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ISO/IEC JTC1/SC6 Secretariat Ms. Jooran Lee, KSA (on behalf of KATS)

Korea Technology Center #701-7 Yeoksam-dong, Gangnam-gu, Seoul, 135-513, Republic of Korea;

Telephone: +82 2 6009 4808; Facsimile: +82 2 6009 4819; Email: jooran@kisi.or.kr
BUSINESS PLAN FOR ISO/IEC JTC 1/SC 6
Telecommunications and Information Exchange Between Systems

Period covered: October 2014 – June 2015
Submitted by: DaeYoung 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 as well as the conditions for their use. The standardization encompasses protocols and services of lower layers including physical, data link, network, and transport as well as those of upper layers including but not limited to Directory and ASN.1. Future Network has recently been added as an important work scope. A considerable part of the work is done in effective cooperation with ITU-T and other standardization bodies including IEEE 802 and Ecma International.

1.2 ORGANIZATION

WG 1 – Services and Protocols in the Physical and Data Link Layers
WG 7 – Network, Transport, and Future Network
WG 10 – Directory, ASN.1 and Registration

1.3 PROJECT REPORT

JTC 1/SC 6 is responsible for 349 published International Standards and 48 open project items.

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 29
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]
Liaison Committee to ISO/IEC JTC 1/SC 6
The below committees may see the documents of ISO/IEC JTC 1/SC 6 :

ISO committees in liaison:

IEC committees in liaison:

ISO committees in liaison:
2. PERIOD REVIEW

2.1 MARKET INITIATIVES

(1a) NFC standards (ISO/IEC 18092 NFCIP-1, ISO/IEC 21481 NFCIP-2) are becoming a significant success in the market. Many vendors including Google, Nokia, and Samsung are incorporating NFC technology in their smart phones. NXP, Sony, NFC Forum, and Ecma International have contributed significantly to the development of the NFC standards. SC 17 has been a close partner in developing the standards in SC 6.

(7b) ISO/IEC TR 29181-series documents have been developing to specify problem statement and requirements for the various issues of Future Network such as overall aspects, naming and addressing, switching and routing, mobility, security, media transport, and service composition. Several approved TR 29181-series documents are referenced and used by relevant SDOs such as TTA to develop further detail standards for Future Network. SC 6 is leading the standardization activities of Future Network in collaboration with ITU-T SG13.

(10a) 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 is completed with LDAP protocol (Directory servers can be accessed with DAP or LDAP protocols) and requests can be chained between X.500 Directory servers and LDAP servers. Directory standard is continuously improved to be usable by emerging applications like tag-based or cloud computing. Public-key and attribute certificates which are also part of X.500 standard are now widely used for security in transactions. A new edition is planned for 2016. In this edition, the part 8 (equivalent to Rec. ITU-T X.509) will contain only features related to public-key infrastructure and privilege management infrastructure and will support new features needed by environments with specific constraints like Smart Grid.

(10b) ASN.1 standard is used in many protocols (directory, network management, security) and permits usage of multiple encoding rules particularly PER for narrow bandwidth, XER for communications with XML applications, OER for fast and efficient encoding (particularly for financial applications).

2.2 ACHIEVEMENTS
WG 1:

Progression of revision IS publication:
- ISO/IEC 24771, MAC/PHY standard for ad hoc wireless network to support QoS

Progression of revision DIS ballot:
- ISO/IEC DIS 29157, PHY/MAC specifications for short-range wireless low-rate applications

Progression of IS publication:
- ISO/IEC 15149-1, Magnetic Field Area Network - Part 1: Air-Interface

Progression of DIS ballot:

Progression of CD ballot:

WG 7:

Publication of Technical Report:
- ISO/IEC TR 29181-1, Future Networks: Problem Statement and Requirements - Part 1: Overall aspects
- ISO/IEC TR 29181-2, Future Networks: Problem Statement and Requirements - Part 2: Naming and Addressing
- ISO/IEC TR 29181-4, Future Networks: Problem Statement and Requirements - Part 3: Mobility
- ISO/IEC TR 29181-5, Future Networks: Problem Statement and Requirements - Part 5: Security
- ISO/IEC TR 29181-6, Future Networks: Problem Statement and Requirements - Part 6: Media Transport
- ISO/IEC TR 29181-7, Future Networks: Problem Statement and Requirements - Part 7: Service Composition
- ISO/IEC TR 20002, Managed peer-to-peer (P2P) framework

