Telecommunications and Information Exchange Between Systems

ISO/IEC JTC 1/SC 6

Document Number:	N14209
Date:	2010-01-29
Replaces:	N14169
Document Type:	Business Plan
Document Title:	SC 6 Business Plan for January 2010 – September 2010
Document Source:	SC 6 Chairman
Project Number:	
Document Status:	As per the SC 6 Barcelona Resolution 6.0.4, this document is circulated to NBs for comments by 2010-04-30.
Action ID:	COM
Due Date:	2010-04-30
No. of Pages:	11

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BUSINESS PLAN FOR ISO/IEC JTC 1/SC 6

Telecommunications and Information Exchange Between Systems

Period Covered: January 2010 – September 2010

Submitted by: Dae Young KIM for approval at the SC 6 Plenary

1. MANAGEMENT SUMMARY

1.1 STATEMENT OF SCOPE

Standardization in the field of telecommunications dealing with the exchange of information between open systems including system functions, procedures, parameters, and equipment, as well as the conditions for their use. This standardization includes both the lower layers that support the physical, data link, network, and transport protocol and services as well as the upper layers that support the application protocols and services such as Directory and ASN.1. A vital aspect of this work is done in effective cooperation with ITU-T and other worldwide and regional standardization bodies including IEEE and IETF.

1.2 ORGANIZATION

WG 1 – Services and protocols in the physical and data link layers
WG 7 – Services and protocols in the network and transport layers
WG 8 – Services and protocols in Directory
WG 9 – Specification of Abstract Syntax Notation one (ASN.1), its Encoding Rules, Generic Applications and related Registration Authorities

1.3 PROJECT REPORT

JTC 1/SC 6 is responsible for 319 published International Standards and 62 open project items. See JTC 1/SC 6 Programme of Work contained in 6N14162 for complete set of projects along with active project information and status.

1.4 COOPERATIONS WITH OTHER ORGANIZATIONS

[Internal liaison within ISO/IEC JTC 1]

ISO/IEC JTC 1/SC 17

ISO/IEC JTC 1/SC 25

ISO/IEC JTC 1/SC 27

ISO/IEC JTC 1/SC 31

ISO/IEC JTC 1/SC 38

ISO/IEC JTC 1/WG 7

[Internal liaison within ISO/TCs and IEC/TCs]
ISO TC 215 (Health Informatics)

ISO TC 68/WG 4

[External - Category A liaison]

ETSI (European Telecommunication Standards Institute)
Ecma International
IETF (The Internet Engineering Task Force)
ITU-T (International Telecommunication Union – Telecommunication Standardization Sector)
OASIS (Organization for the Advancement of Structured Information Standards)

[External - Category B liaison]

SITA (International Society for Airline Telecommunication and Information)

[External - Category C liaison] IP/MPLS Forum
IEEE 802 LMSC (LAN/MAN Standard Committee)

2. PERIOD REVIEW

2.1 MARKET INITIATIVES

WG 1:
As the ubiquitous era emerges, many wireless communication technologies are developed in various SDOs. These include: IEEE 802.11 WLAN technology; IEEE 802.15 WPAN technology; IEEE 802.16 WMAN technology; IEEE 802.20 MBWA technology; IEEE 802.22 Cognitive Radio technology; ISO/IEC 29157 Picocast; and ISO/IEC 29145 WiBEEM (Wireless Beacon-enabled Energy Efficient Mesh network) technology. These technologies are expected to play important roles for u-City applications, u-Home services, u-Healthcare Services, u-Parking Lot Services, and so forth. SC 6 WG 1 mainly handles these topics to create enormous markets.

WG 7:
Data traffic for network continues to grow faster and the request for data transfer facilities with QoS attributes are increased by the market. Continue to develop and encourage deployment of enhanced communication protocols over various network environments. New initiatives on standardization of future network as well as communication aspects of sensor network will be continued and encouraged to meet emerging market requirements.

WG 8:
X.500 standard has been designed to permit deployment of large directory databases distributed in many systems with a very efficient, flexible and reliable replication mechanism.
It constitutes a very good solution for enterprise directory particularly if it completed with LDAP protocol (Directory servers can be accessed with DAP or LDAP protocols).
Public-key certificates (as part of the work on Directories carried out in collaboration with ITU-T and IETF) are heavily used to provide identity service on the Internet, particularly in the E-commerce. Attribute certificates have been defined to manage privileges in a flexible manner (with possibility of delegation) and are independent of public-key certificates.

