



Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat

Appendix K: Requirement specifications Implementation of simulations MOSWOZ

Project: Implementation of simulations MOSWOZ
Case number: 31195825

Date 09-04-2024

Publication details

Published by	Ministry of Infrastructure and Water Management Rijkswaterstaat Sea and Delta
Date	09-04-2024
Status	Definitive
Version number	1.1

These requirement specifications are based on the standard format requirement specifications WVL version 2.5 (dated 31-07-2023)

Contents

1	Introduction	5
1.1	Identification	5
1.2	The programme/project	5
1.2.1	Description of the programme/project	5
1.2.2	Objective of the programme/project	6
1.3	The contract	6
1.3.1	The background to the contract	6
1.3.2	Outline description of the contract	6
1.3.3	Purpose of the contract	7
1.3.4	Option for implementation of 2 additional simulation runs in 2025	7
1.4	Structure of the offer	7
1.5	Information security and open standards	8
1.6	Reading guide	8
2	Contract description	10
2.1	Description of the contract	10
2.2	Options	10
2.3	Description of the result of the contract	10
3	Services and/or products to be delivered	11
3.1	Assessment of feasibility of simulation runs and human factors monitoring	11
3.2	Preparation and implementation of the simulation runs	11
3.3	(Draft) report of analysis of simulations and results of research questions	12
3.4	Management summary of results of research questions	13
3.5	PowerPoint presentation with summary of results of research questions	13
3.6	Video recordings and basic material of human factors observations and analyses	13
3.7	Optional runs and reports	14
3.8	Commentary on the products	14
3.9	General Data Protection Regulation (GDPR)	15
4	Schedule of requirements	16
5	Socially Responsible Procurement	17
6	Project management	18
6.1	Interaction between Awarding Party and Contractor	18
6.1.1	Planned start-up meeting	18
6.1.2	Drawing up progress report	19
6.1.3	Minute taking	19
7	Quality management	20
7.1	Application of quality management	20
7.1.1	Identifying and registering non-conformities	20
7.1.2	Drawing up the action plan	20
8	Project control	21
8.1	Planning timetable	21
8.1.1	Drawing up a planning timetable	21
8.2	Payment	21

8.3	Risk management	22
9	Safety	22
Appendix 1: Overview of requested products		23
Appendix 2 Information issued and to be issued		24
Appendix 3 Topics of MOSWOZ programme		25

1 Introduction

1.1 Identification

These requirement specifications describe the contract, consisting of the work to be executed and the services and/or products to be provided. These requirement specifications are attached as Appendix K to the request for tenders.

1.2 The programme / project

1.2.1 *Description of the programme/project*

Between now and 2030, a large number of wind farms will be built in the Dutch section of the North Sea. Without additional measures, this will have consequences for shipping safety. Against that background, in 2018, the Interdepartmental Directors North Sea Consultative Body (IDON) commissioned a further investigation into the cumulative effects of offshore wind energy for shipping. ([Shipping safety around offshore wind farms \(MOSWOZ\) - Noordzeeloket UK](#)).

Despite all the research and the involvement of experts from a whole range of organisations (government authorities, private parties and interest organisations), uncertainties still remain regarding the actual risks (the risk of collision multiplied by the consequences for humans, the environment and the economy).

The Offshore Wind Energy Shipping Safety Monitoring and Research Programme (MOSWOZ) is part of a larger package of measures that will be deployed over the coming years in order to maintain the level of safety for shipping on the North Sea, in the face of an ever fuller sea due to the construction of wind farms. In preparing this package of measures, several knowledge gaps were identified, which have been further elaborated into research questions and subsequently combined in a number of topics. Together, they form the research programme. The project is part of the topic Safety (MOSWOZ) and relates to research into the consequences of collisions and groundings involving wind turbines and the effect of the presence of wind farms on shipping safety.

The interest for Rijkswaterstaat relates to the fact that Rijkswaterstaat Sea and Delta is responsible for shipping safety in the Dutch section of the Exclusive Economic Zone (EEZ) on the North Sea and as part of that responsibility collaborates closely with the Coastguard. The rapid increase in the number of wind farms in the EEZ has consequences for shipping safety. This project will provide a greater insight into these consequences, better enabling Rijkswaterstaat to respond with mitigating measures and/or to issue advice to the affected policy directorates.

The organisation elements of Rijkswaterstaat involved are Water, Traffic and Environment (WVL) and Sea and Delta (ZD).

