of research standards interfacing in FP7. However, results achieved so far are not a panacea for addressing the many open issues that still lie ahead. Moreover, feedback, specifically from the research community, indicates that more information and higher levels of support are needed from the standards community in order to pass more research output through standardisation and, ultimately, encourage Europe’s leading role in furthering the information society. This can best be achieved through additional support activity in FP7 from the side of the standards community, hence the recommendation to the European Commission to enable (horizontal) support actions building upon the COPRAS achievements.

2. The benefits of standardisation are not clear to a large group of potential contributors and end users of standards. Standards organisations will have to put more effort into marketing the benefits of making as well as applying standards to the research and industrial communities in Europe, and will specifically have to emphasise their communication to SMEs.

3. In the same context, the European standards world should realise there is competition between regions (Europe, China, United States, etc.) as well as between standards organisations. To encourage the global uptake of European standards, it is important that standards organisations implement an active policy to encourage and facilitate projects passing their output through European standards organisations. This may also imply that specific arrangements may have to be implemented addressing the barriers that projects currently encounter in their interfacing with standards organisations (membership fees, IPR rules, confidentiality issues, etc.).

4. Although research and standardisation ideally should proceed in parallel, in most situations this is simply not possible because standardisation processes
generally take more time than projects have. European research programmes should acknowledge this and provide mechanisms that would enable research projects to acquire additional resources in situations where standards work exceeds a project’s life span.

5. Additional mechanisms will have to be put in place to facilitate and encourage research projects getting in contact with standards organisations. Specific tools will be necessary to help projects in finding the standards and standards organisations that are most relevant to their activities and results, and to provide better perspectives on the background and processes adopted by individual standards organisations.

Further information about both the project and the event may be found at http://www.copras.org.

Bart Brusse has been active as an independent consultant in digital media and ICT standards development since 2000. He has worked with operators in several European countries on the development of digital TV services, and carried out a number of projects focusing on further standardization in this area, together with organisations such as the European Committee for Electrotechnical Standardization (CENELEC), the European Telecommunications Standards Institute (ETSI), and the Digital Video Broadcasting project (DVB). Since 2004 he is managing COPRAS, the Cooperation Platform for Research and Standards, a support action project in the European 6th Framework Programme, on behalf of CEN. Before he started his own company, ConTeSt consultancy, Brusse worked in the cable industry for 8 years as head of strategy & business development and head of programming. He has a bachelor’s degree in sociology and a master’s degree in mass communication.
EVENT REPORT

The IEC Challenge Contest

Ken Krechmer, University of Colorado – Boulder, USA

For its 2006 centenary, the IEC (International Electrotechnical Commission) decided to seek independent views on the contribution of international standards to society. The IEC Centenary Challenge asked the world’s academic institutions to address the following: “the economic, business and social impact of the development and use of International Standards for end-users at any level of business activity.” In order to widen the reach of the Centenary Challenge, the IEC asked three major engineering organizations (the U.S.-based IEEE [Institute of Electrical and Electronics Engineers], the U.K.-based IET [Institution of Engineering and Technology], and the German VDE [Association for Electrical, Electronic & Information Technologies]) and one of the world’s most respected magazines (The Economist) to support this initiative.

The contest was officially launched at the 69th General Meeting of the IEC in Cape Town, South Africa, on October 25, 2005. Papers were to be submitted to the IEC by September 1, 2006. A total of 98 institutions from 35 countries registered for the contest; the final submissions totaled about 100 papers from 20 countries.

The submissions were registered, divided into batches (irrespective of geographical origin of papers), and submitted anonymously to three Centenary Challenge Advisory Boards (CCABs): one for the Americas (CCAB1); one for Europe, the Middle East, and Africa (CCAB2); and one for Asia and the Pacific (CCAB3). The CCABs were chaired, respectively, by Dr. James T. Carlo of Consulting LLC (focusing on telecom strategy, standards, and patents), who is also an IEEE Fellow; Dr. John Bishton, chairman of Engineering, Management Partnership and visiting fellow from the University of Bristol, United Kingdom; and Robert Chua, president of the Singapore National Committee of the IEC, and CEO of Excellent Family Lifestyle (S) Pte. Ltd., Singapore.

Each CCAB recommended the top three papers from the total number of papers submitted to each respective CCAB. The CCABs were permitted to include a fourth recommended paper if absolutely necessary should the quality of the papers merit it. On this basis, 11 papers were commended and published by the IEC in a handsome book, International Standardization as a Strategic Tool. From these 11 papers, a panel of four judges selected the four prize-winning
documents. The judges were Dr. Arden L. Bement, Jr., director of the National Science Foundation, USA; Tom Standage, technology editor of The Economist; Dr. Takuo Sugano, professor emeritus at the University of Tokyo and chairman of the board of trustees at Toyo University; and Professor Klaus Wucherer, member of the central managing board, Siemens AG. The judges selected the winners of the IEC Centenary Challenge.

