Source: ETSI

Title: **Review of the Global Standards Conference**

Agenda item: **6**

Document for:

Decision	
Discussion	
Information	**x**

1 Decision/action requested

The GSC is invited to note the information contained in this document and to discuss possible consequences

2 References

Annex 1 contains the revised version of report from the General Rapporteur, Dr. Franco Arzano.

Annex 2 contains as an extract the key issues discussed in Theme 1: “Electronic Commerce” out of the report from the Workshop Rapporteur, Mr. Richard Hayden.

Annex 3 contains an extract of the report from the workshop Rapporteur on Theme 2: “ Services to the Public”, Mr. George Hall.

Annex 4 contains the main elements from the report of the Workshop Rapporteur on Theme 3: “Individual Use”, Mr. John Chattoe.

Annex 5 covers the Rapporteur’s report of Workshop 4 on “Communications Infrastructure Interoperability”, Dr. Sadahiko Kano.

Annex 1

Global Standards Conference

"Building the Global Information Society for the 21st Century"
Brussels, 1 - 3 October 1997

Main Results and Key Issues

General Rapporteur: Mr. Franco ARZANO
Ericsson - Italy

Introduction

At the G-7 ministerial conference on the Global Information Society (GIS), held in Brussels in 1995, all participants agreed on the importance of facilitating the timely and coherent development of the GIS as the most strategic driver for economic and social development at all levels. This should be achieved through the establishment of a consensual standardisation process and the adoption of a market-led approach to the development of new technologies that respect the principle of open interfaces. As a follow-up to this on-going initiative, the first Global Standards Conference has provided an open forum for the gathering of essential market players, in order that they may:

- exchange views regarding actual and potential applications, along with related practical experiences;
- identify factors leading to the successful and fast implementation of selected applications, as well as the business opportunities that they make possible;
- investigate the voluntary standards and related technical regulations that are needed to shape the implementation of the GIS, in order that it may realise its full potential in today's global environment;
- share perspectives on the appropriate timing of the introduction of applications to meet the requirements of the GIS.

Many issues were of common concern across the thematic workshops, therefore, in this overview of the conference proceedings, I will highlight issues of crucial importance to developing and promoting a favourable business environment.

Interoperability

As stressed in most of the workshop reports, it is the conviction of the conference participants that standards must focus on interface, as opposed to implementation, as the best means of arriving at globally harmonised solutions for the interoperability of ICT products and services. In effect, the global information infrastructure will be a federation of heterogeneous networks operating via standardised interfaces for the interconnection of networks and which allow applications to be run across them with seamless

interoperability. On this issue, we must take into account a concern raised by several participants in Workshop 2 (Services to the Public): the cost to the end-user of such interoperability.

Market Developments

International standards are certainly the best available means of achieving the goal of free trade without obstacles in the form of technical barriers. They are essential to the development of new markets and to building the confidence of consumers, manufacturers and service-providers. As highlighted in Workshop 1 (Electronic Commerce), in the development of electronic commerce, markets should be self-regulated and driven by the private sector, while its global nature must respect multilingual realities and avoid adhering to a single business model.

Furthermore, in order to avoid the distortion of competition, the principle of non-discriminatory and technology-neutral taxation should be applied to the use of the Internet.

As discussed in the workshops, the expansion of open, multi-lingual standards could significantly increase the volume and value of the world-wide use of the GIS. These standards could act as a catalyst to user- and industry-led innovations that better serve the globe's rich and diverse cultures.

Technology Implications

As discussed in Workshop 4 (Interoperability), standard interfaces must be technology-neutral, accommodating new advances in technology to the extent possible. At the same time, new standards should be defined for advances that cannot be accommodated within existing standard interfaces. In this sense, the whole set of standards is a tool for change, intended to harness the waves of "creative destruction" to the benefit of users, operators, manufacturers and the society as a whole. Furthermore, this GIS will not realise its full potential without the world-wide adoption of strong encryption techniques that are easily accessible and that ensure confidentiality and the mutual recognition of digital signatures. At the same time, billing and payment technologies are important building blocks for the GIS.

It is equally important to identify interfaces between different modules of software, for example the application programming interface (API), and ensure that such interfaces are open. In a competitive environment, emerging technologies should help users to come together and express their requirements for the development of open interfaces.

Public Interest

The main challenge in building a global electronic market place is to facilitate the emergence of open communities of commerce for existing enterprises, as well as for new virtual enterprises, that can build upon each other's services and cater to world-wide markets while meeting local needs and requirements.

