

Minutes of Meeting of TC88 PT25 held in Kista/Stockholm 2001-06-06 – 2001-06-07

Date and place

The meeting was held 6th to 7th June in Kista (Stockholm), Sweden. The meeting was hosted by SEK, Swedish Electrotechnical committee.

Day 1

Opening of the Meeting

The meeting was opened by the chairman and project leader Anders Johnsson from Sweden who wished the experts and specially invited people welcome. He informed the audience that the 6th June is the Swedish National Day, celebrated in the memory of Gustav Vasa becoming the Swedish king in 1523. However the Swedes do not have enough sense to take the day of and celebrate as the Norwegians do on the 17th May.

Roll call of experts

The following experts and specially invited people attended the meeting:

Mr. Anders Johnsson, Project leader	Vattenfall Utveckling AB	Sweden
Mr. Knud Johansen	Cotas Computer Technology A/S	Denmark
Mr. Keld Rasmussen	Vestas Wind Systems A/S	Denmark
Mr. Claus Bjerger	SEAS Distribution A.m.b.A.	Denmark
Mr. Karlheinz Schwarz	SCC	Germany
Mr. Harald Hilde	Statkraft SF	Norway
Mr. Frederico Albuquerque	Enernova	Portugal
Mr. Gordon Smith	Garrad Hassan	Scotland,UK
Mr. Kay Clinard	KCAssociates	USA
Mr. Jan Blix, Chairman Swedish national committee of TC88	Vattenfall AB	Sweden

Mr Blix attended the meeting until lunch the first day.

Invitations were also sent to the following people but they were prevented from coming:

Mr. Wolfgang Brodt	Convenor TC57 WG03
Mr. Thierry Lefebvre/Brent Brobak	Convenor TC57 WG07
Mr. Rudolf Dinges	Convenor TC57 WG10

Due to e-mail transfer problems between IEC central office and the secretary of TC88 two nominated US experts has not been included in the list of experts. Therefore, they never got an invitation to the meeting. Because the error was discovered the day before the meeting it was impossible to cancel the meeting with such short notice. The two missing experts are Mr Joe Pasquariello, Fenway Systems, California and Mr Ronald Brzezinski, Enron Wind Corp, California.

All people gave a short presentation of themselves and their background.

The object of the meeting

Anders Johnsson presented the object of the meeting. See attachment 88PT25(Kista1)1. The main object of the first day was to define the exact scope. The object of the second day was to develop a plan of actions for the next months.

Deadlines

A first Working Document needs to be produced within 6 months from the approval of the project. Thus, the deadline is 1 October 2001.

A first Committee Draft needs to be handed over to IEC within 24 months. The deadline for this is 1 April 2003

The procedure for development of an IEC Standard

The Guidance for convenors of working groups and project leaders - Annex B include a description of the procedure for development of an IEC Standard. Anders Johnsson showed a copy of that document. See attachment 88PT25(Kista1)3. The document can be downloaded from www.iec.ch.

Basic rules for the structure and drafting of an IEC Publication

Anders Johnsson presented the Basic rules for the structure and drafting of an IEC Publication as described in Guidance for convenors of working groups and project leaders - Annex C. See attachment 88PT25(Kista1)4.

Scope

Anders Johnsson presented the result of the voting on the new proposal and the comments that the different countries made. US made comments on that there are several working groups within TC57 whose work should be co-ordinated with this project.

In the new work proposal the original scope was defined as follows:

"The scope is to achieve a standardisation of the communication between control and monitoring systems in wind power plants and remote SCADA-systems."

Anders Johnsson presented a number of slides that put forward some questions regarding different aspects of the scope.

What communication and between what/whom (Actors, System levels/ interface)?

What functionality (Services, security, etc.)?

What data (On-line, off-line, control system data, ..)?

What part of the lifecycle (Procurement, design, implementation, installation, commissioning, operation, maintenance.)?

See also attachment 88PT25(Kista1)1.

The interface levels and whether to take on a SCADA-view or and a turbine-view was discussed. The question might be relevant as soon as there is need for any intermediate equipment such as a wind farm server. The wind farm server gets control commands from a SCADA-system and then decides which wind turbine to control. However it was decided that the standard shall include all information exchange for monitoring and control and that both views are to be considered.

The meeting agreed on modifying the Title, the Scope and the Purpose of the standard. Especially the word Remote should be removed from the title and scope because monitoring and control could be made from any place. Furthermore the word SCADA should be removed from the scope since it is not unambiguously defined.

Karlheinz Schwarz presented his suggestion on new text for the Title, Scope, and Purpose. Everyone got a copy of the text to take with them and to think about during the evening.

Closing of meeting day 1

Anders Johnsson closed the meeting for the day and invited the experts to a dinner later in the evening.

Day 2

Opening of the Meeting

Anders Johnsson opened the meeting and presented the agenda for the second day. The first item was to continue the discussion on the Scope for the work.

Scope, cont.

The meeting agreed on the following title, scope and purpose

Title: *Communications for monitoring and control of wind power plants*

Scope: *This standard defines information, information description methods, and information exchange for monitoring and control systems for wind power plants.*

Purpose: *This document provides a standard for interconnection of monitoring and control systems for wind power plants. It provides requirements relevant to the specification, engineering, use, testing, diagnosis, and maintenance of the information to be shared in wind power systems.*

A wind power plant can consist of a single wind turbine or a wind farm, with associated equipment.

The following was decided NOT to be within the scope:

- Standardisation of monitoring or control systems
- Standardisation of the exact number, name and type of data for each object. Some data shall be mandatory and some shall be optional.

