



Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat

Digital information meeting

Market consultation Radars for Water levels and Wave heights

RWS CIV IGA RDD Team Instrumenten

4th of July 2022 from 11:00 am to 12:30 pm CE Summer Time



Agenda

- 11.00 am – 11.10 am: Welcome and introduction
- 11.20 am – 11.30 am: The market consultation
- 11.30 am – 12.15 pm: Explaining the scope of the market consultation
- 12.15 pm – 12.30 pm: Questions and closure



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Introduction

RWS & Participants

4th of July 2022



Introduction Rijkswaterstaat

- | | |
|---------------------|---------------------|
| • Ciska Smeets | Project manager |
| • Martijn Andernach | Technical manager |
| • Peter Hendrikse | Contract manager |
| • Christine Arendse | Procurement manager |
| • Marc Hartogs | Technical advisor |
| • Rini Snoep | Technical advisor |



Introduction participants





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Any questions prior to the scope?

Which must be answered in any case?

4th of July 2022



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The market consultation

What and when

4th of July 2022



What is a 'market consultation' ?

- IT IS: Do not miss any requirements to achieve our goals; better match the market; achievable requirements; comprehensibility of the requirements
- IT IS NOT: No points to gain or chances to increase; no benefit for participants; equal opportunities in the tender (2023)
- Confidentiality: anonymized questions; the report is anonymized information (no brands; no prizes; no knowledge about market cooperation's will be published)

Information meeting for market parties	4 July 2022 at 11:00-12:30
Deadline to pose questions about this Market Consultation Document	6 July 2022 at 12:00
Publication of Summary of Additional Information and Changes	08 July 2022
Deadline for submitting completed questionnaire	10 August 2022 at 12:00
Dates for any individual explanatory discussions	From 22 August 2022 till 9 September 2022
Finalisation and publication of final report	30 September 2022

Timeline market consultation

Publication of the Tender will be in the second quarter of 2023



Information meeting

- This meeting is informative and to clarify the market consultation
- For definitive answers, questions can also be submitted in writing for the purpose of the Nota of Information
- Rijkswaterstaat will really be helped with answers from the market. We have many questions. If you can't answer all the questions, but a few, that is also valuable information.



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Context

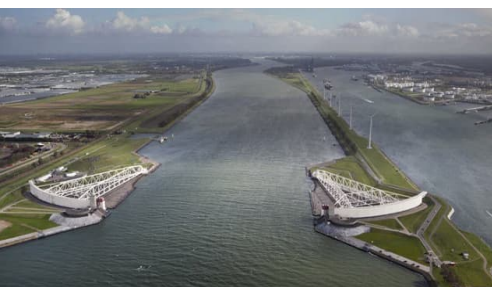
Use of radars in National Water Monitoring Network

4th of July 2022



Rijkswaterstaat

Rijkswaterstaat is the executive agency of the Netherlands' Ministry of Infrastructure and Water Management, dedicated to promote safety, mobility and the quality of life.



For water, our work domain is restricted to the large water bodies such as the North Sea, the main rivers and large lakes.



National Water Monitoring Network: *Landelijk Meetnet Water (LMW)*

Measurement of several parameters across the Netherlands' water bodies:

- Water Level
- Wave Height
- River and Channel Discharge
- Salinity and Temperature
- Several Water Quality parameters

The LMW comprises:

- physical measuring stations,
 - a data-collection network,
 - processing and validation hardware and software
 - distribution to the various users.
-
- Generic modular building blocks across all parameters / sensors
 - Sensors are connected on a IoT-gateway on site



Water level in LMW

Data users: Rijkswaterstaat, port authorities, municipalities, the offshore and hydraulic engineering sectors, civilians.

- Water reporting and crisis management
- Navigation guidance
- Operating barriers, barrages, sluices, floodgates, water control systems and bridges
- Operational Water Management
- Defining characteristics and trends of water systems
- National and international obligations and agreements
- Model designs and research projects
- Supportive measurements for determining derived parameters
- Asset management and construction and maintenance of engineering structures





Network is managed in 2 types of contracts

Sensor contractors (to be tendered for radars)

- Supply of sensors, preventive maintenance (if required) and corrective maintenance of the sensor 'in the workshop'.

Site maintenance contractors (already in place)

- Maintenance of the complete measurement set-ups on site; this includes civil engineering maintenance and the 'primary sensor maintenance': installation, regular cleaning and sensor replacement on failure.



