



Defence Materiel Organisation
Ministry of Defence

Request for Information

Electronic Support Measures *in the mobile domain*

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Version 1.0

Colophon

Dutch Ministry of Defence
Defence Materiel Organisation (DMO)
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1 Introduction

The Dutch Ministry of Defence (NLD MOD) is considering procuring Electronic Support Measures (ESM) Systems for deployment in several mission profiles and invites potential suppliers for these systems to respond to this Request for Information (RFI).

This RFI is part of a market survey. It is not the intention for you to make a detailed proposal at this moment. It is important that you provide the NLD MOD with enough information regarding your possible contribution to the need described in this document. The NLD MOD wants to gather as much information as possible concerning possibilities and restrictions in the vendor market.

The results of this RFI may lead to a shortlist of suppliers. The suppliers on this shortlist may be invited to participate in a classified tender if one follows after this RFI. The information about this tender and the shortlist is classified and will not be published. This RFI doesn't contain any classified information.

This RFI may contain different stages:

- Written stage (this RFI and the answers to the posed questions)
- (Optional) dialogue stage (either visiting the potential suppliers or having the potential suppliers visit the NLD MOD)

Companies that are interested and able to contribute as a prime or subcontractor to this project are invited to respond to this RFI. The market survey could further comprise of company visits, which will encompass demonstrations of (parts of) possible solutions.

DMO has placed a RFI Notice on TenderNed dated August 11, 2017.

1.1 Planning

The planning of this RFI (written stage) is as follows:

Phase	Date and Time	Task	Result
1	August 11, 2017	Publication RFI	RFI (this document)
2	September 1, 2017	Closing date for asking questions before 12:00 PM UTC +1	Questions from potential suppliers are received by the Ministry of Defence ¹
3	September 8, 2017	Questions from interested parties regarding the RFI are answered	Answers will be published on TenderNed ²
4	September 29, 2017	Closing date for a final reaction to the RFI before 12:00 PM UTC +1	Answer forms from potential suppliers are received

¹ Keep in mind only unclassified information will be provided when answering the posed questions.

² If a question is confidential it should be clearly marked as such, including a detailed motivation as to why the question is confidential. If the NLD MOD classifies the question as non-confidential the question and the answer will be published with the other answers. Before this, the supplier will be offered the chance to retract the question.

1.2 Instructions for responding

The NLD MOD requests you to answer the questions in this questionnaire as detailed as possible, clearly explained and in the same order as the questions are stated. Any other information you consider to be of importance will be appreciated.

In order to enable careful evaluation of your information, with respect to other answers to this RFI, please refrain from limiting yourself to the use of cross-references to answers to other questions.

Furthermore all communications will be done preferably **via e-mail**.

If the NLD MOD is required to sign a Non-Disclosure Agreement before any information can be provided, this should be indicated in Phase 2 (page 5 of this RFI).

The deadline for your reaction to be received by the DMO is September 29, 2017. All electronic documents must either be in the Microsoft Office 2007 suite file formats, or as a PDF or ODF file. Please note that our mailbox is limited and not able to receive messages/attachments that exceed **5MB**. It can be necessary to divide your response into several e-mails.

If you wish to provide classified information, the address below may be used:

Ministerie van Defensie
t.a.v. M.L. de Vries
Kromhoutkazerne K5, 3B44
Herculeslaan 1
3584 AB UTRECHT

The NLD MOD understands that certain information cannot be provided at all. If this is the case, if possible, the NLD MOD would like to be informed which question(s) this restriction applies to.

The authors of this RFI have tried to inform you as good as possible regarding the wishes of the NLD MOD. In case you still have some questions or if you have found some deficiencies, you are kindly requested to contact Ms. M.L. de Vries (RFI.C4I@mindef.nl). The responses to this RFI should also be sent to this email address.

1.3 Restrictions

Regarding this RFI two restrictions apply. If you wish to cooperate with this RFI you have to agree to the following:

- Restriction 1.3.a* *The NLD MOD does not reimburse any kind of costs that are connected to answering this RFI or related activities.*
- Restriction 1.3.b* *Depending on the results of this RFI, the NLD MOD has the right to refrain from any further activities regarding this RFI or to choose a different procurement strategy more fitting to the suppliers market.*

2 Information visits

After the written stage, the NLD MOD may decide to add a dialogue stage/information visits to complement the provided information.

