Tender Instructions

Applicable to the European Public Tender for: the provision of airborne electromagnetic services in the Netherlands

Contracting authority:
The Netherlands Organisation for Applied Scientific Research / TNO

Document ref.	:	**2023 FPL/INK 052**
Date	:	**12-02-2023**

Contents

Definitions

In this document, certain capitalized words have a specific restricted meaning, as given below. In the case of nouns, the specific meaning applies to both singular and plural forms. Terms which do not appear in this list but which are defined by legislation, notably the *Aanbestedingswet* (Procurement Act 2012, amended 2016) take the meaning intended by that legislation.

Aanbestedingswet (Netherlands Procurement Act)	:	the *Aanbestedingswet 2012*, effective 1 November 2012, as published in the Government Gazette 2012 no. 542; amended 1 July by Act of 22 June 2016 to amend Netherlands Procurement Act 2012 in connection with the implementation of European Directives 2014/23/EC, 2014/24/EC and 2014/25/EC; commonly referred to in English as the Procurement Act. May be abbreviated to 'AW'.
Appendices	:	Appendices to these Tender Instructions, viz. • **A01** to A.[…] – prescribed templates to be used when preparing and submitting the Tender (bid) • **B01** to B.[…] – prescribed templates to be used for the provision of information by one or more Third Parties e.g. evidential documents to support the Self-Declaration
Award Criteria (singular: criterion)	:	the requirements imposed by TNO with regard to the content of Tenders. Weighted scores are awarded for each requirement in order to select the Tenderer to whom the Contract is to be awarded. Further information can be found in Chapter 6.
Award Decision	:	the decision taken by TNO whereby the winning Tenderer is to be invited to enter into a Contract; alternatively, the decision not to award the Contract to any party.
C01 to C.[…]	:	documents and supplementary information which form part of the Tender Instructions but are not intended for submission by the Tenderer as part of the Tender.
Call for Tender	:	the announcement of a European (Public) Tender, usually on tenderned.nl.
Contracting authority	:	The Netherlands Organisation for Applied Scientific Research (TNO).
Combination	:	an alliance of companies or legal entities who submit a joint tender as if acting as a single entity. Each member of the alliance is jointly and severally responsible and liable in law for the effective performance of the Contract, if awarded.
Commissioner	:	TNO and Deltares acting together or separately as executor of the Contract.
Community Engagement Manager	:	The Community Engagement Manager keeps an overview, monitors progress and coordinates in close cooperation with Deltares & TNO the activities related to the flight survey. The Community Engagement Manager coordinates engagement and communication with the local communities and authorities, mainly related to flying.
Contractor	:	the successful Tenderer to whom the Contract is awarded.
Contract	:	the legally binding agreement between TNO and the Contractor, effected further to the outcome of the Tender Procedure.
Eligibility Requirements	:	the requirements imposed by TNO on all tendering parties not automatically excluded (under the mandatory Grounds for Exclusion), establishing minimum standards which must be met in order to be considered for the Contract.
Grounds for Exclusion	:	reasons whereby a party is automatically deemed ineligible to take part in the Tender Procedure. Depending on the contents of the tender documents and description, such reasons may relate to the (personal) circumstances of the Tenderer company, an officer of that company and/or a Third Party with a material involvement in the Tender and the

		proposed Contract. Mandatory Grounds for Exclusion are restrictions established by European legislation.
Minimum Requirements	:	the minimum requirements imposed by TNO with regard to the provision of supplies, services or works, i.e. the manner in which the Contractor is to perform the activities specified by the Contract.
Memorandum of Information	:	a document providing further information about the Tender Procedure and/or the tender documents, compiled by TNO in response to queries it has received from Tenderers. (The queries are anonymized in the interests of confidentiality.)
Self-declaration	:	the statement in the meaning intended by Art 2.84 para. 1 of the *Aanbestedingswet*, produced in accordance with the format of the European Single Procurement Document as given in Appendices **A01**, **A02** and **B01**.
Tender	:	the bid/proposal submitted by the Tenderer.
Tenderer	:	an individual or legal entity submitting a Tender (bid) further to the Tender Procedure; also termed Tendering Party.
Tender Instructions	:	the current document in which the Tender Procedure is described.
Tender Procedure	:	the European tendering procedure through which a Contract is to be awarded.
Third Party	:	any natural person or legal entity upon whom a market party (the Tenderer) can call to meet the requirements of financial and economic capacity and/or technical and professional competence, regardless of the nature of the relationship between the market party and the Third Party.

1 Contracting Authority and Contract

1.1 TNO

The Netherlands Organisation for Applied Scientific Research, hereafter 'TNO', is a modern, theme-led Research & Knowledge organization. It was established in 1930 by Act of Parliament with the intention of maximizing the practical relevance of scientific research to the public sector, industry and society at large. The government of the day believed that this would enhance the innovative strength of the Netherlands and contribute to long-term economic growth.
TNO is a national institution acting in the general interest and, for the purposes of European policy and legislation, is therefore a 'body governed by public law.' Although it operates under the formal responsibility of the Minister for Economic Affairs, TNO enjoys complete independence and autonomy in its day-to-day activities.

The organization has approximately 3,400 staff who work to develop and apply innovative knowledge. TNO conducts contract research on behalf of clients in all sectors, provides specialist advice and consultancy, and licenses the use of its many patents and the specialist software it has developed. TNO also tests and certifies products and services, issuing an independent quality assessment. The organization has spawned numerous commercial spin-offs to bring its innovations to market.
The Geological Survey of the Netherlands (GDN) is part of TNO. The Geological Survey of the Netherlands is the independent knowledge and research centre of the Dutch subsurface. We use our applied knowledge to provide answers to questions and developments in society. We supply the data, information, and knowledge that enable public authorities and the business community to make sustainable daily use of the subsurface. And we conduct research on current needs and desires or those which may only become tangible in a few years' time

One of TNO's key strengths is that it brings various scientific disciplines together under one roof. Those disciplines combine and interact to create ground-breaking and sustainable new solutions. Increasingly, TNO seeks collaboration with partners in government and industry, working alongside knowledge institutions and societal organizations at home and abroad. Through its varied activities, TNO stimulates economic growth and social renewal. The organization's mission statement (as phrased in its 2015-2018 Strategic Plan) reads, "TNO connects people and knowledge to create innovations that boost the competitive strength of industry and the well-being of society in a sustainable way." Its objectives are encapsulated in the motto, "TNO, Innovation for Life". For further information, see: https://www.tno.nl/en/.

1.2 Procurement by TNO in collaboration with Deltares

TNO's Procurement Department oversees all purchasing, procurement and tendering procedures on behalf of TNO. As part of the Finance, Procurement & Legal (FPL) division, the Procurement Department of TNO is responsible for organizing and implementing all procurement processes in keeping with the corporate objectives of the organization.

This particular tender is a close cooperation between TNO and Deltares with shared responsibilities for both organisations. The governance of the project is described in more detail in Para. 1.3.2.6 – **Error! Reference source not found.**.

Deltares is a leading not-for-profit and internationally operating, institute for applied research in the field of water and subsurface. Deltares is an independent foundation under Dutch law. In 2008, Delft Hydraulics (founded in 1927), together with GeoDelft, the Soil and Groundwater department of TNO and research departments of the Dutch Department of Public Works, Transport and Water Management fully merged into Deltares. Throughout the world, Deltares works on innovative solutions and applications for people, environment, and society. The main focus is on deltas, coastal regions and river basins. 'Enabling delta life' is Deltares mission and ambition. Deltares applies top-level knowledge in order to provide innovative and sustainable solutions for global issues relating to water and the subsurface. Deltares focusses on the use of these essential resources and the associated risks taking into account the socio-economic impacts to these systems. For further information, see: https://www.deltares.nl/en.

1.3 Project description

The purpose of the current Tender Procedure is to select one (1) Contractor to provide an airborne Time-Domain Electromagnetic (AEM) survey in south-west, north-west and northern regions of the Netherlands as part of the project FRESHEM-NL. The services and the manner in which they are provided must comply with the specifications and criteria given in the Tender document and notably the Programme of Requirements (see Chapter 8). There is a combination of 'hard' and 'soft' requirements. The former are mandatory and must be met. The latter are in the nature of 'preferences' which should be taken into consideration to the greatest extent possible and will be subject to assessment by a scoring system.

FRESHEM-NL stands for Fresh Saline groundwater and clay layer distribution mapping by Helicopter ElectroMagnetic survey in the Netherlands. The project is a supra-regional follow-up from the successful provincial scale FreshEM Zeeland[1] and TOPSOIL[2] projects undertaken in 2015 and 2017 respectively.
Partner organisations in FRESHEM-NL include the Dutch knowledge institutes of Deltares and the Netherlands Organisation for Applied Scientific Research (TNO), a branch of which forms the Geological Survey of the Netherlands (GDN). Regional partners include seven Dutch provinces, seven water authorities, and five water supply companies. Funding is provided by the partner organisations, with an additional subsidy being provided by the Netherlands national government.

1.3.1 Project background and objectives

The current understanding of the Dutch subsoil is primarily based on direct, intrusive measurements such as boreholes and cone penetration tests (CPT). As a result, between these measurements there is uncertainty about the depth and extent of clay units and groundwater salinity. The FRESHEM-NL project has two primary objectives: 1) improving our understanding of the spatial extents of specific lithologies – in particular clay layers and 2) detailed mapping of the 3-D distribution of fresh-brackish-saline groundwater – which typically occurs as shallow fresh groundwater floating on brackish and saline water, although in some areas inversions are known to occur where fresh groundwater is found underneath groundwater of higher salinity.
As AEM is sensitive to clay and fresh-saline groundwater distributions and can rapidly survey large areas – a supra-regional AEM survey is commissioned, such that a high-resolution, probabilistic 3-D voxel model of groundwater chloride concentrations can be constructed together with a model of the clay layers (in areas with fresh groundwater) in the upper 150 to 250 m of the subsurface. Because of the combination of the depth target and the high resolution in the near surface, Time Domain EM systems are required. Besides the stated objectives, TNO & Deltares will conduct research into improved methods of data inversion, converting results into clay and chloride concentrations and possible use of induced polarization (IP) effects to also map lithologies in areas with brackish and saline groundwater.

In the following sub-paragraphs, the proposed survey details and technical specifications of a high-resolution AEM survey across (parts of) the Dutch provinces of Zeeland, Noord-Brabant, Zuid-Holland, Noord-Holland, Friesland, Groningen and Drenthe are outlined. A summary of mapping areas and geophysical targets are outlined in Para's 1.3.2.1 and 1.3.2.2. Para's 1.3.2.3 – 1.3.2.5 describe required proposed timelines and pre-flight administrative roles. Para. 1.3.2.6 describes the governance of the project.

1.3.2 Scope and content of the Contract

The Contract relates to the provision of supplies and services as specified in the programme of requirements (Chapter 8) as applicable. The paragraphs below provide a general description of the project, including requirements and preferences, which are also provided in Chapter 8.

1.3.2.1 Proposed survey area

The proposed survey area covers over 7500 km^2 spanning seven Dutch provinces. The level of required detail, therefore flightline spacing, varies depending on mapping objectives and also per sub-area. In all areas, flightline spacing is roughly categorised as either low, medium or high-intensity – meaning further apart or closer line-spacings respectively. The exact line-spacing per area is to be clarified with the Contractor once the Contract with the successful Tenderer is awarded. The total survey length is estimated at approx. 30,000, but will depend on the Tender of the Contractor as the available budget for the survey is fixed.

There are three regions, each of which consists of roughly contiguous parts, as summarised below and shown in Figure 1:

- Northern Region (A)
- Noord-Holland region (B)
- Southern Region (C)

Detailed digital maps of the survey areas with preferred flight line density and the flight periods are provided in Appendix **C02**.

[1] https://iopscience.iop.org/article/10.1088/1748-9326/aad19e
[2] https://northsearegion.eu/media/14045/topsoil_modelling-subsoil.pdf

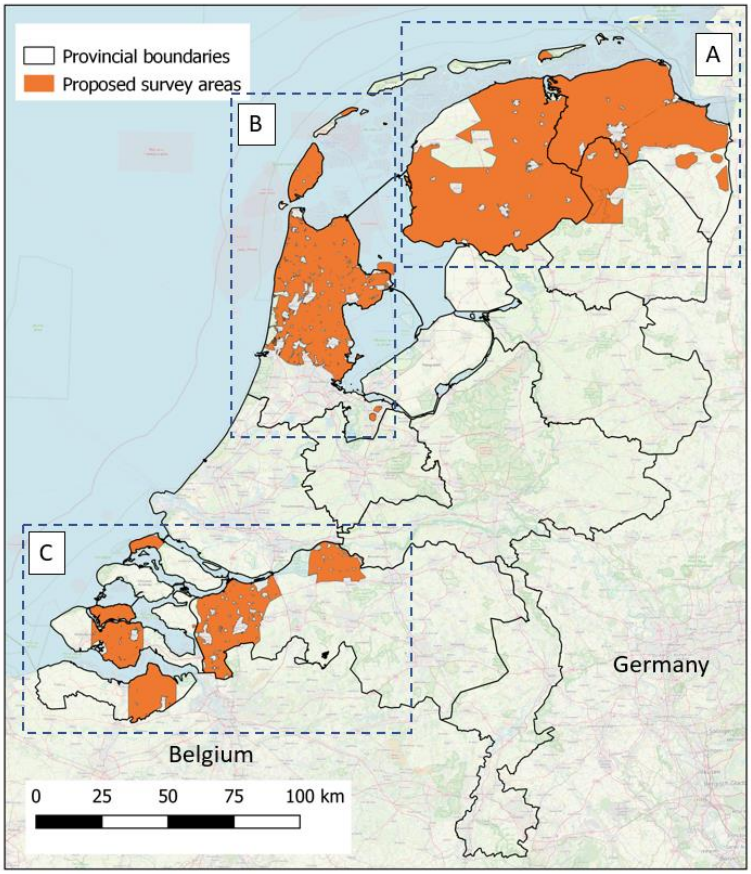

Figure 1: Overview of survey area (orange). Provincial/national boundaries (black lines). A = Northern region: covering parts of the provinces Friesland, Groningen and Drenthe. B = Noord-Holland Region, covering parts of the province Noord-Holland. C = Southern region: covering parts of the provinces Zeeland, Zuid-Holland and Noord-Brabant.

1.3.2.2 Geophysical targets

Considering the size and spread of the survey area, as well as the combined objectives of mapping clays and/or fresh-saline groundwater, the survey area can be further subdivided according to geophysical targets. These are based on approximate depths and/or thicknesses of known physical property contrasts in the subsurface. In summary these can be viewed as either 1) fresh-saline groundwater distributions or 2) clays in fresh groundwater areas. Given the difficulty of mapping clays in highly conductive saline areas, we consider clay mapping only feasible in areas where fresh groundwater is likely present – however the use of induced polarisation (IP) methods will be investigated for e.g. mapping clay layers in saline conditions. In practice, around 50% of the proposed survey areas are located where the fresh-saline interface is <100 m from the surface, and in many regions as little as <10m deep. In fresh groundwater regions (defined here for illustrative purposes as regions where the fresh-saline interface is roughly >100 m from the surface), clay layers of interest are both shallow and deep (>50m). As a result, AEM measurement system geometries need to be suited for high-resolution (shallow and deep) exploration – in a single system. For reference, a regional indicative map of fresh-saline interface depths is provided in Figure 2. Note that the map presented in Figure 2 is a low-resolution estimate based on national models, and therefore does not denote hard boundaries where AEM system geometries/acquisition settings are expected to change.

To obtain optimal results, the orientation of flightlines will have to be aligned based on expected orientation of (changes in) the geophysical targets: The orientation of the flightlines in survey area A (north – Netherlands) will be predominantly east – west. In survey area B (North-Holland) the orientation of the flightlines will be predominantly north – south. In survey area C (southern part of the Netherlands) the flight lines will be north-south in Zeeland (most south-western part of the area) and variable in the other parts. Final flightlines will have to be agreed upon by the Commissioner in accordance with the roles of other partners as described in Para. 1.3.2.6 – Governance.
Figure 3 provides an overview of the flight areas and an indication of the desired flightline density. High, middle and low refer to an indicative line spacing of 100m, 200m and 300m respectively (maps provided in digital format in appendix **C02**).

