

Information Notice

Introduction

- This Information Notice forms part of the European open Tender procedure for SEM + FIB published on 27-07-2026, under TNO reference number WS2640013718.
- This Information Notice provides a record of the questions submitted by the Tenderers up to and including the date of publishment of this Information Notice with the answers provided by TNO.
- If Tenderers have asked questions of similar nature, all such questions have nevertheless been included in this Information Notice and answered separately. This may result in repetition of information.
- Where a company name was mentioned in a question, it has been replaced by another word or term to anonymize the questions.
- TNO advises you to read the entire Information Notice.
- All information in the Information Notice is classified as Confidential and may only be used for the purpose of submitting a Tender for this procurement.
- The Information Notice will be made available on TenderNed through publication at www.tenderned.nl and added as a document.

The Information Notice serves to provide any additions/changes to the Tender Documents and to communicate announcements from TNO.

Where further clarification of the requirements is provided, this must be taken into account when answering Annex A04 at the time of when compiling the tender. If, for example an alternative is accepted in the Information Notice, Annex A04 will not be revised. The tenderer can answer the question for compliancy with "yes" in both cases (compliancy to the original requirement or compliancy to the alternative). In case a requirement no longer applies, leave the check box in Annex A04 on "select".

Nr	Subject	Question	Answer
1	Annex A04	R-1300-010: Can a 130mm - 130mm X-Y stage be accepted? The outer 10mm of the wafer can still be reached using rotation.	No. A 130 mm × 130 mm X-Y stage is not accepted as an equivalent alternative to the required minimum travel range of 150 mm in both the X and Y axes. The rationale for this requirement is that the FIB-SEM system must be suitable for use with full 6" InP wafers. The required 150 mm X-Y travel range is necessary to allow direct, reproducible and process-neutral access to the full wafer area without relying on additional positioning workarounds.
2	Annex A04	R-1100-050 : The requested stage accuracy is 1 micron or better (R-1300-015), but in 1100-050 the accuracy is requested to be 500nm. Can R-1300-015 be changed to 1 micron as well? The requested accuracy in R-1300-015 can not be achieved with a stage that has 1 micron accuracy. (it is essentially the same specification)	No. The requirement will not be changed. TNO does not consider R-1100-050 and R-1300-015 to be the same specification. Requirement R-1300-015 concerns the repeatability of the sample stage XYZ movements, specified as 1 µm or better. Requirement R-1100-050 concerns a system-level automatic wafer alignment and navigation capability, requiring the equipment to automatically recognize alignment marks on the wafer and automatically move to specified wafer locations with an accuracy of ≤ 500 nm.

3	Annex A04	No detector requirements are specified in the requirements document. Could TNO please clarify whether a backscatter detector, such as an in-lens backscatter detector, is required?	We specified we do not require STEM, TEM, cryogenic and EDX to keep the price within budget. As specified, we are interested in upgrade options such that we can still choose these depending on our budget (e.g. STEM, EDX). No further specifications of the detector were given, since we are only interested in the results. As long as the chosen detector configuration can satisfy the requirements of our specified measurement applications (R-1000-015) and further functional requirements it satisfies our needs. Of critical importance is that we can measure at high spatial and material resolution for low voltages (<1kV). We expect that at least an ETD detector, an in-lens SE detector with controlled energy filtering grid and an energy selective in-column BSE detector (as substitute for TEM) are required, and that a retractable low-kV BSE detector would be nice for topographic and compositional contrast at larger working distances (e.g. for facets and contact pads) and a continuous dynode ion detector would be nice for real-time imaging during FIB milling. As mentioned above, EDX and STEM would of course also be nice, but for budgetary reasons such options should be specified as optional upgrade.
4	Annex C04	Regarding the following requirement: "Predictive maintenance: A proactive approach that utilizes data analysis and machine learning algorithms to predict equipment failures and schedule maintenance accordingly", predictive maintenance is included in our offer, provided that the system is connected to the internet. Could TNO please confirm that an internet connection is permitted for this purpose?	An internet connection could be possible in principle, but only under strict conditions which must be agreed upon between parties and on the basis of a risk analysis of the pilot-line management.