WG 9:
Continue to encourage use of ASN.1 and Object Identifiers; Encourage take-up of the Object Resolution System (ORS)

2.2 ACHIEVEMENTS

WG 1:
Progression of FDIS ballot:
- ISO/IEC FDIS 29157, PHY/MAC specifications for short-range wireless low-rate applications in ISM band

Progression of DIS ballot:

- DIS 13156 (ECMA-387), Information technology -- Telecommunications and information exchange between systems -- High Rate 60 GHz PHY, MAC and HDMI PAL
- ISO/IEC DIS 13157, Information technology -- Telecommunications and information exchange between systems -- NFC-SEC: NFCIP-1 Security Services and Protocol
- ISO/IEC DIS 13158, Information technology -- Telecommunications and information exchange between systems -- NFC-SEC-01: NFC-SEC Cryptography Standard using ECDH and AES

WG 7:
Progression of FDIS ballot:
- ISO/IEC FDIS 24792, Multicast Session Management Protocol
- ISO/IEC FDIS 14476-4, ECTP – QoS Management for Duplex multicast transport
- ISO/IEC FDIS 14476-6, ECTP – QoS Management for N-plex multicast transport

Progression of FPDAM ballot:
- ISO/IEC 16512-2/FPDAM1, Secure RMCP-2 Protocols
- ISO/IEC 16512-2/FPDAM2, Messages and Code values

Progression of FCD ballot:
- ISO/IEC FCD 16512-3, Specification for N-plex Group Applications
- ISO/IEC FCD 24793-1, MMC Framework
- ISO/IEC FCD 24793-2, Protocol over Native IP multicast Network

Progression of CD ballot:
- ISO/IEC CD 24793-3, Protocol over Overlay multicast Network
- ISO/IEC CD 29180, Security framework for sensor networks

WG 8:
ISO/IEC 9594-x Edition 6 (2008) Directory (X.500)
ISO/IEC 9594-x Edition 5 (2005) Directory (X.500)

WG 9:
Progression of work on the Object Resolution System (ORS) with a second CD ballot. Registration with IANA of the 'oid' IRI scheme as a provisional registration.

3. FOCUS DURING NEXT WORK PERIOD

3.1 DELIVERABLES

WG 1:
Publication of ISO/IEC 12139-1
Progression of DIS Ballot on ISO/IEC 29157
Progression of CD Ballot on Magnetic Area Network
Fast Track Ballot on TV White Spaces

WG 7:
Publication of ISO/IEC 24792, ISO/IEC 14476-4, ISO/IEC 14476-6, ISO/IEC 24793-1, ISO/IEC 24793-2 and Amendments to ISO/IEC 16512-2
Progression of FCD ballot on Protocol over Overlay multicast Network, Framework for sensor networks, and Specification for N-plex Group Applications
Progression of the work on Future Network

WG 8:
The 6th edition (2008) of the Directory Specifications is now available. This edition incorporates all the amendments and technical corrigenda on the 5th edition (extended communications support and federation among Privilege Management Infrastructures).
Two amendments are actually under development.

The first one is the continuation of Communication Enhancements: in particular, it contains the possibility of using encoding rules other than BER (PER, Packet Encoding Rules, is useful for applications using networks with small bandwidth and XER will permit communications with XML applications).

The second one is related to password policy. It improves the security of the Directory and proposes rules to ensure that users change their passwords periodically, that passwords meet quality requirements that re-use of old passwords is restricted, and that users are locked out after a certain number of failed attempts.

WG 9:
FCD ballot on the Object Resolution System (ORS). Progression of the Internet Draft on the 'oid' IRI scheme (standards track), with a view to permanent IANA registration of the 'oid' IRI scheme.

3.2 STRATEGIES

WG 1:
Develop standards in close relation with IEEE 802.3, 11, 15, 16, 18, 19, 20, 21, 22.
Continue to develop standards in close relation with Ecma International.
Continue to develop standards in close relation with SC 17

WG 7:
Develop standards in close collaboration with ITU-T SG 11(Multicast), SG 17(Security) and JTC1/WGSN(sensor Network)
Continue of collaboration with ITU-T SG 13 and FG-FN on Future Network

WG 8:
Develop strategy for efficient coordination with ITU-T an IETF on Network, Transport, ASN.1 standards, Directory (LDAP) and publickey certificates.