There is no one approach to building the GIS. Therefore, it is vital to recognise the validity of minimum legal requirements, self-regulated or voluntary agreements and formal standards in order to enhance global communication and the exchange of goods and services across the Internet.

In order to empower users and consumers, standards should be adaptable to cultural and linguistic needs on national and regional levels, while ensuring full transparency on available market solutions to the consumer. It is important to minimise the risk that their elaboration becomes unclear to users and customers as a result of the proliferation of standardisation bodies.

In fact, the private sector should lead activities in technical fields, with governments continuing to participate fully in such activities as users. In this respect, a broad range of issues was addressed in Workshop 3 relating to the importance of integrating content rating and user control in the standardisation process.

Processes and Follow-Up

Standardisation bodies should adapt their activities to respect the need for timely procedures essential to the rapid development of ICT and new electronic services, thereby maintaining their fundamental role as a platform for reaching consensus on global standards. In practice, standards bodies should be encouraged to increase their bilateral or multilateral activities, thereby enhancing co-ordination and potential convergence. This could be achieved by implementing the actions proposed in the concluding remarks made in the report by Workshop 4, as well as by creating an "international charter", as proposed by Commissioner Bangemann, to lay the groundwork for establishing global interoperability.

Winding up my remarks, allow me to add a personal consideration. Over the past three days, more than 450 executives, experts and users, coming from all corners of the globe, debated in open and constructive fora the problems to be solved for the timely deployment of applications for the Global Information Society, while striving to identify standardisation problems related to the technical and legal implications of the GIS. We must not consider our work concluded today. Indeed, the momentum that we have gained should be maintained by continuing to promote an open forum for a constructive dialogue amongst all actors involved in the creation of an environment favourable to the promotion of global solutions aimed at better serving the needs of all market segments.

Annex 2

Theme 1 - Electronic Commerce (eComm)

Global Standards Conference

- Lead Coordinator

  U.S. - Randall Whiting, CommerceNet
- Regional Coordinators

  Canada - Jake Knoppers, Canaglobe Int'l

  Europe - Claude Boulle, Bull

  Japan - Tatsuo Goto, NEC

  U.S. - George Spix, Microsoft
- Rapporteur

  Chick Hayden, ANSI/IISP

GII Standards Conference
Electronic Commerce - 1

Theme 1 - eComm
Program

Global Standards Conference

- Panel: Regional Promotion Status for eComm
- Technology
- Markets
- Trust
- Panel: Shaping the Development to Electronic Commerce

GII Standards Conference
Electronic Commerce - 2

Theme 1 - eComm

Key Issues

Global Standards Conference

- Market Developments
- Building Trust
- Technology Implications
- Interoperability of Services & Interconnection of Networks
- Establishing a Global Legal & Regulatory Framework
- Public Interest Issues and Empowering Users, Consumers and Citizens
- Processes and Follow up

GII Standards Conference
Electronic Commerce - 3

Theme 1 - eComm

Market Developments

Global Standards Conference

- eComm market must be self-regulated and private sector driven.
- eComm is global:
  - no single business model (localization)
  - multilingualism must be considered
- eComm growth determined by consumer acceptance:
  - pioneering programs
  - easy to use
  - consumer awareness

GII Standards Conference
Electronic Commerce - 4

Theme 1 - eComm

Building Trust

Global Standards Conference

- Trust is essential for eComm
  - public key cryptography is used to establish electronic trust
- Consumer experience will establish their level of trust
- Personal data protection methods:
  - self-regulation, or
  - standards

GII Standards Conference
Electronic Commerce - 6

Theme 1 - eComm

Technology Implications

Global Standards Conference

- Encryption is the key to eComm
  - tools are available now
- Key eComm technologies include:
  - public key cryptography
  - digital signatures
  - billing and payment technologies
- Technology is not the issue, but rather how it is applied
- Technology must meet market needs
- Avoid stifling innovation
  - no standards for standards sake

GII Standards Conference
Electronic Commerce - 6

Theme 1 - eComm

Interoperability of Services & Interconnection of Networks

- Key to eComm is interoperability not necessarily single standardized solutions
- Standards must focus on the interface vs. implementation

Theme 1 - eComm

Establishing a Global Legal & Regulatory Framework

- eComm requires harmonization
- Focus on resolving problems vs. framework creation
- Global dialogue is required to achieve understanding to facilitate eComm
- Do not regulate the Internet
- No eComm regulation for regulation sake

Theme 1 - eComm

Public Interest Issues and Empowering Users, Consumers and Citizens

- eComm must compete with existing methods of commerce and win consumer confidence
- Require equal access for all - a level playing field
- Involve all interested parties in eComm processes

