CIGRE Study Committee B5: Protection and Automation
Opinion Poll August 2002

1. INTRODUCTION

During the SC34 session in Paris 2002, the Study Committee organized an opinion poll. We received a total of 97 answers, out of the 250 questionnaire sheets that were distributed.

2. OVERALL EVALUATION

Affiliation of the participants:

Utility	Manufacturer	Industry	Consultant	University	Other
37.11%	32.99%	4.12%	13.40%	8.25%	4.12%

Main tasks of the participants:

Management	Sales	Administration	Engineering	Development	Other
26.80%	7.22%	0.00%	46.39%	15.46%	4.12%

Themes to be handled:

Subject	very important	important	less important
Protection	86.00%	11.00%	3.00%
Fault recording	38.00%	49.00%	12.00%
Fault locating	42.00%	46.00%	11.00%
Power quality	32.00%	47.00%	17.00%
Substation monitoring	47.00%	42.00%	9.00%
Substation control	62.00%	26.00%	8.00%
Remote control (RTUs)	27.00%	44.00%	24.00%
Communication in Substation	63.00%	27.00%	10.00%
Remote communication	43.00%	30.00%	22.00%
Metering in substations	30.00%	42.00%	26.00%
Integrated systems	49.00%	44.00%	7.00%
Research and development	37.00%	46.00%	15.00%
Application	46.00%	40.00%	11.00%
Asset management	23.00%	52.00%	22.00%
Maintenance	49.00%	32.00%	19.00%
Testing	44.00%	40.00%	16.00%
Refurbishment	48.00%	32.00%	17.00%
Cost-benefit analysis	55.00%	29.00%	14.00%
Guidelines	39.00%	43.00%	18.00%
Education and Training	49.00%	33.00%	18.00%

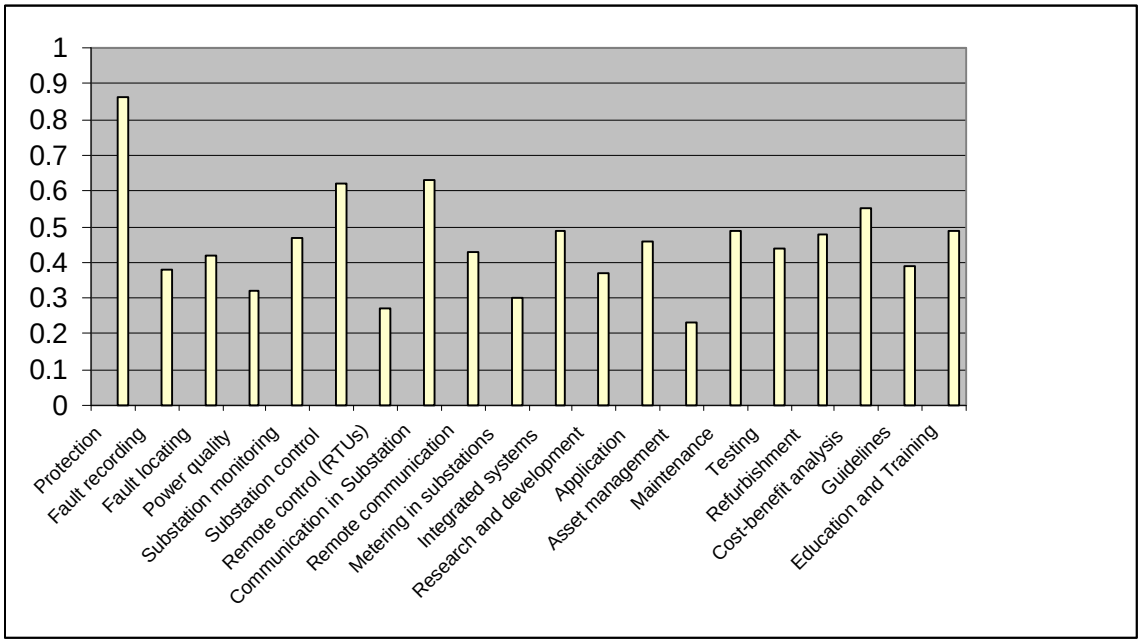

Fig. 1: Analysis of the “very important” responses of all participants.

Remarks:
- The most important theme remains Protection.
- Other important themes are:
  substation control and communications in substations, cost-benefit analysis, education, maintenance, integrated systems, refurbishment, substation monitoring

3. OTHER TOPICS

Apart the listed themes, we received remarks requesting coverage of the following other topics:

- Demand for cooperation between B5 and D2 (was SC35)
- Tools for maintenance, protection coordination, fault analysis
- Advanced application for automation
- Impact of deregulation on the protection, e.g. outsourcing of protection activities
- WEB-based solutions and services
- Reliability issues in an integrated environment
- Generator protection and control; interference with grid operation
- Stability analysis of electrical networks and wide area protection
- Cost comparison between conventional and numerical solutions

4. EVALUATION OF THE "UTILITY" GROUP RESPONSES

An evaluation of the "Utility" group responses was made. The results are listed below in tabular and graphical form.