**First Prize**

*Standardising Mesopic Vision Conditions and Incidence on Light Sources Science and Technology* by Georges Zissis and Stuart Mucklejohn, Université Toulouse III, Paul Sabatier, France

**Second-Prize Cowinners**

*The Entrepreneur and Standards* by Ken Krechmer and Elaine Baskin, University of Colorado at Boulder, USA

**Architecture-Based Approaches to International Standardization and Evolution of Business Models** by Junjiro Shintaku, Koichi Ogawa, and Tetsuo Yoshimoto, University of Tokyo, Japan

**Third Prize**

*Standardization and Patent Pools: Using Patent Licensing to Lead the Market* by Hajime Yamada, Tokyo University, Japan

The winners were announced at the awards ceremony in the IET building, London, England, on December 14, 2006. The winners received $15,000 for first prize, $5,000 for second prize, and $2,000 for third prize. The prestigious IEC Centenary Challenge achieved an important objective by spotlighting academic research in the field of standards and standardization. The published papers may be used by universities, and engineering and business schools to support related curricula in these institutions.

Ken Krechmer has participated in communications standards development from the mid 1970’s to 2000. He actively participated in the development of the International Telecommunications Union Recommendations T.30, V.8, V.8bis, V.32, V.32bis, V.34, V.90, and G.994.1. He was the technical editor of Communications Standards Review and Communications Standards Summary 1990-2002. In 1995 and 2000 he won first prize at the World Standards Day paper competition. In 2006 he received the joint second prize in the IEC Challenge paper competition. He was program chair of the Standards and Innovation in Information Technology (SIIT) conference in 2001 (Boulder, CO) and 2003 (Delft, Netherlands). He is a lecturer at the University of Colorado, Boulder, CO, USA and a senior member of the IEEE. His current activities are focused on research and teaching about standards.
EVENT REPORT

The Open Standards International Symposium

Ken Krechmer, University of Colorado – Boulder, USA

This symposium took place at Yale Law School on February 3, 2007, in New Haven, CT. It was sponsored by Microsoft and Sun and led by the following:

• Jack Balkin, professor of constitutional law and the First Amendment, and director of the Information Society Project at Yale Law School, introduced the conference.
• Eddan Katz is the executive director of the Information Society Project and a lecturer in law at Yale Law School.
• Laura DeNardis is a 2006 to 2007 visiting fellow in the Information Society Project at Yale Law School.

By design this conference attracted a broad and diverse group of participants. The different speakers discussed their views on open standards in four panel groups: technology, economics, politics, and law. About 60 people attended.

Technology Panel
Moderator: Geoffrey Bowker, professor and executive director of the Center for Science, Technology, and Society at Santa Clara University

Speakers

• Jason Matusow, senior director of IP & Interoperability, Microsoft Corporation
• Ken Krechmer, lecturer at the University of Colorado, Boulder, whose position paper was titled Open Standards Requirements
• Peter Strickx, general manager of Architecture & Standards at Fedict, Belgium
• Carl Cargill, chief standards officer at Sun Microsystems, Inc.

The technology panel was divided on expected lines. SUN supports no IPR (intellectual property rights) on open standards. Microsoft desires open standards that may have IPR and other restrictions. The Belgian representative suggests open standards are those that allow only one standard for one function worldwide.
Economics Panel
Moderator: Manon Ress, director of the Information Society Project and Consumer Project on Technology

Speakers
• Rishab Ghosh, senior researcher at the United Nations University and the Maastricht Economic and Social Research Training Centre on Innovation & Technology, whose position paper was titled Free/Libre/Open Source Software: Policy Support
• An Baisheng, deputy division chief of the WTO Department, Ministry of Commerce, People’s Republic of China, whose position paper was titled Intellectual Property Right (IPR) Issues in Standardization
• John S. Wilson, lead economist of the Development Economics Research Group, International Trade, the World Bank, whose position paper was titled A Quick Look at Regulation and Information Technology
• Sherrie Bolin, president and CEO of The Bolin Group (a standards conference and publishing company), whose position paper was Standardization as a Business Tool
• Bob Sutor, vice president of Standards and Open Source, IBM Corp.