Theme 1 - eComm

Processes and Follow-up

- Standards must:
  - meet business needs
  - address essential needs only
- Standards process:
  - must provide timely standards
  - improvements should be approved by participants (industry)

Annex 3

Workshop 2
Services to the Public

Rapporteur : George Hall ICL plc, UK

Global Standards Conference - Brussels 1-3 October 1997 - Workshop 2

Workshop 2 - Services to the Public

Morning Session : Chair Wolfram Berger

15 Speakers - 5 Sectors :

- Transport Services
- Cultural Services
- Information Services
- Health & Medical Services
- Education Services

Afternoon Session : Chair Oliver Smoot

Panel Session : 6 Members

Future Look : 2 Speakers

Global Standards Conference - Brussels 1-3 October 1997 - Workshop 2

Recurring Themes

- INTERNATIONALISATION
- LOCALISATION
- MULTILINGUALISM
- MULTICULTURALISM

Where is the Standards Architecture that respects the Diversity inherent in the GIS ?

- WILL THE PUBLIC SERVICE PROFESSIONS EMBRACE THE INFORMATION SOCIETY ?
- MAINTAINING QUALITY LEVELS WHEN BUDGETS ARE UNDER PRESSURE
- BLURRING OF BOUNDARIES
- HOW TO BUILD BRIDGES BETWEEN THE ISLANDS OF KNOWLEDGE ?

Workshop 2 - Services to the Public

Key Issues

- Interoperability of Services and Interconnection of Networks :

  AVAILABILITY IS TAKEN FOR GRANTED ALTHOUGH ACCESS REMAINS A CONCERN

  THE BIG QUESTION IS « HOW MUCH WILL IT COST ? »

- Building Trust :

  MORE WORK NEEDS TO BE DONE, EG. TO PRESERVE CONFIDENTIALITY / INTEGRITY

  LINGERING DOUBTS ABOUT THE EFFICACY OF « SELF REGULATION » IN PROTECTING THE PUBLIC INTEREST

Workshop 2 - Services to the Public

- Establishing a Global Legal and Regulatory Framework :

  START AT HOME !

  - STATE, LAND, REGION
  - NATIONAL
  - INTERNATIONAL
  - NEED FOR CONSISTENCY ACROSS BORDERS

  Technology Development is Outstripping the Capability of Law Makers/Regulators to Balance Public Concerns and Business Imperatives

- Market Developments

  Users and Suppliers have Common Objectives : To create Standards that Facilitate Development of the Best Product/Application at the Best Price at the Right Time, Market Access and to Encourage New Startups

  Market Driven or Technology Pushed ?

  HOW TO MAKE TODAY 'S INVESTMENTS « FUTURE RESILIANT » AND MANAGE PREVIOUS INVESTMENTS (LEGACY) ?

  BALANCE BETWEEN INTERESTS OF USERS (THE MARKET) AND SUPPLIERS

- **Technology Implications**

  KEEP IT SIMPLE, STUPID !

- **Public Interest Issues and Empower Users, Consumers and Citizens**

- PUBLIC SERVICE ORGANIZATIONS ARE TRULY EMPOWERED - WITH LONG EXPERIENCE OF DEVELOPPING SECTOR SPECIFIC STANDARDS - BUT EVEN THEY GET SWAMPED BY THE COMPLEXITY

Workshop 2 - Services to the Public

- Process and Follow up
- VALUABLE EXERCISE
- DISCOVERY OF COMMON STANDARDS ISSUES ACROSS DIFFERENT SECTORS
- HOW TO KEEP THE INFORMATION EXCHANGE FLOWING ACROSS SECTORS AND BORDERS AND APPLICATIONS ?

Annex 4

Context

Global Standards Conference

GIS Growth Road Blocks

- Geographic variation / territorial imperatives
- Infrastructure evolution limits
- User interface complexity
- English dominance - lack of multi-language capability
- Gender bias
- User / innovator involvement
- Barriers to handicapped and disadvantaged

- **Increasing Awareness of User Needs in Design**

Age of infinite choices — in the complicated, faster life style of the 21st century

- **Supporting individual use & personalization**
  - Anywhere, any time - customer controlled
  - Interactive
- **Meeting increasing user expectations**
  - **Simplify life**
  - Affordable
  - High quality
  - Convenient and easy to use
- **Widely accessible**
  - Multi-language capability
  - Disabled and aged
  - Economically disadvantaged

- **Explored Content , Applications , Services Deployment and Trials -**
  - **telecom**
  - **broadcast**
  - **storage media**
  - **computing - games**

Internet

- **push media**
- **online shopping**
- **global access to digital content**
- **on line magazines - customized, tailored**
- **on line banking , investment**

