



**CALL FOR TENDERS
Open Procedure**

JRC/IPR/2017/D.3/0002/OC

**Collection of soil data in SOTER format from 14 Danube Strategy countries, at
scale 1:250,000**

Tender specifications:

Part 2- Technical specifications

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INTRODUCTION

In the context of support to the Danube Strategy <https://www.danube-region.eu/about/the-danube-region>, the European Commission Joint Research Centre (JRC) Directorate D (Sustainable Resources) – Unit D3 (Land Resources) intends to award a contract for the development of a soil database at scale 1:250,000 according to the SOTER methodology for the territory that covers the Danube Basin.

The SOil and TERrain SOTER methodology has been proposed by the International Union of Soil Sciences (IUSS) as a method to make soils and terrain information available to a wide spectrum of land users.

It is envisaged that the contractor will collaborate with various organizations (to be identified by the contractor) which can contribute with soil data for the 14 countries associated to the Danube Strategy, according to a specific procedure. This procedure requires that soil data available in a country is inserted in a database-structure according to specific rules and in relation to an existing Geographical Information System (GIS) file that outlines the geographical location of soil data in the database (soil terrain units) and covers the Danube basin territory. The database structure shall be first developed by the contractor. The GIS file will be provided by JRC at the start of the contract. For background information on the SOTER procedure: see https://esdac.jrc.ec.europa.eu/public_path/shared_folder/SOTER/isric_report_2013_04.pdf.

For background information on work that the JRC has already been doing in preparation of the development of a SOTER Database for the Danube Basin, see <https://esdac.jrc.ec.europa.eu/projects/esoter-danube>

The 14 countries in the Danube Strategy are: 8 EU countries: Germany, Austria, Hungary, Czech Republic, Slovak Republic, Slovenia, Bulgaria and Romania; and 6 non-EU countries: Croatia, Serbia, Bosnia-Herzegovina, Montenegro, Ukraine and Moldova.

1. SERVICE REQUIREMENTS

The work to be done will consist of 2 main tasks:

- A. Development of a database structure that can be used for inserting and integrating the data
- B. Collection of the required soil data for the 14 countries associated to the Danube Strategy, conversion of data into SOTER format and insertion into the database structure

Task A. Creation of the Database structure:

The tasks/deliverables for this work are:

1. Creation and delivery of an empty SOTER-database template with MicroSoft-Access-2010, the structure of which is in line with the descriptions in the SOTER Procedures Manual version 2.0. This database template will be owned by the European Commission. The structure of the database shall be fully documented.

(https://esdac.jrc.ec.europa.eu/public_path/shared_folder/SOTER/isric_report_2013_04.pdf);

2. Based on the single GIS polygon shapefile that will be provided by JRC (at the start of the contract), containing the Terrain Units for a geographical area covering the Danube Basin, the contractor shall create 14 country terrain unit shapefiles, each covering the territory within the Danube basin for the country. Country-boundary and Danube-basin-outline shapefiles needed for this procedure will be provided by JRC (at the start of the contract). Cross-border terrain unit polygons (between countries and/or between country and Danube Basin outline) shall be split so that each sub-polygon falls within the Danube and country boundary.
3. Provision of two examples that illustrate the good use of the MICROSOFT-Access database (as elaborated in point §A.1) in combination with a geographical map (in ESRI shapefile format) that contains SOTER/terrain units as polygons; one example shall involve SOTER/terrain units that contain more than one terrain component; in the other example, SOTER/terrain units shall contain only one terrain component. Format for each example: a short description of the example (MICROSOFT-Word), a filled-in template database according to the technical guidelines from §A.4, a GIS shapefile containing polygon terrain units in correspondence to the records in the database.
4. Provision of specific technical guidelines that data providers shall use for inserting data into the particular database structure as developed in task §A.1 (e.g. the minimum data required as outlined in the SOTER Procedures Manual VERSION 2.0, etc.); country soil data providers will be given shapefiles that contain the terrain/SOTER units within the Danube basin and the boundaries of countries. Format of the guidelines: MICROSOFT-Word Document.
5. Development of an application (tool) that generates, from the combined data contained in a populated SOTER MICROSOFT-Access database and associated to the geographical features (SOTER/terrain units) of a shapefile, an XML file that is structured according to the specifications of INSPIRE (specified in the guidelines: http://inspire.ec.europa.eu/documents/Data_Specifications/INSPIRE_DataSpecification_SO_v3.0.pdf).

The generated XML shall pass the validation test when comparing with the ‘official’ INSPIRE GML for soil. (<http://inspire.ec.europa.eu/schemas/so/>).