Processing into parameters

Raw data is retrieved from the sensors:

- for water levels: every 10 seconds a water level above the Amsterdam Ordnance Datum (hereafter referred to as NAP),
- for waves: a water surface altitude above NAP or displacement at >2.5 Hz

A Rijkswaterstaat-specific processing that is generic across several sensor types produces:

- 10-minute average water levels above NAP
- wave parameters during an observation interval of 20 minutes

The processing involves validating the raw data based on a number of criteria, calculating the parameters and data validation based on knowledge of the water system and surrounding stations.



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Scope

Required supply and services of the envisaged procurement

4th of July 2022



Technical scope

The technical scope of this call for tenders includes:

- a radar level meter,
- accessories (cables, mounting bracket, etc.) and
- operating software, if necessary.

Outside scope are:

- data communications and data-collection systems
- power supplies such as solar panels
- parameter processing and wave processing
- presentation software

Sensor types: usage



A: Offshore wave radar

- Large wave heights
- Large range



B: Nearshore wave radar

- Restricted wave height
- Restricted range
- Better uncertainty



C: Inland waterlevel radar

- Low wave height
- Small range
- Better uncertainty



D: Stilling well radar

- Shielded measurements
- Stilling wells of 30 cm
- Better uncertainty





Sensor types and main requirements

Sensor type	Name	Maximum power	Must measure waves	Suited for waves of	Range needed	Measurement uncertainty	Beam angle
A	Freespace radar offshore	8 W	Yes (wave period 30 s-1.5 s)	11 m	34 m	$\leq \pm 5$ cm	$\leq 10^\circ$
B	Freespace radar nearshore	8 W	Yes (wave period 30 s-1.5 s)	4 m	19.5 m	$\leq \pm 1$ cm	$\leq 10^\circ$
C	Freespace radar water level	4 W	No	1 m	17 m	$\leq \pm 1$ cm	$\leq 10^\circ$
D	Stilling well radar	-	No	subdued	12 m	$\leq \pm 1$ cm	n/a



Scope of supply

Procurement need by sensor type	A	B	C	D
Initial procurement (initial roll-out + spare) – year 1-2	6	15	13	5
Additional use envisaged – year 3-10	17	16	14	10
Uncertain new-build and replacement – year 3-10	4	13	18	29
Total (certain and uncertain)	23-27	31-44	27-45	15-44



Key targets for this procurement

Primary focus:

- To guarantee availability of radars for measuring water levels and wave heights.
- To ensure preventive and corrective maintenance (time span 25 years).
- To ensure support and training.

Furthermore, RWS envisages optimizing the following objectives:

- A higher degree of data availability.
- Low implementation costs.
- Minimal management costs across the entire maintenance chain.
- Maintenance that is carried out more sustainably and maximum value retention of the equipment.
- Maximum standardisation of sensor types: as few differing sensor types as possible.
- A minimum number of contracts and the least possible administrative burden.



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Your help

What would we like to learn?

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What would we like to learn?

- Check on specifications available in the market
- Improve insights in 'must have' requirements, e.g. for waves
- Develop ideas and feasibility for Verification procedure
- Understanding possibilities of combining sensor types in a contract
- Adapting our market approach to optimally fit to the market
- Obtaining inspiration for sustainability



Verification

In the final stage of the procurement procedure, a Verification will be performed. Aim of the Verification is to confirm that the critical specifications are met by the offered radar. And so to confirm the suitability for the measurements of water level and waves. This is to prevent troubles in the stage of implementing large quantities of radars and to assure our end users the quality of data.

- Generally, a Verification is planned to be only performed on the 'winning' offer; it is not a comparative test.
- If possible, Verification based on existing theoretical determination or existing practical assessments (such as lab or field tests) are our preferred choice. If there is added value, a field test can be part of the Verification.
- We aim for: a simply feasible judgement, short lead time, maximum transparency



Sensor types and market combinations

- Can we optimize the number of necessary sensor types?
- Would a contract be feasible for the supply of multiple sensor types?
- Would a single reseller for all types be of any advantage – and does it even exist?



Sustainability

- RWS wants all procurements to be on a sustainable basis and has formulated ambitions to that effect. We have envisaged three chances:
 - we would like find out if we can reward low energy consumption of the entire production process;
 - we want to optimize logistics movements within the LMW;
 - we want to find out to what extent social aspects are taken into account in the market.



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Questions and closure

Good luck answering the questions

Ask questions about this market consultation within 2 days

Not all questions need to be answered, all suggestions are welcome on the 10th of August!

Communication through Christine Arendse via TenderNed (berichten) & inkoopcentrum-iv@rws.nl

Procurement planning? Publication in June 2023

4th of July 2022