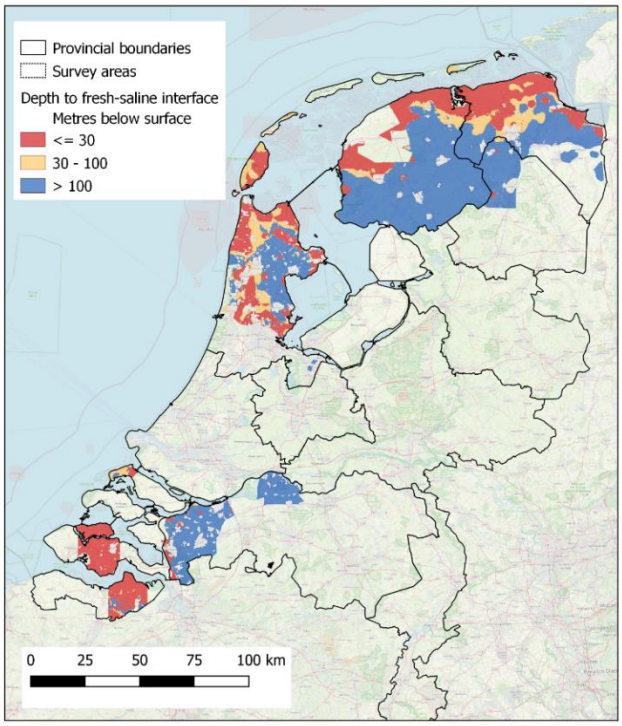

Figure 2: Estimated depth to the fresh-saline groundwater interface within proposed survey areas, based on national, low-resolution models.

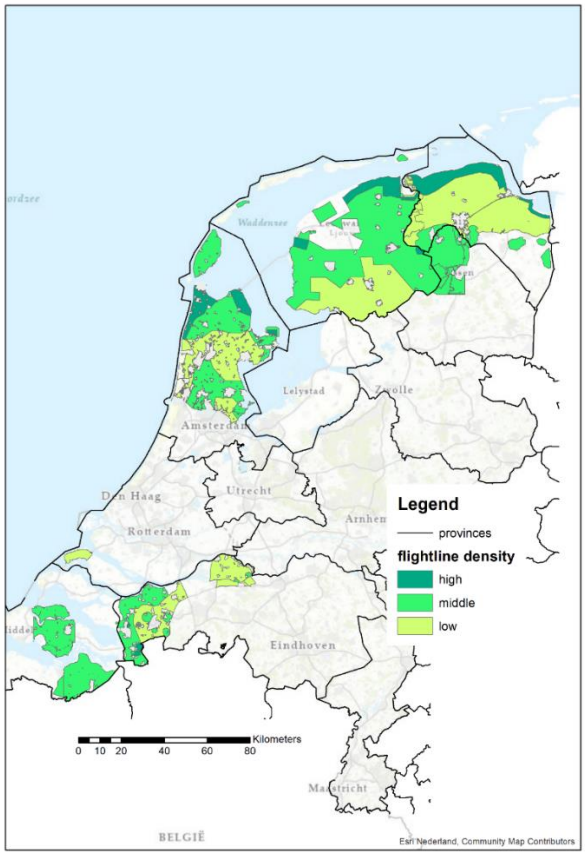

Figure 3: Indication of proposed flight line densities (subject to change).

1.3.2.3 Proposed timeline and project completion date

The start of the project is foreseen upon finalising the contract. Project activities for each region can be divided into 3 phases: 1) planning and preparation, 2) flight period and 3) quality control and reporting:

Planning and preparation phase:

In the preparation phase the required arrangements will be made such as obtaining the required licences and finalising flight plans in cooperation with regional partners (see 1.3.2.6 – Governance). Actual flights, however, can only start after due consideration of the planning and logistics with the Commissioner. Flights cannot start until all required licences and permissions have been obtained (see 1.3.2.4 – Licences). Regulations to avoid / minimise disturbance of protected fauna (mainly birds) determine the periods in which flights can be planned in different parts of the survey area. In preparation of this Tender ecological inventories have been made. The results are summarised in Figure 4, Figure 5 and Table 1 (maps are provided in digital format in appendix **C02**). The maps delineate for the different areas the time-periods in which permission is likely to be granted to fly. This information will be the basis for the licensing procedures but is subject to change based on final decisions of the licensing authorities. It is foreseen that the proposed timelines will have to be revisited and modified in the planning and preparation phase and it is possible that during the project further changes to the planning of flights may be required.

In addition to the limitations based on fauna protection, the Zeeland area (see Figure 4) must be flown in the months of Q3 in either 2024 or 2025 for specific research purposes (comparison with results from previous survey under similar hydrological conditions).

Flight period

The flight period starts with the mobilization of the crew and equipment. When all required licenses and permissions for a (sub)region have been obtained, AEM data acquisition can start in accordance with the agreed flight plans. Late-notice changes of flight plans may be required as a result of bad weather conditions, instructions from ecologists or advise of the Community Engagement Manager.

Quality control and reporting period

Upon completion of the flights in a (sub)region, a maximum period of two months will be devoted to post-processing, quality control, and preparation of all deliverables from the helicopter-borne electromagnetic survey and the survey report, as specified in the Chapter 8.

Project completion date

The project is completed when all deliverables have been received and approved. The project has to be completed no later than by 19 December 2025.

Table 1 gives an indication of the advised flight periods. Final planning is to be agreed upon between the Contractor and Commissioner in consultation with regional partners.

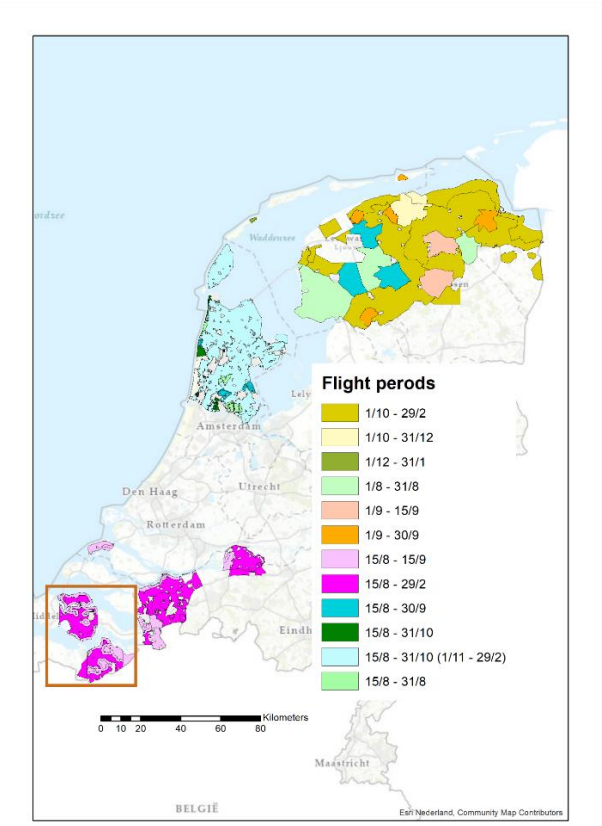

Figure 4: Indication of time periods that flights can be allowed based on current ecological inventories (subject to change based on conditions in nature licenses). Note that the period of 15/8 – 31/10 might have an extension till 29/2, depending on density of migratory birds in the area. The area in the orange rectangle denotes the province of Zeeland, for which additional restrictions apply with respect to the timing of the flights (see text)

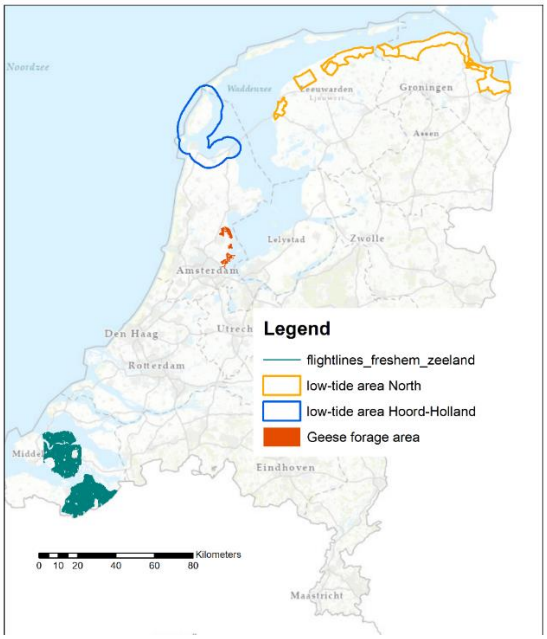

Figure 5: Areas where additional conditions apply with respect to flight periods and flightlines; low-tide areas only allowed to fly at low tide; geese forage areas only allowed to fly from August 15th – November 1st. In the Zeeland province (south-west of the Netherlands) data collection should follow existing flight lines from previous project. Note that the low-tide area in Noord-Holland is also covering the sea, which is not part of the Freshem-NL project.

For some areas in “North” and “Noord-Holland” additional restrictions apply, related to low tide conditions along the shoreline. This is indicated in Figure 5. The additional restriction entails that data acquisition with a helicopter is most likely only allowed during low-tide conditions. A shape with the location of these areas is provided in Appendix C02
Furthermore, in “Noord-Holland” so-called geese-forage areas exists, in which geese are protected from November 1st – June 1st. Since the breeding season for birds lasts till August 15th, the period for data acquisition in the geese-forage areas is from August 15th - November 1st. The geese-forage areas sometimes overlap with Nature2000 areas. An additional shape with the location of these geese-forage areas is provided in Appendix C02.
In the province of Zeeland, the flightlines should follow an existing outline of flightlines that were collected in a previous airborne EM project, Freshem-Zeeland. The shape with the flightlines is provided in Appendix C02.

It is the responsibility of the Tenderer to come up with a time schedule that takes into account all restrictions regarding allowed flight periods etc.

Table 1: Advised flight periods derived from preliminary ecological inventories

Region	1-15 August	15-30 August	1-15 September	15-30 September	October	November	December	January	February
North									
Noord-Holland									
South									

The preferred time-sequence of data acquisition with respect to the flight areas is to start in the Northern area (Groningen, Drenthe and Fryslan provinces), then Noord-Holland and lastly South, so counter-clockwise. The Tenderer is free to propose alternative plans, e.g. with respect to acquire data simultaneously in different areas.

Based on the information provided in this paragraph the Contractor shall prepare a work program. Timing of the issuing of the necessary licences and the resulting windows of opportunity for the execution of flights in different (sub)regions is, at this moment, uncertain as are limitations to the selection of take-off and landing sites. Flexibility in the workplan and project execution is an important issue that will receive great attention in the scoring of the Tender and we expect a description of the way uncertainties are dealt with.

Flexibility can relate to examples such as: being able to change between areas when licenses become available earlier / later than originally anticipated or when data in some areas can only be collected in a narrow time slot (1 – 2 months), due to nature license restrictions; being able to compensate for bad weather conditions that would otherwise force a stand-by period (e.g. by switching to other areas); employing more than one team simultaneously in different areas to speed up AEM data collection; in general, flexibility relates to planning and execution with respect to the pre-determined flight plan and timing.

The proposed timeline is subject to changes. These changes may follow for example from instructions by authorities to comply with nature and other regulations. It is foreseen that in the preparation phase (=period between award of contract and prior to mobilization) the proposed timelines are revisited and modified and it is possible that during the project further changes to the planning of flights may be required. Planning of flights can also be disrupted by bad weather and other incidents (such as instructions from an ecologist or advise from the Community Engagement Manager). Also the final flight logistics are subject to uncertainties / late notice changes as the selection of take-off and landing sites needs to be reviewed in relation to NOx deposition (resulting from NOx emission of the helicopter) on sensitive Natura 2000 areas and at this stage it cannot be excluded that so-called Nitrogen-licenses are required. To deal with uncertainties and / or unforeseen circumstance the Tenderer needs to be flexible in the planning and execution of the survey.

1.3.2.4 Permissions and Licenses

All necessary permissions and licenses need to be obtained prior to starting any flights. The foreseeable timeframe for prior administrative approaches (obtaining all permits / licences, flight clearances, validation of pilot licenses etc.), should be anticipated in the work program. The Commissioner will facilitate relations between the Contractor and regional authorities, airports, civil and military authorities to obtain permits to fly as needed and in accordance with the governance structure outlined in Para. 1.3.2.6 – Governance. The project partners and Community Engagement Managers will take care of the permission to fly over Natura 2000 areas and other nature areas on behalf of the Contractor and Commissioner, where necessary. The Contractor however, remains solely responsible for all necessary permissions for the survey – including all required licenses such as for flying at low altitude ('laagvliegvergunning') and if necessary to take-off and land in areas other than regular airports ('TUG-ontheffing'), etc.

As mentioned earlier potential disturbance of fauna will pose limitations on the flight periods. Additional restrictions may be imposed to limit deposition of nitrogen oxides (NOx) on protected Natura 2000 areas (habitat protection). These restrictions may impact the selection of take-off and landing sides (not too close to Natura 2000 areas) and possibly also impact flight plans and flight periods. At the time of publication of the Tender it is not possible to provide more clarity on this as the outcome of the process depends on proposed flight logistics (sites for take-off and landing) and emissions of the particular helicopter that will be used. Flexibility in this respect is required and the description of the way the flexibility is handled by the Tenderer will be scored (see Chapter 6 and 8). Also, a helicopter with a low NOx emission is favourable.

1.3.2.5 Final flight preparation

The Contractor is responsible for preparing the flight plan with lines that meet the specifications of the survey. The flight plan should also identify the no-fly zones due to licensing (urban areas, airports, restricted areas, etc.) and substantial areas of known cultural noise. The Contractor shall carry out all formalities and ensure that all personnel are equipped with all the necessary visas and permits for carrying out the geophysical survey. The Contractor systematically informs the Commissioner and Community Engagement Manager of the steps taken to ensure this and will take the necessary steps to acquire the requested authorizations.

With the specifications mentioned in this document, some areas may at the initiative of Commissioner, be subject to adjustment, particularly with regard to the spacing of the flight lines and survey areas. These changes may be made before the start or during the service.

From proposed survey area and indicated flight line densities to final flight plans

The final flight plans will be agreed upon during the execution of the project (planning and preparation phase). Flight plans, including line spacing and line orientation are obviously aimed at obtaining optimal results for the different geophysical targets (see 1.3.2.2). Additionally the following aspects will have to be taken into account:

- The total amount of line kilometres that can be flown will depend on the offer of the Contractor as available budget for the survey is maximised and will need to be assigned to line kilometres, mobilization and contingency for stand-by time, etc; see Para. 1.4
- Regional partners have all provided funding to the project and the distribution of line kilometres will have to reflect the relative contributions of regional partners as indicated in Table 2;
- Regional partners, through the Regional Project Groups (see below) will be involved in formulating the final flight plans;
- Flight plans are subject to approval by the authorities and may need to be adjusted to comply with regulations. Among the licenses that are required are licenses under nature laws to avoid/minimise impact on protected fauna (direct

disturbance by the helicopter) and flora (deposition of Nitrogen oxides in critical areas). This has implications on the periods in which the helicopter flights can be executed (see 1.3.2.3 – Proposed timeline and project completion date) but may also have implications on actual flight lines and locations for take-off and landing. Other restrictions, such as no-fly zones around sensitive areas / objects, may have to be taken into account to comply with regulations;

The final flight plan will most likely require several iterations. This process will be coordinated by the Commissioner.

Table 2: Proportion of line kilometre entitlement per region and per province

Region	% of line kms	Province	% line kms
Noord	56%	Drenthe & Groningen	27%
		Fryslân	30%
Noord-Holland	23%	Noord-Holland	23%
Zuid	21%	Zuid-Holland	2%
		Zeeland	9%
		Brabant	11%
Total	100%		100%

*: Drenthe and Groningen are merged on the request of the partners in these provinces.