The developed tool must run standalone on PC, in a Windows environment. The tool shall be tested and validated using the second example created in §A.3 (one soil component per terrain unit)

The deliverables for Task-A are:

- D.A1 Empty SOTER-database template in MICROSOFT-Access-2010
- D.A2 Documentation (MICROSOFT-Word) of the SOTER-database template
- D.A3 14 country shapefiles + documentation (how they were derived ; description of the fields in the attribute table)

- D.A4 2 examples of use of the SOTER database and associated shapefiles. Format for each example: a short description of the example (MICROSOFT-Word), a filled-in template database according to the technical guidelines from §A.4, a GIS shapefile containing polygon terrain units in correspondence to the records in the database.
- D.A5 Technical guidelines for users to populate an empty SOTER database (MICROSOFT-Word document)
- D.A6 Application tool (executable file on PC in a Windows environment)
- D.A7 Developer Manual + User Manual for the tool

The first four tasks shall be accomplished within 4 months after signing of the contract including the provision of deliverables D.A1 to D.A5. The 5th task shall be delivered within 9 months after signing the contract including the provision of deliverables D.A6 and D.A7. All deliverables will be owned by the European Commission.

The JRC will assess technically the quality and conformity of the deliverables of tasks 1 to 5 within 5 weeks after receipt and notify in writing the contractor of the outcome of the assessment. If the deliverables are not according to the above specifications, the contractor shall make the necessary corrections within 6 weeks after receipt of the notification and according to the comments provided by the JRC.

Task B. Collection of required soil data, conversion into SOTER format and population of the database structure for 14 countries and integration

The contractor shall identify and approach organizations that can provide SOTER-suitable soil data at scale 1:250,000 in the 14 Danube Strategy countries and collaborate with these organizations to populate the database structure developed under Task §A.1 in combination with the Terrain Unit GIS-file developed under Task §A.2 for the country. In this way, 14 MICROSOFT-Access databases (one for each country) shall be produced. To each database, the tool developed under Task §A.5 shall be applied to produce 14 INSPIRE compliant GML files. The contractor shall also combine all separate databases and country Terrain Unit shape files into respectively a single MICROSOFT-Access database and a single GIS shapefile (with Terrain Units) associated to the single database. Also to this single database, in combination with the single GIS shapefile, the tool developed under Task §A.5 shall be applied to produce 1 single INSPIRE compliant GML file.

The original soil data from contributing organizations shall be converted from its original format into a format suitable for SOTER. The contractor shall describe for each original soil dataset how the conversion was achieved. In order to allow JRC verification and validation, the original soil data, which have been used for the conversion shall also be sent to JRC in electronic format (MicroSoft Access or Excel), together with reference information on their origin (organization, database, website, etc.)

It is understood that the soil data used from organizations to populate the SOTER database templates will not be owned by the JRC; ownership of all data remains fully at the source where the data came from. However, the JRC will have the right to publish all data in SOTER format (both MICROSOFT-Access databases and GML files) through its European Soil Data Centre (esdac.jrc.ec.europa.eu). To that end, the contractor shall provide the JRC with explicit written statements from contributing organizations that express that JRC will be allowed to publish the soil data in SOTER format.

The final deliverables shall be sent to JRC within 18 months from the signature of the contract. The JRC will carry out an independent check of the technical validity of all datasets (i.e. validity of the SOTER databases associated to the GIS-files (correspondence with Terrain Units), validity of the GML files against INSPIRE specifications) and notify the tenderer of any error within 2 months after receipt of the deliverables. This check will be carried out by an IT expert familiar with the SOTER database, who will be appointed by the European Commission through an expert contract.

In order to check if the contractor is populating the country databases in the correct way, JRC requires the contractor to send (as intermediary deliverable D.B1-int) 2 completed country databases at choice by the contractor, within 9 months after the start of the contract. The JRC will check these databases and notify the contractor of any shortcomings within two weeks after receipt of the databases, which will allow the contractor to adjust, if necessary.

The final deliverables for Task-B are:

D.B1 14 populated SOTER databases (one per country) that correspond to the terrain unit GIS files from §A.2; 14 GML files that are the outcome of applying the §A.5 tool to the 14 SOTER databases.

D.B2 1 SOTER database that integrates the 14 country SOTER databases and a corresponding single Terrain Units GIS shapefile. 1 GML file that is the outcome of applying the §A.5 tool to the integrated SOTER database.

D.B3 1 document that describes, per country, how the original soil datasets were converted into SOTER format

D.B4 For each original soil dataset that has been used for conversion into SOTER-format: a written approval by the dataset owner expressing that its data converted into SOTER format, can be published by the JRC.

D.B5 The original soil data used for the conversion (format MicroSoft Access or Excel), together with reference information on their origin (organization, database, website, etc.)

Within two weeks after the signature of the contract, a 1-day Kick-Off meeting is to be held between contractor and JRC to clarify all issues of the contract and the planned work. This meeting will be held at the contractor's premises.