WG 9:
Continue to promote the use of OIDs and provide support to possible applications of the ASN.1 notation and/or of the ORS.

3.3 OPPORTUNITIES

WG 1:
Provide good protocols at the PHY and MAC layers for JTC 1 WG 7 Sensor Networks.
Initiate new work items at Layers 1 and 2 for Future Networks

WG 7:
Initiate new work on managed Peer-to-Peer communication framework and protocols
Encourage to initiate new work items on Future Network

WG 8:
Add new features where necessary to permit usage by future applications (NGN Directory). Support of new communications protocols and improvement of security.

WG 9:
No new initiatives are planned in the period Jan to Sept 2010.

4. WORKING GROUP PROJECTS

Table 1. SC 6/WG 1 Standards Summary

Category	Acr/No	Description	Notes
Winning Standards	ISDN Connector (ISO/IEC 8877)	Pin assignment for ISDN connector	- Developed in collaboration with ITU- T
	DTE/DCE Connector (ISO/IEC 2110)	DTE/DCE connector pin assignment	- Higher speed, usage in multimedia equipment
	HDLC (ISO/IEC 13239)	High-level Data Link Control Procedures	- Data Link Control Procedures implemented worldwide - Has enhancement features for future uses
	X.25 LAPB (ISO/IEC 7776)	X.25 LAPB - Compatible DTE data link procedures	- Data link protocol for the X.25 suite that is widely used in PSDN - Developed collaboratively with ITU-T
	X.25 LAPB (ISO/IEC 8882-2 & 3)	X.25 Conformance testing: Data Link Layer & Packet Layer test Suite	- Used to decide conformance of the X.25 equipment - Has strong market potential
	CSMA/CD LAN (ISO/IEC 8802-3)	CSMA/CD MAC and PHY Layer Definition	- Widely deployed for LAN protocol over 50 million accesses
	Token Ring LAN (ISO/IEC 8802-5)	Token ring MAC and PHY Layer Definition	- Widely deployed for LAN protocol
	Wireless LAN (ISO/IEC 8802-11)	Wireless MAC control method and physical layer	- Used worldwide for nomadic LAN - Enhancement underway for better performance
	MAC Bridge (ISO/IEC 15802-3)	Medium Access Control sublayer Bridge specification	- It is used extensively to interconnect various LANs - it provides transparent connectivity spanning the network
Niche Standards	26 pole Connector (ISO/IEC 11569)	26pole DTE/DCE connector for data networks	- Higher speed, usage in multimedia equipment
	LLC (ISO/IEC 8802-2)	Logical Link Control	- It is used along with various LAN protocols
	NFCIP-1 & 2 (ISO/IEC 18092 & 21481)	Near Field Communication Interface and Protocols	- Wireless communication within 20 Centimeters with data rate up to 400 Kbps
Future Standards	10 Gbps CSMA/CD (ISO/IEC 8802-3)	Amendments for 10 Gigabit CSMA/CD and DTE power via Media Dependent Interface under development	- The future depends capability of supporting multimedia and mobility. - The market for multimedia and wireless communication will explode
	Wireless LAN (ISO/IEC 8802-11)	Wireless Medium Access Control (MAC) method and physical layer (PHY) specifications	- This standard specifies the WLAN protocol specified by IEEE 802.11 Working Group that has been deployed all over the world to provide high-speed wireless internet access. - The data rate provides 11 Mbps as well as 54 Mbps.
	Ad Hoc Wireless Network with QoS	MAC/PHY standard for ad hoc wireless network to guarantee QoS in an industrial work environment	- It provides diverse and extensive services for short-range communication, including multimedia data transfer and QoS management, based on ad hoc networking, using Binary CDMA technology.

