



**NATIONAL MUSEUMS LIVERPOOL**

Portable X-Ray Fluorescence Analyser for Analysis of Artefacts and Artworks

**Author:** Steve Newman

**Date:** 16/11/2020

Contents

1. Introduction 3

1.1 Company Background 3

1.2 Project Background 3

1.3 High Level Overview of Requirements 3

* 1. Existing Solution 4

2. Tender Instruction s 5

2.1 Introduction 5

2.2 General 5

2.3 Confidentiality and Non-Disclosure 6

2.4 Accuracy of Information and Liability of NML 6

2.5 Cost of Preparation 7

2.6 Oral Agreement or Arrangements 7

2.7 Independent Price Determinations 7

2.8 Payments Against a Contract Award 7

2.9 Bidder Misrepresentation or Default 7

2.10 Amendments to the Tender 7

* 1. Responding to the Tender 7

3. Tender Timing, Scoring and Process 9

3.1 Questions and Additional Information 9

3.2 Target Timetable 9

3.3 Timing and Delivery 9

3.4 Compliance 10

3.5 Evaluation 10

4. Bid Requirements 12

4.1 Introduction 12

4.2 Management Summary 12

4.3 Company Background 12

4.3.1 Company Details 12

4.3.2 Financial Information 13

4.3.3 Third Party Services 13

4.3.4 Relevant Experience and Performance 13

4.4 NML Procurement Protocol 13

4.5 Timetable 14

4.6 Contractual Considerations 14

* 1. Costs 14

4.8 Summary of Documents to be returned as part of Submission 14

5. Requirements Specification 15

5.1 Requirements Detail 15

5.2 Detailed Specification of Requirements 15

5.3 Implementation / Installation 16

5.4 Support / Maintenance 16

6. Additional Questions 17

6.1 Introduction 17

6.2 Questions 17

**Appendices**

Appendix A – Form of Tender

Appendix B – NML Procurement Protocol

|  |  |
| --- | --- |
| Introduction |  |

## Company Background

National Museums Liverpool (NML) is one of the world’s leading museum organisations. NML currently comprises eight museums in and around Merseyside. Entry to all our venues is free, with circa 3 million visitors per year. We hold in trust and safeguard some of the world’s greatest museum collections, which are universal in their range – everything from archaeology and ethnology, natural and physical sciences, fine and decorative arts, maritime, social and industrial history. We are core-funded by central UK government, and we are the only national museum service in England based wholly outside London, so we have a unique fourfold role – we are the main museum service for Liverpool and Merseyside; the largest cultural organisation in the North West of England; and we operate at both national and international levels.

Having played a pivotal role in the cultural, educational and economic life of Liverpool and the North West for more than 150 years, our success can be measured in terms of how well we combine this local and regional role with our national and international responsibilities.

Our mission is to be the world’s leading example of an inclusive museum service. We believe in the concept of social justice; we are funded by the public and in return we strive to provide an excellent service to the whole of the public. We believe in the power of museums to change people’s lives. We work hard to be a free museum service and focus our venues, exhibitions and education resources to reach out, and to represent the diverse needs of our local communities.

National Museums and Galleries on Merseyside was established as a national museum as an incorporated Trustee Body by the Merseyside Museums and Galleries Order 1986, because of the outstanding quality of its collections. In 2003 the name was changed to National Museums Liverpool. Our origins go back to 1851 and the founding of Liverpool Museum. NML is an exempt charity by virtue of Schedule 3 to the Charities Act 2011.

NML has status as a Non-Departmental Public Body (NDPB) sponsored by the Department for Culture, Media and Sport (DCMS). The DCMS became the principal regulator of NML on 1 June 2010 and provides the majority of its revenue funding.

## Project Background

NML is looking to replace core equipment for the digitisation and study of collections. As part of this, we are looking to upgrade our elemental analysis facility with a state of the art handheld portable X-Ray Fluorescence (pXRF) Analyser, that can be used to analyse largely non-standard materials found in a wide range of collection types without the need for destructive sampling, and with minimum need for the handling and manipulation of fragile objects.

## High Level Overview of Requirements

Bidders are asked to submit a formal tender for the handheld pXRF analyser for the analysis of artefacts and artworks from the museum collections.

NML is looking to procure a handheld pXRF analyser that allows flexible elemental analysis of a wide range of museum collections, including 2D and 3D artworks, with minimal handling of the objects being examined. The pXRF analyser will also be required for the elemental analysis of geological samples, soil samples and for identification of harmful heavy metals and pesticides used historically to preserve biological collections.