An Baisheng discussed some of the difficulties in China regarding other countries’ IPR associated with standards. He noted that a group of Chinese engineers identified problems with a specific patent in a patent pool, and the patent holder agreed to withdraw the patent from the pool. However, the total royalty charge the patent pool charged remained the same.

John Wilson offered a positive view of trade and how it increases GDP (gross domestic product) in even the poorest counties.

Sherrie Bolin discussed standardization as a business tool and how it should be managed.

Bob Sutor addressed standardization from a high and pragmatic level and how it is seen internal to IBM. IBM examined 37 cases where IBM IPR could be used in an external standardization process and came to the conclusion that it made the most sense for IBM to offer the IPR royalty free. This was the genesis of IBM’s current approach to IPR in standards.

Politics Panel
Moderator: Alexander Galloway, assistant professor of culture and communication, New York University

Speakers
• Huang Rengang, minister counselor of the permanent mission to the WTO, People’s Republic of China
• Linda Garcia, professor and director of communication, culture and technology at Georgetown University, whose position paper was titled Bringing the Public Interest into Standard Setting
• Vittorio Bertola of the At-Large Advisory Committee at ICANN, and

Mr. Ghosh’s paper argues that open standards, as properly defined, allow “natural” monopolies to form in a given technology while ensuring full competition among suppliers of that technology. This is a distinct economic effect that deserves to be distinguished by the use of a separate term, hence open rather than ordinary standards, referred to as semi-open in this article.
president and CTO at Dynamic Fun, whose position paper was titled *The Age of Mass Standards*

- Natalie Sunker, Republic of South Africa, deputy director of Intellectual Property, Policy & Legislation at the Department of Trade and Industry, whose position paper was *Political Issues: South Africa*

- Victoria Espinel, assistant U.S. trade representative (USTR) of Intellectual Property & Innovation, Office of the U.S. Trade Representative

Mr. Huang offered a view of China’s political concerns, noting that the TBTs (technical barriers to trade) direct countries to use standards, but does not address how IPR within standards is itself a barrier to trade.

Linda Garcia offered a governmental view noting successes and failures of standards-setting organizations as well as the U.S. government, and suggested that the U.S. government needs to look harder at how to address standardization issues as standardization is fundamental to the public good.

Vittorio Bertola offered his view of the importance of the independent nature of the Internet. Victoria Espinel noted the need for both commercial and legal consideration of IPR issues to find an appropriate solution.

Natalie Sunker described the South African view of standards, noting that while South Africa protects IPR, it receives very little value from IPR.

**Law Panel**

Moderator: Daniel Benoliel, lecturer at the Hebrew University at Jerusalem and the Haifa University Law Faculties in Israel. He teaches patent law, biotechnology law, and foreign trade law. Previously, he was a visiting fellow with the Information Society Project between 2004 and 2005.

**Speakers**

- Andrew Updegrove, cofounder and partner of the Boston law firm of Gesmer Updegrove LLP, has worked with over 70 consortia, accredited standards development organizations, and open-source consortia since 1988, and has assisted many of the largest technology companies in the world in forming such organizations

- John Morris, director of the Internet Standards, Technology, and Policy Project at the Center for Democracy and Technology, whose position paper was titled *Injecting the Public Interest into Technical Standards*

- Amy Marasco, general manager for Standards Strategy, Microsoft

- John Palfrey, executive director of the Berkman Center for Internet & Society, and a clinical professor of law at Harvard Law School

- Robin Gross, founder and executive director of IP Justice, an international civil liberties organization that promotes balanced intellectual property law and protects freedom of expression (http://www.ipjustice.org)

Daniel Benoliel offered that standards are not a topic, but a prism through which the full spectrum of many other legal topics may be seen.

Andrew Updegrove offered the view of ICT standardization (compatibility
standards) as a process under stress. The migration from industrial-age standards to information-age standards is part of this cause. He offered three solution directions including forcing a single standard, using ex ante procedures to identify IP in advance, and using profiles (adaptability standards) to allow variation.

John Morris is a public advocate of the use of standards. He explained the difficulty of bringing public views to standardization organizations and noted the need for better public-interest awareness in the standardization community.

Amy Marasco addressed the legal aspects of standards and standardization supporting a market-oriented solution rather than a government-oriented solution.

John Palfrey offered a broad legalistic view of how to identify and utilize open standards. Robin Gross raised the issue of tying in the digital music player business and the use of consumer and antitrust laws to address these issues. She noted that this action is already starting in Europe (e.g., iTunes actions).