The related projects are:

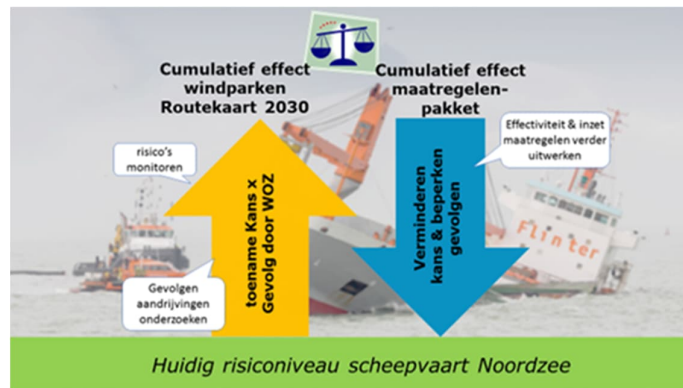
- the annual North Sea Network Analysis;
- compiling BowTie analyses for ship-to-ship and ship-to-wind turbine collisions
- describing scenarios for nautical simulations as direct input for this contract

1.2.2 Objective of the programme/project

The eventual objectives of the programme are to generate a greater insight into the effect of offshore wind farms on shipping safety and to allow a timely response to innovations in this field.

The Monitoring and research programme should make a contribution to the following objectives:

1. Reducing uncertainties surrounding knowledge gaps and assumptions for the increased safety risks (probability x consequence) at sea related to wind farms;
2. Reducing the shortfalls in knowledge and uncertainties in assumptions relating to the effectiveness of mitigating measures for safety at sea;
3. Identifying whether measures sufficiently mitigate the increased risks (fulfilling objectives) and if not, which additional measures should be considered. This objective will provide important building blocks for the (final) evaluation of the programme.
4. Enabling a timely response to innovations in the field of offshore wind.



The programme consists of a number of topics, of which Collision Safety is just one. For explanatory notes on all topics, refer to Appendix 3 to these Requirement specification and <https://www.noordzeeloket.nl/functies-gebruik/windenergie/scheepvaart-moswoz>.

1.3 The contract

1.3.1 The background to the contract

For both RWS WVL (knowledge/advice to DGLM) on nautical safety, and for RWS ZD in its role as North Sea manager, the project is important to ensure the management of the growing risks to shipping safety as a consequence of the rising number of wind farms on the North Sea.

1.3.2 Outline description of the contract

The contract involves undertaking the following works:

- Preparation of the simulation runs based on the elaborated scenario descriptions, attached as Appendix 02-01 to this tender request.

- Implementation of the simulation runs
- Initial/explorative Human Factors analyses
- Drawing up the report

The contract is discussed in more detail in chapter 2.

1.3.3 *Purpose of the contract*

The purpose of this contract is to provide an answer to the research questions from appendix 02-01, based on an analysis of the human factor data that are generated by implementing a series of nautical simulations, in close consultation with the Awarding Party and the topic drivers involved.

Human Factors

Generally speaking, Human Factors relates to the application of cognitive, psychological and ergonomic principles to the design and development of products, processes and systems. Based on Human Factors, a number of specific principles from the individual tasks of every type of user (waterway user, coastguard, VTMon, etc.) are identified as being relevant, namely:

- Pattern of expectations: Does the situation comply with the expectations of the user?
- Observation: Can the user observe all information relevant to the (sailing/monitoring) tasks?
- Understanding: Do users understand the information and do they know what action they should take?
- Ability: Is the user able to perform the task ?
- Willingness: Is the user willing to demonstrate the desired behaviour?

The objective for MOSWOZ is that by 2025, based on these simulations, a greater insight will have been obtained into the consequences of the growing number of wind farms for shipping safety in relation to

- collisions between ships; and
- collisions between a ship and a wind turbine.

This will be achieved by means of simulation runs on a Class A simulator for Bridge and VTS operations.

1.3.4 *Option for implementation of 2 additional simulation runs in 2025*

Following presentation of the results of the 8 simulation runs, the Awarding Party may decide to implement 2 additional optional simulation runs. This will be confirmed in writing in the form of a contract letter.

1.4 Structure of the offer

In the offer, the following issues will be elaborated in an Action Plan.