This dialogue stage may take place at either the potential suppliers premises, or at the NLD MOD premises.

The NLD MOD acknowledges that it may not be possible to provide all information in the written stage of the RFI. However, the NLD MOD does expect to receive information detailed enough to determine whether or not a supplier is capable of supplying the NLD MOD with an ESM System.

The NLD MOD is not authorized to supply you more information than the information supplied in this RFI. This also means that the dialogue stage of the tender is mostly one-sided. The NLD MOD will ask (general) questions, but no additional information will be provided in this stage.

The results of the dialogue stage will be used to provide the NLD MOD with insight in the technical possibilities of available solutions and the feasibility of the solutions the NLD MOD has in mind.

If applicable the dialogue stage will preferably take place in the last quarter of 2017.

3 Background

Electronic Warfare (EW) is (military) action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy.

There are three subdivisions;

- Electronic attack (EA);
- Electronic protection (EP);
- Electronic support measures (ESM).

This RFI comprises only the ESM subdivision.

The Electronic Warfare Company (EW Coy) is a unit of the Royal Netherlands Army, with a joint task. The EW Coy also supports the Royal Netherlands Navy and the Royal Netherlands Air force. The EW Coy provides intelligence acquired from the electromagnetic spectrum. To achieve this the EW Coy uses an ESM System acquired in the 1990s. Between then and now several updates have been implemented.

The information obtained by the EW Coy is essential for mapping the environment and threat picture. In other words, the systems can be used for obtaining situational awareness (SA) and situational understanding (SU). This awareness and understanding is essential for the support of the commander and his unit. With the gathered information the EW Coy gathers predictable intel and contributes in the field of force protection (FP).

4 Desired situation

The scope of this RFI is to obtain information regarding an ESM system/building blocks for an ESM system for the mobile domain. The ESM system should at least be able to:

- Intercept signals within the electromagnetic spectrum;
- Direction finding/localising of sources within the electromagnetic spectrum;
- Analysing/classifying/decoding signals within the electromagnetic spectrum;
- Report/share the results.

Units are exposed to irregular opponents in a complex environment with a multitude of actors. Technological developments have led to an increase of the complexity of the EM spectrum and its use being increased. In addition to the classic (military) frequency bands in the land-based domain, an increasingly widespread part of the EM spectrum becomes relevant for acquiring information. The development of new encryption algorithms and communication technologies have made the acquisition and analysis of intelligence from the EM spectrum more complex. Besides the military frequency bands, there is an increasing need for acquisition and analysis of signals in the civil frequency bands. Preferably, resources are acquired in which training and simulation capabilities are integrated.

The NL MOD requires a total of fifteen (15) ESM systems. Nine of these systems will be integrated into Armoured personnel carriers (APC). The platform for the other six (6) ESM systems is yet to be determined. It is certain that these six (6) platforms will not be armoured vehicles. Therefore, the systems should be independent of the platform where possible. This also means that the ESM systems can be deployed within the NL MOD Air force or Navy platforms.

The ESM solution should be flexible. The NLD MOD requires a system that can cope with the rapidly changing environment and the technological developments.

The need for collaboration with our international partners increases, which asks for solutions regarding the interconnectivity/interoperability of the ESM systems (and EA and EP systems). The product/solution should be COTS/MOTS where possible.

The NLD MOD prefers to close one contract for 15 complete ESM systems comprising of all necessary components i.e. sensors, processing unit, antenna system and the integration of these components. We would also like to receive information regarding building blocks that can be a part of an ESM system/solution.

