



Internationale Kommission zum Schutz des Rheins  
Commission Internationale pour la Protection du Rhin  
Internationale Commissie ter Bescherming van de Rijn

# **ICPR Tender documents (specification and terms of reference)**

**Name of the assignment:**

**Adjustment of an Excel tool (or provision of a comparable tool) calculating flood probability changes, including calculation and evaluation of results according to EG HVAL methodology**

## **Initial Situation and Purpose of the Terms of Reference**

The Expert group HVAL of the ICPR has been tasked with identifying how realized and planned measures for lowering water levels (e.g. flood retention areas) along the Rhine affect flood probabilities. These calculations are vital for determining flood risk and providing information in the context of the [International Flood Risk Management Plan \(IFRMP\) of the Rhine basin](#) and the ICPR overarching program "[Rhine 2040](#)". In this frame a methodology and corresponding Excel tool used from 2013 to 2015 by the EG HVAL has to be adjusted and applied with newest results of the EG HVAL. Optionally, a new tool or software can alternatively be provided if it assures a comparable procedure and results. The ICPR has therefore decided to engage an external company that is familiar with both Excel macros, flood statistics and flood calculations.

### **1. Purpose of the document**

These terms of reference or specifications define the services to be provided by the bidder on the basis of the information described in this document. It regulates the procedure and form of the tender submission and is the basis for the solicitation. Please examine at an early stage the procedure and criteria for selecting the service provider described in chapter 5 (*particularly under "Contract award criteria"*).

### **2. Initial situation**

#### **International Commission for the Protection of the Rhine:**

The ICPR was founded by the governments of Switzerland, France, Germany, Luxembourg, the Netherlands and the EU as a water protection commission for the Rhine. The co-operation that has existed since 1950 has been extended to Austria, Liechtenstein and the Walloon Region since 2001 as part of the joint implementation of EU directives throughout the river basin. The secretariat is based in Koblenz.

#### **The expert group " Validation" (EG HVAL) and work carried out:**

The EG HVAL is an ICPR expert group subordinated to the Working Group "Floods and Low Water" (WG H). In the ICPR Action Plan on Floods (APF) (1998), part of the overarching ICPR program "Rhine 2020" the reduction of flood water levels through retention measures was agreed as being one of the main objectives (*see corresponding results of the APF/Rhine 2020 [here](#) or in [this brochure](#)*). Since 2015, this objective has remained in the [International Flood Risk Management Plans \(IFRMPs\)](#) for the Rhine basin and in the ICPR umbrella programme "[Rhine 2040](#)" (*see [here](#) for the corresponding targets up to 2040*). The task of the EG HVAL is to identify the effectiveness of measures aimed at lowering flood water levels (e.g. flood retention measures)

a) in terms of flood water level reduction carrying out hydraulic modelling calculations and

b) in terms of corresponding flood probability changes.

See [here](#) for more information about the task, the list of measures and the results so far. Two publications produced by the EG HVAL are of particular interest in this context: ICPR technical [report no. 199](#) and, even more relevant in the context of this terms of reference is ICPR technical [report no. 229](#).

With regard to the **tasks relating to this call for tenders**, the EG HVAL has to answer the following question: How do the realized and planned measures for lowering water levels (e.g. flood retention areas) along the Rhine affect the flood probability? In order to determine these "probability changes", HVAL has developed in 2013-2015 an **Excel-based evaluation methodology** which carried out the complex calculations using 2 Excel files with macros. Methodology and results are documented in the ICPR report no. 229 (specifically chapters 2 and 3 and appendixes 1, 2 and 3 of this report) with further information in chapter 6 of this tender document. In 2022 EG HVAL was asked to make an actualization of the calculations done in 2013-2015 and update the ICPR report no. 229. Based on investigations and decisions of the EG HVAL in 2023/2024, it concluded that **the Excel-based evaluation methodology** used in 2013-2015 should **be reused or an exactly comparable and comprehensible tool/software must be developed or provided**.