	Wireless LAN (ISO/IEC 8802-11 DAM 4)	Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications AMENDMENT 4: Further Higher Data Rate Extension in the 2.4 GHz Band	-. This standard supports extended data rate upto 54 Mbps at the 2.4 GHz band for the ISO/IEC 8802-11 WLAN specification. - It provides the backward compatibility to ISO/IEC 8802-11 WLAN specification operating at the 2.4 GHz band.
	Wireless LAN (ISO/IEC 8802-11 DAM 5)	Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications Amendment 5: Spectrum and Transmit Power Management Extensions in the 5 GHz band in Europe	- This standard provides MAC and PHY specifications of WLAN technology that can be extended to be used in Europe by adopting mechanisms of spectrum and power management. - The two mechanisms called DFS (Dynamic Frequency Selection) and TPC (Transmit Power Control) are sdopted. - The DFS and TPC work together to protect pre-existing services running in this band from being interfered possibly by WLAN uses in the 5Ghz band.
	Wireless LAN (ISO/IEC 8802-11 DAM 6)	Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications Amendment 6: Medium Access Control (MAC) Security Enhancements	- This standard specifies enhanced security mechanism in the 8802-11 MAC layer in which WEP (Wired Equivalent Privacy) based on RC-4 has been used. - The basic concept is to use RSN (Robust Security Network) which includes TKIP (Temporal Key Integrated Protocol) and CCMP.
	High Rate Ultra Wideband (ISO/IEC 26907)	High Rate Ultra Wideband for Multimedia Services within 10 m range	- This standard specifies PHY and MAC specifications for High Rate Ultra Wideband WPAN networks upto 480 Mbps in transmission speed. - The communication range of HR UWB systems covers 10 m for the application areas of Audio/Video streaming. - The standard provides some level of QoS based on DRP (Distributed Reservation Protocol)
	Picocast (ISO/IEC 29157)	PHY/MAC specifications for short-range wireless low-rate applications in ISM band	- This standard specifies PHY/MAC protocols for short-range wireless low-rate applications in ISM band - The communication range of Picocast systems covers 10 m for the application areas of Audio broadcasting. - The system does not provide full mesh network capabilities.

Table 2. SC 6/Ex-WG 6 Standards Summary

Category	Acr./No.	Description	Notes
Winning Standards	QSIG BC (ISO/IEC 11572)	"Basic Call" – Establishment and release of calls within Private ISDN Networks (QSIG: SIGnalling at the "Q" reference point, i.e. within and between private ISDN networks)	- An MoU for QSIG has been signed by the 10-15 major manufacturers in the world; it has been implemented by practically all manufacturers - A Forum ("IPNS-Forum") has been established by major manufacturers for the particular purpose of promoting the implementation of QSIG - It is clearly visible that QSIG takes over the market from previous regional or proprietary standards, e.g. from DPNSS in the UK

			- QSIG has meanwhile even been taken as the basis for VPN applications in public ISDN networks.
	QSIG GF (ISO/IEC 11582)	"Generic Functional Protocol" - Basic transport and support functions for ISDN supplementary services	- For the same reasons as given for QSIG BC above - It has become the basis for about 20 ISO-standardized supplementary services and related protocols for private ISDN networks - It's approach has been accepted for the standardization of ISDN supplementary services also beyond ISO/IEC JTC1, e.g. within ITU-T
	ISO/IEC 11571	"Numbering and Addressing"	- It provides the basic numbering and addressing scheme used in private ISDN networks, in particular with regard to the "private numbering plans"
	ISO/IEC 11579 / TR14475	"Reference Configuration" and "Architecture and Scenarios" for private ISDN networks	- They provide the basic foundation for private ISDN networks, and have provided the framework for a number of derived ISO/IEC standards
Niche Standards	ISO/IEC 13871	Digital channel aggregation	- It is important for a specific limited set of applications
	B-QSIG BC (ISO/IEC 13247)	"Basic Call" – Establishment and release of calls within Private B-ISDN Networks (B-QSIG: SIGnalling at the "Q" reference point, within and between private B-ISDN networks)	- It will become the basis for a set of future standards in private B-ISDN networks - It complies with existing specifications of the ATM Forum, particularly PNNI signalling; its approach has been taken as the basis of further ATM Forum specs., e.g. AINI (ATM internetwork interface), and "Supplementary Service support".
Future Trends and Directions	CSTA ISO/IEC 18051-18053	Computer supported Communications Application Services signalling protocol and glossary of terms	- Ecma International is drafting a new edition of ISO/IEC 18051 that supports SIP and multi-media calls. (18051 and 18056 now published)
Future Trends and Directions	WSDL	Web Services Definition Language	- Ecma International has developed a Web Services Definition Language specification (ECMA-348), which refers to SOAP 1.1 and WSDL 1.1. When the W3C updates those recommendations, ECMA-348 will be aligned with them and possibly will be submitted for fast track approval to ISO/IEC JTC1.
Future Trends and Directions	NFP ISO/IEC 18092	Near Field Communications	A promising technology that has may find applications ranging from mobile payments to easy configuration. It has been positioned as the wireless connector for technologies that function as "cable replacement".
Future Trends and Directions	UWB ISO/IEC DIS 26907	High Rate Ultra Wideband PHY and MAC Standard	A highly adaptive wireless high date rate technology for personal area, short range, networks.

