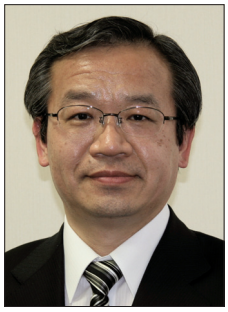
STANDARDS FOR EFFICIENT DELIVERY OF FUTURE SERVICES



Mostafa Hashem Sherif

Yoichi Maeda

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The papers selected for this Series present various standards that assist in meeting the explosive demand for content delivery by efficient use of network resources.

The first article, "Efficient HDTV and 3DTV Services over DVB-T2 using Multiple PLPs with Layered Media," by Hellge *et al.*, describes how DVB-T2 can be adapted to the high transmission rates of future High Definition TV (HDTV) services including three dimensional digital TV (3DTV) services. The DVB-T2 standard from the Digital Video Broadcasting (DVB) consortium is designed to reuse the transmission infrastructure of the first generation digital TV but improves throughput and allocates the bandwidth and frequency resources in a flexible manner [1].

IEEE 802.11ac, an amendment to IEEE 802.11n, is the subject of the second article, by Bejarano *et al.*, "IEEE 802.11ac: From Channelization to Multi-User MIMO." With IEEE 802.11n, the throughput is increased with MIMO (multiple-input and multiple-output) technology to allow the simultaneous operation of several antennas at both the transmitter and receiver of a single station. This increases the total network throughput to the gigabit range. IEEE 802.11ac is expected to be ratified in 2014.

The third article, "IEEE 802.11af: A Standard for TV White Space Spectrum Sharing," by Adriana *et al.,* complements an article published in the April 2013 issue [2]. Specifically, the article describes IEEE 802.11af, a standard framework for spectrum sharing among unlicensed devices in the TV White Space (TWS).

Content delivery services have to meet strict requirements with respect to reliability, service availability, and manageability. The 2013–2016 work program of the International Telecommunication Union-Telecommunication Standardization Sector (ITU-T) covers efficient content delivery based on network virtualization, software defined networking, and autonomic management. Many proposals are currently being discussed such as enhanced NGNs (Next Generation Network), NICE[1] or Future Networks. The fourth and final article, by Chae Sub Lee *et al.*, "Standardization and Challenges of Smart Ubiquitous Networks in ITU-T," presents a Korean view called Smart Ubiquitous Networks (SUNs). According to its designers, SUNs are intended to support context-aware services through adaptable traffic control and resource management and can be the building block for scalable and reliable services. It is useful to note that they share the same acronym with Smart Utility Networks standardized in the IEEE 802.x committees for deployment in TV white space [3], even though they are conceptually different.

In closing, the editors would like to express their gratitude to the reviewers listed below in alphabetical order, for their assistance in making the selections and for their generous advice to the prospective authors.

Accettura, Nicola, Politecnico di Bari, Italy
Chang, Kuor-Hsin, Elster Solutions, United States
Chen, Chih-Hsuan, Chunghua Telecom, Taiwan
Christin, Delphine, Technischen Universität Darmstadt, Germany
Ding, Gang Ding, Olympus, United States
Ding, Haiyang, Xidian University, China
Dressler, Falko, University of Erlangen, Germany
Egawa, Takashi, NEC, Japan
Faria, Gérard, TEAMCAST, France
Haffenden, Oliver, BBC, R&D, U.K.
He, An, Virginia Tech, Electrical and Computer Engineering, USA
Hytönen, Vesa, University of Jyväskylä, Finland

[1] *NICE is an enhanced NGN with intelligent provisioning of services per the requirements of users and application providers.*

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[1] L. Vangelista *et al.*, "Key Technologies for Next-Generation Terrestrial Digital Television Standard DCB-T2," *IEEE Commun. Mag.*, vol. 47, no. 10, Oct. 2009, pp. 146–53.
[2] C.-S. Sum *et al.*, "Design Considerations of IEEE 802.14m Low-Rate WPAN in TV White Space," *IEEE Commun. Mag.*, vol. 51, no. 4, Apr. 2013, pp. 74–83.
[3] C.-S Sum, H. Harada, F. Kojima, Z. Lan, and R. Funada, "Smart Utility Networks in TV White Space," *IEEE Commu. Mag.*, vol. 49, no. 7, Jul. 2011, pp. 132–32.

BIOGRAPHIES

MOSTAFA HASHEM SHERIF (ms5285@att.com) has been with AT&T in various capacities since 1983. He has a Ph.D. from the University of California, Los Angeles, an M.S. in the management of technology from Stevens Institute of Technology, New Jersey, and is a certified project manager of the Project Management Institute (PMI). Among the books he authored are *Protocols for Secure Electronic Commerce* (2nd ed., CRC Press, 2003), *Paiements électroniques sécurisés* (Presses polytechniques et universitaires romandes, 2006), and *Managing Projects in Telecommunication Services* (Wiley, 2006). He is a co-editor of two books on the management of technology published by Elsevier Science and World Scientific Publications in 2006 and 2008, respectively, and is the editor of the *Handbook of Enterprise Integration* (3rd ed., Auerbarch, 2009).

YOICHI MAEDA [M] (yoichi.maeda@ttc.or.jp) received B.E. and M.E. degrees in electronic engineering from Shizuoka University, Japan, in 1978 and 1980, respectively. Since joining NTT in 1980, for the last 30 years he has been engaged in research and development on access network transport systems for broadband communications including SDH, ATM, and IP. From 1988 to 1989 he worked for British Telecom Research Laboratories in the United Kingdom as an exchange research engineer. He currently leads the Japanese telecommunication standardization organization, TTC (The Telecommunication Technology Committee) since October 2010. In November 2012 at the World Telecommunication Standardization Assembly (WTSA-12), he was newly appointed Chair of the ITU-T Review Committee for the 2013–2016 study period after serving as Chari of ITU-T SG15 for eight years. He is a Fellow of the IEICE of Japan. He has been a Series Editor of the Standards Series in *IEEE Communications Magazine* since 1999.