Due to time constraints, limited programming expertise, and some gaps in understanding the existing tool and its documentation, the EG HVAL does not have the capacity to perform the calculations with the existing Excel tool with newest results of the EG HVAL (available end of 2024), to produce corresponding graphs/figures with the tool, adjusting the tool if needed or alternatively provide for a new tool/software. Therefore, the ICPR has decided to **engage an external company** (see details of the assignment in chapter 3). According to the schedule, the work should begin in autumn 2024 and be completed by end of 2025 (see chapters 4 and 5). The bidder (and later the contractor, in consultation with the customer) must plan intermediate work stages to ensure partial deliveries and align the work with the customer. The plan must guarantee plausibility checks of the adjusted excel tool/alternative software as well as the delivery of the operational tool/software during the contract phase, not at the end. If proposing a new tool/software, the bidder should describe - already in its offer - the reasons for the choice, including its potential comparability with the current Excel tool, and incorporate an early consultation with the customer in the work plan (see chapter 5, "Work plan and schedules"). EG HVAL assumes that 320 to 480 hours of work will be required (non-binding estimation) and has therefore budgeted for this contract a maximum fix pricing of €48,000 (incl. X% VAT) (see details in chapter 5 under "Terms of payment"). For more transparency we ask the bidder to also include its hourly rate in the offer. Selection criteria are described in chapter 5 under "Contract award criteria".

### **3. Aim of the assignment and boundary conditions**

#### **3.1. Assignment description**

To adjust the existing Excel tools or optionally create/provide a new tool/software that meets the calculation needs and is user-friendly for the EG HVAL, while following the HVAL methodology. The service includes the delivery and calculations of/with the adjusted tool or optionally with a new tool/software, evaluation and delivery of the results (calculation results and graphs/figures), providing technical handbooks for the tool and training the client. Based on the work carried out by the service provider, EG HVAL will update its report no. 229.

Remark: For more details on the methodology, the input and output data of the current Excel tool (calculation procedure and figures/graphs) please examine the [report no. 229](#) (specifically chapters 2 and 3, and appendixes 1, 2 and 3) and the current tool itself as well as the two "handbooks" of the EG HVAL available in DE, FR, NL (see chapter 6 and the details about the downloadable folder).

**In detail the assignment includes the following tasks:**

#### **1. Tool Adjustment or Creation:**

- Adjust the existing Excel tool to ensure it is capable of handling the latest results of the EG HVAL and produce with the tool comparable figures/graphs as with the current tool. Report no. 229, the two Excel tool handbooks and nevertheless the current Excel tool itself (see chapter 6) show the graphs/figures which should be reproduced in a comparable way based on the newest HVAL results.
- Optionally and if the bidder considers it relevant, create/provide a new tool/software that replicates the same calculations, results, and produces comparable figures/graphs as the existing/adapted Excel tool (see details in chapter 6 and report no. 229). This new tool should be open source and easy for the EG HVAL members (predominantly hydrologists) and the ICPR secretariat to use in-house. The bidder should offer the option of creating/providing a new tool/software and the costs for this option are to be listed separately. Note that the bidder's choice to adjust the current Excel tool or to propose a new tool/software does not represent a selection criterion for the offer (see chapter 5 "Contract award criteria"). If proposing a new tool/software, the bidder

should describe in its offer the reasons for this choice and potential comparability with the current Excel tool.

- In particular, in the event that a procedure/software other than the current/previous Excel tool is created and used (*see point above*), the EG HVAL must be informed at the beginning of the contract as well as at appropriate intervals and, if necessary, on request about the chosen procedure and the results already achieved. In this case it is particularly important for the bidder/contractor to plan a preliminary close consultation with the customer (at the beginning of the contract period) and to carry out comparison/plausibility tests of the new tool/software. **Important note:** The client reserves the right, if the alternative tool does not meet its need, to require the contractor to continue working with, or exclusively use, the Excel tool. Therefore, the bidder/contractor must ensure that he accepts and is capable of working with the Excel tool if requested by the client.
- See also below under 2, the necessary plausibility check to be performed with the adjusted tool and/or the new software.

