



Defence Materiel Organisation
Ministry of Defence

Market Consultation

**small ground-penetrating radar (GPR)
used for the detection of buried objects,
caches and voids in the ground and walls
of buildings**

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Colophon

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Contents

1.	Introduction.....	4
1.1	Reason and purpose market consultation.....	4
1.2	Defence Materiel Organisation (DMO) and background	4
2.	Procedures and planning	5
2.1	Procedures.....	5
2.2	Planning	5
2.3	Instructions	6
3.	Systems	6
4.	Finally	6

Intellectual property

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1. Introduction

1.1 Reason and purpose market consultation

The Defence Materiel Organisation (DMO), on behalf of the Netherlands Armed Forces is preparing a tender for a possible agreement for small ground-penetrating radar (GPR) used for the detection of buried objects, caches and voids in the ground and walls of buildings. Before publishing this tender, the DMO has decided to consult the market first.

The information gathered in this market consultation will primarily be used to determine whether the functional and/or other requirements for the mobile energy supply program can be met, if the program can be realized with the available budget and, therefore, if this program can be carried out in the way it was intended as well as checking whether improvements are possible. The information obtained will **not** be used to draw up a shortlist.

Furthermore, the results from this market consultation will be used by the DMO to determine a suitable procurement strategy. The procurement will be conducted according to EU directive 2004/18 procurement contracts for public works, public supply and public service and the "Aanbestedingswet 2012" which was implemented on 01-04-2013.

1.2 Defence Materiel Organisation (DMO) and background

The Defence Materiel Organisation ensures that military personnel have modern, robust and safe materiel to work with. The DMO is involved in the procurement, maintenance and sale of materiel.

The DMO maintains Defence materiel throughout its entire life-cycle, from purchase via sustainment to disposal, whether ships, aircraft, helicopters, vehicles, fuel, ammunition, clothing, computer systems or weapons are involved.

After procurement, the DMO hands over the purchased materiel to the relevant armed forces Service, which is then responsible for its sustainment

2. Procedures and planning

2.1 Procedures

The market consultation will be conducted in writing in the English language. At this stage, the DMO has no intentions to plan meetings with respondents. Respondents are requested to use either the English or the Dutch language.

With this document respondents are able to obtain a global view of the project and some specific items which the DMO would like to investigate.

Respondents should bear in mind that it is the DMO's decision whether or not to commence with the next phase and in what way. Therefore, it should be noted that:

- with receipt of this market consultation, it may not be inferred that (pre)contractual contacts with the DMO have arisen, nor that a contract will be placed, nor that the project will be executed as currently envisioned, nor that the company of the respondent will automatically appear on the tender list;
- the DMO retains the right to change the contents of the program and/or to end the program, without being obliged to pay any form of compensation.
- all costs with regard to the completion of this market consultation must be borne by the respondents and will not in any way be reimbursed by the DMO.

By responding to this RFI the respondent agrees to the above mentioned conditions. In the event that the respondent decides not to participate, he is kindly requested to inform the DMO by e-mail (as mentioned hereunder).

The DMO has the right to use any information provided by respondents for the future tender. All questions and answers will be shared with all participants (respondents). If certain information is commercial and/or technical in confidence, this must be explicitly marked by the respondent.

All correspondence regarding this market consultation must be sent to:

phm.bremer.01@mindef.nl

Please refer to : "small ground-penetrating radar (GPR) used for the detection of buried objects, caches and voids in the ground and walls of buildings"

The respondent is kindly requested provide the point of contact (name, address) when participating in this market consultation. All communication regarding this market consultation will be conducted by e-mail.

The following planning will be applicable:

Step	Action	Date
1	Publishing of market consultation	02 February 2016
2	Closure date for issuing questions	03 March 2016
4	Replying of questions/answers to all participants (respondents)	24 March 2016
5	Closure date market consultation	31 March 2016

2.2 Planning

Depending upon, among others, the results of this market consultation, the DMO is planning a Request for Quotation in the 4nd quarter of 2016.

2.3 Instructions

The questions in annex A are the essence of this market consultation. You are requested to answer them as completely as possible.

Your remarks and/or supplements are highly appreciated and can relate to various aspects such as: financial, organizational, practical, technical and/or legal aspects but can also relate to the planning.

If you have any questions about this market consultation please feel free to contact the e-mail address as mentioned in paragraph 2.1

3. Systems

The Netherlands armed forces has implemented the Search capacity at the Engineers Regiment. One of the tools in the Search set is a small ground-penetrating radar (GPR) used for the detection of buried objects, caches and voids in the ground and walls of buildings. An evaluation of this device has resulted in a project with the aim to assess the suitability of current COTS/MOTS GPRs for Search applications.

4. Finally

The questions in the appendix are the essence of this market consultation. Your are requested to answer them as completely as possible. The questions should be regarded together with the context which is described in paragraph 3 and 4.

Your remarks and/or supplements are highly appreciated and can relate to various aspects such as: financial, organizational, practical, technical and/or legal aspects but can also relate to the planning.

If you have any questions about this market consultation please feel free to contact the email address as mentioned in paragraph 2.1.

Finally The Netherlands Armed Forces and the Defence Materiel Organisation would like to thank you in advance for the effort you will make by participating in this market consultation.

Appendix

A. Questionnaire

Suitable COTS/MOTS GPRs have the following properties:

1. Suitable for use on a horizontal plane (area search) and/or vertical plane (building search)
 2. Can be operated by one person with limited (max. 3 days) training (either hand-held, on a push cart, or UGV)
 3. Data storage capability
 4. Accurate geo-positioning (accuracy less than 20 cm)
 5. Graphical User Interface with real-time data visualisation
 6. For area search: minimum scan speed is 0.5 m/s
 7. Detection performance: capable of detecting the following targets:
 - For building search:
 - * voids and anomalies with a characteristic size of 15 cm in a layered wall up to 30 cm thickness
 - For area search:
 - * mine-like objects, both non-metal and low metal, with a minimum size of 10 cm, buried from 5 up to 30 cm;
 - * voids and non-/low-metallic objects with a characteristic dimension of 50 cm, up to 1 m depth;
- in non- and low-mineralized soils (relative permittivity of the soils: $3 \div 30$ for 100 MHz $\div$ 1 GHz; material attenuation loss: maximum 50 dB/m)

Desirable properties of GPRs for the application mentioned above, are:

1. For area search: preferably air-coupled (no physical contact of the sensor with the ground)
2. Data export capability
3. Software for assisted detection is available
4. The GPR is combined with other sensors, such as a metal detector, to increase the detection performance