1.3.2.6 Governance

Error! Reference source not found.6 gives a schematic overview of the governance structure of the FRESHEM-NL project. T he coordination of the project is in the hands of Deltares and TNO together. A **Guidance group** is established, comprising all participating parties (= 7 provinces, 7 water authorities, 5 water supply companies, Deltares and TNO). The Guidance group, that will meet about 2 times per year, is the ultimate decision board and has to decide on significant changes in the project. In addition, a smaller **Core group** consisting of representatives of the participating parties is established. The Core group monitors the project progress to address operational issues and discusses organizational matters and meets regularly (at least 3 times per year or more as needed). **Regional Project Groups** are established for each (sub) region. In these groups participating parties contribute to the project with regional knowledge and they are also instrumental in informing external regional parties on the project, etc. It is in these regional groups where the practical matters related to project executing are organised, such as fine-tuning of fieldwork and flight plans, coordinating aspects of Natura2000 licensing, regional communications and at later stage also discuss regional results. For each (sub)region a '**Community Engagement Manager**' ('Omgevingsmanager' in Dutch) will be appointed by the regional partners. The role of the Community Engagement Manager is to keep an overview, monitor progress and coordinate in close cooperation with Deltares & TNO the activities related to the flight survey. The Community Engagement Manager is to coordinate engagement and communication with the local communities and authorities, mainly related to flying. The Community Engagement Manager will be in close contact with the Contractor and Commissioner to keep an overview of the progress of flight operations, maintain the required commitment to communication and plays a role in adjusting flight plans if that should be required from a Community / Environmental perspective. The Community Engagement Manager also monitors if all required licences have been obtained and informs all relevant parties about delays (project partners and external parties). Day to day flight planning is the responsibility of the Contractor and the Contractor is responsible to timely communicate flight plans with the Community Engagement Manager and the Commissioner such that all relevant parties can be informed of the flight plans and any deviations from the original plans. The Community Engagement Manager will be active from approx. 3 months before flying until the end of flying in each region and will be supported by Deltares & TNO. Details of sub-regions and respective Community Engagement Managers will be provided in due time.

An **External Advisory Board** will be formed. This small group of experts will provide solicited and unsolicited technical advice to the Core group to ensure that we get optimum results out of the project.

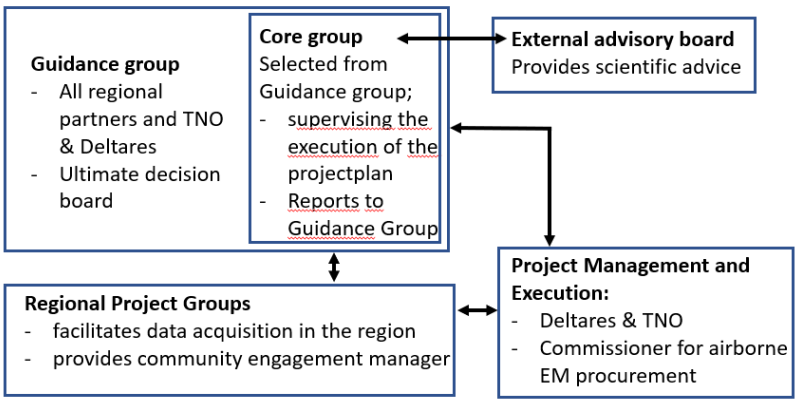

Figure 6: Schematic overview of governance structure of the FRESHEM-NL project

Role and responsibilities of TNO and Deltares in managing the Contractor's activities

In the FRESHEM-NL project, Deltares and TNO act together as coordinator and bear shared responsibility for the project. This means that TNO and Deltares together or separately can act as Commissioner in overseeing and managing the activities of the Contractor. Contractor conforms to the fact that TNO and Deltares together or separately are in a position to give instructions to the Contractor regarding all aspect of project management and execution.

1.4 Contract

The contract will be awarded based on the criteria described in these Tender instructions. A contract will be awarded to the winning Tender and will include an agreement on the maximum budget. Once the outcomes of the nature licenses is clear and final flight plans can be made, the Commissioner in consultation with the Contractor, will assign the available budget to number of flight line kilometres, number of mobilization / demobilizations and a contingency for a specified number of standby days. Invoicing by the Contractor will be based on the unit-prices provided in their Tender. In case the agreed contingency is not needed for standby days this budget will be used for additional flight line kilometres. TNO wishes to stress that the requirements listed in the PoR form binding Contract conditions. As mentioned in paragraph 2.2.18 a Contract is to be effected by means of a purchase order including the Purchasing Conditions of TNO, February 2022. Tenderers must be aware that the Tender will be a contract document if the Contract is awarded to the Tenderer.

1.5 Lots

This Tender Procedure consists of one Lot. One lot was chosen because the project needs consistent results over all survey areas. This calls for one Contractor, in order to prevent inconsistencies between survey areas due to different equipment, techniques or operational issues that may exist between different Contractors.

1.6 Socially responsible procurement

Sustainability is an extremely important aspect of TNO's core business. Much of our research is concerned with managing the economic, environmental and social impact of developments within our adopted themes. We do so using the 'roadmap' approach. In addition, we devote very close attention to the manner in which we can minimize the negative impact – and ideally maximize the positive impact – of our own operations. We therefore attach great importance to social and environmental responsibility: People and Planet. We acknowledge that our staff are essential to our mission. The core values of TNO – integrity, independence, professionalism and social responsibility – underpin the organization's strategy and all its activities. In terms of environmental responsibility, our policy centres on the spearheads of energy efficiency, reducing the carbon footprint of business travel, and sustainable procurement practice. Further information can be found in the TNO Sustainability Report which forms part of the TNO Annual Report. Socially responsible procurement practice is therefore an intrinsic part of the procurement agenda. All procurement decisions are taken in consultation with the TNO budget holders and involve careful consideration of sustainability aspects. Where relevant and possible, the sustainability aspects will be translated into sustainability requirements and/or preferences which will be included in the Tender Instructions document.

2 The Tender Procedure

The Tender Procedure is conducted in full compliance with the conditions of the Dutch Aanbestedingswet (Procurement Act), which in turn is based on relevant European legislation.
TNO has opted for the 'public' tendering procedure. This means that the Call for Tenders will be published on the TenderNed website at www.tenderned.nl.
TNO has opted to apply the European public procurement procedure. This is because:

i) based on the limited competition in the field to which the Contract pertains, a restricted number of Tenders are expected whereupon the public procedure is likely to be more (cost-)efficient;
ii) the complex nature of the Contract activities restricts the number of parties able to meet the eligibility criteria whereupon the public procedure is likely to be more (cost-)efficient.

2.1 Schedule

The proposed schedule for the Tender Procedure is as follows:

No.	Action	Deadline
1.	Publication of Call for Tenders (on www.tenderned.nl)	12 February 2024
2.	Final opportunity for interested parties to submit questions	28 February 2024, 12:30 PM CET
3.	Publication of (final) Memorandum of Information	20 March 2024
4.	Final date (and time) for submission of Tenders	8 April 2024, 12:30 PM CET
5.	Announcement of Intention to Award	29 April 2024
6.	Final date for submission of evidential documents by intended Contractor	6 May 2024
7.	Final date for lodging an objection	20 May 2024
8.	Confirmation of Contract Award	21 May 2024 or shortly after

Dates are indicative. TNO reserves the right to amend the schedule but will of course observe all legislative requirements.

2.2 Tender conditions

2.2.1 Acceptance

The submission of a tender is confirmation that the Tenderer accepts all applicable conditions.

2.2.2 Formats

The Tenderer must use the templates and prescribed formats provided in the Appendices to the Tender Instructions. It is expressly forbidden to make any alteration to these templates without the prior consent of TNO.

2.2.3 Self-declaration

The Tenderer must complete and submit a Self-declaration (Appendix **A01** and, if applicable, Appendix **A02** and/or **B01**) according to the following instructions.

The Tenderer must use Adobe Reader to open and complete Appendix **A01, A02** and **B01** (the European Single Procurement Document; ESPD). Opening Appendix **A01, A02** and **B01** in any other program may result in the loss of information that has been pre-entered by TNO. The submission of a Self-declaration in any form other than that included with the original tender will exclude the entire tender from further consideration. The Tenderer bears sole responsibility for opening Appendix **A01, A02** and **B01** and for submitting the Self-declaration in the prescribed manner.

2.2.4 Order of precedence

Where any discrepancies between the contents of the various tender documents exists, the following order of precedence applies (in descending order of importance).

- Contract (purchase order)
- Memoranda of Information, most recent first
- Tender Instructions and Appendices
- Call for Tenders.
- Tender

2.2.5 Contact person and communication

All communication with respect to the Tender Procedure will only take place through Tenderned and in the manner prescribed in these Tender Instructions. For questions refer to paragraph 2.3. **Queries/questions will not be accepted via the TenderNed system (even though it has a module for this purpose). All questions and requests for further information must be submitted directly to the TNO contact person.** If legal contact with TNO is required / necessary, communication only takes place at TNO's contact point below, which communication must always be done in writing via the e-mail address mentioned below.

Name	:	Raymond Peddemors
Position	:	Procurement Advisor
Department	:	Procurement
Correspondence	:	P.O. Box 96800, 2509 JE, The Hague
Visitors	:	Anna van Buerenplein 1, 2595 DA, The Hague, The Netherlands
Email	:	**raymond.peddemors@tno.nl**

Tenderers cannot derive rights from verbal statements, promises and suggestions from TNO employees or agents, made in connection with the Tender Procedure and / or tender documents. Tenderers can only rely on written information provided by or on behalf of TNO.

Failure to comply with the above conditions, or any attempt to influence the judgement or decisions of any person involved in the Tender Procedure, will result in immediate disqualification.

2.2.6 Language

Tenders must be submitted in the English language. Tenders submitted in other languages than the English language will be excluded from further participation in this Tender Procedure. Evidential documents which cannot submitted in the English language, should be submitted in the original language but the Tenderer should be able to provide a (sworn) translation on request.

2.2.7 Multiple tenders

The submission of multiple tenders is not permitted. Each interested party may submit only one tender regardless of the capacity in which it does so (independent Tenderer, lead contractor, subcontractor or member of a combination). A group of companies, as defined by Article 2:24b of the Procurement Act, may submit only one tender unless it is possible to show that there is no dependent relationship between the companies, i.e. no company is able to influence the decisions or operations of another. It is only permissible for two or more companies within the same group to submit competing tenders if they can demonstrate their independence and confidentiality of information (the 'Chinese wall' principle) to the satisfaction of TNO by any means they consider appropriate. Companies forming part of the same group can submit a single tender which specifies their respective roles (lead contractor and subcontractor or acting as a Combination).

2.2.8 Combination

A Combination is defined as an alliance of companies which submits a tender as a single party.

Lead partner

Where a tender is submitted by a Combination, a Self-declaration (Appendix **A01**) must be completed by its lead partner, who must provide the following required information *with regard to the Combination itself,* in addition to the standard information required by the Self-declaration.

(i) In Part IIA, under the heading 'Manner of Participation', tick the 'Yes' box to indicate that the Tender is being submitted on behalf of a Combination.

(ii) In Part IIA, under the heading 'Manner of Participation' at 'If so', subsection a), the lead partner should state which of the eligibility requirements he fulfils (if applicable) and the specific tasks for which he is responsible.

(iii) In Part IIA, under the heading 'Manner of Participation' at 'If so', subsection b), enter the official name(s) and legal structure of all other members of the Combination.

(iv) If the Combination has been formalized and has a registered trading name, this should be entered in Part IIA under 'Manner of Participation' at 'If so', subsection c).

Other members

Each of the other Combination members must complete and submit a separate ESPD (Appendix **A01**) to include the following information regarding the Combination itself (in addition to all other required information).:

i) In Part IIA under 'Manner of Participation', tick the 'Yes' box to indicate that the Combination member is taking part in the Tender Procedure alongside other partners.
ii) In Part IIA, under the heading Manner of Participation, subsection a), the Combination member should state which of the eligibility requirements he fulfils (if applicable) and the specific tasks for which he is responsible.
iii) In Part IIA, under the heading Manner of Participation, subsection b), enter the official name(s) and legal structure of all other members of the Combination.
iv) If the Combination has been formalized and has an official trading name, this should be entered in Part IIA under Manner of Participation, subsection c).

By submitting the tender, all members of the Combination accept joint and individual responsibility for the fulfilment of all obligations and responsibilities further to the Tender Instructions, the Tender Procedure and the Contract itself should this be awarded to the Combination.

2.2.9 Subcontractor

A partnership comprising a lead contractor and a subcontractor can submit a single Tender. The lead contractor is at all times responsible and liable in law for the proper performance of the Contract activities, including those delegated to the subcontractor.

A lead contractor can submit a Tender with a subcontractor in one of the following two manners. The signatory's authority must be established by enclosing a certified extract from the Chamber of Commerce Trade Register with the subcontractor's Self-declaration form (Appendix B01).

- Use of subcontractor's credentials to fulfil Eligibility Requirements
  If the Tenderer is reliant on the financial, economic, technical and/or professional capacity of a Subcontractor to fulfil the Eligibility Requirements, that subcontractor is also regarded as a Third Party. In such instances, the Tenderer must follow the instructions given in Para. 2.2.10 concerning reliance on the resources of one or more Third Parties.

- Subcontractor's contribution to fulfilment of Contract
  Where the Tenderer meets all Eligibility Requirements unaided but nevertheless wishes to deploy a subcontractor for the fulfilment of the Contract or parts of the Contract, the Tenderer must list all subcontractors to be involved in the fulfilment of the Contract in part IID of the Self-Declaration.

  Instructions for the Tenderer when completing the Self-declaration (Appendix A01)
  The Tenderer should state whether he does or does not intend to involve one or more subcontractors in the performance of the Contract by completing Part II D of the Self-declaration (Appendix **A01**).
  - If there is no intention to involve a subcontractor:
    The Tenderer should tick the box marked 'No' in Part II D of the Self-declaration (Appendix **A01**).
  - If the Tenderer does intend to involve one or more subcontractors:
    The Tenderer should tick the box marked 'Yes' Part II D of the Self-declaration (Appendix **A01**), and enter the names of those subcontractors in the space provided beneath 'If so'.

  Instructions for submission of evidential documents
  At the request of TNO and within the period specified in Para. 7.1., the Tenderer who is identified as the lead Contractor (subject to confirmation by TNO) is required to submit the corresponding information that he submitted about himself (in Parts II A, II B and III of the Self-declaration) for all subcontractors listed in Part II D of the Self-declaration (Appendix **A01**). The Tenderer must provide this information by submitting a Self-declaration form (Appendix **B01**) in which the relevant sections have been completed by each subcontractor.

  The subcontractor's Self-declaration (Appendix **B01**) must be duly signed by an authorized company officer. The Tenderer must establish the signatory's authority by enclosing a certified extract from the Chamber of Commerce Trade Register with the subcontractor's Self-declaration form (Appendix **B01**).
  - Required action between notification of Award and commencement of Contract
    Where the successful Tenderer intends to involve one or more subcontractors in the performance of the Contract, TNO must be informed, in writing, of the name or names of the subcontractors who are to perform the contract, of

the name of the duly appointed legal representative of each subcontractor, as well as the name, telephone number and email address of a contract person for each subcontractor. This information is to be provided no later than seven days prior to the date of commencement of the Contract that was agreed by TNO and the Contractor or subcontractor. No subcontractor may be involved or changed without TNO's prior written consent.

- Required action during performance of Contract

  Any subcontractors engaged by the Contractor during the performance of the Contract must be approved by TNO. Such approval must be confirmed in writing before the subcontractor is permitted to begin work on the contract (or part thereof) assigned to him by the Tenderer. This provision applies where the Contractor was not required to name specific subcontractors during the Tender Procedure and where new subcontractors are recruited after the Contract work has commenced. If there are any changes to the information relating to a subcontractor, the Contractor or subcontractor must inform TNO immediately and in writing.

  In order to approve a subcontractor, TNO must ascertain that none of the Grounds for Exclusion listed in the original Tender Procedure apply. TNO may require the Contractor or subcontractor to submit evidential documents to establish that this is the case. The documents to be requested by TNO are limited to those listed in Para. 5. 1 of the Tender Instructions.

  If TNO determines that one or more Grounds for Exclusion do indeed apply to the subcontractor, approval will not be granted. TNO will allow the Contractor to propose another subcontractor, whereby the same approval procedure will be followed. TNO will hold the Contractor and subcontractor(s) responsible for the correct and timely execution of the Contract, regardless of any delay due to a subcontractor having been excluded from participation.

2.2.10 (no) Reliance on Third Party resources

The Tenderer may call upon the financial, economic, technical and/or professional capacity of one or more Third Parties. Where the Third Party is to provide financial resources, both the Tenderer and that Third Party are jointly responsible and liable in law for the proper execution of the Contract (if awarded).

Where the Tenderer calls upon the technical or professional capabilities of one of more Third Parties, those Third Parties must take an active part in the performance of the Contract activities (assuming that the Contract is indeed awarded to the Tenderer).