The handheld pXRF analyser should be able to provide the identification of low elements down to Mg (magnesium) in air and lower elements down to F (fluorine) with the use of a helium purge. The beam window should be of 1µm Graphene for the maximum sensitivity to low elements.

Due to the nature of historic and archaeological objects most have non-standard compositions and any pXRF should allow for the analysis of spectra on the handheld analyser and remotely. The use of calibration sets for modern alloy, plastics and bulk soil standards will also be required. The provision of and easily switchable use of 3mm and 8mm collimators is essential.

The analyser should have the ability to transfer data to a PC via WiFi and/or Bluetooth, as well as by cable.

As well as handheld use we also require the pXRF analyser to be easily attached to a range of tripod or stand mounts to present up to flat artworks, such as paintings and paper, and also three-dimensional artworks such as sculpture or objects that are larger still from our collections. In such environments and at such scales, the ability to see the target area for analysis (from the analysers in-built camera(s)), triggering of the pXRF analyser and readout of the resultant spectra and data should be achievable remotely. The pXRF should also be able to be used in vertical and horizontal orientations, with appropriate considerations for safety. The provision of accessories such as work stands with interlocked sample chambers as well as soil feet, carry cases and straps etc. would be desirable. The inclusion of GPS/GLONASS location recording is also of interest although not essential.

The control and analysis software for use with the analyser should be compatible with Microsoft Windows 10. Software should be provided for the identification of elemental spectra including ability to carry out deconvolution where results of analysis include overlapping spectra. The ability to be able to apply different calibrations retrospectively to spectra data is preferable. Software that allows for the creation of our own user-created calibration standards is essential.

***Delivery and installation are to be completed no later than 11th March 2021***

## Existing Solution

We currently have a redundant SEM EDS that requires replacement with a more flexible elemental analysis solution for use across our venues.

# 

|  |
| --- |
| Tender Instructions |
| 2.1 Introduction |

# Tendering is required by NMLs procurement processes that ensure that NML is adhering to Managing Public Money guidelines. The Bidder is requested to propose a solution that will meet the current and future requirements of NML, as detailed within this tender pack.

## 2.2 General

NML reserves the right, without prior notice, to change, modify, or withdraw the basis of its request and/or to reject all proposals and terminate negotiations at any time. In no circumstance will NML incur any liability in respect of time, effort or costs incurred in regard to either discussions, meetings or time spent in respect of reviewing and/or responding to this document or any subsequent material.

This tender is not a purchase order or an offer to contract and does not constitute an offer capable of acceptance. This tender does not commit NML or any official of it to any specific course of action. The issue of this tender does not bind NML or any official of it to accept any proposal, in whole, or in part, whether it includes the lowest priced proposal, nor does it bind any officials of NML to provide any explanation or reason for its’ decision to accept or reject any proposal. Moreover, while it is the intention of NML to enter contract negotiations with the selected bidder, the fact that NML has given acceptance to a specific Bidder does not bind it or any official of it in any manner to the bidder. Acceptance of a proposal neither commitsNML to award a contract to any bidder, even if all requirements stated in this tender are satisfied, nor does it limitNML’s right to negotiate in their best interest. NML reserves the right to contract with a bidder for reasons other than the lowest price. Contract award will be post the tender process and may be awarded without discussions or negotiations

The bidder shall be deemed to have examined before the submission of their bid submission, all the provisions in this tender as well as regulations and other information relevant to your bid submission, and to have fully considered the risks, contingencies, and other circumstances, which could affect the bid submission. The bidder shall be responsible for obtaining all information by the making of reasonable and prudent inquiries and, by prior arrangement.

By submitting a bid submission the bidder represents that it has read and understood the tender. The bidder will consider the contents of any submitted bid submission as an offer to contract.