- Risk management: demonstrating insight into the top 5 most important predicted risks, the management of the risks and the effectiveness of the management measure(s).
- Project team:
Composition, tasks and roles. Is the proposed project team appropriate for this contract, in terms of:

- level of knowledge and employees to be deployed;
- experience among the employees to be deployed with similar projects;
- tasks, responsibilities and authorities within the project organisation for managers, key figures and project employees;
 - description of the project organisation compiled for the implementation of the project, including the tasks allocated to them by the points of contact.
- For substantiation purposes, please include the Price sheet excluding the price/cost columns, as a separate appendix to the Action Plan.
- replacement scheme for employees
- The way in which the Contractor provides for quality assurance for the tasks and products referred to in the requirement specifications.

1.5 Information security and open standards

This contract is subject to the national policy on information security and open standards with as its underlying objectives of promoting information security, interoperability and increased supplier independence.

For all related issues, refer to the website of the Standardisation Forum (www.forumstandaardisatie.nl). According to the decision tree on this website <https://www.forumstandaardisatie.nl/beslisboom/beslisboom-openstandaarden>, the following open standards are mandatory:

1. Odf v1.2
2. Pdf\A-1 and Pdf\A-2, Pdf 1.7, Pdf/UA
3. NEN-EN-ISO/IEC27002
4. Digi link
5. OWMS
6. Digi-accessible (EN301549 with WCAG 2.1)
7. Geo standards

If the Services or products to be delivered are not subject to one of these open standards, that open standard should be dropped. If an open standard is not listed here which (also on the basis of the Decision Tree and the National policy on open standards) is nonetheless required for the Services or products to be delivered, then that open standard will naturally apply.

If the tenderer offers an 'equivalent' standard, the tenderer must demonstrate that this alternative satisfies the criteria operated and published by the Standardisation Forum for inclusion on the 'Comply or explain' list, so that interoperability and supplier independence are sufficiently safeguarded for the Awarding Party.

For a complete list of the mandatory open standards, refer to <https://www.forumstandaardisatie.nl/open-standaarden/verplicht>

1.6 Reading guide

Chapter 2 contains a description of both the contract and the result, including the parameters on the basis of which both were drawn up. Chapter 3 then describes what needs to be achieved in relation to the assignment and in respect of the products and/or services to be delivered.

Chapter 4 provides a further explanation of the schedule of requirements.

Finally, a description is provided of what must be achieved in relation to the contract and in respect of socially responsible procurement (chapter 5), project management (chapter 6), quality management (chapter 7), project control (chapter 8), and safety management (chapter 9).

2 Contract description

2.1 Description of the contract

The contract involves the preparation, implementation and analysis of 8 simulation runs (with the possibility of implementing 2 additional runs at a later date), as described in appendix 02-01. The analysis aims to provide an answer to the research questions described in appendix 02-01. The appendix describes which runs must be carried out, indicating for each run:

- Run duration
- Simulation area in use with (future) wind farms
- Meteorological conditions
- Crew composition
- Vessels to be deployed
- Simulators to be deployed
- Route to be followed
- Research questions to be answered

The contractor is responsible for the correct use of the ship simulators, the programming of the appropriate areas, incl. nautical charts and ships, the hiring and briefing of the crew with the required background/experience, possible refocusing of the research questions, drawing up and implementing the human factors observations during the implementation of the runs, and analysing these observations in order to answer the research questions posed.

The approach, implementation, analyses and results of the simulation runs must be described in a report, a management summary and a PowerPoint presentation.

The process and production requirements relating to the contract are formulated in chapter 3.

2.2 Options

Below are the products/services the implementation of which during the contract period is not yet certain. If it proves necessary, these products/services may be added, as an option:

2 additional simulation runs and elaboration based on additional scenarios; implementation in 2025.

2.3 Description of the result of the contract

The result of the contract is in the form of a report which provides an answer to the research questions and sub questions identified in the simulation scenarios.

The result of the contract consists of the following key subproducts and end products:

- Product 1: result of assessment of feasibility of simulation runs and initial human factors monitoring with a view to answering and possibly refocussing the research questions from appendix 02-01.
- Product 2: preparation and implementation of the simulation runs including crew and initial human factors study, per run.

- Product 3: (draft) report of analysis of simulations and results of research questions (in English).
- Product 4: management summary of results of research questions (English/Dutch)
- Product 5: PowerPoint presentation with summary of results of research questions (English/Dutch)
- Product 6: video recordings and source material of the analysis of the implemented simulation runs.
- Product 7 (optional): report of the optional additional simulations and results of research questions (in English).