No reliance on Third Party resources

A Tenderer who does *not* intend to make any use of the financial, technical or professional capabilities of any Third Party should tick the box marked '*No*' in Part II C of the Self-declaration (Appendix **A01**).

Reliance on Third Party capacity

A) Instructions for completion of Tender

If the Tenderer *does* intend to call upon the financial, economic, technical or professional capabilities of one or more Third parties, he should fill in Part II C of the Self-declaration (Appendix **A01**) as follows:

1. tick '*Yes*' in the appropriate section
2. indicate *which* of the Eligibility Requirements will be met further to the involvement of the Third Party
3. state *how* the Third Party's involvement will fulfil the relevant Eligibility Requirement(s).

The Tenderer who intends to call upon the financial, economic, technical and/or professional capacity of one or more Third Parties should also provide:

4. a separate Self-declaration form (Appendix **A02)** for each such Third Party, in which parts II A, II B and III have been completed. The forms must be signed by the duly authorized legal representative of the Third Party concerned, and this person's authority to sign must be confirmed by means of a certified extract from the Chamber of Commerce Trade Register. Note that the extract does not have to be submitted at the same time as the Tender itself; TNO will request further information in accordance with the following provisions.

Addition requirement where Tender relies on the technical or professional capabilities of one or more Third Parties

5. Where the Tenderer intends to call upon the technical or professional capabilities of one of more Third Parties, a list of reference projects must be provided for each Third Party (in addition to that relating to the Tenderer). The list of Third Party reference projects should be compiled using the prescribed template provided as Appendix **A03**.

B) Instructions for Provisional Contractors who intend to call up the resources of one or more Third Parties

If the Tenderer selected by TNO and thus identified as the Provisional Contractor (subject to confirmation) intends to call upon the financial, economic, technical or professional capacity of one or more Third Parties, that Tenderer must submit the following documents on request, within the period stipulated in Para. 7.1 of the Tender Instructions:

1. A declaration produced and duly signed by each Third Party confirming that the Tenderer will have access to the resources stated. Where the Tenderer intends to call upon the financial and economic capacity of the Third Party, the declaration must be made using the template provided as Appendix **B02.** In the case of technical and/or professional capacity, the statement should be made using the template provided as Appendix **B03.**

2. A certified extract from the Chamber of Commerce Trade Register pertaining to each Third Party for whom a Self-declaration (Appendix **A02**) is submitted. The extract should confirm that the legal validity of the signature on the Self-declaration (i.e. the signatory is an authorized officer of the company concerned).

3. All evidential documents listed in Para. 5.1 for each of the Third Parties named in the Tender, confirming that none of the Grounds for Exclusion apply.

Supplementary provision for a proposed Contractor intending to call upon the financial and economic capacity of one or more Third Parties

4. If the Tenderer selected by TNO and thus identified as the Provisional Contractor intends to call upon the financial and economic capacity of one or more Third Parties, that Tenderer must, at the request of TNO and within the period stipulated in Para. 7.1 of the Tender Instructions, submit all documents listed in Para B (concerning '*Instructions for provisional contractors*') together with the evidential documents which establish that each of the Third Parties meets the Eligibility Requirements in respect of financial and economic status. (This replaces the requirement for the Tenderer to submit evidence of its own financial and economic status.)

2.2.11 Alternative Tenders

The submission of alternative Tenders is not permitted. Alternative Tenders will be disregarded.

2.2.12 '...or equivalent'

Where the Tender documents, including Appendices, refer to any specific brand name, patent, type, model, manufacturing process, etc., the words '... or equivalent' should be understood to follow.

2.2.13 Reserved rights

1. TNO may, at its own discretion and without having to state reasons, decide not to award the Contract to any of the parties from whom Tenders have been received. Tenderers are not entitled to compensation for any form of loss or damage directly or indirectly incurred as a result.

2. TNO reserves the right to suspend or cancel the entire Tender Procedure. Tenderers are not entitled to compensation for any form of loss or damage directly or indirectly incurred as a result.

3. TNO reserves the right to subject all information provided by Tenderers to further scrutiny for the purposes of verification. Referees may be contacted without further notice.

   The Tenderer is aware that the provision of false or incomplete information will result in disqualification from the Tender Procedure. Any agreements made prior to the discovery of the false or incomplete information will be revoked and contracts will be annulled. No compensation will be paid. TNO expressly disclaims liability for loss or damage howsoever caused.

2.2.14 Confidentiality

The Tenderer undertakes to treat all information which may affect the commercial interests or scientific integrity of TNO in the strictest confidence. Information is provided on a 'need to know' basis and must not be disclosed to any employee or agent of the Tenderer's organization of those of a Third Party (including consultants and subcontractors) unless such disclosure is essential to the effective preparation of the Tender or, where applicable, the proper performance of the

Contract. TNO acknowledges the confidentiality of all information provided in support of the Tender and undertakes not to disclose such information to unauthorized parties. However, Tenderers are advised that TNO is under a legal obligation to explain and justify the Award Decision, which may entail the disclosure of information pertaining to the Tenders received, both successful and unsuccessful.

2.2.15 Distortion of competition

Attempts to distort fair competition, such as collusion or cartel-forming, are grounds for disqualification. Where TNO has plausible indicators of any such attempt, the Tenderer will first be given an opportunity to prove otherwise. If, in the sole opinion of TNO, the Tenderer is not able to provide a satisfactory defence, he will be excluded from the remainder of the Tender Procedure.

2.2.16 Withdrawal of Tender

Once a Tender has been submitted it cannot be withdrawn. The Tender will be remain in place throughout its period of validity.

2.2.17 Period of validity

The Tender represents a formal offer which must remain valid for ninety (90) days from the deadline for the submission of Tenders. This period of validity is automatically extended until the point at which the final Contract is signed with the Tenderer who emerges as the Provisional Contractor.

If an objection to the Award Decision is placed before the judicial authorities, the period of validity will (if necessary) be further extended by a period of thirty calendar days following the day on which the court returns its judgment.

2.2.18 Terms and Conditions of Contract

The Award of the Contract is to be effected by means of:

- A purchase order; and
- General Purchasing Conditions of TNO, February 2022, as included as Appendix **C03**, except where the Tender Documents include alternative provisions, in which case the Tender Documents take precedence.

As provided by Para. 2.3 of the Tender Instructions, the Tenderer may propose amendments to the current formulation of the General Purchasing Conditions. TNO will confirm the amendments to be made, which will be listed in the final Memorandum of Information.
Acceptance of the final version of the amended General Purchasing Conditions is to be regarded as a minimum requirement. Failure to meet this requirement in full will result in exclusion from the remainder of the Tender Procedure.
The submission of a Tender indicates the Tenderer's full acceptance of all terms and conditions applicable at the time of submission.

2.2.19 Suppliers' Terms and Conditions; Provisional Tenders

TNO shall not be bound by any Terms and Conditions of Supply imposed by the Tenderer or by any Third Party, including but not restricted to subcontractors, auxiliaries or agents, at any time during the Tender Procedure or thereafter, during the performance of the Contract and related activities. An attempt to impose Terms and Conditions shall render the Tender provisional and hence invalid. Tenders which are deemed provisional for this or any other reason will be excluded from further consideration.

2.2.20 Legally valid signature

The Tender and all related documents must be duly signed in ink by an authorized representative of the Tenderer organization. The hard copy of each document is then be scanned and uploaded to the TenderNed site. The signatory's authorization to sign must be established by means of a certified extract from the Chamber of Commerce Trade Register. If the signatory is not listed as an authorized representative of the Tenderer organization in the Trade Register, a mandate signed by a registered company officer must be provided. The extract and mandate must be submitted at the first request of TNO in accordance with the instructions and deadline stated in Para. 7.1 of the Tender Instructions.
The signature under the Tender also applies as a signature under the Self-declaration, Article 2.2.3, the form "ESPD".

2.2.21 Reimbursement of Tender costs

All costs incurred further to the production and submission of the Tender are to be borne by the Tenderer. TNO shall not provide any form of reimbursement.

2.2.22 Statement of prices and costs

Prices and costs must be stated in euros (EUR) and excluding Value Added Tax. The prices and costs are to remain applicable throughout the Contract term except where the Contract terms make alternative provisions. TNO wishes to make clear that price negotiations do not form part of the Tender Procedure.

2.2.23 Publicity

The Tenderer and any partners and/or subcontractors of the Tenderer must not make any public statement or comment about the Tender Procedure, except with the prior written permission of TNO.

2.2.24 Intellectual property rights

Except where expressly permitted under Copyright Law or where necessary for the successful preparation of a Tender, no part of the tender documents may be reproduced in any form, by print, photocopy, DVD, CD-ROM, microfilm or other means, without the prior written permission of TNO. Tenders and all accompanying documents submitted further to the Tender Procedure become the property of TNO upon receipt.

2.2.25 Use of TNO logo

It is not permitted to copy, modify or otherwise use the TNO logo on any documents submitted by the Tenderer further to the Tender Procedure.

2.3 Further information (questions)

The Tender documents, including the Tender Instructions and Appendices, have been compiled with the greatest possible care. Interested parties are able to submit questions and requests for clarification at any time before the deadlines given in the schedule in Para. 2.1. The questions may relate to the contents of the tender documents or to the Tender Procedure itself. Clarification may be sought where there are any apparent ambiguities or discrepancies between documents. Further information should be requested within the stated period and in the manner described in this paragraph. A Tenderer who fails to request information on time and in the prescribed manner will forfeit his right to object to any identified defects at a later date.

During the period between the Call for Tenders and the information deadline, Tenderers may also submit grounded questions, suggestions for amendments to the text of the Tender documents, including the TNO General Purchasing Conditions (Appendix **C03**). Suggestions should be restricted to textual improvements, editorial corrections and clarifications; they may not affect the essence of the Contract or the applicable Terms and Conditions. TNO reserves the right to act upon or reject such suggestions at its sole discretion.

Questions, comments and requests for supplementary information must be in English. They must only be submitted in writing, in the form of an email, and must use the 'editable' MS Excel template provided in Appendix **C01.** The specific aspect of the documents or procedure to which the query refers should be clearly indicated using the drop-down menu in Excel. The file must then be submitted by email to the TNO contact person named in Para. 2.2.5.

IMPORTANT: Queries/questions will not be accepted via the TenderNed system (even though it has a module for this purpose). All questions and requests for further information must be submitted directly to the TNO contact person.

The TNO contact person will compile one or more Memoranda of Information which provide the answers to the questions submitted. The source of the questions will not be identified by name. The deadline for submitting questions is given in Para. 2.1.
The Memoranda of Information will be published at www.tenderned.nl in accordance with the schedule in Para 2.1.
All questions and the answers provided are to be regarded as an integral component of the Tender Instructions. In principle, the Tender Instructions document becomes definitive with the publication of the final Memorandum of Information.

Responsibility for reading and acting upon the Memoranda of Information in a timely manner rests with the Tenderer. If the production of the final Tender is jeopardized by technical problems affecting the TenderNed site, the Tenderer should contact the TNO contact person named in Para. 2.2.5, and TenderNed, without delay. If the TenderNed site is indeed 'down', TNO will implement an alternative course of action (subject to the provisions of the Procurement Act.)

TNO advises Tenderers to delay submitting a Tender until the final Memorandum of Information has been published. This may include information and details of changes to the Tender Instructions that affect the process of drawing up a Tender.

2.4 Disputes and applicable jurisdiction

All aspects of the Tender Procedure are subject to Dutch law. Any dispute requiring legal adjudication must in the first instance be placed before the Court in Interlocutory Proceedings in the District of The Hague, Prins Clauslaan 60.
Tenderers who object to (any part of) the Tender Procedure, (any part of) the information provided, or any other aspect directly or indirectly relating to the Tender Procedure and likely to affect its outcome, must bring their objections to the attention of the TNO contact person named in Para. 2.2.5 at the earliest possible opportunity.

The period in which a formal objection can be lodged against the Award Decision and/or the Tender Procedure is twenty calendar days from the date on which the Award Decision is issued. The objection must be made in writing and served at the registered business address of TNO within the twenty-day period. Where formal proceedings have not been instigated within the designated period, all rights shall lapse.

Any Tenderer wishing to lodge an objection or appeal is requested to notify TNO prior to commencing proceedings.

Where a court order challenging the Award Decision and/or the Tender Procedure is sought, in a timely and legally valid manner, the Tenderer to whom the Contract has been provisionally awarded is expected to intervene. If the Tenderer fails to do so, they will forfeit their right to a judicial procedure or to third-party proceedings if the judgment in the first instance requires TNO to amend or withdraw the Award Decision. It is in the interests of all parties to create clarity at the earliest possible opportunity and this requires all arguments to be presented openly and without delay.

2.5 Submission of the Tender

2.5.1 Digital submission

The Tender comprises all forms in Appendices **A01 to A07** which must be completed in full and duly signed by a legally authorized representative of the tendering organization. The formats (if provided) given in the Appendices must be used. For the signature requirements, see Para. 2.2.20.

For the current tender procedure, TNO has opted to use the online TenderNed system. TenderNed is the Dutch government's online tendering system. All Dutch authorities are obliged to announce their national and European tenders on TenderNed's announcement platform, so businesses can have insight into all public publications from a single webpage.

If you would like to bid in TenderNed you first have to register your company. Please keep in mind that the TenderNed application is only available in Dutch. The following information on registering your company and bidding is available in English:

- Registering a foreign business
- Logging in as a foreign entrepreneur
- Request to participate in a restricted procedure
- Submitting a bid directly in an open procedure
- Training and consultancy

Other manuals and instructions are only available in Dutch. You can also contact TenderNed's Service Desk at +31 70 379 88 99 or email. Their opening hours are: 08:30-17:00 CET.

The completed Tender documents must be uploaded to the TenderNed secure document safe no later than **12:30 PM CET on 8 April 2024**.

Tenders which are submitted beyond the published deadline or which are not uploaded to TenderNed's secure document safe in accordance with the instructions given in this document will be excluded from the remainder of the Tender Procedure. Responsibility for the timely and correct submission of documents rests with the Tenderer at all times.

Tenderers are urged to read the instructions on the TenderNed site, particularly those relating to the uploading of documents to the secure document safe. Note that the upload must be confirmed using the 'registration wizard' which has two-factor authentication requiring users to enter a code which has been sent to them as a text (SMS) message.

Tenderers are advised to allow ample time for the uploading of documents. If a technical problem occurs which places the timely submission of the Tender at risk, the Tenderer should immediately report this situation to TenderNed AND to the TNO

contact person named in Para. 2.2.5. If TenderNed does experience a technical problem that makes it impossible for tenders to be submitted shortly before the deadline and TNO is unaware of any Tenders that, despite the technical problem, have been successfully uploaded to TenderNed's secure document safe, then TNO will extend the deadline for submission of Tenders, subject to the restrictions imposed by Article 2.109 of the Procurement Act.

TNO advises Tenderers to take note of the contents of Article 2.109a, further to which they should be prepared to submit an encrypted code identifying their Tender should there be any technical problem preventing the full Tender being uploaded to TenderNed.

2.5.2 Structure and presentation

The following instructions apply to the structure and presentation of the Tender submission. The Tender must consist of the following documents:

Part A comprises the following documents (files):

Appendix A01 Self-declaration by Tenderer (European Single Procurement Document; ESPD)

Appendix A02 Self-declaration by Third Parties on whose resources or abilities the Tenderer Relies (European Single Procurement Document;)

Appendix A03 Prescribed format for reference projects

Appendix A04 Schedule of prices / charges

Appendix A05 Conformity list Programme of Requirements

Appendix A06 Notification of preferences and answers to questions

Appendix A07 Preferences (own format)

All forms must be completed in full and then printed out. The paper hard copy is to be signed in ink by a legally authorized representative of the Tenderer organization and then scanned to create a digital (PDF) version.

The various PDF files (Appendices **A01** to **A07**) are to be placed in a single folder which must then be compressed ('zipped'). This folder should be named xxxx**_part A**, where xxxx is replaced by (part of) the name of the Tenderer organization. Upload this compressed folder to TenderNed's secure document safe.

If a Tender is incomplete, the Tender is invalid and the Tenderer will be excluded, except when this is disproportionate and not contrary to the fundamental principles of procurement law.

3 Evaluation of Tenders and Tenderers

3.1 Evaluation team

A multidisciplinary team will be assembled to undertake the qualitative evaluation of the Tenders. Its members will include experts in the subject matter and processes involved. The team members evaluate the Tenders on the basis of quality alone; they are not informed of the financial aspects.
Each member of the evaluation team assesses those parts of the Tender that are within their expertise, against the qualitative (sub-) award criteria, doing so independently and without reference to the other members of the team. A meeting is then held at which the individual evaluations are compared and discussed. The overall score given for each of the (sub-) award criteria is the average of the individual scores.

