EVENT REPORT

Report of Standards and Innovation in Information Technology (SIIT) 2005

Ken Krechmer, International Telecommunications Union, Switzerland

The SIIT 2005 conference was opened by Mostafa Sherif (AT&T), SIIT2005 Conference Chair, who thanked the ITU-T, BT, Microsoft, and SUN for their support of this, the fourth SIIT conference. SIIT is a multi-disciplinary refereed paper standards and standardization conference held every two years in different locations around the world. The purpose of the SIIT conferences is to develop the field of standards and standardization by bringing together participants from all the different disciplines that are impacted by standards in order to understand and learn from each other. Seventy participants attended this conference, including attendees from as far away as Australia, Estonia, Iran, Japan, and South Korea.

Houlin Zhao, Chair of the ITU-T and host to SIIT2005, offered opening remarks, recounting the long history (since 1865) and success of the ITU, the interest of the ITU in working with academic organizations, and the continuing ability of the ITU to be responsive to the needs of the standards marketplace.

John Hill, SUN, offered a stirring opening address, “Standardization: I Have a Dream.” He pointed out the great value of standardization worldwide to disseminate knowledge and to increase trade and noted the difficulties caused by entrenched interests in the standardization process. He dreams of infrastructures that meet needs, leaders of SSOs who lead their organizations, collaboration in standardization and competition in the marketplace, standardization that is greater than creating specifications, interoperability as a requirement, and a time when consortia are the equals of SDOs.

After the presentation of papers on Wednesday, the day concluded with a panel session, “The Economic Value of Standards,” which began with a presentation by R.R. Teh of the WTO. This presenta-
tion offered a trade-related view of standards. He explained that the impact of standards on trade is often ambiguous, as standards increase cost and also increase the attractiveness of the goods. These surprising assertions unfortunately were not discussed in the follow-up panel discussions.

On Thursday, September 22, Keith Dickerson of BT Group opened the conference with his presentation, “The Paramount Importance of Standards to Operators, Vendors and Users.” BT views standards as necessary to enable new global services, reduce costs, meet regulatory requirements, and ensure safety/accessibility/security. In each technology, there are SSOs that address market requirements, regulatory aspects, standard making, test and certification, and marketing (in sum, the standardization food chain). The number of SSOs in each technology multiplied by the number of technologies makes coordination of next generation networks (NGN) very difficult and expensive. BT is concerned that SSOs like the IETF are not receptive to operators’ concerns and that IPR issues are becoming a significant problem not addressed by existing SDO policies. He noted some examples of good standardization coordination (ITU-T Informal Forums Summit, ICT Standards Board, ISO/IEC/ITU MoU on eCommerce, the Multi-Service Forum) and suggested that greater coordination is necessary. BT sees the coordination value of the ICT Standards Board as important to the continuing development of NGN standards. He called for greater coordination among consortia and SDOs and global ITU recommendations for the NGN with regional variation where required.

Thursday evening conference attendees and guests enjoyed a four-course dinner with entertainment at a restaurant on an island in the Rhone River.

On Friday, September 23, Guriqbal Singh Jaiya of WIPO spoke on “Integrating Standards and Intellectual Property Rights for Enhancing the Competitiveness of Small and Medium Enterprises (SMEs).” Of considerable interest was his suggestion that greater coordination of IPR issues between SDOs and WIPO appeared desirable.

During the course of the two-and-a-half-day conference, 22 refereed papers were presented and discussed in the following eight sessions:

- Standardization Directions
- The Economics of Standardization
- Standards Implementation
- Standards Use
- Patents and Standardization
- Telecommunications Standards
- Standardization and Developing Countries
- Concepts of Standards

These sessions addressed standards and standardization from many perspectives: standards development organizations (SDOs), regulatory, patent, trade, operational, economic, social science, and mathematical. Interesting questions and comments from the audience caused many sessions to go over their time limit.