A full list of the requested results appears in Appendix I Statement of Rates.

3 Services and/or products to be delivered

- PR001 The Contractor must execute the contract in such a way that the resultant services and/or products both demonstrably and traceably meet the requirements arising from the Agreement.

3.1 Assessment of feasibility of simulation runs and human factors monitoring

- PR002 The Contractor will assess the submitted description of the simulation runs for feasibility in the field of the deployment of simulators, and the initial human factors study among the crew and other participants. In a brief report, the Contractor will submit proposals for improving the implementation and efficiency of the simulations.

- PR003 This assessment will at least include the following elements:
- Technical feasibility
 - Layout of human factors data gathering
 - Efficiency of the planned simulation runs
 - Composition and hiring of the required crew

3.2 Preparation and implementation of the simulation runs

- PR004 The Contractor must ensure adequate implementation of the simulation runs and the human factors data gathering in accordance with the scenarios provided, with a crew that satisfies the requirements imposed.

- PR005 These simulation runs must meet the following requirements:
- The simulation runs meet the requirements imposed in appendix 02-01
 - The simulation runs must be carried out on a DNV approved Class A simulator (or demonstrable equivalent)
 - The simulator must offer sufficient computing capacity due to the duration and extent of the runs.

- Preparation of evaluation tools, to answer research questions during/after simulation runs. The crew to be deployed will be hired by the Contractor and will meet the requirements outlined in appendix 02-01.
- The preparation for the simulation runs will include developing and testing the scenarios, the prescribed charts, briefing the operators, hiring and briefing/familiarising the crew and defining the human factors observations.
- Contrary to Appendix 02-01, section 4.1.3, section 4.2.2 and appendix 4 which refers to a range of 350-500 ships, the simulator must be able to process 350 navigating ships. (This quantity of ships is only of interest where the VTMON has an active role).
- Not all ships need be presented visually on the external screen. Ships that come into view from the own ship must be visually displayed and provided with the appropriate interaction. Other ships may appear as target only on AIS/Radar and indirectly on ECDIS when AIS/Radar overlay is activated.
- The simulation runs are recorded on video (see also section 3.6).
- The simulation runs are supplied to the Awarding Party (see also PR013) via an online streaming service.

3.3 (Draft) report of analysis of simulations and results of research questions

PR006 The Contractor must draw up a draft report and a final report.

PR007 The draft report and final report must meet the following requirements:

- The technical content of the report must be drawn up in English.
- Reports must be drawn up in the house style of the Contractor.
- The reports must provide a description of the results and analyses.
- The reports must contain a discussion with interpretation of the results in respect of the assumptions and limitations of the research, new questions and hypotheses that emerge from the research and recommendations for follow-up research.
- The report must provide an answer to the research questions appearing in appendix 02-01.
- Reports are complete, readable, unequivocal, error-free and omission-free.
- Unless otherwise specified, reports must only be provided to the Awarding Party in digital form.
- The Dutch government publishes its research. This means that this should already be taken into account during writing (Open by design). See

Handout 'Writing for publication', appendix 02-02.

3.4 Management summary of results of research questions

PR008 The Contractor must draw up a management summary.

The management summary must meet the following requirements:

- The management summary is drawn up in Dutch and English.
- The management summary comprises not more than 6 pages.
- The management summary must be usable separately from the report.
- The management summary must be drawn up in the house style of the Contractor.
- The management summary must provide a brief description of the approach, interpretations and the results of the simulation runs, together with recommendations for follow-up research, and must be part of the final report.
- The management summary may be issued to the Awarding Party in digital form.
- The Dutch government publishes its research.

3.5 PowerPoint presentation with summary of results of research questions

PR009 The Contractor must prepare a PowerPoint presentation with the summary, layout and implementation of the simulation runs, and the results of the research questions.

PR010 The PowerPoint presentation must meet the following requirements:

- The PowerPoint presentation is drawn up in Dutch and English.
- The PowerPoint presentation must be usable as an independent product separately from the report.
- The PowerPoint presentation must be drawn up in the house style of the Contractor.
- The PowerPoint presentation must provide a brief description of the approach and the results of the simulation runs.

