CONSEIL INTERNATIONAL DES GRANDS RÉSEAUX ÉLECTRIQUES
INTERNATIONAL COUNCIL ON LARGE ELECTRIC SYSTEMS

STUDY COMMITTEE D2
INFORMATION SYSTEMS AND TELECOMMUNICATION

Study Committee D2 Annual Report 2008

Mr. Maurizio MONTI – SC D2 Secretary

STRATEGIC DIRECTION

SC D2 mission is:

- to facilitate and promote the progress of engineering and the international exchange of information and knowledge in the field of information systems and telecommunications for power systems;
- to add value to this information and knowledge by means of synthesizing state-of-the-art practices and drawing recommendations.

The Strategic Plan (2007-2016) defines the organization of the SC D2 to cope with the following objectives:

- To be more customer oriented;
- To foster the participation in the working bodies;
- To be well balanced between information systems, telecommunications, telecontrol and automation;
- To draw the interest of the customers for the work done in the SC.

Stress is thus put on the Cigré SC D2 goal to "**be the major technically competent international body for electricity utilities on Information and Telecommunication Systems**".

SC D2 publications issued in 2008 were as follows:

- Three Papers published in Electra:
  - WGD2.22 – "Risk Assessment of Information and Communication Systems - Analysis of some practices and methods in the Electric Power Industry" – August 2008;
  - WGD2.22 – "Security Technologies Guideline - Practical Guidance for Deploying Cyber Security Technology within Electric Utility Data Networks" – December 2008;
  - WGD2.22 – "Security Frameworks for Electric Power Utilities – Some Practical Guidelines when developing frameworks including SCADA/Control System Security Domains" – in the publication process.
- Three Technical Brochures:
  - TB 341, by WGD2.17 – "Integrated Management Information in Utilities".
  - WGD2.13 - "New Mobile Solutions in the Utility Sectors" approved by SC D2 for publication.
  - WGD2.21 – "Broadband PLC Applications" approved by SC D2 for publication.
- Two SC D2 session papers from WGD2.22.

At the 2008 Paris Session, SC D2 performed a joint Group Discussion Meeting with SC C5 "Electricity Markets and Regulation". The Preferential Subjects of the SC D2 2008 were:

- "**Information and Communication Systems in the deregulation of the electric sector**":
  - Impact on the information and communication systems of the unbundling of vertically integrated companies;
  - Implementation of the new market oriented services;
  - Integration of the new Information and communication system.
- "**Frameworks for the governance and the management of the information and communication systems in the Electric Power Utilities**":
  - Description of best practices;
  - Utilization of emerging standards (COBIT, ITIL, BS15000…);
  - Organization of the utility.

The attendances and contributions were as follows:

- About 200 persons for the SC C5/D2 joint Discussion meeting, 11 prepared contributions and 5 spontaneous ones.
- About 150 persons attended SC D2 Group Discussion meeting, 22 prepared contributions and 2 spontaneous ones.

TECHNICAL ACTIVITIES

INTERNET AND INFORMATION SYSTEMS

Current Practices and Experiences

Two Advisory Groups are monitoring the evolutions and the needs of utilities:

- AGD2.01"Core Business Information Systems". This Advisory Group is ITS' users oriented. Its main mission is in particular to monitor the needs and the stakes of the users in their core businesses which are linked with ITS (telecontrol, asset management, customer relationship, etc.);
- AGD2.02: "Techniques and Management of the Information and Telecommunication Systems". This Advisory Group focuses on the needs of the ITS specialists (organization, techniques used, implementation, feedback, etc.).

During the SC D2 Regular Meeting, information was provided on the following items:

- Information Systems in Power Plants;
- Service Oriented Architecture;
- Intelligent Grids;
- External 3rd party access;
- IT System Governance;
- IT Data and Knowledge Management.

These presentations provided the main outputs for new Working Group activities.

Metering, Revenue Protection, Billing and CRM/CIS functions

Metering, Billing and CRM are important functions in the liberalized electricity market process. Metering and billing were already basic functions for the electricity supply chain before the liberalization, while CRM in his complete functionality entered in this sector since the market opening.

The WGD2.18, "Metering, Revenue Protection, Billing and CRM/CIS functions", carried out a bibliographic investigation on "Standards and Recommendations, State of the Art, Practices and Trends". More than 50 documents were reviewed.

The Technical Brochure should be finalized in 2009.

WGD2.18 will also actively contribute to the 2009 SC D2 Colloquium on the second Preferential Subject "Metering and Billing".

Treatment of Information Security for Electric Power utilities (EPUs)

The scope of work of WGD2.22, "Treatment of Information Security for Electric Power utilities (EPUs)", is to study the following three items, striving towards a common understanding and terminology for handling of information security:

- Frameworks for EPUs on how to manage information security.
- Risk assessment: Common models and methods for treating vulnerabilities, threats and attacks.
- Security technologies for SCADA/control systems including real time control networks.

A Technical Brochure is to be published by 2009, and intermediate deliveries are being published as separate papers in Electra.

EMS Architectures for the 21st Century

The scope of work of WGD2.24, "EMS Architectures for the 21st Century", is to:

- Develop the vision for the architecture of the next generation of Energy Management and Market Management Systems.
- Gain broad adoption by the industry, and in particular to draft a road map for the vendors of SCADA/EMS/MMS.
- Facilitate its implementation as a de facto standard.

In order to achieve these activities, the WGD2.24 is organized into five internal Task Forces. Altogether, nearly 50 persons are involved in this activity.

A "White paper" and a Electra paper are to be published beginning of 2009.