Publication of International Standard:
- ISO/IEC 17811-1, Device Control and Management – Part 1: Architecture

Progression of FDIS Ballot:

Progression of Working Draft:
- ISO/IEC TR 29181-8, Future Networks: Problem Statement and Requirements - Part 8: Quality of Service

Progression of Preliminary Work Items:
- PWI - Functional Architecture and Protocols for Managed P2P communications
- PWI - Network Proxy Protocol for Sleep Mode Management of Nodes
- PWI - Distributed Mapping System (DMS)
- PWI - Knowledge Distribution Model and Protocols (KDMP)
- PWI - Service Framework and Protocols for Wireless Power Transfer Applications
• PWI - Architecture and Intelligent Proxy Model for promoting the Quality of Service in Future Network (FNQoS)
• PWI - Architecture of Future Network Naming and Addressing

Collaboration with Liaison Organizations:
• ITU-T SG2 on Future Network Naming and addressing
• ITU-T SG11 on Multicast and Managed P2P communications
• ITU-T SG13 on Future Network
• ITU-T SG17 on Security
• ISO/IEC JTC1/SC29/WG11 on MMT (MPEG Media Transport)
• ISO/TC 122/WG 12 on Supply chain applications of logistics technology
• IEEE-SA on IEEE 1888
• ETSI TC RRS on Reconfigurable Radio Systems
• ISOC/IETF on Tlssec

WG 10:

Directory:
Achievement of Edition 7 of ISO/IEC 9594. This edition (now under publication) incorporates the technical corrigenda on Edition 6 and the three amendments:
• Amendment 1: Password Policy support
• Amendment 2: Communication enhancements
• Amendment 3: Directory IDM support
This edition can use encoding rules other than Basic Encoding Rules (BER). The interworking with LDAP has been improved and the part 8 of the standard (Public-key and attribute certificates) has been adapted for Identity Management.

ASN.1:
• A new set of encoding rules set (Octet Encoding Rules), which is faster than Packed Encoding Rules but less compact is now available. Octet Encoding Rules (Rec. ITU-T X.696 | ISO/IEC 8825-7) has been designed for real time applications like high speed trading.

Registration:
• New Edition of ISO/IEC 9834-8 (Generation of Universally Unique Identifiers (UUIDs) and their use in object identifiers) is now available.

3. FOCUS DURING NEXT WORK PERIOD

3.1 DELIVERABLES

WG 1:

Progression of revision
• FDIS ballot: ISO/IEC DIS 29157, PHY/MAC specifications for short-range wireless low-rate applications

Progression of FDIS Ballot on Magnetic Field Area Network
• ISO/IEC FDIS 15149-2: Information technology -- Telecommunications and information exchange between systems -- Magnetic field area network (MFAN) -- Part 2: In-band Control Protocol for Wireless Power Transfer

Progression of DIS Ballot on Magnetic Field Area Network
• ISO/IEC DIS 15149-3: Information technology -- Telecommunications and information exchange between systems -- Magnetic field area network (MFAN) -- Part 3: Relay Protocol for Extended Range
WG 7:

Publication of relevant documents:
- Progression of Working Draft and other technical issues on Future Network:

Progression of Working Draft and other technical issues on Future Network:
- ISO/IEC WD 29181-8, Future Networks: Problem Statement and Requirements - Part 8: Quality of Service

Progression of Preliminary Work Items:
- PWI - Functional Architecture and Protocols for Managed P2P communications
- PWI - Network Proxy Protocol for Sleep Mode Management of Nodes
- PWI - Distributed Mapping System (DMS)
- PWI - Knowledge Distribution Model and Protocols (KDMP)
- PWI - Service Framework and Protocols for Wireless Power Transfer Applications
- PWI - Architecture and Intelligent Proxy Model for promoting the Quality of Service in Future Network (FNQoS)
- PWI - Architecture of Future Network Naming and Addressing

Other new issues:
- Other new technical issues on Future Network and other WG7-related work scope

WG 10:

Directory:
- Progression of two amendments:
  - Amendment 1: Communications Support Enhancements: improvement of interworking between X.500 directory and LDAP servers.
  - Amendment 2: IDM support: improvement of part 8 of the standard related to public-key and attribute certificates.
- Restructuration of several parts for the future Edition 8 to have part 8 only related to public key infrastructure (PKI) and privilege management infrastructure (PMI). Addition of new functionalities for specific usages like Smart Grid.