**SUMMARY**

Overall, this conference suggests that the compatibility-standardization and related IP system is not working well. The following are indicators of this: the difficulty of achieving interoperability, rise of consortia, rise in patent litigation, lack of third-world IP input into the standardization process, demands on commercial companies like Microsoft and Apple to give away their IP where they have market control, and weakness of RAND (reasonable and non-discriminatory) policies to resolve IPR issues.

Solution directions that were proposed included the following:

- Regarding technical issues, utilize profiles or adaptability standards
- Regarding legal issues, use patent policy changes or ex ante provisions and greater assertion of existing law to fix the current problem
- Expand trade regulations to address IPR impact, and promote greater government involvement and copyright exemptions on public standards

Ken Krechmer has participated in communications standards development from the mid 1970’s to 2000. He actively participated in the development of the International Telecommunications Union Recommendations T.30, V.8, V.8bis, V.32, V.32bis, V.34, V.90, and G.994.1. He was the technical editor of Communications Standards Review and Communications Standards Summary 1990-2002. In 1995 and 2000 he won first prize at the World Standards Day paper competition. In 2006 he received the joint second prize in the IEC Challenge paper competition. He was program chair of the Standards and Innovation in Information Technology (SIIT) conference in 2001 (Boulder, CO) and 2003 (Delft, Netherlands). He is a lecturer at the University of Colorado, Boulder, CO, USA and a senior member of the IEEE. His current activities are focused on research and teaching about standards.
A step-by-step approach to e-business interoperability, widely understood as the automated sharing of information within and between companies irrespective of their industry sectors and company size, was discussed at the Second eBIF Conference, held in Utrecht on December 11 to 12, 2006. Among the assertions from the meeting are that technology will become a commodity and information will be the differentiator. This observation from the KPMG presentation is further underpinned by the Microsoft keynote address, which noted that people are the best examples of interoperability, and software is just here to help.

The conference participants reviewed the achievements and challenges in relation to standardisation, practical research criteria and plans for FP7 (Seventh European R&D [Research and Development] Framework Programme), collaboration with and between SMEs (small and medium-sized enterprises), cross-functional standardisation services such as OASIS (Organization for the Advancement of Structured Information Standards) and EIC (Enterprise Interoperability Centre), and e-business standards developments in China, among others, and concluded with an open panel discussion. Copies of the presentations can be downloaded from http://www.cen.eu/cenorm/businessdomains/businessdomains/isss/activity/ebif_conf_programme.asp.

Two major essential steps to workable solutions emerged from the presentations and panel discussion and will be further developed in the full report to be made available early in 2007 from the EQUENS and the CEN/ISSS (Comité Européen de Normalisation, European Committee for Standardization) Web sites. These steps, which represent areas on which eBIF in collaboration with partners will expand and build, are as follows:

- Access to better information about successful standards implementations
- Reduction in fragmentation and elimination of gaps in end-to-end standards developments and standards-based e-business implementations

Success stories concerning interoperability in e-business identified in the discus-
sion included the open document format, the eCommerce Directive, the eZFlux standards implementation in the agricultural and food manufacturing industry, ICT applications used in the liberalisation of the energy sector, and instances being prepared by OASIS on the implementation and success of ebXML (e-business using extensible markup language).

Guidance through the “jungle of standards,” the reduction of unnecessary fragmentation, and the business need for simplicity will drive end-to-end standards development across a wide range of complementary organisations. While fragmentation is not welcome, it was noted that diversity is good as different organisations can collaborate in areas of common interest and adopt each others’ work where relevant.

Interoperability is key to the revised Lisbon strategy and central to the survival and growth of small and medium enterprises. Nonetheless, interoperability remains an area to be tackled at various levels: There are business, nontechnical, and technical challenges. The main problems to be tackled are a better understanding of interoperability needs by business leaders, improved internal interoperability in large companies, SME participation in problem definition and the search for solutions, and the need for a clear and harmonised legal framework.

eBIF is convinced that the way forward is strengthening partnership with other organisations active in e-business. eBIF is already collaborating with many fora and activities at the international level. In Utrecht, eBIF and EIC announced discussions concerning a mutual collaboration arrangement.

Henry J. F. Ryan is the managing director of Lios Geal Consultants Ltd., an Irish company specialising in information management and strategic ICT standardisation. He is a practicing information scientist, with over 30 years experience in expert and information management roles in both public and private industry. He is also an active member of the e-Business W@tch Advisory Board (www.ebusiness-watch.org) and author or contributor to several of its study reports. He has master’s degrees in experimental physics (University College Cork, Ireland) and in information studies (University of Sheffield, UK) and has completed international change management courses at the International Institute for Management Development (IMD, Switzerland).