Subject	very important
Protection	90.00%
Fault recording	20.00%
Fault locating	10.00%
Power quality	15.00%
Substation monitoring	25.00%
Substation control	50.00%
Remote control (RTUs)	20.00%
Communication in Substation	50.00%
Remote communication	30.00%
Metering in substations	20.00%
Integrated systems	45.00%
Research and development	45.00%
Application	45.00%
Asset management	20.00%
Maintenance	45.00%
Testing	35.00%
Refurbishment	50.00%
Cost-benefit analysis	70.00%
Guidelines	30.00%
Education and Training	45.00%

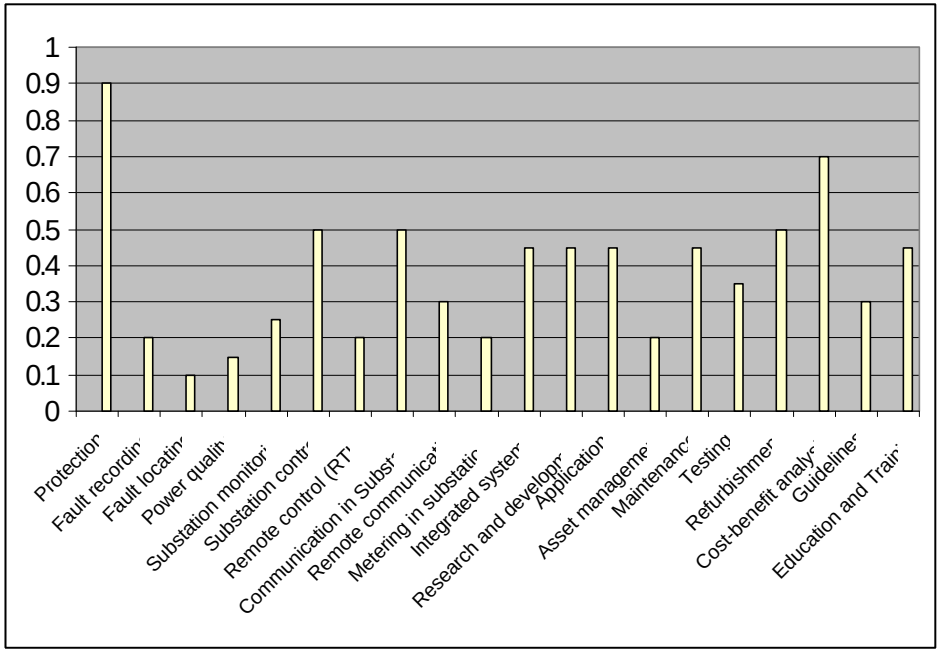

Fig. 2: Analysis of the "very important" responses for the "Utility" group.

Remarks:

- The two main topics are Protection and Cost-Benefit analysis.
- Other very important topics are substation control, communications in substations and refurbishment.
- Guidelines are not considered to be the most important topic.

5. EVALUATION OF THE "MANUFACTURER" GROUP RESPONSES

An evaluation of the "Manufacturer" group responses was made. The results are listed below in tabular and graphical form.

Subject	very important	important	less important
Protection	79.00%	15.00%	6.00%
Fault recording	38.00%	50.00%	12.00%
Fault locating	56.00%	37.00%	8.00%
Power quality	48.00%	38.00%	14.00%
Substation monitoring	57.00%	36.00%	7.00%
Substation control	69.00%	22.00%	9.00%
Remote control (RTUs)	18.00%	41.00%	41.00%
Communication in Substation	66.00%	31.00%	3.00%
Remote communication	53.00%	25.00%	22.00%
Metering in substations	28.00%	41.00%	31.00%
Integrated systems	50.00%	44.00%	6.00%
Research and development	34.00%	47.00%	19.00%
Application	58.00%	36.00%	6.00%
Asset management	36.00%	50.00%	14.00%
Maintenance	50.00%	37.00%	13.00%
Testing	38.00%	31.00%	31.00%
Refurbishment	50.00%	31.00%	19.00%
Cost-benefit analysis	69.00%	28.00%	3.00%
Guidelines	38.00%	41.00%	21.00%
Education and Training	38.00%	31.00%	31.00%