After the paper presentations, a second panel session, “RFID Technologies and Ubiquitous Network Societies,” offered four different views (early history, current standardization, ITU role, and future impact)

Joel West of San Jose State University in California, in an unscheduled presentation offered “Thoughts on Building an IT Standards Community.” He presented the publication history of the four SIIT conferences and two previous Hawaii International Conferences on System Sciences (HICSS) as well as the Journal of IT Standards Research (JITSR). West is co-chair of the standards track at HICSS. Creating greater legitimacy of the field of standards and standardization requires publication in accepted journals. Currently, the publications that most often publish papers in this field are not widely cited.

The SIIT conferences certainly have improved the visibility of this emerging field. Closing remarks were offered by Kai Jacobs, Aachen University, who instigated the first SIIT conference in 1999. Jacobs proudly announced that the next SIIT will be held in North America at the University of Calgary, Canada, September 5-7, 2007.

Thanks to the ITU-T, all participants received a CD that included all of the refereed papers. The conference Web site (http://www.siit2005.org) includes all the slide presentations given during the conference. Thanks to the generosity of the corporate sponsors (BT, Microsoft, and SUN), a number of travel expense grants were provided to assist participants.

Ken Krechmer (krechmer@csrstds.com) has participated in communications standards development from the mid-1970s 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. 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, USA and a senior member of the IEEE. His current activities are focused on research and teaching about standards.
Dynamics of E-Business Standardization

Kai Jakobs, Aachen University, Germany

This workshop was organized at the University of Edinburgh and took place on November 3, 2005. It was a joint event of two projects: NO-REST and Network Enterprise (an ESRC-funded study on the shaping of institutions and standards in e-business). The workshop was well attended. Twenty people showed up, with representatives from the Scottish Executive, NHS Scotland (National Health Service), and the British DTI (Department of Transport and Industry) among them.

Following some opening remarks by Rob Brightwell of DTI, Ian Graham’s talk on “Dynamics of e-Business Standardisation” highlighted the need for interdisciplinary research in this field, comprising economics, sociology, and management. Questions to be addressed include: How many standards are enough? How many standards development institutions are too many? What are the “best” means of developing standards?

The presentation by Tineke Egyedi on “Dynamics of Standards” identified three classes of causes for such dynamics: success, maintenance, and implementation. Identified individual causes for dynamics in the maintenance of standards include, for example, technology development, regulatory change, and market dynamics. Dynamics during implementation may be caused, for example, by ambiguity of natural language; ill-structured standards; the complexity of comprehensive, ambitious standards; bugward compatibility; and the level of tacit knowledge that has gone into a specification. Proposed remedies for the latter include, among others, the deployment of technical editors, use of pseudo-code or...
formal languages, and the definition of rules for how to deal with options. The presentation also presented a framework for standards evolution that was developed within NO-REST.

Ralucca Bunduchi’s presentation, “RFID Standardisation—Development & Implementation,” discussed the challenges surrounding the development and adoption of RFID standards. The competition between the two global RFID standardization bodies reflects the dual nature of the RFID standards with the component manufacturers-driven ISO focusing on generic technology standards and the end-user-driven EPC focusing on data-specific standards. The danger is that future RFID technologies will be shaped only by the interests of component manufacturers and large retailers’ standards through their participation in ISO and the EPC process, respectively.

“Selecting the Best Platform for ICT Standards Development,” by Kai Jakobs, tried to provide the information that potential standards setters should consider when selecting a standards setting body (SSB). It proposed classifications of both standards users and SSBs. The former focuses on users’ strategies and business models; the latter describes SSBs’ characteristics in different categories.

The presentation titled “Standards Developments in Healthcare,” by Rob Woolman, first outlined the history of IT standards in the health-care sector. Subsequently, standards achievements and failures were discussed, together with some factors that decide which way a standard goes. Manufacturer commitment, customer procurement leverage, and financial incentive are important contributors to a standard’s success, whereas those developed by consultants, academics, or a central body, without manufacturer input, stand a good chance of failing.