Table 3. SC 6/WG 7 Standards Summary

Category	Acr. / No.	Description	Notes
Winning Standards	8208	X.25 Packet Layer for DTE	Mature standard, very large worldwide installed base. New technologies now have the major share of new communications infrastructure, but X.25 base will remain large for many years and require some maintenance.
	TR9577 8348AnnA	Protocol Identifiers NSAP addressing	Global enablers for the multi-protocol environment. ITU-T, Frame Relay Forum and ATM Forum are among the organisations that look to SC6 documents to assure worldwide interoperation.

	10589 10747	IS-IS routing protocols, intra-domain and inter-domain	Both protocols are widely used in Internet and Intranet environments, in the form of internet IS-IS routing and BGP4 respectively, such use appears likely to increase.
Niche Standards	8073	Connection-mode Transport Protocol	Widely deployed in specific ITU-T applications, including TMN
	CONS	Connection-mode Network Protocols	Deployed in OSI networking systems and in ITU-T applications.
	CLNP	Connectionless-mode Network Protocols	Deployed in OSI networking systems and in ITU-T applications.
Future Trends and Directions	13236 13243	QoS Framework QoS Methods and mechanisms	Trial for providing high level descriptions and solutions to consider Quality of service issues in OSI networking services and applications
	13252 14476	Enhanced communications transport Service definition and Protocol specifications for one-to-many, many-to-one and many-to-many data transport	These enhancements are required for new high-speed, multicast and multimedia applications, and particularly enhanced end to end Quality of Service over IP multicast network environments (for example to enable ISPs to offer differentiated service levels to subscribers and thus expand their market offerings and revenue opportunities).
	16513	Group management protocol	Provide group membership management services for multicast communication protocols
	16512	Relayed Multi-Cast Protocol	End-to-end overlay multicast communication protocols that may be used over current IP network where IP multicast is not fully deployed.
	24792	Multicast Session Management Protocol	It is an application-layer control protocol for managing the quality of service for a group communication
	24793	Mobile Multicast Communication	Provide one-to-many multicast services and applications over mobile communications networks

Table 4. SC 6/WG 8 Standards Summary

Category	Acr. / No.	Description	Notes
Winning Standards	9594	Directory (X.500)	- Used by major suppliers of directory services as foundation for LDAP access to such services in the internet. - X.509 public key certificates used extensively to secure transactions in Internet secure commerce based on SSL. X.509 attribute certificates used in Privilege Management Infrastructure (PMI) and in telebiometrics applications.

Table 5. SC 6/WG 9 Standards Summary

Category	Acr. / No.	Description	Notes
Winning Standards	8824 8825	ASN.1	Standardized notation and Encoding Rules used for a large number of protocols and file formats.

	9834	Registration of International Object Identifiers	93,000 Object Identifiers registered on the associated Web Site, probably twice that many actually allocated.
	24824	Generic Applications of ASN.1.	Efficient binary encoding of XML documents (Fast Infoset), binary encoding of SOAP wrappers (Fast Web Services), application of integrity and encryption to Fast Infoset (Fast Infoset Security)
Future Trends and Directions Directions	29186	OID Resolution System	Provision for the resolution of any object identifier to information about it, by the use of either the numeric form of arcs or more general Unicode labels, including long arcs. ISO/IEC 10646 character, with associated representation in protocols using object identifiers.

Table 6. SC 6 Standards Summary

Category	Acr. / No.	Description	Notes
Winning Standards	10021	Messaging (X.400)	Deployed in enterprise EMAIL systems