3.6 Video recordings and basic material of human factors observations and analyses

PR011 The video recordings of the simulation runs must meet the following requirements (see also appendix 02-01):

- the video recordings must be recorded using a camera (dashcam/webcam or similar) with a view of the bridge and crew

- the images are sharp enough to read instrumentation (including radar, ECDIS, RADAR and possibly telegraph position and rudder position indicator).
- all video recordings will be supplied in MP4 (or equivalent) format
- The video recordings will be supplied separately in logical order as a series of MP4s for each run.

- PR012 The source material on human factors observations must meet the following requirements:
- the source material for each run contains the basic material drawn up for the human factors analysis during and immediately following completion of the run (forms, data, interview reports, etc.).
 - the source material will be supplied to the Awarding Party in digital format.
 - the source material will be supplied to the Awarding Party separately for each run.

- PR013 The livestream during implementation of the simulation runs must meet the following requirements:
- the livestream is available for at least 20 participants
 - the livestream is supplied via a direct link to the Contractor who will be responsible for further distribution of this link.

3.7 Optional runs and reports

- PR014 The Contractor must implement the optional runs with reports in accordance with the requirements imposed above (PR004 through to PR013).
- PR015 The optional runs with reports must meet the following requirements:
- The optional runs will be contracted to the Contractor via a Separate Agreement.

3.8 Commentary on the products

- PR016 All products to be delivered must be submitted to the Awarding Party and any other reviewers by the Contractor, for assessment, in 'draft' form. For each product, as single round of comments will take place, over a period of 3 weeks, whereby Rijkswaterstaat will be responsible for combining the comments. Following processing of the comments, the documents must be made 'definitive' by the Contractor within 2 weeks.
- PR017 The Contractor will arrange an independent review of the action plan and the report by a scientific/knowledge institute with expertise in the field of shipping safety and/or human factors analysis. The Contractor will agree on this choice with the Awarding Party.

3.9 General Data Protection Regulation (GDPR)

- PR018
- Since 25 May 2018, the same privacy legislation has been in force throughout the European Union, the General Data Protection Regulation (GDPR). A number of important points:
 - o the purpose of gathering the data must be clearly described;
 - o no more data may be gathered than necessary for the purpose of the research;
 - o the data obtained must be secured against loss or theft and unlawful processing (use for more than the original purpose);
 - o the data provider has the right of access and right of amendment;
 - o the data provider has the right to immediate termination of participation;
 - o data may be stored as long as the purpose for which they were gathered.
 - Under the GDPR, the Contractor must also ensure that personal data in documents or data files that are made public or are used repeatedly cannot be derived to individual persons unless those persons themselves have duly given permission.
 - In addition, the processing of personal data must be carried out under the protection of appropriate technical and organisational measures whereby security of the systems in use or in management, including storage stations and databases and webpages, is guaranteed (for example by two-factor authentication) in order to prevent a breach which could result in the theft of personal data.
 - Pursuant to Article 28 of the GDPR, for the data processing, a data processing agreement must be entered into between the Contractor (processor) and the Awarding Party (controller) prior to the start of the contract. The format for the Data Processing Agreement appears as an appendix to the tender documents.

4 Schedule of requirements

- PVE01 Interpretation of data
The processing of the data meets the following requirements:
- The Contractor provides an insight into:
 - o The way in which research questions with a Human Factors component are translated into human factors principles
 - o The way in which the Human Factors analyses were conducted
 - o The methodology employed for the interpretation of human factors data
 - The Contractor substantiates the conclusions.
 - The Contractor indicates which assumptions were taken into consideration.
- PVE02 Simulation runs
The simulation runs must meet the requirements imposed in appendix 02-01 with regard to
- Composition of the crew.
 - The geographic research area, including wind farms and specific information needed
 - Communication with: Coastguard, ERTV, etc.
 - Changes to weather conditions, current/tide.
 - - The duration of the scenarios,
 - - The technical specifications simulators used (par. 4.1),
 - - The ships and objects
- PVE03 Implementing changes to the simulation runs
If due to circumstances, the simulation runs cannot be carried out in accordance with the requirements in appendix 02-01, discussions must be held with the Awarding Party in good time; the Contractor will present an alternative proposal in which it remains possible to answer the research questions.
- PVE04 Composition of the Contractor's project team
- The project team comprises at least one project leader, (junior) project consultant and human factors contribution in the form of a cognitive ergonomist/cognitive psychologist/human factors specialist.
- PVE05 Hiring the crew
The Contractor is responsible for hiring the crew:
- The composition of the crew is in accordance with the requirements from appendix 02-01.
 - The Contractor is responsible for the travel and accommodation costs of the crew to be deployed.