## **2. Calculation and Evaluation:**

- Conduct a plausibility check and verify the correct functioning of the adjusted tool and/or the new software. This verification should be based on a minimum of [XX] example values (= samples to be agreed in detailed with the client during the contract), with corresponding comparisons drawn from ICPR Report No. 229 and/or the current Excel tool. Note that these controls may lead to the customer changing the subsequent work procedure.
- Perform calculations with the newest HVAL data using the adjusted Excel tool or new software and deliver figures/graphs. The tool/new software must be able to reproduce the graphics/figures made in the past with the Excel tool (*see report 229 and chapter 6*), unless the customer specifies otherwise during the contract.
- Details on the extent of the calculations: In total and under present estimation, calculation and graphs/figures for 5 time horizons (or so called "Rhine development years"/"Rhein-Ausbauzustände")<sup>1</sup> and thus 540 flood peaks (108 modelled Rhine floods for each time horizon) each containing information for 7 gauging stations and 5 river stretches, are to be produced with the adjusted Excel tool/new software on the basis of the new input data from HVAL on flood water level reductions due to retention measures. These input data should be available by the end of 2024 and provided to the contractor during the contract. Evaluate the results and the figures to ensure they are consistent and accurate and deliver them to the EG HVAL.

## **3. Documentation and Training:**

- Provide comprehensive documentation of the work done as well as the tool (including updated/adapted "handbooks" of the Excel tools, *see chapter 6*, or new handbooks in case of a new software).
- Instruct/Train the secretariat and the EG HVAL on how to use the tool and how to adapt it internally in the future. To this end, a meeting (most likely in physical form in Koblenz) will have to be prepared and organized by the contractor in consultation with the client.

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<sup>1</sup> 5 time horizons: 1977 (situation without retention measures) as well as 4 years with increased implemented retention measures along the Rhine [as described in these tables \(2022, 2027, 2033, 2039\)](#).

**4. Conditional stage-payment and provisional items<sup>2</sup>:**

- If needed and requested by the client, the contractor implements additional/alternative services/tasks/works during the term of the contract (see details in chapter 5 under "Terms of payment").

**5. Option for further support after completion of the contract<sup>3</sup>:**

- The bidder should separately also offer the option of supporting the secretariat/EG HVAL in using the tool after completion (submission) of the work/the contract, based on an hourly rate. The costs for this option are to be listed separately and may, but do not need to, take account of the maximum cost mentioned in the chapter 5 under "Terms of payment".

**Delivery of assignment:****The following work is delivered during and/or by the end of the assignment:**

- results of plausibility check, test calculations and comparisons including verification by the Secretariat or the EG HVAL
- a short report summarising the work carried out (*see chapter 4 „Reporting“*) which includes the adjusted (or new) tool including all related codes, files, data and calculation results used during the contract
- the installation and introduction of the tool (incl. possibilities to change the tool in-house) at the ICPR Secretariat and/or to the EG HVAL
- adaptations of the current technical documents for the tool (*see chapter 6, the two handbooks or new handbooks in case of a new software*)

The client will notify the contractor of acceptance of the delivered work within two months after receiving all above-mentioned items by the contractor. Where applicable, and if defined in the contract to be concluded between the client and the contractor, the client may accept different stages of the work as they are completed.

**3.2. Important boundary conditions**

Reproducibility and ownership: The adjusted tools or new tools and their calculation results should be transparent and reproducible. The contractor should carefully document the adjustments and work carried out and deliver the data, codes and results used in this context to the client (property of the ICPR). After acceptance of his service, the contractor transfers all rights to the new/adapted tool (and included parts) to the ICPR.