2. REPORTING

Project progress emails and project diary

The project progress emails are each a brief, bullet-point style summary of the project's monthly working progress to be sent by the contractor to the JRC technical contact. These emails have to provide a concise summary of the previous month's work – including deliverables' status, activities and meetings with dates, involved experts and stakeholders, administrative issues, etc. – of current progress in relation to the project and the initial or adjusted working plan. They will help JRC to stay informed about the project status.

The progress emails will also form the basis for the interim and the final technical report (see below) that will give the chronological course of the project's activities and achievements.

Interim technical report

The interim technical report will document the course of the project, including organisational and administrative issues (please note that all scientific and technical deliverables of this project are to be provided separately).

The interim technical report will be compiled by the contractor and be composed of the monthly progress emails which are to be combined into one text providing the chronological course of the project's activities and achievements ("project diary") plus a short summary chapter as well as an adjusted project work-flow chart of the completed and of the yet foreseen tasks and deliverables of the project as well as timing.

The interim technical report together with foreseen deliverables will serve to decide whether the project's initial objectives have been achieved in line with the contract, including possible adjustments and amendments made, as well as whether the remainder of the project can be expected to be completed as foreseen. The interim technical report is - together with expected deliverables – the basis for the interim payment of the project¹.

The interim report will provide details on the state of communication with the various organizations from which original soil data are going to be acquired, on the modalities of the acquisition, and on the implementation plan to convert the original soil data to the SOTER format.

Final technical report

The final technical report will be compiled by the contractor similarly while not identical to the interim technical report and will document the course of the project, including organisational and administrative issues, and include a number of annexes.

The final technical report will consist of the monthly progress emails, which are to be combined into one text providing the chronological course of the project activities and achievements ("project diary") plus a short summary chapter as well as an adjusted project work-flow chart of the completed tasks and deliverables of the project and final timing.

Other than the interim technical report, the final technical report (including its draft) will have an executive summary. The executive summary has to provide a description of the project and of its deliverables, name its purpose and scope, potential users and applications as defined in this call for tender, key assumptions / limitations, main results and main conclusions / recommendations as well as the expected benefits of the achievements. The executive summary summarises both the final technical report and the scientific and technical deliverables. The executive summary has to be written using non-technical language, targeting upper level management.

The final technical report is – together with all completed deliverables – the basis for the final payment of the project².

Important: all reports shall include the following mandatory information:

- Contractor
- Contract number
- Nature of the report (e.g. 1st interim technical report)
- Subject

¹ As per article I.5.2 of the Contract

² as per article I.5.3 of the Contract

- Name of the author and original signature.

3. OPTIONS

None

4. CHRONOLOGICAL SUMMARY TABLE OF OUTPUT AND MEETINGS

Timing	Reference	Title	Type of deliverable
Within 2 weeks after signature of the contract	KO-Meeting	Kick-off meeting at the contractor's premises	Meeting Minutes by the contractor
Within 4 months after signature of the contract	Deliverables D.A1,D.A2 ,D.A3 ,D.A4 and D.A5	See Service Requirements	See Service Requirements
Within 7 months after signature of the contract	Interim Report	Interim Report	Interim Report
Within 9 months after signature of the contract	Deliverables D.A6 and D.A7	See Service Requirements	See Service Requirements
Within 9 months after signature of the contract	Intermediary deliverable D.B1-int	2 populated country databases	See Service Requirements
Within 18 months after signature of the contract	Deliverables D.B1 to D.B5	See Service Requirements	See Service Requirements
Within 20 months after signature of the contract	Final Report	Final Report	Final Report

5. GUARANTEE

Not applicable

6. OTHER GENERAL MODALITIES AND RESPONSIBILITIES

The principal place of work will be the contractor's premises (“off-site”)

Deliverables should be submitted to the JRC technical contact by email or other electronic means; the JRC technical contact will formally notify receipt by email.

Possible comments by the JRC on the deliverables will be sent by email to the Contractor who will notify formally the email receipt.

The JRC will inspect technically the deliverables as described above.

All results developed under this contract are confidential and remain the exclusive property of the JRC, as provided for in Articles II.8, II.9, II.10 of the General Conditions of the contract. However, the JRC will not become owner of the original nor converted soil data.

7. OCCUPATIONAL HEALTH AND SAFETY

The execution of a contract on the Ispra site under the Italian law foresees the application of Italian law as regards to Occupational Health and Safety (OHS) risks, in particular (DECRETO LEGISLATIVO 9 aprile 2008 n.81 (in Suppl. ordinario n. 108 alla Gazz. Uff., 30 aprile, n. 101).- Attuazione dell'articolo 1 della legge 3 agosto 2007, n. 123, in materia di tutela della salute e della sicurezza nei luoghi di lavoro).

The tasks to be contracted fall into the category of purely intellectual services; the OHS and interferential risksⁱ are not further considered.

8. LIST OF RELEVANT WEB SITES AND DOCUMENTS

See Service Requirements.

ⁱ Additional OHS risks arising from other activities at the same place and time.