

MAJOR PROGRAMME 5:

Evaluation



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During 2000, further progress was made in promoting the development and implementation within the PTS of an evaluation framework and a quality assurance system for the verification regime. Work on these two basic components of Major Programme 5 proceeded in a balanced manner. An increasingly important feature was the complementation of these components with new approaches, particularly by using the synergy between evaluation and quality assurance. As the implementing body for this programme, the Evaluation Section developed capabilities for contributing to an overall evaluation of the verification system, and for focusing in a timely fashion on issues related to key segments and components of this system as it develops.

EVALUATION

Work was conducted to further develop and promote evaluation tools and metrics, especially for the IMS and IDC activities.

With regard to waveform technologies, work was conducted on the development of software tools to assess the performance of the IMS seismic network, especially its detection and location capabilities, under various circumstances. The use of Network Simulation (NetSim) and Threshold Monitoring (TM) software tools for evaluation purposes specific to the verification system was explored. It was established in principle that there would be potential benefits in supplementing NetSim with an interactive version of TM, which would need to be modified to meet specific requirements. Following consultations within the PTS, work using external software expertise was initiated late in 2000 for this purpose.

Concerning radionuclide technology, the development of assessment tools for radionuclide monitoring related operations focused on software algorithms. For example, the software package known as Aatami, an advanced analysis tool to evaluate the quality of IMS data and IDC data processing, was almost completed. The data structures of Aatami are three dimensional and several spectra can be handled simultaneously. No commercially available software has such capabilities. Aatami is able to read several IMS spectra and IDC analysis results, and compare them with other analysis information for verification purposes.

QUALITY ASSURANCE

Consistent with guidance from WGB and the Preparatory Commission, increased emphasis was put in 2000 on quality assurance (QA) issues.

A revised version of the CTBTO Quality Manual was issued in April. Based on the latest international standards and 'best practices', this document contains general quality management requirements for processes and procedures to be implemented by the verification Divisions according to operational and technical manuals.

In interaction with the Global Communications Section, work continued on the development of a QA environment specific to the Section, including the drafting of technical procedures. The resulting quality manual for the Global Communications Section was completed by the end of 2000.

In accordance with WGB guidelines, particular emphasis was put on QA issues related to the draft operational manuals for the verification regime. In coordination with the IDC Division, and with the support of external expertise, the Evaluation Section provided quality management inputs which were taken into account in the preparation and content of an updated draft of the IDC Operational Manual. Work was also undertaken on QA issues related to the IMS Operational Manuals, leading to a report which was considered at a QA workshop in November. The workshop produced some recommendations which may be of significant benefit when drafting of the manuals resumes (see “Workshops”, page 32).