**3.3. After sales service**

Once acceptance and payment have been made to the service provider (contractor), the client reserves the right to inform the contractor of any problems or defects that arise in the use of the tool/tools and data within two years of payment. In this case, the contractor is required, as far as possible, to find solutions to these problems together with the client or to correct and resend the tool/tools/rights or the data.

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<sup>2</sup> in German "Bedarfspositionen", in French „Tranches conditionnelles“, in Dutch „Voorwaardelijke tranches“.

<sup>3</sup> Remark: item is different than "after sales service" under chapter 3.3.

## 4. Organisational details

The contractor (engineering office or similar) is determined through a call for tenders in which - if available - several offers are obtained and compared. After the deadline for the submission of tenders, the ICPR Secretariat and EG HVAL will coordinate the selection of the service provider and make a decision based on the contract award criteria mentioned in chapter 5. Only if necessary, the contractor(s) will be invited to a bidder hearing (online or in Koblenz) to present their bids in the presence of the ICPR Secretariat and/or EG HVAL.

The ICPR's expert group HVAL is responsible for the technical direction of the project. The work organisation is shown in the following table:

Role	Function	Person/institution
Client	Initiator and responsible for the realisation of the assignment	ICPR
Technical direction	Responsible for the technical and scheduling specifications and achievement of the objectives within the set cost and time frame; if necessary, provision of data	Expert Group HVAL of the ICPR, represented by the Chair of the EG HVAL, Rüdiger Friese (employee of the Landesanstalt für Umwelt Baden-Württemberg, Germany)
Administration	Handling correspondence and payment transactions	ICPR Secretariat (Adrian Schmid-Breton – technical assistant and Marc Daniel Heintz - executive secretary of the ICPR)

**Project duration:** The execution of the assignment should **begin in autumn 2024 and be completed by end of 2025**. In the offer and later in the contract to be drawn up between the client and the contractor (*see chapter 5, "Work plan and schedules"*), different stages/phases of work and deliveries must be scheduled before the entire work is completed. Details on dates/formats to be agreed/fixed with the customer. During the contract phase, these work stages must enable the customer to react to or accept the products delivered by the contractor or to adjust or specify the work carried out or to be carried out.

**Reporting:** A short report should be prepared summarising the adjustments and calculations made to and with the tool/tools as well as the results of comparative calculations performed to ensure existing functionality. In addition, the reporting of the contractor contains further information deemed useful by the contractor and/or client, instructions for the use and on the calculation process of the tool (*e.g. by adapting the technical "handbooks", see chapter 6*) as well as instructions for (future) programming/adjustment of the tool, etc.<sup>4</sup>

<sup>4</sup> See also chapter 3.3 "Delivery of assignment".

## 5. Administrative details

### Company profile of the bidders:

- Head office, branches (how many, where)
- Legal form
- Size, turnover, number of employees
- Market position in the countries involved and in Europe
- List of the most important/relevant services and references provided in recent years

**Compliance:** The bidder must prove its suitability for this contract, including which persons with which qualification will carry out the work.

### Work plan and schedules

The bidder is obliged to provide the following information in its offer:

- Detailed work plan with cost estimates and information on delivery dates. A detailed processing/work plan<sup>5</sup> must be enclosed which has to include intermediate stages of work/product delivery/milestones and intermediate consultation meetings/phases with the customer. In particular, this plan must ensure that the operational tool/alternative software is delivered to the customer during the contract phase and not at the very end of the contract term.
- If the bidder/contractor opts for a tool/software other than the current Excel tool, it is particularly important for the bidder/contractor to:
  - describe in its offer the reasons why it could propose an alternative software/tool and explain how it believes that this alternative software/tool could be appropriate and produce comparable results as the Excel tool.
  - plan a preliminary close consultation with the customer (at the beginning of the contract period) and to carry out comparison/plausibility tests of the new tool/software. Remark: The client reserves the right to require the contractor to use the Excel tool if the alternative does not meet their needs, so the contractor must be prepared and able to work with Excel if requested.
- Information on the underlying data (e.g. format) and information used and to be supplied.

