

Organization of a proficiency testing scheme for the TNMN laboratories under the ICPDR in years 2014 - 2018.

Terms of Reference

Background

The results of water analysis are subject to errors, and this gives certain limitations to their interpretation. Such limitations may then have a negative impact on the environmental policy decisions, as they are derived from information adversely biased by a random and/or systematic error. Obvious difficulties can also arise in the common situation where analytical data have to be compared with a water quality standard, with data provided by another laboratory or with results obtained at a different time. Control of the analytical quality is a fundamental issue, which relates to all types of analyses carried out in monitoring programmes. The Transnational Monitoring Network in the Danube River Basin is based on the data arriving from a large number of laboratories therefore securing a regular analytical quality control program is essential. The mutual recognition of the data produced in the laboratories in each country involved is a prerequisite for forming a sound basis for the evaluation of results.

The organization of inter-laboratory comparison in the Danube River Basin was initially performed under the Bucharest Declaration Danube monitoring. The first distribution in 1993 included samples for the analysis of three determinants: pH, conductivity and total hardness. By the end of 1995, four more distributions had been made for the analysis of the following determinants: chlorides, COD, nutrients (ammonium, nitrate, Kjeldahl-nitrogen, orthophosphate and total-P) as well as different metals, including Fe, Mn, Ca, Mg, Cd, Cu, Hg, Pb, Ni, and Zn. In 1996 the so-called QualcoDanube proficiency testing scheme was extended to the National Reference Laboratories (NRL) in the TransNational Monitoring Network (TNMN) and the second distribution in 1996 already included all Danube laboratories - 11 NRLs and 18 national laboratories - implementing the TNMN. Using a tender procedure the ICPDR appointed VITUKI in Budapest to organize the AQC for the TNMN laboratories. Closing down of VITUKI necessitated organizing of a new tender procedure for organization of the inter-laboratory comparison in the Danube River Basin.

Major objective

Provision of the annual proficiency testing programme for the ICPDR laboratories involved in the operation of the Transnational Monitoring Network for the Danube River Basin.

Job description (specific activities)

To ensure the continued participation of TNMN laboratories in the international basin wide proficiency test scheme it is necessary that the Contractor (organizing laboratory) shall provide following activities in 2014-2018:

- a) Preparation of water samples as concentrate-pairs in ampules. Testing according to the Youden-plot, and carrying out long-term stability tests of these samples,
- b) Distribution once in a year of the check samples for AQC to the Danube basin laboratories (the national laboratories providing data for the Danube TNMN: approx. 19-25 laboratories). The possibility of operative inclusion of additional national laboratories into the distribution lists shall be taken into account,
- c) Evaluation of the results received from the laboratories by distribution of assigned values and feedback to the laboratories,
- d) Preparation of the yearly summary report and its distribution by 31 January of the following year.

During accomplishing of tasks a) to c) the provision of following combination of determinants and matrices must be assured:

	2014	2015	2016	2017	2018
Nutrients: NH_4^+ , NO_3^- , NO_2^- , N_{org} , TN, PO_4^{3-} , TP in real surface water samples	+	+	+	+	+
Priority substances: heavy metals Cd, Pb, Ni, Hg in real surface water samples	+			+	
Priority substances: organic micro pollutants lindane, atrazine and p,p'-DDT as spike solutions		+			+

Institutional arrangements

During accomplishment of the described tasks the Contractor shall be in regular contact with the Secretariat of the ICPDR.

Technical arrangements

The Contractor shall provide for appropriate tools to ensure on-line communication with tested laboratories especially for uploading results and downloading reports after data assessment.

Time schedule

The provision of services is planned to start on September 1, 2014 and to terminate on January 31, 2019. For each year a separate contract will be issued.

Contractor must in his proposal clearly indicate:

- experience in organizing of national proficiency testing,

- experience in organizing of international proficiency testing,
- experience in water analysis,
- international experience in the Danube region,
- proposed time schedule for the sample distributions as well as for the collection of results from laboratories and for sending the information on assigned values to the participating laboratories,
- determinants covered
- application of procedure required under item a)
- conformity assessment according to the EN ISO/IEC 17043:2010 declared by certificate of accreditation
- meeting the requirements of ISO/IEC guide 43-1 or of other equivalent standards accepted at international level and using the scoring systems set out in ISO/IEC guide 43-1 or in the ISO-13528 standard or in other equivalent standards accepted at international level for the evaluation of the results of participation in proficiency testing programmes
- sample distribution logistics
- list of staff (details below)

List of staff

The Contractor shall in the proposal provide the basic data on the expert staff responsible for the execution of the tasks.

Name of the expert	Present position	Years of experience	Educational background	Experience in water analysis	Experience in proficiency testing organization

Expected outputs

- Preparation of a report for each year containing detailed information on analytical proficiency of hydro-analytical laboratories participating in the TNMN. Each participating laboratory shall receive one hard-copy of the yearly report. The ICPDR Secretariat shall receive an electronic copy as well as three hard-copies of the yearly report.

Breakdown of prices

Contractor shall provide a unit price in EUR for each group of determinants (nutrients, heavy metals, and organics) for one distribution to one laboratory. This unit price shall stay at the same level for the whole period of 2014-2018.