- Because the composition of the crew is crucial for the human factors research, the requirements imposed may only be deviated from following written approval by the Awarding Party.

5 Socially Responsible Procurement

MV01	The Contractor must execute the contract in such a way that the contract and its results are executed and realised in a sustainable manner.
MV02	The Contractor must demonstrate the following: • Proof of an internal sustainability policy and/or vision. Described in ½ - 1 A4. • An explanation of how this sustainability policy/vision impacts on this contract.
MV03	The Contractor will share the results of the contract and methodology with educational/academic institutions in the Netherlands by providing (digital) presentation(s) as an appropriate means of implementation of the Social Return obligation upon the organisation of the Awarding Party.

6 Project management

PM001 The Contractor must prepare and execute the contract in such a way that it is completed in a managed and controlled manner, so that the desired result is achieved.

6.1 Interaction between Awarding Party and Contractor

PM002 The Contractor must contribute to the effective exchange of information with the Awarding Party in such a way that both parties are informed correctly and in a timely manner.

PM003 For implementation of the contract, at least in accordance with the following timetable, the Contractor and Awarding Party must consult as follows:

No.	Meeting	Initiator	Date
01	Start-up meeting	Contractor	Within 2 weeks following initial award
02	Progress discussion	Contractor	2-weekly
03	Discussion of feasibility of implementation of simulation runs	Contractor	
04	Evaluation of implementation of simulation runs	Contractor	Within 1 week following implementation of runs
05	Discussion of draft report	Contractor	
06	Final evaluation	Contractor	Following completion of the project

6.1.1 Planned start-up meeting

PM004 The start-up meeting will be organised by the Contractor immediately following awarding. The start-up meeting is intended as an introduction and an opportunity to discuss the expectations of the Awarding Party and the Contractor in respect of one another.

PM005 During the start-up meeting, at least the following subjects will be discussed.

- Further explanation by the Awarding Party of the project and background information;
- Request for tender and offer;
- Planning timetable;
- Products to be delivered;
- Identified current risks and management measures;
- Quality assurance by the Contractor;
- Contract management by the Awarding Party.

6.1.2 *Drawing up progress report*

- PM006 The Contractor must provide the progress report to the Awarding Party's project leader at least five (5) working days prior to the progress meeting in question.
- PM007 The progress report must contain at least the following elements:
- The progress report contains an up-to-date planning timetable including the description of the activities in time and an interpretation of the critical pathway.
 - The progress report describes the progress and any deviations and alterations over the period to which the progress report relates.
- Unless otherwise stated, progress reports need only be issued to the Awarding Party in digital form.
- PM008 Without prejudice to the obligations referred to in section 9 of the ARVODI-2018 to report on the progress of the Services of the Awarding Party whenever and in the manner the Awarding Party considers this necessary, under all circumstances, the Contractor is also required to report immediately at the end of each month regarding planned, completed products and products accepted by the Contact person of the Awarding Party, and the invoiced and paid-for products as listed in Appendix I Statement of Rates and prices.

6.1.3 *Minute taking*

- PM009 The Contractor is responsible for taking minutes of the meetings.

7 Quality management

- KM001 The Contractor must manage and optimise the contract with the aim of revealing errors and wastage and continuously improving services and/or products.

7.1 Application of quality management

- KM002 As specified in chapter 2 of the Tender Guidelines, a quality system certificate is not required if the Contractor works according to its own quality system which in the judgement of the Awarding Party is appropriate to the nature of the work and is structured according to the Plan-Do-Check-Act cycle, in which:
- a) a description is given of the way in which the imposed requirements will be satisfied in the provision of the Services (Plan);
 - b) the Services are provided according to the drawn-up plan in which the requirements imposed are satisfied (Do);
 - c) the quality of the Services provided is demonstrably assessed for compliance with the requirements imposed (Check);
 - d) in the event of failure to comply with the requirements imposed, appropriate measures are taken aimed at recovering and preventing the observed non-conformities (Act).

7.1.1 *Identifying and registering non-conformities*

- KM003 The Contractor must identify and discuss with the Awarding Party any deviations from that which is agreed in the contract or in its own quality system. This will be recorded in the progress report.

