

## *Advances in Home Networking Standardization and Related Research Opportunities*

### **Instructor**

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### **Abstract**

Sometimes, the worlds of standardization and academic research seem far apart. However, home networking scientists and developers need to understand in which context their technology is expected to operate, in order to optimize the chance that their products will co-exist and interoperate with other systems in the consumer space. The focus of the tutorial will be on the role of standardization in the home networking field, how it works, what the main forces are, and why it is so opaque and complex. This will be illustrated in the light of current trends: the introduction of ICT from new domains (energy, health, ...) and the need for convergence and interoperability with ICT from established domains (telecom, consumer electronics, Internet). The second part of the tutorial will discuss the current status in home networking standardization: "official" bodies such as IEEE, ETSI, ISO/IEC, CENELEC, ITU, but also industry initiatives such as IETF, HGI, DLNA, UPnP Forum, Broadband Forum, Continua, PUCC, ATIS, DVB, Enocean Alliance, OSGi, CECED, DLMS, Zigbee Alliance, etc. The emphasis will be on the standards that are relevant today, with a focus on new developments, such as IEEE-802.11ac and -1905.1, DLNA CVP, UPnP-HEMS, -DMS, and -EHS, DECT ULE, and G.hnem and G.phnt. The final hour will be spend on related research questions: architectures for convergence, co-existence issues, migration and scalability studies, etc.