Knut Blind talked about “Impact Assessment of ICT Standards: Methods and Results.” This presentation first gave an overview of methods to assess the impacts of ICT standards. Subsequently, some specific results of various approaches to assess the impact of ICT standards were presented, with a focus on the results of a survey among ETSI, CEN/ISSS, and ITU members. The main new insight was that there is little difference between the impacts of formal and consortia standards. Furthermore, standards obviously are more important for structuring markets than for cost savings (the traditional argument).

“ICT Standardisation in ETSI. How to Be Fit for the Purpose?” by Yves Chauvel, observed that the formal standardization bodies such as ETSI need to move in order to remain a significant player in an increasingly fragmented standards production market. New business models such as those offered by the open software approach are likely to impact standardization. The presentation also explained the action plan established by ETSI to examine the environment in which it will have to operate in the coming years and evaluated the necessary options for change in its strategy and working methods.
INTEREST Workshop

Kai Jakobs, Aachen University, Germany

The INTEREST project (INTEgrating REsearch and STandardization) is co-funded by the European Commission as part of their programme on “Policy-Oriented Research.” It aims to improve the interface between research and standardization for the good of EU competitiveness and European consumers. The first of the series of three INTEREST workshops took place on November 16, 2005, in conjunction with a meeting of the CEN-STAR group. This event was aimed at the standards setting community. The overall goal of the workshop was twofold. First, it served to raise awareness of the standards setting community (including standards setting bodies and individuals with experience in standardization) regarding the problems and issues to be associated with the transfer of knowledge from research and development to standardization. Second, the workshop also was supposed to highlight the opportunities for the standardization community that lie in a better deployment of the knowledge more or less readily available from the R&D sector.

In order to do so, external speakers were invited to complement INTEREST’s views and findings. One of them, Bart Brusse, discussed how the COPRAS project bridges the gap between IST research and standardization. This project identifies and subsequently supports other FP6 projects that show a promising potential for providing input to the standards setting process. Moving over to some of INTEREST’s preliminary findings, a basic model of the interaction between research and standardization was presented by Knut Blind. He looked at the recursive interdependence between standardization and research and at the role of different types of standards in the innovation process. Sub-
sequently, Stefan Gauch quantitatively explored the link between a firm’s technology portfolio and standardization activities. This is ongoing work; findings so far show that the employers of TC chairs hold patents in the TC area in less than one-third of the cases. However, based on this indicator, it was possible to produce a matrix that underlines that companies focus their participation on those TCs that correspond to their patent portfolio. Blind and Gauch then presented some preliminary results of a survey among FP5 participants. Among other aspects, they looked at the barriers to the transfer of research results into (formal) standardization, at potential ways to overcome this barrier, and at the assessment of the role of researchers in standardization, as identified by coordinators of FP5 projects. The first part of the WS was concluded by the presentation by Heide Coenen of a case study that looked into the organizational of the interface between research and standardization in a major company in the shipbuilding sector. This company recognizes the value of standards in its domain and has identified a number of success factors and areas of improvement.

Part two of the workshop started with a presentation by another invited speaker, Philippe Quevauviller, of DG Environment. He described an interface implemented between science and policy in support of water and marine policies, thus extending the discussion on the research-standardization interface. His longer-term vision is to implement a platform that provides access to relevant research output, data, and communication facilities in support of policymaking.

The presentations are available via the INTEREST home page at http://www.interest-fp6.org.

Kai Jakobs joined Aachen University’s (RWTH) Computer Science Department as a member of the technical staff in 1985. Over the years, his research interests moved away from the technical nuts and bolts of communication systems to socio-economic aspects, with a focus on IT standardization. He is the co-author of a text book on data communications and more recently, five books on standards and standardization in IT. He has been on the program committees of numerous international conferences, and has also served as an external expert on evaluation panels of various European R&D programs, on both technical and socio-economic issues. He holds a PhD in computer science from the University of Edinburgh.