ASN.1:
- New Edition of ASN.1 and its encoding rules incorporating Technical Corrigenda into the base texts.
- Continue to assist other groups with use of ASN.1-related texts and use of object identifiers and respond to their needs.
- Resolution of current defects.

Registration:
- Extension of the scope of ISO/IEC 9834-9 to include network sensors.
- New usage of object identifiers for resolution of heterogeneous identifiers and locators in network.
- Usage of object identifiers for Internet of Things

3.2 STRATEGIES

- (1a) Development of emerging standards for wireless power transfer based on close collaboration with Liaison Organizations such as IEC TC100 TA15 on relevant standardization issues
- (7a) Development of emerging standards for network, transport and Future Network based on close collaboration with Liaison Organizations such as ITU-T SG11, SG13, SG17, ISO/IEC JTC1/SC29/WG11 on relevant standardization issues
- (10a) Develop strategy for efficient coordination with ITU-T and IETF on ASN.1 standards, Directory (LDAP) and public-key certificates to provide and efficient Directory services with
interworking of X.500 servers and LDAP servers. Support of new applications.

- (10b) Ensure appropriate publicity for ASN.1 work as a structured data serialization format with multiple encoding rules.

3.3 OPPORTUNITIES

- (1a) Continuing opportunities of deployment of the NFC technologies in the market.
- (1b) Realization of the real wireless communication environment by the expansion of wireless power transfer technologies
- (7a) Support of new communications protocols and improvement of security.
- (7b) Continuing opportunities of deployment of the emerging networking technologies including Future Network, managed P2P and sensor network for the future enhanced services and applications
- (10a) Improve Directory standard by addition of new features if necessary to support new communication protocols and usage by new applications (NGN directory, tag-based applications, cloud computing).
- (10b) Restructure ISO/IEC 9594-8 into a reference document for public key infrastructure and privilege management infrastructure.
- (10c) Liaise with those involved in new technologies and approaches to ensure that the importance of ASN.1 to their work is fully recognised.
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<th>Category</th>
<th>Acr/No</th>
<th>Description</th>
<th>Notes</th>
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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>
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<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>
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<td>Wireless LAN (ISO/IEC 8802-11)</td>
<td>Wireless MAC control method and physical layer</td>
<td>- Used worldwide for nomadic LAN</td>
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<td>MAC Bridge (ISO/IEC 15802-3)</td>
<td>Medium Access Control sublayer Bridge specification</td>
<td>- Enhancement underway for better performance</td>
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<td>NFC (ISO/IEC 18092 &amp; 21481)</td>
<td>Near Field Communication Interface and Protocols</td>
<td>- Contactless near field communication within 20 Centimeters with data rate up to 400 Kbps for mobile phones</td>
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<td>Picocast (ISO/IEC 29157)</td>
<td>PHY/MAC specifications for short-range wireless low-rate applications in ISM band</td>
<td>- This standard specifies PHY/MAC protocols for short-range wireless low-rate applications in ISM band</td>
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<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 interoperation.</td>
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<td></td>
<td>8348AnnA</td>
<td>NSAP addressing</td>
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<td>10589</td>
<td>IS-IS routing protocols, intra-domain and inter-domain</td>
<td>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.</td>
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<td>10747</td>
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<tr>
<td>Niche Standards</td>
<td>8073</td>
<td>Connection-mode Transport Protocol</td>
<td>Widely deployed in specific ITU-T applications, including TMN</td>
</tr>
<tr>
<td></td>
<td>CONS</td>
<td>Connection-mode Network Protocols</td>
<td>Deployed in OSI networking systems and in ITU-T applications.</td>
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<tr>
<td></td>
<td>CLNP</td>
<td>Connectionless-mode Network Protocols</td>
<td>Deployed in OSI networking systems and in ITU-T applications.</td>
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<tr>
<td>Future Trends and</td>
<td>13236</td>
<td>QoS Framework</td>
<td>Trial for providing high level descriptions and solutions to consider Quality of service issues in OSI networking services and applications</td>
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<tr>
<td></td>
<td>13243</td>
<td>QoS Methods and mechanisms</td>
<td></td>
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<tr>
<td>Directions</td>
<td>13252 14476</td>