3.2 Evaluation procedure

The evaluation procedure consists of several phases, as described in Chapters 4 to 8.

Chapter 4 : Evaluation with regard to timely submission, form, presentation and completeness

Chapter 5 : Evaluation against and Grounds for Exclusion and Eligibility Requirements. These are mandatory provisions, whereby non-compliance will result in immediate and irrevocable exclusion from the remainder of the Tender Procedure.

Chapter 6 : Evaluation against the Award Criteria. This is based on a numerical score for each material aspect.

Chapter 7 : Evaluation of evidential documents which the Provisional Contractor is requested to submit to TNO.

Chapter 8 : TNO's evaluation against the Minimum Requirements (with regard to Contract performance) and the Programme of Requirements (PoR).

The activities involved in the overall evaluation procedure are (in chronological order):

- Confirming timely submission; opening the TenderNed secure document safe; establishing the number of Tenders submitted.
- Evaluation of form, presentation and completeness.
- Evaluation against Grounds for Exclusion and Eligibility Requirements
- Evaluation against Minimum Requirements
- Evaluation of Tenders which have passed the preceding stages, against the Award Criteria.

Based on the overall evaluation, TNO will rank the Tenders in order. The Tender in first place is the '*Economically Most Advantageous Tender based on the Best Price-Quality Ratio' ('Best PQR')'.*

At any time during the evaluation procedure, TNO may contact a Tenderer to request clarification where necessary. Tenderers are expected to provide a response within 48 hours.

4 Evaluation of timely submission, form, presentation and completeness

4.1 Timely submission

The Tender must be submitted before the published deadline. Any Tender which fails to meet this requirement will be deemed invalid and excluded from further consideration.

4.2 Form, presentation and completeness

Tenders will be assessed in terms of completeness and compliance with the published instructions. The omission of required information will result in disqualification.
Tenders which are incomplete and/or fail to comply with the presentation instructions will be declared invalid and excluded from further consideration.

5 Evaluation against Grounds for Exclusion and Eligibility Requirements

5.1 Grounds for Exclusion

The Tenderer will be evaluated against the Grounds for Exclusion. The self-declaration (European Single Procurement Document) includes a section which requires the Tenderer to confirm that none of the Grounds for Exclusion applies. If one or more of the Grounds for Exclusion do apply, the Tenderer will be disqualified and excluded from the Tender Procedure.

Where any of the Grounds for Exclusion apply to any one member of a Combination, the entire Combination is excluded from the Tender Procedure.

Where the Tenderer calls upon the resources or abilities of one or more Third Parties, as described in Para. 2.2.10, and one or more Grounds for Exclusion applies to any of those Third Parties, TNO will disallow the involvement of that Third Party. The Tenderer will then be given an opportunity to find another Third Party able to provide the necessary resources. If the Tenderer is unable to do so within the allotted period, or if the replacement Third Party is also subject to any other Grounds for Exclusion, the Tenderer will be excluded from the remainder of the Tender Procedure.

In the first instance, a duly completed and signed Self-declaration form (Appendix **A01**) is enough to establish that none of the Grounds for Exclusion apply to the Tenderer. In the case of a Third Party, the Self-declaration form in Appendix **A02** is required. If the Tenderer is identified as the Provisional Contractor, further evidence will be required. At the request of TNO, that Tenderer must provide the following evidential documents within the period stated Para. 7.1. In the case of a Combination, each individual member of that combination must submit these documents within the period stated Para. 7.1. Where the Tenderer calls upon the resources or abilities of one or more Third Parties, the Tenderer must submit these documents on behalf of each Third Party within the period stated Para. 7.1.

The evidential documents in question are:

- A certified extract from the Chamber of Commerce Trade Register pertaining to the Tenderer, or in the case of a Combination, to each member individually. The extract(s) must be dated no more than six months prior to the date of submission.
- A certified extract from the Chamber of Commerce Trade Register pertaining to each Third Party on whose resources the Tenderer intends to rely. The extract(s) must be dated no more than six months prior to the date of submission.
- A Certificate of Good Conduct (GVA) by the Tenderer or - in the case of a Combination - of any combinant and/or - if the Tenderer appeals to one or more Third Parties - every Third Party to which the Tenderer appeals. The Certificate of Good Conduct (GVA) is dated no more than two years prior to the date of submission of the Tender. To apply for a procurement statement, the Tenderer, combinant and/or Third Party must consult the Justis website (www.justis.nl) and follow the instructions contained therein regarding the application for a Certificate of Good Conduct;
- A declaration issued by the Tax Administration of the Tenderer or – in the case of a combination – of any combinant and/or – if the Tenderer appeals to one or more Third Parties – every Third Party to which the Tenderer appeals. The declaration must at the time of submission of the Subscription not exceed six months to prove that the Tenderer, combinant and/or Third Party has fulfilled his obligations under applicable legal provisions applicable to him relating to the payment of national insurance premiums or taxes.

Tenderers are reminded that it can take several weeks to obtain some types of evidential document. It is therefore advisable to apply for them at the earliest possible moment. It will then be possible to produce the documents when required. It should also be noted that Tenderers are responsible for the timely submission of evidential documents pertaining to any Third Parties on whose resources they intend to rely. TNO therefore advises Tenderers to approach those Third Parties as soon as possible to make the necessary arrangements. Third Parties should be made aware of the time needed to obtain some documents.

A Tenderer who fails to submit the requested evidential documents (pertaining to himself or to any Third Parties) on time will be excluded from the Tender Procedure. TNO may then invite the party who came second in the evaluation process to submit evidential documents.

5.2 Evaluation of Eligibility Requirements

A Tenderer must be able to demonstrate the level of expertise and skill required to perform the Contract activities. These are termed the 'Eligibility Requirements'.
The Tenderer is evaluated against the Eligibility Requirements as formulated for the Tender. If the Tenderer intends to call upon the professional expertise of one or more Third Parties, as described in Para. 2.2.10, TNO will assess whether each of those Third Parties fulfils the Eligibility Requirements.

The Eligibility Requirements apply to several aspects: financial and economic capacity, technical and professional ability, and professional qualifications. The Tenderer and/or the Third Parties on whose capacity the Tenderer relies must meet all requirements in order to be considered for the Contract.

5.2.1 Financial and economic capacity

5.2.1.1 Insurance

The Tenderer identified as the Provisional Contractor adequately insures, in a way that is appropriate and customary according to common standards, and thus keeps insured (i) the Performance to be delivered, as well as goods that it received from TNO for processing, against all risks of damage, loss, theft and depreciation, The Tenderer must hold full liability insurance with cover of at least € 1.250.000 per event giving rise to damage or series of related events, or must be willing to meet this requirement if identified as the Provisional Contractor. The insurance cover must be in place for the entire term of the Contract.

In the first instance, a duly completed and signed Self-declaration form (Appendix **A01**) is sufficient to establish that this requirement has or will be met. If, for the purposes of the present Eligibility Requirement, the Tenderer intends to rely on the financial and economic capacity of a Third Party, a separate Self-declaration must be submitted using the template provided as Appendix **A02**.

At the request of TNO, the Tenderer identified as the Provisional Contractor must submit evidence, within the period specified, of adequate insurance cover in the form of the policy document or a certificate of insurance issued by a recognized insurance company, showing that the Tenderer is insured as required in the Tender documents. Where the policy document is in the name of a holding company, group or concern, the Tenderer must present a copy together with evidence that cover extends to the Tenderer organization.

Where the Tenderer is not (yet) in the possession of the insurance policy or a certificate of insurance issued by an insurance company, within the period specified, he must complete, sign and return a Declaration of Intent (Appendix **B04**). This is a statement to the effect that the Tenderer will obtain the required insurance cover and present the necessary evidential documents within **seven calendar days** of being notified that TNO intends to award him the Contract (see also Paras 7.1 and 7.2). It should be noted that this is a suspensory condition; failure to provide a copy of the policy or a certificate of insurance issued by the insurance company will result in the Contract offer being withdrawn. TNO will not issue confirmation of the Contract until the deadline for legal objections has passed or, if an objection is indeed lodged, it is overruled by the court. The Contract itself cannot be signed until TNO is in possession of evidence that the Tenderer holds the required insurance cover. In the absence of such evidence, TNO reserves the right to withdraw the Contract offer, whereupon the runner-up in the Tender evaluation process will assume first place and will be identified as the Provisional Contractor.

The prescribed document format for the insurance policy or certificate of insurance is enclosed as Appendix **B04.**

5.2.2 Technical and professional competence

The evaluation of technical and professional competence is an indicator of whether the Tenderer can be expected to perform the Contract activities to the required standard.

5.2.2.1 Reference projects

To support the evaluation of technical and professional competence, the Tenderer is required to submit a minimum of *3* reference projects using the template provided in Appendix **A03**. These reference projects should demonstrate that the Tenderer has adequate experience and possesses the skills which make up the core competencies listed below. For each core competency, the Tenderer should refer to at least one reference projects. It is not necessary to list a separate reference project for each core competency; one project may be used to demonstrate several competencies. A maximum of 5 pages (A4) apply for the description of each core competence.

To demonstrate adequate experience in the core competencies listed below, the Tenderer should submit details of reference projects as part of the tender. This is accomplished using Appendix **A03,** which must be completed in full and signed in ink by a duly authorized representative of the Tenderer organization. If the Tenderer intends to call on the technical or professional resources of one or more Third Parties, a completed and signed form (Appendix **A03**) should also be submitted in respect of each Third Party, stating the core competency /competencies to which it refers.
If any of the reference projects has yet to be completed, only the results achieved thus far should be cited. A prognosis of results will not be accepted.

Core competency 1 – The Tenderer has experience in airborne EM groundwater mapping in fresh and saline conditions, in unconsolidated sediments in densely populated deltaic areas.

Reference project: During the ten (10) years prior to the date of the Call for Tenders, the Tenderer has completed a project that demonstrates core competency 1, and had a contract value of at least € 200.000, excluding VAT. The project must have been completed in accordance with all the contractual conditions agreed at the time, including those relating to lead time and budget.

Core competency 2 – The Tenderer has experience in the delivery of timely survey reports of airborne EM projects; removing couplings and deliver the processed data in digital ASCII format, which is compatible, or easily importable into Arhus Workbench

Reference project: During the ten (10) years prior to the date of the Call for Tenders, the Tenderer has completed a project that demonstrates core competency 2, and had a contract value of at least € 200.000, excluding VAT. The project must have been completed in accordance with all the contractual conditions agreed at the time, including those relating to lead time and budget.

Core competency 3 – The Tenderer has experience in operating an airborne system for both shallow (<10m depth) and deeper (>70m depth) with DOI > 100m depth**.**

Reference project: During the ten (10) years prior to the date of the Call for Tenders, the Tenderer has completed a project that demonstrates core competency 3, and had a contract value of at least € 200.000, excluding VAT. The project must have been completed in accordance with all the contractual conditions agreed at the time, including those relating to lead time and budget.

TNO reserves the right to verify all references. TNO assumes that the Tenderer will have informed its referees accordingly and has obtained their permission. Where the Tenderer has not demonstrated the necessary experience in all competencies, the Tender will be declared invalid and excluded from the remainder of the Tender Procedure.

5.2.3 Professional authority

By completing the Self-declaration (Appendix **A01**) the Tenderer declares that he is registered in the relevant professional register or trade register, in compliance with all requirements of the member state in which he is based.

At the request of TNO, the Tenderer must provide the following evidential documents within the period stated in Para. 7.1:

- For companies registered in the Netherlands: an original certified extract from the Chamber of Commerce Trade Register should be submitted. This must be no more than six months old at the time of submission. Companies registered in another country should provide a comparable document in accordance with national legislation and practice.
- If the Tenderer is a legal partnership, extracts should be submitted for all parties who are included on the Trade Register, together with a declaration signed by all partners establishing the right of representation with regard to the Tender.
- If the Tenderer is a Combination, an extract should be submitted for each member.
- If the Tenderer intends to call upon the resources of one or more Third Parties or subcontractors, extracts should be submitted in respect of each Third Party or subcontractor.

6 Evaluation against Award Criteria

TNO will evaluate and rank the Tenders based on the Award Criteria. The primary consideration in this Tender will be the Price-Quality Ratio.

6.1 Best Price-Quality Ratio

This criterion is divided into the following sub-award criteria and weighting factors. A numerical score is given in respect of Price (TP) and Quality (QU).

Award criteria	Max. points
Price (TP)	***700***
Quality (QU)	***300***
Total	***1000***

Minimum requirement for Quality

TNO attaches great importance to achieving the best possible Price-Quality Ratio for the services which fall under this Tender. Quality is nevertheless a critical factor. A minimum requirement is therefore applied whereby the Tender must achieve at least an overall score of 50% of the maximum points for Quality (150 points). A Tender which fails to do so will be excluded from further consideration, regardless of Price (TP).

The Tender with the highest overall score is designated the '*Economically Most Advantageous Tender based on the Price-quality Ratio' ('Best PQR')' on the basis of which TNO intends to award the contract. See also Para. 6.2 Award.* The scores are rounded down to the nearest (1) decimal point. The total score for sub-award criterion: Quality (QU) has been arrived at by totalling unrounded scores on the sub-sub-award criterion.

In the event of a 'tie' - two Tenders with exactly the same total score - the choice will fall to the Tender with the highest score for Quality. If all Tenders also tie for Quality, the Provisional Contractor will be selected by a drawing of lots.

6.1.1 Sub-award criterium: Price (TP)

To allow an evaluation of the Tender by total price (the Price (TP) sub-award criterium), the Tenderer should complete the schedule of prices and costs in Appendix **A04.** If this schedule is found to include omissions or inaccuracies, the entire Tender will be declared invalid and excluded from further consideration.

The sub-award criterium Price (TP) consists of 3 sub-sub-award criteria: price for (fictitious) 30.000 line kilometres, price for (fictitious) 3 mobilizations & 3 demobilizations and price for (fictitious) 10 standby days. For each sub-sub-award criterion, points will be awarded based on the formula provided below. The points awarded for Price (TP) is the sum of the points obtained for each of the elements. The maximum scores for each element are listed below.
The price quoted for the 30.000 line kilometres should include all flight preparations, data handling and processing, as defined in the Requirements section in Chapter 8.

Price (TP) is assessed according to the following sub-award criteria:

Subdivision of sub-award criteria Price (TP)	Max. score
P1: Price for (fictitious) 30.000 line kilometres	*660*
P2: Price for (fictitious) 3 mobilizations & 3 demobilizations	*20*
P3: Price for (fictitious) 10 standby days	*20*
Price (TP)	***700***

To allow a fair comparison of Price (TP), Tenderers must use the schedule provided by TNO as an MS Excel worksheet (Appendix **A04**). On completion, the schedule must be printed out, signed by an authorized representative of the Tenderer

organization. It should then be added to the Tender. The Tenderer must adhere to the prescribed format. All sections must be completed. Tenders containing an incomplete form or a form of which the prescribed format is changed, are deemed invalid.

When evaluating the Tender against the sub-award criterium of price, TNO will check that the schedule of prices (Appendix **A04**) has been completed in full. A price quotation on the basis of the schedule must meet the following minimum requirements:

1) Prices and costs must be stated in euros, excluding VAT, and accurate to two decimal places.

2) All numbers and calculations which are provided in these Tender Instructions for calculating the costs are indicative; no rights may be inferred of claimed.

3) The prices that are quoted by the Tenderer in Appendix **A04** should be based on the fictitious stated number of line kilometres (sub-sub criterion P1), mobilization & demobilizations (sub-sub criterion P2; one combined price for both mobilization and demobilization together) and one price for standby days (sub-sub criterion P3). The stated number of line kilometres, mobilizations & demobilizations and standby days are the best possible estimates currently available. These estimates are given for comparison sake, in order to be able to compare the quotations of the different Tenderers. In practice, the estimates on which the quotation is based will differ from the actually numbers that will be determined after contract award. The prices quoted by Tenderer will be regarded as unit-price and will apply to the actual number of line kilometres, mobilizations & demobilizations and standby days. These actual numbers are depending on the maximum and fixed budget that is available and also on the logistic consideration regarding the planning of the flights.