- government services on line
- home medical care and diagnosis
- interactive entertainment
- home learning

Not meeting needs of different languages , cultures and styles

Experience

- Multimedia and multisource
  - **DVD as a unified storage medium**
- DVD distribution and the Internet
  - **DVD and copying protection**

Responsive

Industry --- Market Driven Consensus

Public Interest & Trust

- Enable Youth Users
  - Broaden accessibility & opportunity awareness
- **Extend consumer protection legislation**
- Implement Content Rating and User Control
  - **Broadcasting - rating system & V chip**
  - **Internet - PICS standard & browsers**

Issue of labelling services and regional control

Business models & supporting technology , standards

- **Mobility- Terminal and Personal**

  Towards Multimedia and Global Service

  - **Second generation systems**
  - **Evolving to Third Generation Systems**

    UMTS

    – Enabling technologies

    – Spectrum - global compatibility ?

    - IMT 2000

    – Alternative access mechanisms

    – **Air interface standard(s) by 1999**

    – Services & network architecture

    - Roaming, personal service profile, Internet access
    - **Need flexible service creation - API**

- **Multimedia Terminals**

  - Support personal or shared experience
  - Permit transparent transition from networked interactive to broadcast to local resources

– **Multiple Terminal Designs**

  – Different functions and locations

  – Transparent multiple network access mechanisms

  – Common ***simplified*** **user application interfaces**

  - **Open API**
  - Services and applications navigation tools **EPG**

  – **Future proofing - software adaptable and configurable**

- **Digital copyright protection**
  - Balance of copyright protection and reasonable consumer use exceptions
  - Backed by appropriate copyright laws and technical protection systems
- **Progress international multi-language standards and expand implementations**
- **Enable roaming of digital home terminals**
  - **Propose joint ISO/IEC/ITU initiative**

to here

Global Standards Conference

Building the Global Information Society for the 21st Century

Theme 1
Electronic Commerce
Theme 2
Services to the Public

Theme 3

Individual Use *

User in the domestic or remote environment

Theme 4
Communications Infrastructure Interoperability

*Rapporteur's Report

Annex 5

RAPPORTEUR'S REPORT OF WORKSHOP 4

(Communication Infrastructure Interoperability)

Rapporteur: Dr. Sadahiko Kano, Senior Vice President, NTT

Note: This report is a personal report of the rapporteur, who tried his best to capture the discussion during the Workshop 4 on 2 October 1997, but not fully reviewed and endorsed by the participants.

1. Interoperability of services and interconnection of networks

1.1 General

1.1.1 The GII will be a federation of heterogeneous networks interconnected via standardized interfaces for the interconnection of networks, so that applications could run across it with an end-to-end (user-to-user) interoperability.

1.1.2 In the definition of standardized interfaces for GII, what is needed is a framework of interfaces for network interconnection, and reference models with an aim to assure end-to-end (user-to-user) application interoperability. Based on this framework for interfaces and the reference models for end-to-end application interoperability, the next job is to identify the types of standard interfaces for GII. The work is already under way in most of the standards bodies, but they should increase their efforts to coordinate with each other.

1.2 Network interconnection

1.2.1 The interfaces framework for network interconnection should take into account not only heterogeneous network technologies, existing and future, but also different types of networks both public and private (e.g., telephony, Internet, cable TV, etc.), and various traffic volumes and traffic patterns. It is expected that such interface frameworks and reference models will evolve over time.

1.2.2 In the case of packetized information transfer with some tolerance for delay (the so-called connection less information transfer), the Internet Protocol (IP) is currently the only protocol in widespread use that allows heterogeneous networks to smoothly interoperate. In such cases, the use of IP as the standardized interface protocol at the network layer would be the most practical basis for evolution in the near term. For a longer term, advances in technololgy, emergence of new applications, especially those which require much higher speed than most of the current IP applications, and ingenuity of human brains may lead to produce another new protocol which may or may not evolve from the current IP.

1.2.3 The feasibility of interconnection in high-speed networks is already being demonstrated through testbeds, e.g. those of G7 Interoperability of Broadband Network project.

1.2.4 A viable approach to evolve from today's networks is necessary.

1.2.5 Interconnection among heterogeneous networks must be built on the proper balance among:

- Cooperation among network providers to interconnect their networks by the standardized interfaces.
- Competition among network providers on performance, QoS, features, services and applications offered, and price.
- Cooperation, coordination and potentially convergence among standards bodies including forums and consortia, allowing some room for competition to spur efficiency and innovation.