Relationship to other projects and to existing publications, National/regional standards available/applicable, and Review of relevant International Standards, ISO/IEC and IEC guides

The standards developed within working groups 3, 7, 10 and 11 within TC57 was presented by Anders Johnsson. See attached document 88PT25(Kista1)2. Documents regarding IEC61850 can be downloaded from www.scc-online.de or www.ucausersgroup.org. Karlheinz Schwarz suggested the experts to read IEC61850 part 1 to part 5 and part 7-1 to part 7-4.

Harald Hilde presented Statkrafts strategy for a standardised communication system for supervision of all their power plants, both hydro plants and wind power plants, in Norway. They will have one integrated system for all control centres. They have chosen IEC 60870-5-104 as the protocol between the power plants and the control centres. The slides, 88PT25(Hilde)1, will be distributed by Harald Hilde.

The project leader Anders Johnsson is invited to the TC57 SPAG meeting in Oslo 12th June to discuss co-operation with TC57 working groups.

Statement of Work

The following tasks were listed. See also attachment 88PT25(Kista1)1.

1. Analysis of needs - Description of operational functions
The document Functional requirements on communication system for wind turbine applications will be used as basis.
2. Define which interface to standardise
The interface of turbine control systems is to be standardised. Whether the interface to the SCADA system is to be included will be determined based on the functional requirements.
3. Communication requirements (type of data to be exchanged, maximum data flow, exchange time constraints etc)
The communication requirements affect the design of the communication system (media, network access protocols etc.).
4. General requirements (reliability, system availability, security, data integrity etc)
5. Descriptions of potential solutions
A couple of standards that might be used was presented and discussed during the meeting. See attachment 88PT25(Kista1)12.

The standard itself require the following work:

1. Analysis of which modifications and extensions are needed to fulfil the needs of communication with wind power plant
2. Definition of wind power data objects, data types and services
3. Definition of communication profiles

Organisation of the standard

The meeting decided to adopt a document structure similar to the one of IEC 61850. In the first working document all parts shall be included in a single document. The standard shall allow mappings to different protocols. Thus, the model for describing information objects and services shall be independent on the communication protocol. The approach shall be similar to the Abstract Communication System Interface in IEC 61850-6. In this way the communication protocol can be replaced without changing the description of information and the services used to exchange the information.

The first working document shall include the following sections. The texts in brackets indicate the corresponding part of IEC 61850.

1st draft WD*Title**Scope**Purpose*

...

*Overview**General requirements**Functional requirements (part 5)**Approach: Information, Method for information description, Information exchange**Information model (part 7-4)**Information exchange (part 7-2)**Specific mappings to communication protocols (parts 8-1 and 9-1)**Conformance testing (part 10)*

No specific mapping is considered at this moment but the document shall include text stating that different mappings will be specified. The communication protocol standard, to the maximum extent possible, should make use of existing standards.

The final standard could be made up of several parts.

Plan of action/priorities

Karlheinz Schwarz and Kay Clinard stressed the importance to get all major vendors involved in the work. The fact that this project has started and that the work is in progress must be communicated.

To produce descriptions on functions within the defined scope is of highest priority. To select communication protocols and to define mappings for these protocols are later issues.

Numbering of the WG documents

Documents from experts are to be numbered as in the following example:

88PT25(JOHNSSON)x x=1, 2, 3,

Documents from meetings are to be numbered as in the following example:

88PT25(KISTA)y x=1, 2, 3, y=1, 2, 3,

Karlheinz Schwarz provided the participants with a CD-rom including a MS Powerpoint file showing the conventions for naming and numbering used by TC57 Wg10-12. File names shall also be named in a unified way. According to Karlheinz Schwarz the date and the revision number are important.

Assignment of tasks to the WG members

Anders Johnsson suggested that the project leader should be the chairman for all meetings. No one objected to this.

The project shall not have a permanent secretary. The host of each meeting will provide information on the meeting. The host of each meeting will produce minutes from the meeting.

All experts are requested to read Section 4 of document 88PT25(JOHNSSON)1 and to add requirements on functions or alter the descriptions on the already described functions. The changes are to be sent to the project leader and to Karlheinz Schwarz who will publish them on the web-page (in case there is a web-page).

Karlheinz Schwarz will provide a first draft of the WD by end of July.

Anders Johnsson and Claus Bjerger has a list of companies that received the draft document Functional requirements on Communication system for Wind turbine applications, 88PT25(JOHNSSON)1. Anders Johnsson will contact key market players as well as any missing company in that list to inform them about the project and to ask them to join to the work.

Report to the TC/SC meeting

There is no TC88 meeting until the 3rd quarter of 2002. However the project leader will report the progress of the work to the secretary of TC88.

Date and location of the next meeting.

The first Working Document is to be ready October 1, 2001. Comments on Draft 1st Working document 1 month before 1st October. I.e. the project decided to meet in Copenhagen 5th to 6th September. Until then more experts will most likely join the project.

Claus Bjerge is responsible for contacting the Danish standardisation organisation to find out if they can host the next meeting.

Additional item on the agenda

It was decided that all documents and information about meetings etc is to be published on a public web-server. Maybe with a specific area for restricted information. Karlheinz Schwarz offered to host and maintain such a web-server. Karlheinz Schwarz will find out about the possibilities for setting up a new URL.

Closing of meeting

Anders Johnsson closed the meeting by thanking everybody for their contribution. The start is very promising for the future. All seem to agree on what shall be accomplished.