4) Hourly rates are deemed to be 'all-in' amounts which include all costs associated with the service provision, including but not limited to travel and accommodation expenses, office costs and overheads. The Tenderer confirms that there will be no additional costs further to the performance of the Contract. Costs, rates and / or prices not included in the price sheet (Appendix **A04**) will not be paid by TNO during the fulfilment of the Contract.

5) The schedule of prices must be completed in full. The Tenderer must use the MS Excel spreadsheet provided by TNO without any amendments or alterations.

6) The Tenderer is responsible for ensuring the accuracy of all figures and calculations. There will be no negotiations about the price sheet (Appendix **A04**).

7) All prices quoted by the Tenderer must be based on the contents of the Tender Documents and form a binding offer.

8) Specific minimum requirements and additional instructions for the completion of the Schedule of Prices can be found under the tab marked 'Additional Instructions'. Submission of the Tender indicates that the Tenderer accepts these conditions in full.

The lowest Total Price (TP) is assessed using the costs appearing on the schedule of Appendix **A04**. For each sub-sub-criterion P1, P2 and P3 listed in Appendix **A04** (which are also listed in this paragraph), the number of points is calculated according to the formula:

$$Points = (\frac{min.price}{price}) * max.points$$

max. points: maximum amount of points for criterion
min. price : minimum price quoted for criterion
price: quoted price for criterion
points: number of points scored for (each of) the sub-sub-award criterion P1, P2 and P3

The sum of the awarded points to each sub-sub-award criterion P1, P2 and P3 is the total score for the sub-award criterium Price (TP).

6.1.2 Sub-award criterium: Quality (QU)

The sub-award criterium Quality (QU) consist of a part that describes the Minimum Requirements that must be met during the performance of the Contract activities. These Minimum Requirements are listed in para. 8.1 and should be agreed upon using Appendix **A05**. These Minimum Requirements are hard requirements, as formulated by TNO. If one or more of the Minimum Requirements of the Program of Requirements are not met, the Tender is invalid. These Minimum Requirements pertain to (amongst other things) Instrument specifications, Calibration procedures, flight plan, etc.

In addition to the minimum requirements, a number of preferences with regard to the criterium Quality are formulated, see Para. 8.2. Tenderer's are asked to state whether and how they can meet these preferences. For each preference, the Tenderer is asked to provide a description which addresses the specific aspects for that preference.

6.1.3 Scoring of Preferences

The description should be clear and unambiguous, covering all the relevant points in order. Each submission must be no more than the stated number of A4 pages (printed on one side only, with a line spacing of a least 1, minimum font size of 9 pt and margins of 2.5cm left, right, top and bottom).

TNO will base its assessment solely on the answers given. Illustrations, diagrams, tables, organograms and sample reports are permitted. Any appendices that do not form part of the answer will not be included in this part of the evaluation procedure.

The answers setting out the manner in which the which the Tenderer proposes to meet the stated preferences must be presented in accordance with the instructions in Chapter 8.2.

The Tenderer may use their own A4 format for this purpose, but it is necessary to stick to the max. number of pages mentioned in Chapter 8.2 for each preference. The answer to the questions and thus the interpretation of wishes Q1, Q2.1, Q2.2 and Q3 must be built up in the manner and order as mentioned in Chapter 8 and can be submitted through a "free format" document, where the whole document must be merged as 1 pdf document called "Appendix A07 Preferences" (see also: Para. 2.5.2)**.**

The evaluation of the answers to questions will rely on a system of numerical scores. These scores will reflect the degree to which the Tenderer replied to each item / question. The various sub-criteria will be scored by the individual assessors in accordance with the table below. The overall score (derived from the averages of the individual scores) will then be calculated as described in Para. 3.1.

Table 3: Scoring system for preference Quality

Rating	Score	Notes
No/poor answer	0%	Nil score. In the assessment team's opinion, the tenderer does not answer the quality element or has skipped it altogether.
Inadequate answer	20%	In the assessment team's opinion, the tenderer does not sufficiently address the required elements and aspects in terms of content and relevance. The tenderer does not take sufficient account of the principles set out in this invitation to tender. The connection with the quality element of the contracting authority is insufficient.
Adequate answer	50%	In the assessment team's opinion, the tenderer does sufficiently address the required elements and aspects in terms of content and relevance, but his answer is too limited. The tenderer does take sufficient account of the principles set out in this invitation to tender, but his answer is too limited. The alignment with the quality element of the contracting authority is only partially sufficient.

Rating	Score	Notes
Good answer	80%	In the assessment team's opinion, the tenderer addresses the required elements and aspects well in terms of content and relevance. The tenderer takes good account of the principles set out in this invitation to tender. The alignment with the quality element of the contracting authority is good.
Very good answer	100%	In the assessment team's opinion, the tenderer addresses the required elements and aspects very well in terms of content and relevance. The tenderer takes full account of the principles set out in this invitation to tender. The alignment with the quality element of the contracting authority is very good.

NB These are the only possible scores: there are no intermediate values.

When evaluating the degree to which the Tender addresses TNO's preferences, the assessors will consider:
- the degree to which the proposed solution is specific, realistic, feasible, effective, complete and consistent
- the degree to which the proposed solution is in keeping with the specific situation and circumstances, and the degree to which it takes into consideration the (hard) requirements stated in the PoR.

The evaluation is based on the 'total picture' created by each answer. Tenderers must be aware that the Tender will be a contract document if the Contract is awarded to the Tenderer. Therefore, the Tender must be a specific as necessary. A more specific Tender will score higher than a more general Tender.

6.2 Award of Contract

6.2.1 Announcement of Award Decision

All Tenderers will be notified of the results of the evaluation and the Award Decision. Every effort will be made to ensure that this notification is given on the date stated in the Schedule in Para. 2.1.
The notification of the Award Decision will state which Tenderer has been selected as the Provisional Contractor and will give general reasons for the rejection of other Tenders. In the interests of confidentiality, TNO will not provide any information relating to the Tender price offered by the unsuccessful Tenderers.

6.2.2 Objections

A Tenderer who does not agree with the Award Decision may lodge an objection. He must do so within twenty (20) calendar days of the date of the Award Decision and in the manner described in Para 2.4.

If interlocutory proceedings are filed, the Court's preliminary decision will be the basis for the continuation of the Tender Procedure.

6.2.3 Confirmation of Award

Once the period permitted for objections has elapsed and no interlocutory proceedings are filed, TNO will contact the winning Tenderer, as soon as possible, with a view to signing the Contract *unless* an appeal has been lodged with the judicial authorities. The Award is confirmed and is deemed to be final when TNO and the Tenderer enter into a formal Contract. Until the agreement is signed, TNO has no obligation, legal or otherwise, towards the Tenderer or any other party.

7 Evaluation of evidential documents and other documents

7.1 Submission of evidential documents and other documents

The Tenderer identified as the Provisional Contractor must submit all necessary documents and information in support of the statements made in the Self-declaration, as well as any other documents and/or information, within seven (7) calendar days of being requested to do so by TNO. (These documents in question are those supporting Appendices **B01** to **B.[……]** and any others stipulated in the Tender Instructions and/or request for information.)

TNO will request the Provisional Contractor to submit the required evidential documents which will then be evaluated against the following criteria:

- Timely submission (within allotted period)
- Whether all requested documents have been provided and are complete. The absence of (part of) any document and/or other information may result in the disqualification of the Tender.
- Whether the documents support the Tenderer's eligibility, as claimed by means of the self-Declaration.

It is stressed that any Tenders which prove to include material errors or make claims which cannot be substantiated will be excluded from the Tender Procedure. Tenderers must therefore compile their Tenders with the utmost care and truthfulness.

TNO can request the Provisional Contractor to provide other documents or evidence concerning the contents of the Tender.

7.2 Suspensory conditions

Where the Tenderer is unable to submit a copy of the required insurance policy or a certificate of insurance issued by a recognized insurance company within the period stated in the foregoing paragraph, but has nevertheless signed the Declaration of Intent in Appendix **B04,** and provided that the period permitted for objections has elapsed without any party notifying the intention to instigate legal action (or such action has been adjudicated in TNO's favour), TNO will notify the Tenderer of its intention to enter in a contract 'under suspensory conditions'. In practice, this means that the Contract may only be deemed final and valid if the Tenderer is able to submit a copy of the required insurance policy or a certificate of insurance issued by a recognized insurance company, showing that the Tenderer is insured as required in the Tender documents, within a period of seven (7) calendar days. The Contract will be finalized upon receipt of one or other of these documents.

If the Tenderer fails to submit either a copy of the insurance policy or a certificate of insurance issued by a recognized insurance company, the Contract will be deemed null and void. TNO reserves the right to approach the party whose Tender was ranked second in the Tender Procedure with a view to entering into a Contract.

7.3 Contract signing

If the conditions in paragraph 7.1 and 7.2 are met and no interlocutory proceedings are filed within twenty (20) days after Award decision, or, if proceedings are filed but the claims are denied, TNO will proceed to formalise the Award of the Contract by sending the Contractor a purchase order. TNO points out that the Contract has not been definitively awarded until the purchase order has been submitted to the Contractor by TNO.

8 Requirements with regard to Contract performance (Programme of Requirements and Preferences (PoR))

TNO will assess all Tenders against the Minimum Requirements which relate to the manner in which the Contract itself is to be performed. The Minimum Requirements imposed by TNO itself are listed in this Chapter: the **Programme of Requirements and Preferences** (PoR).

By submitting a Tender, the Tenderer indicates his unconditional acceptance of all Minimum Requirements, including the TNO General Purchasing conditions (Appendix **C03**).

Tenders which do not comply unconditionally with all minimum requirements are deemed invalid and will be excluded from further consideration.

As stated in Para. 6.1.2 of these Tender Instructions, this PoR contains, in addition to the minimum requirements, a number of requests regarding the quality of the requested service/delivery, called preferences.
The Tenderer demonstrates the ability to meet the requirements and preferences by means of his answers to the various questions, which must be structured in accordance with the instructions given in Chapter 8. The Tenderer may use their own A4 format for this purpose.

Activities further to the Contract must be performed in full accordance with the Tender Documents and the Tender submitted by the Tenderer. TNO wishes to stress that the requirements listed in the PoR form binding Contract conditions. Any amendments to the PoR made during the term of the Contract are to be implemented within the framework provided by the Contract. TNO will ensure that there is no material alteration to the Contract or the obligations it imposes on either party.

In the following paragraphs, the Requirements and Preferences are described. The requirements are also listed in Appendix **A05** and should be confirmed by using Appendix **A05.**

8.1 Requirements

8.1.1 Equipment

Aspect "Equipment"	
Requirement 8.1.1	The Contractor shall implement the necessary equipment to carry out a geophysical survey following the required specifications .
Requirement 8.1.2	Spare equipment, with the same characteristics, shall be provided by the Contractor so that in case of failure, the defective equipment can be replaced without significant delay.
Requirement 8.1.3	The Contractor shall take all necessary provisions to ensure that there is sufficient fuel to ensure continuity of the airborne electromagnetic survey.
Requirement 8.1.4	The Contractor agrees to make available the necessary qualified personnel to carry out the survey.
Requirement 8.1.5	The composition of the team mobilized on site throughout the duration of the acquisition shall be established at least one week in advance (operator, geophysicist, Head of Mission, etc.); composition changes shall be communicated with the Commissioner. Contact details – at least cell phone number - of the Head of Mission shall be made available at least one week in advance.
Requirement 8.1.6	The Contractor shall submit a commitment on the measures it has taken in terms of Quality, Safety, Health and Environment (QSHE).

8.1.2 Mobilization

Aspect "Mobilization"	
Requirement 8.2.1	The Contractor shall prepare a flight plan that meets the specification of the survey, as described in Para. 1.3.2. This flight plan needs to be approved by the Commissioner (after consultation with regional partners) before the actual data acquisition can begin. The flight plan shall reflect the relative budgetary distribution of the funds by each region (Table 2).
Requirement 8.2.2	The data acquisition itself shall not begin until the Contractor shall have all the logistics for the planned survey (e.g., supply of fuel, spare parts) available on site and all necessary permits are obtained.
Requirement 8.2.3	The mobilization shall only be considered complete when the airborne and ground systems are operational following suitable calibration procedures.
Requirement 8.2.4	The actual start of the survey shall then be taken as soon as weather conditions allow and are within the agreed timelines, such as those outlined in the awarded contract and defined in the preparation and planning phase.

8.1.3 Production flights

Aspect "Production flights" (Production flights are defined here as any period of flight ranging between take-off and landing of the helicopter, with the aim to acquire data along a predetermined flight lines)	
Requirement 8.3.1	Each flight must be accompanied by the production calibrations and tests as described in Requirement 8.8.1 and Requirement 8.8.2.
Requirement 8.3.2	If the Contractor wants to shorten connecting flights between flight areas by changing the home airport during the mission, the Commissioner and Community Engagement Manager should be notified in advance.
Requirement 8.3.3	It is the responsibility of the Contractor that the relocation of home airports takes into account administrative restrictions such as licenses.
Requirement 8.3.4	The final spacing and orientation of flight lines and the time schedule is to be agreed upon between the Contractor and the Commissioner (in accordance with the roles of other partners as described in Para. 1.3.2.6 – Governance) before production flights commence. Late notice changes in timing and specific areas might occur, due to e.g. nature conservation issues (birds in the area).
Requirement 8.3.5	The flights will be operated so that each theoretical profile is represented by a straight line on the map with the chosen coordinate system.
Requirement 8.3.6	Outside urban areas and restricted areas, it is imperative that flights during acquisition are made with constant ground clearance.
Requirement 8.3.7	Flightline altitude, aircraft speed and path deviation tolerances are outlined in Requirement 8.9.1 and in Para. 8.1.13 ('Addition to Requirement 8.9.1').
Requirement 8.3.8	The Contractor shall systematically inform the Commissioner and Community Engagement Manager of the steps taken during the production flights and will take the necessary steps to acquire the requested authorizations.

8.1.4 Deliverables

Aspect "Deliverables"	
Requirement 8.4.1	The results must be provided only in a digital format together with related survey reports.

Aspect "Deliverables"	
Requirement 8.4.2	The data must be carefully (manually) processed to remove coupling and other noisy data through advanced processing. Coupling sources are anthropogenic noise sources that can interfere with the electromagnetic system in the data processing. Coupling sources include (but are not limited to): • Power lines, • Railroads, • Wind farms, • Military bases, • Cities, towns, villages etc.
Requirement 8.4.3	The fully processed dataset should be delivered in a format that is compatible with industry standard software or easily importable into Arhus Workbench and that is ready for inversion. The data should require no further pre-processing and should be ready to be inverted. The content and form of the deliverables are explained in Requirement 8.10.2 and Para. 8.1.13 ('Addition to Requirement 8.10.2').

8.1.5 Terms of stand-by

Aspect "Terms of stand-by"	
Requirement 8.5.1	The Contractor shall bear all stand-by costs deemed preventable by the Contractor, for example due to malfunctioning equipment, lack of fuel, aircraft maintenance etc.
Requirement 8.5.2	Once the outcomes of the nature licenses is clear and final flight plans can be made, the Commissioner in consultation with the Contractor, will assign the available budget to number of flight line kilometres, number of mobilization / demobilizations and a contingency for a specified number of standby days. Invoicing by the Contractor will be based on the unit-prices provided in their Tender. In case the agreed contingency is not needed for standby days this budget will be used for additional flight line kilometres. As mentioned in paragraph 2.2.18 a Contract is to be effected by means of a purchase order including the Purchasing Conditions of TNO, February 2022.

8.1.6 Instrumentation

Aspect "Instrumentation"	
Requirement 8.6.1	The Contractor shall provide an aircraft to carry out the survey.
Requirement 8.6.2	The aircraft should be maintained in accordance with the standards and requirements of aerial work in the Netherlands.
Requirement 8.6.3	The Contractor shall ensure that there are sufficient flight hours to complete the mission without stopping for major scheduled maintenance in the survey time period.
Requirement 8.6.4	The helicopter must be equipped with the following measuring devices: • An electromagnetic system. • A total intensity magnetometer. • A GPS tracking system on the towed system. • A laser altimeter on the towed system. • Inclinometers on the towed system.
Requirement 8.6.5	The flights shall be operated according to the trajectory of the agreed flight plan. The pilot shall follow the navigation rules (Visual Flight Rules – VFR), with an exemption for low-altitude flight. Embedded sensors (GPS) will be used as an aid to navigation.