4.1 General/Commercial questions

Ref. nr.	Question
001	<p>Please provide the following information:</p> <ul style="list-style-type: none"> • Your company name and address details; • A contact person for this RFI and contact details; • A brief description of your company (profile); • Do you have a quality management system which meets the ISO-9001 standard? • Are you familiar with the AQAP quality assurance and if so, to what extent?
002	<p>Do you have a ESM system or ESM subsystems, that can be of interest to the NLD MOD? If it relates to a subsystem, which one? Please elaborate on your answer with (among other things) a description of a possible ESM system/solution, including the capabilities of this system.</p>
003	<p>What are according to you specific advantages your company and products have as opposed to others in the industry?</p>
004	<p>What are in your opinion the most important requirements for a new (mobile) ESM solution? Please elaborate.</p> <p>If you were to write down a program of requirements for the ESM System, what would be the five most important requirements you would state? Please mention these in descending order of importance and explain for each requirement why this important.</p>
005	<p>Would you be able to provide the whole solution? If not, would you be comfortable acting as system integrator (including full system responsibility)?</p>
006	<p>What are the restrictions/limitations of your solution/system? Please elaborate for both technical and functional limitations, but restrict your answer to 1 A4 page.</p>
007	<p>Please provide the estimated initial and annual costs for the purchase, construction, integration, warranties and maintenance (10 years) based upon a hypothetical order of 15 ESM Systems.</p> <p>Please explain what these costs consist of (maintenance level, initial costs, etc.) and please explain the variables that may have influence on price fluctuations. (price breakdown & cost drivers).</p>
008	<p>Please also provide the estimated costs (initial purchase, integration and maintenance) if the NLD MOD were to add 1, 3 or 6 systems either to the initial purchase or during the exploitation phase of the initial purchase of the hypothetical 15 ESM Systems.</p>
009	<p>Please provide a budgetary price for a 3 and 5 year initial package of spare parts, components, special tools and special test equipment.</p>
010	<p>Supply a budgetary price for training and instruction (price per day and estimated number of training days needed).</p>

011	<p>Please describe if you are capable to deliver:</p> <ul style="list-style-type: none"> • A complete ESM solution including platform integration or; • Just the ESM system or subsystems or; • Only components or; • Only integration. <p>Please elaborate.</p>
012	<p>What are the up and coming developments within the field of the recommended system and your company (the technical roadmap of your solution)? How would you advise the NLD MOD to act in relation to these developments? Please elaborate.</p>
013	<p>Is your company capable of instructing NLD MOD personnel?</p> <p>Please include in your answer:</p> <ul style="list-style-type: none"> • Is your company capable to give instruction in the Dutch or English language? • Is your company able to give instruction in the Netherlands? • Which qualifications you expect of personnel to be trained? • What kind of training you would propose and how many days of training you think are necessary?
014	<p>Are there any restrictions with regard to export of your products to the Netherlands?</p>

4.2 Technical questions

Ref. nr.	Question
015	<p>Please specify for both military and civil frequency bands which communication devices your system can intercept, analyse/decode, and localize.</p>
016	<p>How can the status of the product you are offering be described best, in technical readiness level:</p> <ul style="list-style-type: none"> • Development stage • Demonstrator available • Prototype Ready • Preliminary series delivered • Series production running • Already in operational use • Battle-proven <p>Please elaborate.</p>
017	<p>A modular and distributed approach is to be implemented, with specialized realization building blocks for certain functions. Does your company offer products for these integration building blocks? Please elaborate.</p>
018	<p>How does your company cope with technological developments, and how do you see these technological developments implemented in a flexible way, both for implantation and during the maintenance period? (Value engineering)</p>
019	<p>Does your system have both communication and radar capabilities (Intercept, Direct, Classify, Decode, Analyse, Report)? If not, which one is</p>