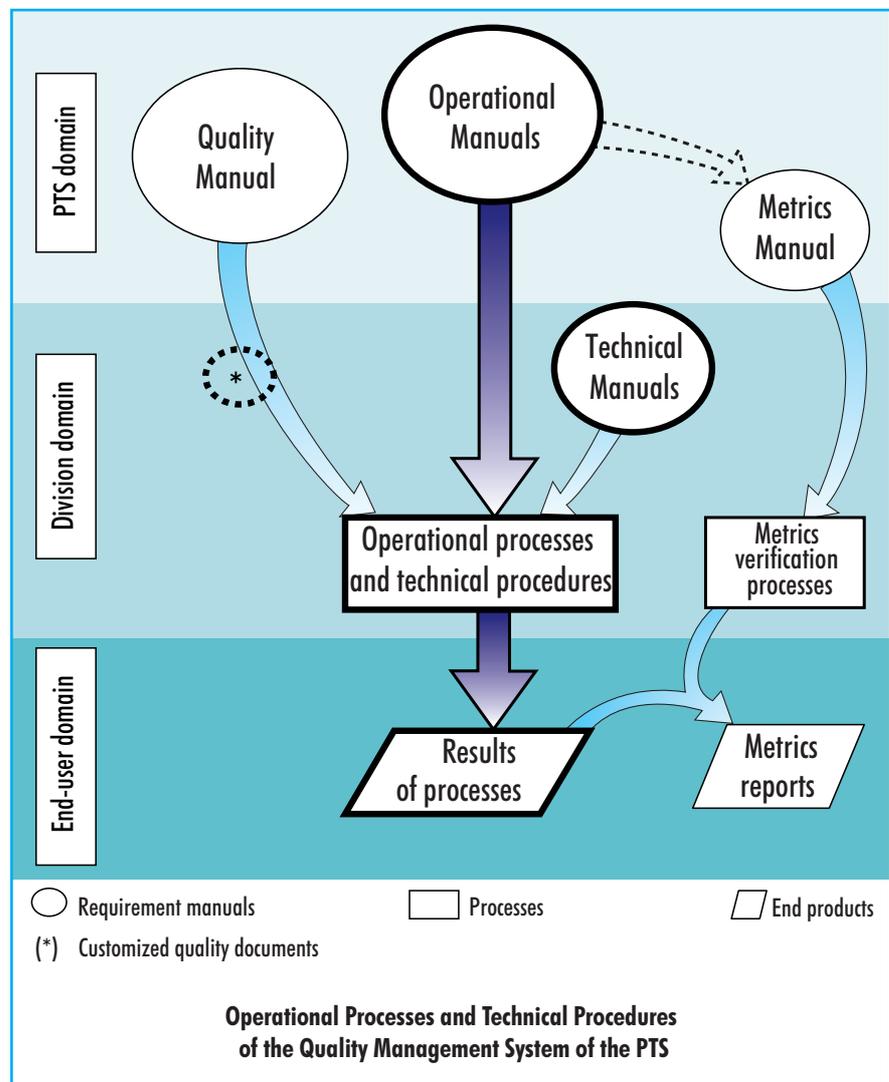
This relatively new component of Major Programme 5 reflects the fact that interaction between QA and evaluation, as two complementary means, enhances the capacity to achieve the best possible verification capabilities in terms of efficiency and value for money.

SYNERGY OF QA AND EVALUATION

The Evaluation Section, in cooperation with the IDC Division and using external expertise, conducted a quality assessment of Release 2 of the IDC monitoring applications software. The work related to various topics, including programming rules, evaluation modules and assessment of long term maintainability of software. Results are to be included in the further development of a comprehensive plan on software acceptance tests.

During the first part of 2000, the Evaluation Section, in interaction with the IDC Division and with external expertise inputs, also carried out a quality assessment of the documentation associated with the IDC software. The main findings and recommendations are to be implemented in the documentation for subsequent releases.

With regard to state of health monitoring for IMS, IDC and GCI systems, the Evaluation Section joined efforts aimed at developing a long term policy and procedures. The monitoring will be based on dedicated software tools. The Evaluation Section proposed methodology for the assessment of these tools.



The Evaluation Section assisted in the external evaluation of the IDC and Communications Major Programmes by providing the evaluation team with documentation on evaluation and QA, both of a general nature and also related specifically to these programmes. This documentation additionally served as a basis for Section interviews with the team.

WORKSHOPS

Two PTS workshops were organized in 2000 to provide additional contributions on QA and evaluation for work related to the development of the verification system and for increasing interaction with experts from States Signatories, especially NDCs.

A workshop on PTS/NDCs Cooperation and Interaction on Evaluation Related Issues, held in Edinburgh from 9 to 12 May, was organized in cooperation with the United Kingdom NDC. The participants produced recommendations for the development of evaluation tools and metrics applicable to the verification regime. Subsequent to discussion in WGB, the PTS organized, as a follow-up, a 'one data day' exercise on IMS data and IDC products.

A workshop on Quality Assurance Issues Related to the Operational Manuals for the CTBT Verification Regime was held in Vienna from 7 to 9 November as a response to the increased interest shown in the subject by the States Signatories. The workshop offered recommendations on the drafting process and content for the IMS, IDC and OSI Operational Manuals, taking into account the specific procedures, technologies and different stages of development for each of the manuals. An important view offered for the first time related to the need for coherence and complementarity among the operational manuals, in recognition of their shared objective to ensure the reliability of the verification regime as a whole.