7.1.2 *Drawing up the action plan*

- KM004 The Contractor must draw up an action plan which includes an integrated description of the application of the quality management in execution of the contract.
- KM005 The Action Plan must at least include the following subjects:
- description of the way in which the contract will be managed, including:
 - a) a description of the strategy/approach to the contract;
 - b) a description of the project organisation established for execution of the contract, in which the managers and key positions are specified, including the tasks, responsibilities and authorities allocated to them;
 - c) a description of the communication and provision of information for the contract (internal and external);
 - d) a description of the way in which non-conformities and/or changes are dealt with.

8 Project control

- PB001 The Contractor must control its Works in respect of the project control aspects in such a way that the contract is realised in accordance with the requirements arising from the agreement.

8.1 Planning timetable

- PB002 The Contractor must structure the contract in such a way that the contract and consultation about the contract with the Awarding Party are managed over time, and that the resultant services and/or products are realised at the latest by the agreed completion date and any milestone dates imposed.
- PB003 The Contractor will draw up a realistic planning timetable with final completion date for the definitive report on 31 December 2024, and on 1 July 2025 for the Definitive Report in the case of the option to extend with 2 simulation runs.

8.1.1 Drawing up a planning timetable

- PB004 The Contractor must draw up a planning timetable and duly inform the Awarding Party of this timetable at least as part of his tender, and prior to each progress meeting.
- PB005 The planning timetable must at least:
- Demonstrate the activities to be undertaken for the contract, in which these activities are realistically laid out over time;
 - Demonstrate relevant consultation with the Awarding Party (for example acceptance terms, communication terms);
 - Demonstrate the start and finish date for (any) payment items.

8.2 Payment

- PB006 The contract fee will be paid on the basis of a fixed price and, if variable products are subsequently contracted, on a post-calculation basis.
- PB007 The contract fee will be paid in accordance with section 3 of the Agreement entered into and in accordance with Appendix I State of Rates and prices submitted with the Tender (and completed) as Appendix I (including the specified fixed price per product according to column G).
Parties may decide, given the limited size of an invoice amount, to suspend the payment for the products in question until the next monthly instalment.
- PB008 The price for the services/products to be supplied by the Contractor will not be subject to indexing, either for the contract or for any additional work. Any indexing of prices and/or rates must be included in the tender by the Contractor.

8.3 Risk management

- PB009 During the course of the project, the Contractor must identify, analyse and manage risks in such a way that the likelihood of occurrence or the consequences of unwanted events are minimised for the Contractor and where possible for the Awarding Party.

9 Safety

- V001 The Contractor must perform the contract in such a way that the contract and its results are performed and realised in a safe and healthy manner.

Appendix 1: Overview of requested products

Appendix I Statement of Rates and prices has been drawn up to provide an overview of the requested products.

This appendix must be completed and submitted with the tender.

In the model, the pale blue cells must be completed by the tenderers. Total prices will be entered automatically.

Appendix 2 Information issued and to be issued

No.	Title	Version and date	Supplied with invitation	Supplied following awarding
02-01	English version Rijkswaterstaat MOSWOZ drawing up simulation scenarios, including 8 appendices descriptions of runs	definitive	yes	
02-02	Handout 'writing for the government' Handout 'Schrijven voor openbaarheid'	definitive	yes	
02-03	General information regarding the MOSWOZ project: www.noordzeeloket.nl/functies-gebruik/windenergie/scheepvaart-moswoz	definitive	yes	

Appendix 3 Topics of MOSWOZ programme

For the MOSWOZ programme, the questions and possibly additional integration measures for shipping safety for the Roadmap 2030 have been combined into a number of topics. By elaborating these research questions in these topics, a contribution will be made to achieving the objectives.

Topic	
Monitoring	Aimed at current risk development at sea for all shipping as a consequence of wind farms
Safety	Consequences of collisions and running aground with wind turbines
Passage	Risks of passage through wind farms versus detouring
VTMon	Structural requirements for Vessel Traffic Monitoring
ERTV	Investigation into the deployment of multiple ERTVs (emergency response towing vessels) - effectiveness and modus operandi
Hydro Meteo	Hydro meteo in respect of shipping safety - effects of wind farms on wind, waves and visibility - improved weather warnings.
Anchorage	Better use of anchorages
Crisis organisation	Investigation of impact on crisis organisations (in connection with complexity)
Foreign dimension	Foreign information exchange concerning wind farms including construction requirements for wind turbines, deployment of measures, harmonisation