<td>Enhanced communications transport Service definition and Protocol specifications for one-to-many, many-to-one and many-to-many data transport</td>
<td>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).</td>
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<tr>
<td>16513</td>
<td>Group management protocol</td>
<td>Provide group membership management services for multicast communication protocols</td>
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<tr>
<td>16512</td>
<td>Relayed Multi-Cast Protocol</td>
<td>End-to-end overlay multicast communication protocols that may be used over current IP network where IP multicast is not fully deployed.</td>
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<tr>
<td>24792</td>
<td>Multicast Session Management Protocol</td>
<td>It is an application-layer control protocol for managing the quality of service for a group communication</td>
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<tr>
<td>24793</td>
<td>Mobile Multicast Communication</td>
<td>Provide one-to-many multicast services and applications over mobile communications networks</td>
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<td>29180</td>
<td>Security framework for sensor networks</td>
<td>It describes the security threats and security requirements of the ubiquitous sensor network, and categorizes the security technologies according to the security functions that satisfy the security requirements and where the security technologies are applied in the security model of the ubiquitous sensor network. Also, The security functional requirements and security technologies for the ubiquitous sensor networks are presented.</td>
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<tr>
<td>Code</td>
<td>Description</td>
<td>Details</td>
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<tr>
<td>29181</td>
<td>Future Network: Problem statement and requirements</td>
<td>The Future Network (FN), which is anticipated to provide functionalities and services beyond the limitations of current networking technology, has been studied by researchers in the field of communication network and services worldwide. FN technologies have now been widely and deeply studied in many research organizations and standardization bodies. It consists of seven detail documents that cover various aspects of Future Network.</td>
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<tr>
<td>2002</td>
<td>Managed P2P - Framework</td>
<td>Peer-to-Peer (P2P) is distributed network architecture composed of participants (peer) sharing resources without intervention from the central coordination instances. This technical report does not define new P2P protocol or P2P-based application. This technical report does not define manageability feature for interoperation with conventional P2P-based application. The goal of this technical report is to define a framework to provide manageability to the conventional P2P-based application.</td>
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<tr>
<td>17811</td>
<td>Device Control and Management</td>
<td>It provides the architecture for device control and management (DCM). DCM can support the various control and management services, regardless of the network protocols or interfaces. DCM is composed of two protocols; DCMP (Device Control and Management Protocol) and RMDP (Reliable Message Delivery Protocol). ISO/IEC 17811, consists of the following parts:   - Part 1: Architecture   - Part 2: Specification of Device Control and Management Protocol (DCMP)   - Part 3: Specification of Reliable Message Delivery Protocol (RMDP)</td>
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</table>
It defines the network specification for devices, which are operated on IEEE Std. 802.15.4-2011 PHY capable to support the channel-hopped TDMA links of the DSME MAC of IEEE Std. 802.15.4e-2012, to provide low cost communication network that allows reliable, deterministic-latency, and scalable wireless mesh connectivity.

This standard provides the followings:
- DSME MAC link control
- unbalanced cluster-tree based network formation
- directional multiple grades mesh connection
- link-path routing and data forwarding
- link and link-path maintenance

Table 3. SC 6/WG 10 Standards Summary

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</table>
| Winning Standards| 9594       | Directory (X.500)      | - Directory standard is used by major suppliers of directory services. It is also used, as foundation for LDAP, by many services in the Internet. X.500 directory servers and LDAP servers can now be parts of a same directory system.  
- X.509 public key certificates are used extensively to secure transactions in e-commerce and can be adapted for other environments.  
- X.509 attribute certificates are used in Privilege Management Infrastructure (PMI) and in telebiometrics applications. |
|                  | 8824, 8825 | ASN.1                  | Standardized notation and Encoding Rules used for a large number of protocols and file formats.                                      |
93,000 Object Identifiers registered on the associated Web Site, probably twice that many actually allocated.

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).

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