TRANSMISSION MEDIA AND TECHNIQUES

Telecommunication Networks, Services and Technology

The mission of Advisory Group, AGD2.03 "Telecommunication Networks, Services and Technology", is to monitor these technologies and to foresee its possible use and impact on power utilities.

The AGD2.03 has reviewed the published SC 35 and SC D2 Technical Brochures and is assessing the needs for the updates of these documents.

In addition, AGD2.03 has identified five potential issues of concerns:

- Telecom Service Delivery Model, Architecture, Management and Support in the Electrical Power Utility;
- Power Line Carrier Channel Modelling, Planning and Usage;
- Communications for HV Substation Protection & Wide Area Protection Applications;
- Communication Architecture for IP-based Substation Applications;
- Communication access to Electrical Energy Consumers and Producers.

These proposals have been discussed at the SC D2 Regular Meeting and are under submission to the Technical Committee fro the creation of the necessary Working Bodies.

Mobile Radio

The WGD2.13 scope of work is to consider and report on the issues involved in implementing new mobile services and systems. This was carried out by a comprehensive questionnaire within the utility and emergency services sectors to identify real mobile projects that have been implemented in the last two years. SC D2 approved the Technical Brochure for publication. This Technical Brochure provides an analysis of systems currently being implemented by utility companies and examines the issues associated with the delivery of working systems.

The use of Ethernet Technology in the Power Utility environment

The WGD2.23, "The use of Ethernet Technology in the Power Utility environment", has as main objective to explore new opportunities and applications of Ethernet technology as well as in substation environment (LAN) or in control network (WAN).

The Technical Brochure on the concept of Ethernet, both as an access interface and as a network service is to be drafted by beginning of 2009.

INDUSTRY DEREGULATION

Broadband PLC Applications

The WGD2.21, "Broadband PLC Applications", has the task to study energy-related services based on Broadband PLC, such as Automatic Meter Reading (AMR) and Management, Telecontrol, Tele-surveillance, etc.

Two questionnaires were issued concerning the PLC technology interest, its use and PLC technology economics. The Technical Brochure was approved by the SC D2 and is to be published beginning of 2009.

Information and Communication Systems in the deregulation of the electricity sector

The scope of work of WGD2.25, "Information and Communication Systems in the deregulation of the electricity sector", is to focus on the impact of deregulation on Information and Communication System in all parts of value chain (generation, transmission, distribution and sales), with a special attention to interfaces between actors.

Two main outputs are expected. The first one is a "White paper" on best practices and the second one is an international benchmark on the impact of deregulation on Information and Communication systems. A first report is to be issued by June 2009.

ADMINISTRATIVE ACTIVITIES

IMPROVE STUDY COMMITTEE PRACTICES

In 2008, 6 SC D2 Members and 2 Observer Members retired and were replaced by 5 new Members and 2 Observer Members.

To adapt SC D2 structure to on-going activities and where necessary **"Restructure Working Groups**" and **"Use of Ad-hoc Groups for Special Tasks"**, the following decisions have been implemented:

- Two WGs having published their work are dismantled:
  - WGD2.13, "Mobile Radio".
  - WGD2.21, "Broadband PLC applications".
- Five new WGs will be created after Technical Committee approval:
  - WGD2.26, "Telecom Service Delivery Model, Architecture, Management and Support in the Electrical Power Utility".
  - WGD2.27, "Power Line Carrier Channel Modelling, Planning and Usage".
  - WGD2.28, "Communication Architecture for IP-based Substation Applications".
  - WGD2.29, "Communication access to Electrical Energy Consumers and Producers".
  - JWGD2/B5.30, "Communications for HV Substation Protection & Wide Area Protection Applications".

The following table provides for each technical area the Working Body in charge of carrying out the task.

Title	AG/WG Convener
Advisory Group on "Core Business Information Systems"	AGD2.01 Mr. E. Sandström
Advisory Group on "Techniques and Management"	AGD2.02 Mr. M. Samaan
Advisory Group on "Telecommunication Networks, Services and Technology"	AGD2.03 Mr. M. Mesbah
Metering, revenue protection, billing and CRM/CIS functions	WGD2.18 Mr. G. Vidrio
Treatment of Information security for electric power utilities	WGD2.22 Mr. G. Ericsson
The use of Ethernet technology in the power utility environment	WGD2.23 Mr. C.Samitier
EMS Architectures for the 21st Century	WGD2.24 Mr. A. Steven
Information and Communication Systems in the deregulation of the electricity sector	WGD2.25 Mr. A. Bourguignon
Telecom Service Delivery Model, Architecture, Management and Support in the Electrical Power Utility	*WGD2.26 Mr. M. Mesbah*
Power Line Carrier Channel Modelling, Planning and Usage	*WGD2.27 Mr. G. Vrabic*
Communication Architecture for IP-based Substation Applications	*WGD2.28 Mr. H. Riis*
Communication access to Electrical Energy Consumers and Producers	*WGD2.29 Mr. P. Moray*
Communications for HV Substation Protection & Wide Area Protection Applications	*JWGD2/B5.30 Mr. C. Samitier*

A2 WIDEN STUDY COMMITTEE INFLUENCE

SC D2 is maintaining **"Relationship with kindred organisations"**, in this respect, a Memorandum of Understanding was signed in 2008 between the WGD2.24 and IEC TC 57 related to the work carried out on the architecture of the Control Centres.

SC D2 Members are active in the following organizations:

- IEC TC57, "Power System Management and Associated Information Exchange",
- IEEE Power Engineering Society, "Power System Communication Committee" (PSCC),
- IETF, "Internet Engineering Task Force",
- EUTC, "European UTC".