**Pricing and Costs:** All prices and costs incurred by the client as external remuneration in connection with the contract must be listed transparently, i.e. comprehensibly. For more transparency we ask you to also include your hourly rate in the offer. Other costs (e.g. for transport, insurance, inspection, customs and other import duties) must also be stated.

**Miscellaneous / Appendices:** The bidder is free to include any information they consider important.

**Confidentiality:** The specification or terms of reference and the data/information provided by the ICPR in this context may not be made accessible to third parties without prior consultation. The data/information provided by the client must be protected against access by third parties during the bidding and contract term or processing and must be deleted by the bidder/contractor after the work has been completed. All knowledge, data, codes or the tools itself obtained in connection with the terms of reference must be treated confidentially. This also applies to bidders who do not receive the assignment.

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<sup>5</sup> Remark: Full details of the procedure and work plan/schedule will obviously be agreed between the customer and the service provider at the start of the contract.

**Queries regarding the specification/terms of reference:** All queries regarding the terms of reference must be sent per Email **by 17 October 2024** to [secretariat\(at\)iksr.de](mailto:secretariat(at)iksr.de). After this date, a timely response to questions can no longer be guaranteed. Providers can request until 17 October 2024 the list of anonymised questions posed by other providers and the answers provided by the secretariat.

**Submission of tenders:** Tenders must be **submitted** as a pdf in English **by 31 October 2024, 17:00 to the above email address**. If the pdf exceeds the email sending size (10 MB or 20 MB), providers can be offered an ftp server on request to the above email address before the 31 October 2024.

**Contract award criteria:**

**The following criteria are decisive for the award of the contract:**

- Quality of the offer including quality of the proposed implementation concept/work plan
- Price/costs and economic efficiency
- Proven experience from similar projects
- Experience with/knowledge of Excel-tools including macros and/or similar tools
- Experience with flood statistic and flood probabilities calculations
- Other services and references
- Delivery times

**Terms of payment:** Invoice in Euro. The payment is based on an offer/order/contract according to an **hourly rate**. The bidder must therefore ensure that during the contract the client is regularly informed of the number of hours worked on the contract. The ICPR and EG HVAL assume that 320 to 480 hours of work will be required (non-binding estimation) and has therefore budgeted for this contract **a maximum fix pricing of €48,000 (incl. VAT)**. While not exceeding the maximum fixed costs of €48,000 (incl. VAT), the bid submitted by the service provider must contain and take account of **provisional items in the form of a conditional stage-payment**, i.e. additional/alternative services defined and requested by the client during the term of the contract and which the EG HVAL currently estimates at a maximum of 2 working weeks (non-binding estimate), in one block or not (*see chapter 3*).

For more transparency we ask you to also **include your hourly rate in the offer**.

Payment is made after acceptance of the delivered assignment or if concerted with the client, part assignments (*see chapter 3.1*). Payment deadlines will be established prior to awarding the contract. *See also the details and information on "after sale services" in chapter 3.3 and on "reporting" at the end of chapter 4.*

**Contact details of the ICPR:**

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## **6. Provision of important documents, data and the Excel tools by the client**

In addition to the references and links provided in the previous chapters of this document leading to information or reports useful to the bidder/contractor, and to facilitate the submission of bids and, if applicable, the execution of the work, the ICPR provides bidders with a **special downloadable folder** containing all important documents, reports, the excel-tool and data. **If you are interested to receive this folder, please contact [sekretariat\(at\)iksr.de](mailto:sekretariat(at)iksr.de)**. Please consult first the "Read me" document in the folder. Please note that the tools, the information and the data are only to be used internally for the preparation of the bid (and, if applicable, the execution of the work) and must be treated confidentially (*see chapter 5*).