Aspect "Instrumentation"	
Requirement 8.6.6	Concerning the electromagnetic system, the Contractor should propose a Time Domain system. The Project Plan should describe the electromagnetic system implemented. The characteristics of the measuring system have to be explained in detail, with respect to the objectives of the survey and by taking into account the geological conditions in the survey area. The expected details are (but not limited to): • Geometry of transmitting and receiving antennas. • Geometry and orientation of the transmitter and receiver (Tx-Rx). • Power of the primary field. • Frequency, duration and shape of the emission current. • Number of moments and parameters of the time gates (windows) (number, position duration) and measuring cycles. All gates should be free of system response after data processing.
Requirement 8.6.7	The total intensity of the magnetometers used to perform the survey shall have a sensitivity of 0.1 nT or better. Values shall be obtained along flight lines at intervals no greater than those of the TEM specifications, i.e., not greater than 20m. The error envelope due to turbulence and the internal magnetometer noise shall not exceed 0.1 nT for more than 10% of any flight line.
Requirement 8.6.8	One or more continuously recording ground magnetometers shall be located within 80 kilometres of all survey points.
Requirement 8.6.9	A total intensity magnetometer shall be used to monitor diurnal drift.
Requirement 8.6.10	A single location for each survey area shall be designated for the base station.
Requirement 8.6.11	The ground magnetometer shall have a resolution of 0.2 nT or better, have absolute control of 0.5 nT or better and a noise envelope of less than or equal to 0.1 nT.
Requirement 8.6.12	The ground magnetometer shall be located so that sources of man-made noise such as vehicular traffic do not exceed 1 nT.
Requirement 8.6.13	The ground magnetometer shall produce data at less than or equal to 1 second intervals during airborne data acquisition.
Requirement 8.6.14	Digital recordings of the ground magnetometer made during times of airborne acquisition shall be available at all times during the survey.
Requirement 8.6.15	The digital data shall include the date and absolute value of the magnetometer and GPS time with accurate synchronization to the aircraft data acquisition system.
Requirement 8.6.16	The system shall collect synchronized data measurements including: • System measurements (GPS, altimeter, inclinometer). • The electromagnetic data. • The magnetic data.
Requirement 8.6.17	The system must be equipped with digital outputs to allow digital recording of data while preserving details and frequency of measurements. All records must be synchronized by a single clock locked to the GPS time. The measures will be done with an accuracy of 1/100 s. Delays inherent in the system (calculation time compensating magnetometer for example) or time clock drifts are compensated.
Requirement 8.6.18	The Contractor shall implement a real-time differential GPS and will have a GPS reference station on the ground, serving as a backup and for differential post-processing.
Requirement 8.6.19	The implemented GPS system and its technical characteristics will be explained in the offer.
Requirement 8.6.20	The place or places to install the GPS antenna of the reference station shall be selected to ensure optimum reception and free unmasked interference, keeping a reasonable distance from the helicopter area.
Requirement 8.6.21	The measurement rates of GPS receivers shall allow the return of the positioning data at a frequency of 1 Hz after differential treatment.
Requirement 8.6.22	In addition to the raw satellite data necessary for differential treatment, instant contact, the quality factor GDOP and the GPS time shall be saved.

Aspect "Instrumentation"	
Requirement 8.6.23	After differential correction, the relative accuracy required for positioning should be better than ± 5 m in latitude and longitude, and better than ± 3 m in altitude.
Requirement 8.6.24	A laser altimeter (narrow beam) is to be used by the Contractor in order to measure the distance between the electromagnetic system and topographic irregularities of short wavelength such as trees.
Requirement 8.6.25	The accuracy of the altimeter should be better than 0.5 m.
Requirement 8.6.26	Measurement rate of the altimeter shall be at least 10 Hz.
Requirement 8.6.27	The altimeter laser is attached close to the electromagnetic measurement device.
Requirement 8.6.28	The inclination of the instrument is measured using one or more inclinometers. The required minimum frequency of the measurement is 2 Hz.

8.1.7 Quality control

Aspect "Quality control"	
Requirement 8.7.1	The Contractor shall ensure data acquisition to the predefined specs, checked daily by the Commissioner – summarized in a daily report: • Noise recording prior to flight. • Full inspection of transient recordings. • Data dump of all acquired data. • Unprocessed (raw) data saved to digital storage. • Automated processing of transients (filter, stack). • Convert processed transient to apparent resistivity (late time approximation). • Plot processed, app. Resistivity in daily report.
Requirement 8.7.2	All saved formats should be plain ASCII with full descriptions and saved to digital storage.
Requirement 8.7.3	Nomenclature is to be part of the daily report. Daily report should be handed over 48hrs after acquisition. The results will be judged by experts from the Commissioner for acceptance. If the experts of the Commissioner find the result not acceptable, a meeting with the Contractor will be organized to discuss the reasons and possible remedies.
Requirement 8.7.4	In the case of final non-acceptance, soundings shall be re-flown.
Requirement 8.7.5	Only costs in respect of an accepted sounding shall be claimed by the Contractor.
Requirement 8.7.6	Acceptance can be refused in the case of: • Technical failure. • Non-approved navigational deviations. • Inadequate Tx settings (e.g., Tx moment too low). • Inadequate Rx settings (e.g., low sample rate). • Incomplete or inaccurate records. • Missing noise record. • Any other unaccepted deviations from specifications.
Requirement 8.7.7	Concerning the calibration of instruments, all instruments should be calibrated at the beginning of each production flight. Added to the initial and final calibrations are checks performed by the Contractor on a daily basis.

8.1.8 Calibration of instruments

Aspect "Calibration of instruments"	
Requirement 8.8.1	Concerning electromagnetic system calibration, the system has to be calibrated according to the pre-survey guidelines as listed at the end of this chapter under Para. 8.1.13 ('Addition to Requirement 8.8.1').
Requirement 8.8.2	In addition to specific instrumental calibrations which are stated above, a repeated test profile location must be selected for each take-off and landing site within each of the areas outlined in figure 1 (A – C). Specifications are listed at the end of this chapter under Para. 8.1.13 ('Addition to Requirement 8.8.2').

8.1.9 Tolerances

Aspect "Tolerances"	
Requirement 8.9.1	Concerning navigation and flightpaths, detailed information that should be adhered to is given in Para. 8.1.13 ('Addition to Requirement 8.9.1'). In general, instrument ground clearance should be 30-40m. Specifications of adherence to the pre-defined flightpath are listed at the end of this chapter under Para. 8.1.13 ('Addition to Requirement 8.9.1').
Requirement 8.9.2	Given an existing electromagnetic survey within the Province of Zeeland (flown in 2015), for research purposes flight lines in this area are subject to additional conditions. Flightlines are attached (Appendix C02). The additions listed below exclude areas now deemed unsafe by ground activity, or those with new sources of noise – such as new powerlines. • The flight plan is to be based on the flightpaths of the pre-existing survey. • Navigation: + / -10 m from the existing flight plan for a section of a line no longer than 3km. • Data acquisition should take place in 3rd quarter of the year.
Requirement 8.9.3	In case the average flight speed deviates from the agreed specification more than 10%, it requires the acceptance of the Commissioner. The Contractor is required to indicate the minimum and maximum rated speed, depending on the proposed helicopter.
Requirement 8.9.4	Concerning frame angle, the frame should be maintained as horizontally as possible during flight. Whenever possible, the frame should be suspended in such a manner that the angles (pitch and roll) do not exceed +/- 15 degrees in production mode. If these conditions are not met, the Commissioner shall be informed and acceptance of the data and preliminary results (rho-a) will be discussed. If the data and results are not of sufficient quality, the data should be re-flown at the costs of the Contractor.
Requirement 8.9.5	Concerning conditions of record if the GPS reception, or any instrument is defective for short segments (less than 100m) it has to be decided by the Commissioner or through mutual agreement if the line has to be reflown. For segments longer than 100m the segment has to be reflown. The reflights are at the expense of the Contractor.
Requirement 8.9.6	Concerning noisy measurements: all noisy recording (random peaks, parasites, discontinuous measurements, etc.), regardless of the setting will be considered defective. The Contractor shall ensure that the measuring devices are not disturbed by the VHF emission and are functioning properly.
Requirement 8.9.7	Concerning ground recording In case of malfunctioning of the ground stations, the airborne measurements will be redone at the Contractor's expense if ground data cannot be obtained by other observatory data (subject to approval by the Commissioner).
Requirement 8.9.8	The data delivered by the Tenderer should consist minimum one measurement every 20m after stacking following agreed flight speed specifications.

8.1.10 Format of deliverables

Aspect "Format of deliverables"	
Requirement 8.10.1	Concerning digital supplies for each flight, the preliminary results files shall be transferred using a secured file transfer system to the Commissioner. These files include EM, ground station data and reduced altitude and navigation data. All calibration records shall also be provided as and when they are completed, including related graphics. The data shall be accompanied by a summary report which include at a minimum: • A daily report. • A copy of the minutes of equipment maintenance, calibrations, logbook and other aspects relevant to the survey. • List of flown lines, accompanied by a map showing the flight plan and progress. • The list of files delivered or transferred with description formats.
Requirement 8.10.2	Concerning a digital archive, the Contractor shall deliver digital data at the end of the Quality control and reporting period in each (sub)region. The content of the archive is specified at the end of this chapter under Para. 8.1.13 ('Addition to Requirement 8.10.2').
Requirement 8.10.3	Concerning reporting and data delivery, within 2 months of survey completion, the Contractor shall hand over a survey report describing and documenting all phases of acquisition, calibrations performed and the processing steps as well as the formats of digital files archives and a log of equipment calibration, maintenance, failures, etc.

8.1.11 Project governance

Aspect "Project governance"	
Requirement 8.11.1	Contractor conforms to the fact that TNO and Deltares together and separately are in a position to give instructions to the Contractor regarding all aspect of project management and execution. TNO and Deltares together and separately act as Commissioner.
Requirement 8.11.2	Contractor acknowledges the role of the Community Engagement Manager and will timely provide the necessary information to the Community Engagement Manager. This information includes – but is not limited to - details on the required licenses, flight plans and changes therein.

8.1.12 Contract and Payment

Aspect "Contract and Payment"	
Requirement 8.12.1	The project starts with assigning the contract. The work shall be finished not later than 19 December 2025.
Requirement 8.12.2	The Contract is to be effected by means of a purchase order including the Purchasing Conditions of TNO, February 2022. Tenderers must be aware that the Tender will be a contract document if the Contract is awarded to the Tenderer.

Aspect "Contract and Payment"	
Requirement 8.12.3	Terms and conditions of payment: • 10% at signing of the contract • 20% at start of data acquisition • 25% at data delivery of first half of the agreed line kilometres (quality checked and confirmed by the Commissioner) • 25% at data delivery of second half of the agreed line kilometres (quality checked and confirmed by the Commissioner) • 20% at completion of the project The Tenderer to whom the Contract will be awarded must provide a bank guarantee to TNO, covering at least 80% of the total price. The Bank guarantee and the bank who issues the Bank guarantee have to be approved by TNO (minimal A rating). TNO must have the right to draw the bank guarantee in any and all cases where Tenderer falls short in fulfilling its obligations under the Contract.

8.1.13 Further explanation of selected Requirements

Addition to Requirement 8.8.1

Calibration of time shifts and level displacements are established by comparing a measured TEM response to the forward response from the geophysical ground model at a suitable test site were the geophysical ground model is established with a pre-calibrated ground-based system. This must be performed for a minimum of three altitudes, typically approximately 10, 20 and 30 m. The forward responses are calculated on the basis of the actual altitude and the entire TEM system (transmitter waveform, filters, front gate, etc.) is modelled. This procedure is known as upward continuation. The waveform shall be determined prior to the calculation of forward responses. If the waveform is altered, new forward responses shall be generated and used for calibration.

Documentation of the calibration is to be provided in the form of a plot showing the forward data and the measured data at the selected altitudes. A frame angle of approx. 0 degrees is the target. If the angle differs significantly from 0 degrees, adjustments should be made. The determined calibration constants should be identical for all measured altitudes. The difference between an upward continued forward response for the model from the test site and the measured response at every altitude shall not exceed 5% (rho-a data transformation) for data with a low noise level. Any deviations from this are subject to acceptance by the Commissioner.

Addition to Requirement 8.8.2

A ~1000 m long test profile locations will be chosen by mutual agreement with Commissioner, and should be in close vicinity of each take-off and landing site. It will allow the verification of the correct operation of the measuring system and detect any drift. The test line will be flown under normal production conditions at the beginning of each production flight. Reproducibility of the measurements on the test lines will be a minimum standard for the validation measures. Inspection of the data and the results (rho-a) of the consecutive measurement for the test line should be consistent in time, to be judged and agreed upon by both the Contractor and the Commissioner.

Concerning a high altitude test, the platform will be elevated until earth response vanishes to evaluate the system noise level. The high-altitude test will be made prior to production start and again at regular intervals during the survey.

Addition to Requirement 8.9.1

in areas of regular topography, unless special constraints imposed by the civil aviation, military authority or any other relevant authority, the nominal flight altitude (instrument ground clearance) is 30 – 40 m in open terrain, maintained at + / - 10 m. If in large areas high ground clearance is needed, a localized adjustment of the flight plan could then be considered. Over woodland and installations, the altitude is increased by the height of the objects overflown. Generally, the altitude should be maintained as low and as constant as possible.

The flight path can be deviated to bypass electromagnetic noise sources related to ground facilities such as wind-turbines, high voltage power lines, highways or railroads. Flightlines should not deviate from borehole locations that are provided by the Commissioner by more than 10m. More specifically – for a section of a flightline no longer than 3km deviation are listed below:

Navigation: + / -20 m from the theoretical flight plan, except for geological reference points (boreholes, CPT's) where the accuracy should be 10 m.
Elevation: + / -10 m from the pre-set altitude (the flying surface).
Speed: The average speed, (average of +/-10%) will be specified according to the proposed helicopter. In general, speed should be kept as low as possible to facilitate the stacking of transients.

Addition to Requirement 8.10.2

An archive with all raw-data in digital format will be delivered. Raw-data here means data that have undergone a quality control and the needed pre-processing such as synchronization and noise removal. All measurements should be in metric system and all units should be clearly defined. Any further processing, for example the delivery of stacked measurements, are to be decided later by the Commissioner and Contractor. Raw-data includes: The original raw EM measurements, altimeter measurements, inclinometer measurements, transmitted current for the measurements, coordinates of measuring points, topography with date and time of all measurements. A geometry file of the used system, specifying the entire system setup, waveform etc. This geometry file has to be in a format that is compatible with the Aarhus Workbench software. Derived parameters such as total magnetic field. This has to be delivered as magnetic maps. The choice of maps produced will be decided by mutual agreement with commissioner. Furthermore, the raw data has to be imported and delivered in a database which is compatible with Aarhus Workbench. This is delivered as one together with the survey report.

8.2 Preferences

8.2.1 Preferences information

Preferences are divided in several categories as shown in Table 4. The table also indicates the maximum scores per category of preferences.

Table 4: Preferences and maximum scores

Preference		**Maximum points**
Q1	Project Plan	100
Q2.1	Forward modelling: main hypothetical models	60
Q2.2	Forward modelling: hypothetical sub-models	40
Q3	Flexibility	100
	Maximum score for quality	**300**

In Table 5 scoring aspects for the preferences are indicated. In their proposal Tenderers should adhere to aspects mentioned in this table.

Table 5: Explanation and scoring aspects of preferences

Preference	Explanation and scoring aspects	Points of attention	Objectives of the Commissioner
Q1 Project Plan Max. 20 pages	Tenderer shall provide a Project Plan with a description of all logical steps to obtain the objective of the Project and will address at least the following components: • Project management: Describe the project management process used and/or project management methodology used. • Risk management: Describe technical (equipment) and non-technical (personnel) risks and how this is managed. • Data management: Describe the applied method for maintaining, updating, managing and securing the data obtained. • Technical description of the proposed measurement system: Describe the airborne system that will be used and explain why this system is a good choice for the objectives of this project. • Flight Plan: Describe the Proposal for the flight plan for the different flight areas and flight periods, given the constraints that are mentioned in the Tender Instructions and in the maps • Time schedule: Illustrate the work (within the period of completion the project, no later than by 19 December 2025) in a time schedule (e.g. Gantt chart or comparable) in which regions, timing and tasks are visualized including preparation time. Aspects that will be focused on during assessment are (non-exhaustive): • Presence in the Project Plan of at least the above mentioned components: Project management, Risk management, Data management, Technical description of the proposed measurement system, Flight plan and Time schedule. • Technical description of the proposed measurement system: details of the transmitter and receiver, wave forms and gate times, specifications of auxiliary equipment (laser altimeter, magnetometer, etc.). Focus will be on the capacity of the equipment in relation to the objectives of the project: mapping of salinity at shallow depths and clay layers, as described in the Tender document.	The extent to which the project plan contributes to the objectives of the project. Over-all quality of the project plan including, completeness, clarity and consistency of the Project Plan The extent to which the measures in the project plan are substantiated. The matter of detail that is provided, and adherence to the components that are described.	The Tenderer shows a clear understanding of all technical and organizational aspects of the project and shows they can handle uncertainties and risks of the project.