5	Annex A04	R-4000-010: Could TNO please clarify how software updates and software upgrades are defined? Within our warranty and service contracts, software updates are included, but software upgrades are not. For example, the introduction of new software features would be considered an upgrade. Similarly, the system will be delivered with Windows 11 LTSC, which means that upgrading to a future major Windows version, such as Windows 12, would be considered an upgrade. Could TNO please confirm that this distinction is acceptable?	In Annex C04 - framework of maintenance and services, we state: <i>"A Software Upgrade is to be understood as a new version of the software as part of manufacturer's release management or the issuing of newly or enhanced specific functionalities."</i> Your example of Windows 11 / Windows 12 is a clear example of a technical upgrade. 'New software features' is not similar to that, because it can be anything, including features which have no added value for TNO. In our definition we speak of manufacturer's release management (based on incorporating new professional developments or needs/findings from user communities). For good understanding, 'manufacturer' applies also to yourself.
6	Annex C02	Paragraph 6.2: The proposed payment terms are 70% upon delivery and 30% upon acceptance. We would like to propose our standard payment terms instead: 60% upon purchase order, 30% upon delivery, and 10% upon acceptance. Would these payment terms be acceptable to TNO? In this case, a bank guarantee would be required, which is acceptable to us.	Not accepted. We can accommodate you as follows: - 30 % on PO under the condition a bank guaranty is given - 50% on delivery DDP; - 20% on successfully finishing the SAT
7	Annex A04	R-4000-015: A response within 2 hours after a problem is reported is required. We can commit to this response time when the problem is reported by telephone or through our customer portal. This response time cannot be guaranteed for problems reported by email. Could TNO please confirm that this is acceptable?	TNO likes to understand your processes concerning your after-sales and service management and understand why e-mail traffic is not being used. Generally, the other communication channels are acceptable to use.
8	Annex A03	A list of all consumables, spare parts, etc. is required. We would like to clarify that consumables are not included in the warranty or in the subsequent service contracts and will always be charged separately to the customer. Could TNO please confirm that this is understood and acceptable?	We confirm.

9	Annex C02	Paragraph 3.5: Could TNO please clarify how the term “operational lifetime” of the setup is defined?	Requirement R-2200-20 says: <i>"The equipment and all its parts, except those parts that are designated to be consumable or regular to be exchanged due to foreseen “wear and tear” by normal use, shall be designed for a useful life of 10 years."</i> Following this requirement "operational lifetime" is to be understood as 10 years.
10	Annex C04	We understand that TNO requires a full warranty for the first two years of the system's lifetime, during which the customer will not incur any costs other than those related to consumables. Could TNO please clarify its preferred service coverage from the third year onwards? Would TNO require preventive and predictive maintenance only, or should corrective maintenance also be included in the service contract? Alternatively, will the preferred level of service coverage be determined based on the pricing offered in tab "4 Price P2"?	This is correct. The preferred level of service coverage will be based on the pricing offered in tab "4 Price P2". Remark: an error has been noticed in Annex A03 Price sheet. A new version has been published together with this Information notice.
11	Pr. Guide5.2.5	Could you please clarify whether the exclusion described in this provision is assessed solely with regard to the economic operator submitting the tender, or whether the provision also applies to the country of origin/establishment of the manufacturer(s) of the equipment offered by the economic operator?"	"The tenderer" is an entity that can be composed, e.g. consortium of main- and sub-contractor. Everyone of them is an economic operator.
12	Annex A04	R-1200-30; is this a KO specification or nice to have?	All requirement are mandatory, we have not defined 'nice to haves'.
13	Annex A04	R-2200-005 is this calculated time day and night , or only count the day time 8 hours?	The calculation must be based on 24 hours a day and 7 days a week.
14	Annex A04	R-2200-005 is there any corresponding penalty if the system breakdown time more than 15%	No there is not. We do not use an overall penalty model on all performance indicators during the pilot line phase.

15	Annex A02	Could you indicate where these projects should be located?/is there a limitation where the reference project must be located?	There is no restriction, provided that referees can be approached if TNO decides to do so. In this matter we draw your attention to paragraph 5.2.2, in which we stipulate the requirement to supply all information asked in Annex A02. One important consequence of this, is that an appeal to confidentiality will not be accepted.
16	Annex C02	Payment. If there is a delay during the construction of the building, will there be a payment before delivery?	No, the approach is, that parties communicate closely to align the assembly planning of the equipment and the date delivery. The payment schedule in answer to question number 6 stays in place.
17	Annex A04	R-1000-050 is a chamber working pressure of $< 5 \times 10^{-5}$ mbar also allowed?	No, we require a working pressure of $< 1 \times 10^{-5}$ mbar to prevent InP facet contamination, avoid imaging resolution loss from carbon deposition, and maintain safe column operation during GIS deposition.
18	Annex C04	R-2200-005; Is the 85% uptime a mandatory requirement or part of the evaluation criteria?	It is a mandatory requirement.
19	Annex A04	R-4000-010; Is scheduled preventive maintenance excluded from the downtime calculation?	Yes.
20	Annex A04	R-4000-015; What is meant by “start of solving the problem within 24 hours”: remote diagnosis, shipment of a part, or the presence of an engineer on-site?	Whatever it takes, given the nature of the problem.
21	Annex A04	R-4000-015; Who determines the impact category of a malfunction, and can that assessment be discussed? The tender text currently states that the impact level is determined at TNO’s discretion.	Discussion is always possible, but TNO has the final say.
22	Annex A04	R-4000-015; Which spare parts are classified as “critical and/or expensive spare parts” and must be available within a specific delivery timeframe?	We expect that the supplier answers this question, based on his product knowledge and maintenance experience.

23	Annex A04	R-4000-010; Does the obligation to provide free software updates for the entire expected service life apply to major software versions as well, or only to regular updates? The tender text distinguishes between updates and upgrades, but this point may still be somewhat unclear	See our answer on question number 5.
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