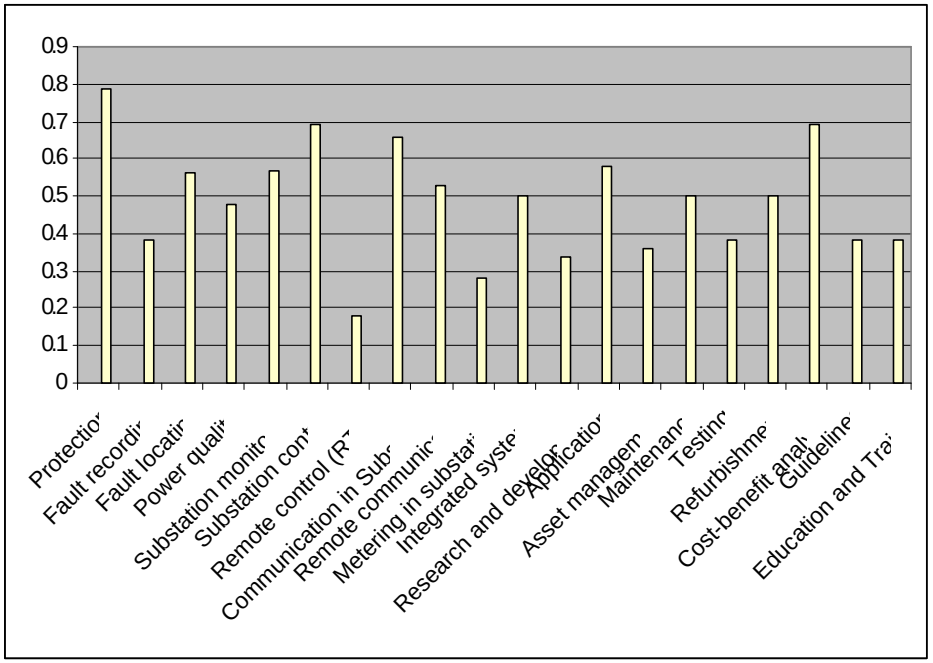

Fig. 3: Analysis of the "very important" responses for the "Manufacturer" group.

Remarks:

- The two main topics are Protection, Substation Control and Cost-Benefit analysis.
- Other very important topics are fault location, substation monitoring, communications in substations and application.

6. EVALUATION OF THE "CONSULTANTS" GROUP RESPONSES

An evaluation of the "Consultants" group responses was made. The results are listed below in tabular and graphical form

Subject	very important
Protection	73.00%
Fault recording	37.00%
Fault locating	55.00%
Power quality	28.00%
Substation monitoring	55.00%
Substation control	73.00%
Remote control (RTUs)	19.00%
Communication in Substation	55.00%
Remote communication	28.00%
Metering in substations	28.00%
Integrated systems	55.00%
Research and development	55.00%
Application	46.00%
Asset management	10.00%
Maintenance	55.00%
Testing	37.00%
Refurbishment	46.00%
Cost-benefit analysis	37.00%
Guidelines	28.00%
Education and Training	64.00%

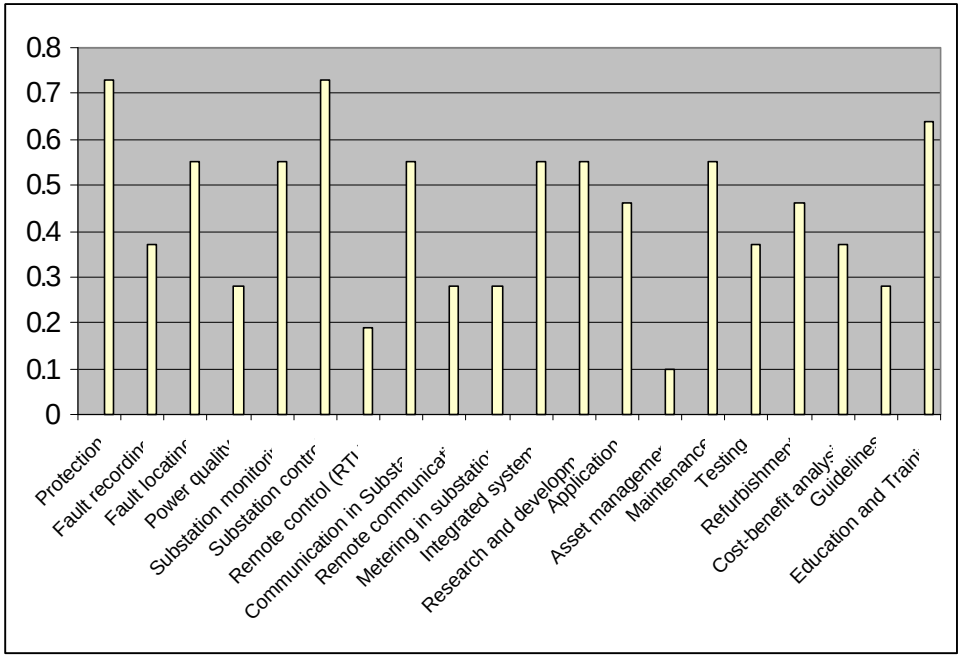

Fig. 3: Analysis of the participant group "Consultants".

Remarks:

- Protection and the substation control are the most important topics.
- Other topics, such as communications in substations, maintenance, substation monitoring, research and development are also important.

7. CONCLUSIONS

- Utilities and consultants made up more than 50% of the respondents at the B5 discussion sessions. Manufacturers were well represented (about 33%) and also universities (about 8%).
- The main tasks of the respondents are split between engineering (nearly 46%), management (27%) and development (15%).
- The main topic of interest remains protection, but substation control, communications in substations and cost-benefit analysis are also considered to be important.
- The respondents confirmed the importance of the themes handled by the study committee. The respondents did not consider the new topics assigned by the Technical Committee to Study Committee B5 as having the highest priority. The SC decision to establish two new Task Forces in order to approach these new topics appears to have been wise.
- Some participants complained that spontaneous contributions were not possible during the discussion sessions, but this was due only to the lack of time because the high number of prepared contributions.

CH – Baden
19-10-2002
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