	• Flight plan: The consistency between the stipulated flight areas, flightline density (as given in Figure 3 and Appendix **C02**) and flightline orientation (Para. 1.3.2.2) and the proposed plan of the Tenderer. The way eventual deviations from the proposed flight plan are substantiated. • Time schedule: degree of compliance with the preferred time-sequence of regional data acquisition mentioned in paragraph 1.3.2.3, Figure 4 and Figure 5 and in Appendix **C02**. The way eventual deviations from the time schedule are explained and substantiated. • What measures the Tenderer takes in the area of Quality, Safety, Health and Environment (QSHE).		
Q2.1 Forward modelling: main hypothetical models Max. 10 pages	The additional explanation in paragraph 8.2.2 should be taken into account before addressing this preference. Tenderer shall show in the description of this Preference the way in which the forward modelling of Model B in each main group (group 1, 2 and 3) is carried out and should describe the results. This description should contain the logical steps, with relevant details, that were taken to obtain the results. Aspects that will be focused on during assessment are (non-exhaustive): • The extent to which the configuration of resistivities in Model B is approximated in the forward modelling. • The extent of consistency in the way the different groups are modelled. • Quantitative estimation of errors in the modelling. • The extent to which the Tenderer is able to propose innovative methods / instrumentation to improve the results.	The extent to which the modelling results contribute to the geophysical project objectives: mapping shallow and deep clay layers and to determine shallow groundwater resistivity for 3D salinity mapping. The completeness and profoundness of the analysis	To gain insight into the suitability of the Tenderer's equipment in relation to the objectives of the project and innovation for further improvement
Q2.2 Forward modelling: hypothetical sub-models Max. 10 pages	The additional explanation in paragraph 8.2.2 should be taken into account before addressing this preference. Tenderer shall show in the description the way in which the forward modelling of the Models A and C in each main group (group 1, 2 and 3) is carried out and should describe the results. This description should contain the logical steps, with relevant details, that were taken to obtain the results. Aspects that will be focused on during assessment are (non-exhaustive): • Extent to which the configuration of resistivities in Model A and C in each group is approximated in the forward modelling. • The extent to which Models A, B and C are distinguished in the forward modelling. • Consistency in the way the different Models in the group are modelled.	The ability of the Tenderer to be able to distinguish between shallow and deeper clay layers. The ability of the Tenderer to be able to discriminate between salinity contrasts in groundwater at different depths.	To gain insight into the vertical resolution and discriminatory ability of the Tenderer's equipment in relation to the objectives of the project

	• Quantitative estimation of errors in the forward modelling.		
Q3 Flexibility Max. 5 pages	The additional explanation in paragraph 8.2.3 should be taken into account before addressing this preference. Para. 1.3 (project description) provides currently available information on the proposed time line, permissions and licenses, and final flight preparation and the associated uncertainties. To deal with uncertainties and / or unforeseen circumstances the Tenderer needs to be flexible in the planning and execution of the survey. Tenderer describes how Tenderer will deal with uncertainties in the planning of the flights and the flight logistics in such a way that the objectives of the Commissioner are met. Tenderer can refer to examples from previous projects / experiences but must propose concrete actions and / or make concrete commitments. Aspects on which the proposal at least will be judged (non-exhaustive) are: • Capacity to deal with changes in the over-all planning without compromising the final completion date of the project, for example by being able to change between (sub)regions at short notice, or by deploying more than one team and helicopter. • Capacity to minimize stand-by days that could otherwise arise as a result of bad weather, instructions from ecologists, or advice of the Community Engagement Manager. • Solutions to deal with problem that data in some areas can only be collected in a narrow time slot (some even 2 weeks or only during high-tide of the sea level) due to restrictions resulting from Nature protection law or other regulations; these areas may be located as “isolated islands” within areas with less strict timing requirements; see Appendix **C02** for the layout of the flight areas and periods. • Innovative solutions that contribute to the objective flexibility.	The degree to which the commitments of the Tenderer and the proposed actions contribute towards reaching the Commissioner’s objectives. The degree to which the commitments of the Tenderer and the proposed actions are substantiated.	Ensure finalizing project execution by the project completion data as stipulated in 1.3.2.3 and minimize (costs for) stand-by days, whilst maximizing flight line kilometres.

8.2.2 Additional information Preferences Q2.1 and Q2.2 (Forward modelling)

Preferences Q2.1 and Q2.2 are about forward modelling: Sensitivity of the proposed EM system to pre-defined examples of typical 1D hydrogeological profiles that are expected to occur in the area.

The forward modelling part, with the technical details described at the end of this paragraph, has a total maximum of 100 points divided over Q2.1 and Q2.2:

Q2.1: Sensitivity of the system that will be applied by the Tenderer to the main group of models, of Figure 1-3 below, targeted on Model B (max 60 points):

- shallow clay layers in fresh groundwater
- both superficial and deep clay layers in fresh groundwater
- shallow saline conditions

The result of the forward modelling for this part will be judged according to the ability of the Tenderer to obtain a model that represents the synthetic model, looking at the dBz/dt results. The model that should be used for each of the 3 groups is Model B.

Q2.2: Sensitivity between the different sub-models within the group of models (max. 40 points).

If the Tenderer achieved 0 points for the sensitivity for the main group of models (point 1 above), no points can be awarded for this topic. The points will be awarded based on the ability to distinguish the different sub-models, as depicted in Figures 1-3 in the Forward modelling section below.

The rating of the scores will follow the system of Table 3.

Forward modelling

To help compare the suitability of proposed acquisition systems against the mapping objectives outlined in Para. 1.3, several 1-D synthetic models of representative geophysical stratigraphy were produced (Figures 1 to 3, below). These are based on known occurrences using (low-resolution) national 3-D models from publicly available national repositories[3] [4]. Corresponding resistivity values are based on regional estimates[5].

Based on the described models, the Tenderer's proposal shall include a simple forward modelling assessment of the proposed acquisition system. In addition, completed field examples that are similar to the 1-D models provided are welcome. It is recognized that synthetic models are difficult to assess, not least the difficulties in representing system noise. As a result, it is requested that each geophysical model is assessed using simple 1D forward modelling based on relevant acquisition geometries, waveforms, amplitudes etc. To avoid an overly time-consuming activity, it is suggested that the assessment simply demonstrates the sensitivity of the system by providing the transient response to the models as ascii output and in figures – rather than subsequently reproducing models using inversion modelling.

The task will be assessed according to the following, using a normalized sensitivity threshold based on the provided (forward modelled) data:

1. Sensitivity of each main Group (Group 1,2 & 3). For this, Model B is to be used.
2. Sensitivity between the slightly perturbed sub-models in each Group (Models 1A, 1B, 1C etc.).
3. Field examples from previous surveys in similar settings.

[3] https://www.dinoloket.nl/regis-ii-het-hydrogeologische-model
[4] https://doi.org/10.13140/RG.2.2.17077.09447,
[5] Siemon B. 2006. Electromagnetic methods – frequency domain: Airborne techniques. In: Kirsch, R. (Ed.), Groundwater Geophysics – A Tool for Hydrogeology. Springer-Verlag, Berlin, Heidelberg, 155-170.

In the following, acquisition conditions for the synthetic resistivity models are defined as:

- Free of background (anthropogenic coupling) noise.
- Response to include a standard deviation related to the estimated accuracy of the system.
- Instruments are perfectly oriented.
- The source (Rx) is at 30m altitude, with the receiver (Tx) offset according to that outlined by the proposed system.

Models 'A' to 'C' for each group (1 – 3) are included to help highlight sensitivities of typical mapping objectives within the survey area. All length units relate to thicknesses.

Group 1: Shallow clay layers

Table 1. Group 1 properties

	Model A	Model B	Model C
Layer 1	Sand (20m, 100 Ωm)	Sand (30m, 100 Ωm)	Sand (40m, 100 Ωm)
Layer 2	Clay (3m, 10 Ωm)	Clay (3m, 10 Ωm)	Clay (3m, 10 Ωm)
Layer 3	Sand (100 Ωm)	Sand (100 Ωm)	Sand (100 Ωm)

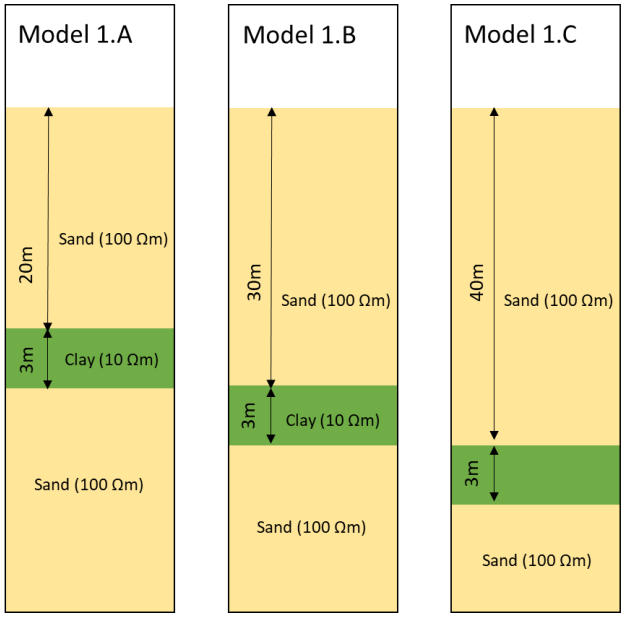

Figure 1. Schematic representation of Group 1, model A to C.

Group 2: Surficial and deep clays

Table 2. Group 2 properties

	Model A	Model B	Model C
Layer 1	Clay (5m, 10 Ωm)	Clay (5m, 10 Ωm)	Clay (5m, 10 Ωm)
Layer 2	Sand (50m, 100 Ωm)	Sand (75m, 100 Ωm)	Sand (100m, 100 Ωm)
Layer 3	Clay (10m, 10 Ωm)	Clay (10m, 10 Ωm)	Clay (10m, 10 Ωm)
Layer 4	Sand (100 Ωm)	Sand (100 Ωm)	Sand (100 Ωm)

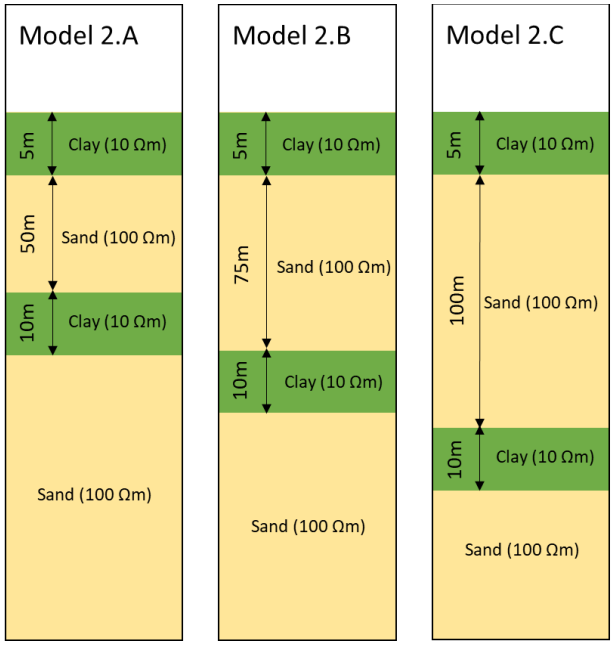

Figure 2. Schematic representation of Group 2, model A to C.

Group 3: Shallow saline conditions

Table 3. Group 3 properties

	Model A	Model B	Model C
Layer 1	Clay/sand (2m, 50 Ωm)	Clay/sand (4m, 50 Ωm)	Clay/sand (6m, 50 Ωm)
Layer 2	Saline groundwater (0.3 Ωm)	Saline groundwater (0.3 Ωm)	Saline groundwater (0.3 Ωm)

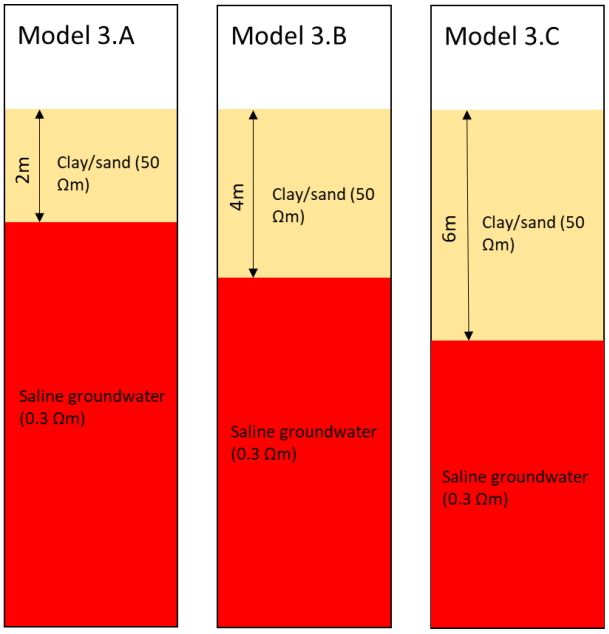

Figure 3. Schematic representation of Group 3, model A to C.

8.2.3 Additional information Preferences Q3 (Flexibility)

Part of the Quality criterium is related to the flexibility the Tenderer can offer. This contains several different aspects (timing, planning, licensing, etc.). There is considerable uncertainty with respect to timing and licensing in relation to nature conservation. For example, it is not clear at his moment when the Nature2000 licenses and other licenses regarding nature conservation will be issued and if these licenses contain additional constraints. We have done extensive preparatory work, but not all issues that are important for the licensing authority are known yet. This applies e.g. to the number and location of take-off and landing sites, which is depending on the Tenderer's offer. Also, the restrictions on allowed flights periods based on nature licences may require flexibility in flight schedules, depending on the actual situation in the field. For example, migratory birds might arrive earlier or remain longer than usual, which might require (late notice) changes to the flight plan. A further description can be found in para. 8.2.

9 Appendices

All Appendices to the Tender Documents are published to accompany the Tender Instructions on www.tenderned.nl.

The Appendices fall into three categories:

A) To be submitted with Tender

Appendix A01 Self-declaration by the Tenderer: European Single Tender Document (ESTD)
- *If the Tender is to be submitted by a Combination, a copy of Appendix A01 must be submitted by each member of the Combination.*

Appendix A02 Self-declaration by all Third Parties on whose resources the Tenderer intends to rely: European Single Tender Document (ESTD)
- *Where necessary, a copy of this form should be provided for each Third Party on whose resources the Tenderer intends to rely.*

Appendix A03 Reference projects

Appendix A04 Schedule of Prices and Costs

Appendix A05 Conformity list Programme of Requirements

Appendix A06 Notification of preferences and answers to questions

Appendix A07 Preferences (own format)

B) To be submitted on request (evidential documents)

Appendix B01 Self-declaration with regard to subcontractor(s) to be deployed during performance of Contract
- *Where necessary, a copy of this form should be provided for each subcontractor*

Appendix B02 Declaration re. use of Third Party financial and economic capacity

Appendix B03 Declaration re. use of Third Party technical and professional competence

Appendix B04 Declaration re. insurance policy/certificate of insurance

C) Additional information:

Appendix C01 Standard template for questions by Tenderer

Appendix C02 Digital maps

Appendix C03 TNO General Terms and Conditions of Procurement, February 2022

Remarks
Some of the forms and templates listed above are made available as 'editable' MS Excel or MS Word files. This is to facilitate both their completion by the Tenderer and the subsequent evaluation by TNO, in accordance with Chapter 5. Some (sections of the) documents are secured in order to prevent unintentional or undesirable changes.

It is not permitted to make any alteration to the format or pre-completed content of any document. The format and text of all documents as included in the Tender Instructions and published on www.tenderned.nl will take precedence at all times.