	<i>your system capable of?</i>
020	<i>Would you say your solution is (mainly) COTS/MOTS? If not, please provide additional information regarding the parts that aren't.</i>
021	<i>If possible, please provide information as to which customers use the COTS/MOTS aspects of your solution, and in what setting these solutions are used.</i>
022	<p><i>Please provide your ideas or possible solutions for platform independent ESM systems.</i></p> <p><i>Are there any conditions that need to be met to guarantee a working platform independent system (i.e. should it still be integrated in a vehicle)? Please elaborate.</i></p> <p><i>Is it possible to deliver a solution that is not bound to a certain kind of platform? If so, what are the limitations? Please elaborate.</i></p> <p><i>To help in answering this question, the goal is to purchase a flexible system, that can also be used for the Air force or the Navy.</i></p>
023	<p><i>The NLD MOD strives to automate as much of the capabilities (Intercept, Direct, Classify, Decode, Analyse, Report) as possible. Which parts of your ESM solution is automated? What parts aren't? Do you foresee this changing in the (near) future? Is a manual override or manual control possible regarding the automated parts of the systems?</i></p> <p><i>Please elaborate.</i></p>
024	<i>Does your system comply with international standards, for example NATO? Which ones? Please elaborate.</i>
025	<i>Is your system capable of interconnectivity/interoperability with other (third party) systems. What systems are these? What measures should be taken to make the integration possible?</i>
026	<i>Please describe your vision regarding system interoperability. What are your experiences and where do you see the risks?</i>
027	<i>Do you have experience with C2/radio systems used for (B)LOS data-exchange?</i>
028	<i>Does your system contain (closed and unique) specific own factory standards or software?</i>

4.3 Logistical/maintenance questions

Ref. nr.	Question
029	<i>Has your product (previous versions included) been manufactured in larger quantities and delivered to (military and/or private) customers? If possible, please include details.</i>
030	<i>If the NLD MOD decides to purchase 15 ESM Systems, what time frame for delivery should the NLD MOD take into account? What time frame should the NLD MOD take into account for the integration? Please elaborate.</i>
031	<p><i>What is your maintenance philosophy? Please elaborate with examples.</i></p> <p><i>Is this also your recommendation as the most suitable maintenance solution? Why is that? Please take in account; how and where the NLD MOD uses the products, that the NLD MOD wants to be flexible in adding new and/or more system (components) and that it has to have value for money.</i></p> <p><i>Describe this (possible) maintenance concept for the total Life Cycle of the EMS System. Please include:</i></p> <ul style="list-style-type: none"> • <i>which maintenance levels require resources from the manufacturer;</i> • <i>the logistic consequences for the total Life Cycle;</i> • <i>the inspection and maintenance intervals;</i> • <i>on-site support and maintenance;</i> • <i>information regarding replacement on component, module or other levels.</i>
032	<i>What are the possibilities your company offers regarding (preventive and corrective) maintenance in the field and in missions.</i>
033	<i>What kind of maintenance would you advise in operational areas? Is your company familiar with maintenance support in operational areas? Please elaborate.</i>
034	<i>Do you have Mean Time Between Failures (MTBF) and Mean Time To Repair (MTTR) data and/or calculations available? Specify for critical components.</i>
035	<p><i>Please inform the NLD MOD about the documentation usually provided with these systems:</i></p> <ul style="list-style-type: none"> • <i>user manual(s);</i> • <i>manual(s) for maintenance and repair on different levels;</i> • <i>technical data for NATO codification of spare parts and modules;</i> • <i>constructional drawings;</i> • <i>exploded views or pictures for lists of spare parts;</i> • <i>software documentation.</i>
036	<i>To what extent will the NLD MOD and/or a third party be free to maintain and/or modify your proposed system?</i>

5 In conclusion

The NLD MOD informs you that any acquisition activities regarding this RFI are not appreciated.

Written questions that are submitted before **September 1, 2017** by e-mail will be answered anonymously on **September 8, 2017** and will be published on TenderNed.

In conclusion the NLD MOD would like to thank you in advance for your time and effort by answering our questions.

Annex A: Abbreviations

- APC - Armoured personnel carrier
- COTS – Commercial Off The Shelf
- C4I – Command, Control, Communication, Computer & Information
- DMO – Defence Materiel Organisation
- EA – Electronic attack
- EM - Electromagnetic
- EP – Electronic Protection
- ESM – Electronic Support Measures
- EW Coy –Electronic Warfare Company
- FP – Force Protection
- IED – Improvised Explosive Devices
- JIVC – Joint IT Command
- MOTS – Military Off the Shelf
- MTBF – Mean Time Between Failures
- MTTR – Mean Time To Repair
- NLD MOD – Dutch Ministry of Defence
- RFI – Request for Information
- SA – Situational Awareness
- SU – Situational Understanding
- TED - Tenders Electronic Daily