1.3 End-to-end (user-to-user) application interoperability

1.3.1 What is needed is an identification of types of interfaces especially software interfaces between different modules of software.

1.3.2 Important interfaces so far identified include Application Programming Interface (API), and interface description notations such as those defined by OMG.

1.3.3 One group of software modules to which it is desirable to define open interfaces is to the so-called middle-ware which provides common services to various applications, such as identification/authentication for security, directory and payment.

1.3.4 It is essential that such interfaces be open. In the competitive environment, some manufacturers may choose to maintain control of their proprietary software interfaces. However, users may get together to place their requirements that lead to open interfaces, such as those of ETNO and ION (Interoperable Open Network) Workshop in Korea.

1.3.5 Interoperability among higher layer applications/services is also required to reap GIS benefits.

- Key GIS applications and services will be decided by the marketplace, i.e. by users.
- Those key applications must be designed to work with the protocol used for network interconnection.
- Application protocols, analogous to SMTP for e-mail, must be developed for those key applications.
- Market driven competition among applications and service providers is critical to achieve widespread availability of key GIS applications.

2. Building trust

2.1 Users trust - Increased network interconnection and seamless application interoperability open a wider window for ill-behavior on the network, which requires robust security and privacy protection arrangements, etc., for building user's trust.

2.2 Business trust in standards and standards making process - For manufacturers and service/network providers to commit their investment on the equipment, software and services, trust must be built on the standards and standards making process.

3. Establishing a global legal and regulatory framework

3.1 In the area of security arrangements, a consistent global legal and regulatory framework is needed. Inconsistent frameworks adopted by different countries pose a formidable obstacle to the success of GII.

4. Markets developments

Standards for interoperability are essential for the development of new markets and building the trust of consumers, manufacturers and service providers.

5. Technology implications

5.1 It is expected that the exponential advances in technology would continue at least for the coming 10-20 years, for example, in the area of processing power, memory capacity, display technologies, speed of transmission and mobility and reach afforded by wireless and satellite technologies. This makes prediction of applications and architectures extremely difficult.

5.2 This requires standard interfaces to be technology neutral, accommodating advances in technology as much as possible. For advances that cannot be accommodated within the existing standard interfaces, then new standard interfaces need to be defined. As such, the role of standards is to contain the waves of "Creative Destruction" for the benefit of users, manufacturers and society as a whole.

5.3 One of the areas where such a wave of "creative destruction" would wash is the area where new types of services are expected to emerge as a result of technological convergence of communication, broadcasting, internet, multimedia entertainment, printing and publishing.

6. Public interest issues and empowering users, consumers and citizens

6.1 Standards making process is becoming very unclear to users of standards and customers of services provided by the users as a result of proliferation of standards bodies. With the today's pace of advances in technology, it is becoming more and more difficult for customers to understand different solutions and to make a decision.

6.2 The role of government should be clarified from the following three viewpoints:

Viewpoint 1: In most of the technical areas concerning the network interconnection and end-to-end application interoperability, private sector should lead the activities, the role of government being a participant. In technical areas affecting issues such as safety, environment, the role of government is to establish minimum regulation for public interest.

Viewpoint 2: For policy issues such as Intellectual Property Rights, privacy, security and other legislation needed, for example, for electronic commerce, the role of government is to provide the framework within which individuals and industries can protect their interests for global seamless interoperability.

Viewpoint 3: In government-led application areas such as education, health and various registrations (vehicle, passport, etc), governments as a "model user" are expected to take the leadership role in the standardization of various items needed for such applications.

7. Processes and follow up

7.1 Concerning cooperation, coordination and potentially convergence of standards bodies (including industry forums and consortia), standards bodies should be encouraged to increase their bilateral or multilateral coordination activities. In such coordination, standards bodies should be encouraged:

1) to use as much as possible standards made by another body.

2) to exchange work plans to eliminate overlaps and encourage complementary actions.

3) to draft common reference models and common terminology to aid the understanding of the work plans above.

4) Major standards bodies should provide a visibility on the overall work plan to assist members to coordinate their participation, e.g. by providing information on the Web home page.

5) Cooperation and coordination would be facilitated if each standards body identifies its work area with reference to some commonly used reference models.

6) It is desirable that there will be some arrangement, where interested parties can come and find out where to go to find out more information.

7) in the software-related standardization, the speed is a critical key factor, which must be taken into account in the cooperation and coordination.

8) It is not the standards bodies as such, but their members who have the responsibility to set up an organization, disband it, decide the procedures, etc, by reviewing work items of individual standards bodies and propose needed coordinations.

Members of standard bodies in cooperation with the standards bodies are urged to take above points into consideration and take appropriate actions.