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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

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:

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:
Progression of the work on Future Network

WG 8:
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>
<thead>
<tr>
<th>Category</th>
<th>Acr/No</th>
<th>Description</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>Winning Standards</td>
<td>ISDN Connector (ISO/IEC 8877)</td>
<td>Pin assignment for ISDN connector</td>
<td>- Developed in collaboration with ITU-T</td>
</tr>
<tr>
<td></td>
<td>DTE/DCE Connector (ISO/IEC 2110)</td>
<td>DTE/DCE connector pin assignment</td>
<td>- Higher speed, usage in multimedia equipment</td>
</tr>
<tr>
<td></td>
<td>HDLC (ISO/IEC 13239)</td>
<td>High-level Data Link Control Procedures</td>
<td>- Data Link Control Procedures implemented worldwide</td>
</tr>
<tr>
<td></td>
<td>X.25 LAPB (ISO/IEC 7776)</td>
<td>X.25 LAPB - Compatible DTE data link procedures</td>
<td>- Data link protocol for the X.25 suite that is widely used in PSDN</td>
</tr>
<tr>
<td></td>
<td>CSMA/CD LAN (ISO/IEC 8802-3)</td>
<td>CSMA/CD MAC and PHY Layer Definition</td>
<td>- Widely deployed for LAN protocol over 50 million accesses</td>
</tr>
<tr>
<td></td>
<td>Token Ring LAN (ISO/IEC 8802-5)</td>
<td>Token ring MAC and PHY Layer Definition</td>
<td>- Widely deployed for LAN protocol</td>
</tr>
<tr>
<td></td>
<td>Wireless LAN (ISO/IEC 8802-11)</td>
<td>Wireless MAC control method and physical layer</td>
<td>- Used worldwide for nomadic LAN</td>
</tr>
<tr>
<td></td>
<td>MAC Bridge (ISO/IEC 15802-3)</td>
<td>Medium Access Control sublayer Bridge specification</td>
<td>- Enhancement underway for better performance</td>
</tr>
<tr>
<td>Niche Standards</td>
<td>26 pole Connector (ISO/IEC 11569)</td>
<td>26pole DTE/DCE connector for data networks</td>
<td>- Higher speed, usage in multimedia equipment</td>
</tr>
<tr>
<td></td>
<td>LLC (ISO/IEC 8802-2)</td>
<td>Logical Link Control</td>
<td>- It is used along with various LAN protocols</td>
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<td></td>
<td>NFCIP-1 &amp; 2 (ISO/IEC 18092 &amp; 21481)</td>
<td>Near Field Communication Interface and Protocols</td>
<td>- Wireless communication within 20 Centimeters with data rate up to 400 Kbps</td>
</tr>
<tr>
<td>Future Standards</td>
<td>10 Gbps CSMA/CD (ISO/IEC 8802-3)</td>
<td>Amendments for 10 Gigabit CSMA/CD and DTE power via Media Dependent Interface under development</td>
<td>- The future depends capability of supporting multimedia and mobility. - The market for multimedia and wireless communication will explode</td>
</tr>
<tr>
<td></td>
<td>Wireless LAN (ISO/IEC 8802-11)</td>
<td>Wireless Medium Access Control (MAC) method and physical layer (PHY) specifications</td>
<td>- 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.</td>
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<td></td>
<td>Ad Hoc Wireless Network with QoS</td>
<td>MAC/PHY standard for ad hoc wireless network to guarantee QoS in an industrial work environment</td>
<td>- 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.</td>
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<td>Winning Standards</td>
<td>QSIG BC (ISO/IEC 11572)</td>
<td>“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)</td>
<td>- An MoU for QSIG has been signed by the 10-15 major manufacturers in the world; it has been implemented by practically all manufacturers</td>
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<td>- A Forum (“IPNS-Forum”) has been established by major manufacturers for the particular purpose of promoting the implementation of QSIG</td>
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<td>- It is clearly visible that QSIG takes over the market from previous regional or proprietary standards, e.g. from DPNSS in the UK</td>
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Table 2. SC 6/Ex-WG 6 Standards Summary
QSIG has meanwhile even been taken as the basis for VPN applications in public ISDN networks.

- 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: SICnalling 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

<table>
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<th>Description</th>
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<tr>
<td>Winning Standards</td>
<td>8208</td>
<td>X.25 Packet Layer for DTE</td>
<td>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.</td>
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<td>TR9577</td>
<td>Protocol Identifiers</td>
<td>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 interoperability.</td>
</tr>
<tr>
<td></td>
<td>8348AnnA</td>
<td>NSAP addressing</td>
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</table>
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

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

QoS Framework

Trial for providing high level descriptions and solutions to consider Quality of service issues in OSI networking services and applications

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).

Group management protocol

Provide group membership management services for multicast communication protocols

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.

Multicast Session Management Protocol

It is an application-layer control protocol for managing the quality of service for a group communication

Mobile Multicast Communication

Provide one-to-many multicast services and applications over mobile communications networks

Table 4. SC 6/WG 8 Standards Summary

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<th>Description</th>
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<tbody>
<tr>
<td>Winning Standards</td>
<td>9594</td>
<td>Directory (X.500)</td>
<td>- Used by major suppliers of directory services as foundation for LDAP access to such services in the internet.</td>
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<td>- X.509 public key certificates used extensively to secure transactions in Internet secure commerce based on SSL.</td>
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<td>- X.509 attribute certificates used in Privilege Management Infrastructure (PMI) and in telebiometrics applications.</td>
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Table 5. SC 6/WG 9 Standards Summary
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<th>Description</th>
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<tr>
<td>Winning Standards</td>
<td>8824</td>
<td>ASN.1</td>
<td>Standardized notation and Encoding Rules used for a large number of protocols and file formats.</td>
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<td>8825</td>
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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 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.

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<tr>
<td>Winning Standards</td>
<td>10021</td>
<td>Messaging (X.400)</td>
<td>Deployed in enterprise EMAIL systems</td>
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