Any attempt by bidders or their advisors to influence the contract award process in any way may result in the bidder being disqualified. Specifically, bidders shall not directly or indirectly, at any time:

* Revise or amend the content of their tender in accordance with any agreement or arrangement with any other person, other than in good faith with a person who is a proposed partner or bidder;
* Enter into any agreement or arrangement with any other person as to the form or content of any other tender, or offer to pay any sum of money or valuable consideration to any person to effect changes to the form or content of any other tender;
* Enter into any agreement or arrangement with any other person that has the effect of prohibiting or excluding that person from submitting a tender;
* Canvass NML or any employees or agents of NML in relation to this procurement; or
* Attempt to obtain information from any of the employees or agents of NML or its advisors concerning another bidder or tender; or
* Offer, pay, promise to pay, or authorize the giving of any financial or other benefit to any person for the purpose of obtaining an improper advantage, or otherwise conduct themselves in a manner contrary to any anti-bribery or anti-money laundering legislation and/or regulations in the broadest sense (whether issued by the EU, the US, the UN or any other body) or any other such rule or legislation that may apply from time to time.

Bidders are responsible for ensuring that no conflicts of interest exist between the bidder and its advisors, and NML and its advisors and Partners.

NML also reserves the right to cease discussions with any bidder from the date of submission of bidder tender.

Failure to meet a qualification or requirement in this tender will not necessarily subject a proposal to disqualification but may do so.

## 2.3 Confidentiality and Non-Disclosure

The information contained in this tender (or accumulated through other written or verbal communication) is confidential. It is for proposal purposes only and is not to be disclosed or used for any other purpose.

Information received by NML in this tender will be held in strict confidence and will not be disclosed to any party, other than within NML and their engaged consultants if appropriate,without the express written consent of the bidder.

NML undertakes not to publicise any information obtained during this tender process, either generally or to any other bidders involved in the tender. Additionally, there will be no obligation on the part of NML to share any of the results or conclusions of the tender process with any bidder.

As a responder to this tender, you are reminded of the need for confidentiality and the need not to divulge your actual or intended tender price or an approximation of that price to any other person or body until we notify you that the contract has been awarded.

## 2.4 Accuracy of information and liability of NML

The information contained in this tender has been prepared by NML in good faith but does not purport to be comprehensive or to have been independently verified. NML does not accept any liability or responsibility for the adequacy, accuracy, or completeness of, or make any representation or warranty (express or implied) with respect to the information contained in the tender, or with respect to any written or oral information made or to be made available to any bidder or its professional advisors and any liability therefore is hereby expressly disclaimed.

Bidders considering entering into a contractual relationship with NML should make their own enquiries and investigations of NML's requirements. The subject matter of this tender shall only have contractual effect when it is contained in the express terms of an executed agreement.

Nothing in this tender is, or should be, relied upon as a promise or representation as to the future, and NML does not undertake to provide bidders with access to any additional information, or to update the information in this tender, or to correct any inaccuracies that may become apparent. NML reserves the right, without prior notice, to change the procedures outlined in this tender or to terminate discussions and the delivery of information at any time before entering into an agreement.

Should there be any obvious typographical errors or misunderstandings in the tender documentation then clarification should be sought. However, if the response is found to misrepresent facts, the documents will be deemed void. In the case where the error or misrepresentation is not discovered until after the contract is awarded, we reserve the right to determine the contract and costs incurred by us as a result of the determination shall be recoverable from the bidder under the contract.

## 2.5 Cost of Preparation

NML will not accept any liability or responsibility for any costs incurred by the bidder in preparing this tender document or any associated work effort.

## 2.6 Oral Agreement or Arrangements

Any alleged oral agreements or arrangements made by the bidder with any NML agent or employee will be disregarded in any proposal evaluation or associated award.

## 

## 2.7 Independent Price Determinations

The bidder shall warrant, represent, and certify that the following requirements have been met in connection with their proposal for this tender:

* The costs proposed have been arrived at independently, without consultation, communication, or agreement for the purpose of restricting competition as to any matter relating to such process with any other organisation or with any competitor;
* Unless otherwise required by law, the pricing proposed has not been knowingly disclosed by the bidder on a prior basis directly or indirectly to any other organisation or to any competitor; and no attempt has been made, or will be made, by the proposed to induce any other person or firm to submit or not to submit a proposal for the purpose of restricting competition.

## 2.8 Payments Against a Contract Award

Under no circumstances shall the successful bidder begin to perform under the contract prior to the effective date of the contract. NML shall assume no liability for payment of services under the terms of the contract until the successful bidder is notified that the contract has been agreed by both parties.

## 2.9 Bidder Misrepresentation or Default

NML may reject the proposal and void any award resulting from this tender to a bidder who makes any material misrepresentation in their proposal or other submittal in connection with this tender.

## 2.10 Amendments to the Tender

NML reserves the right to issue amendments or modifications to this tender during the tender stage. These will be amended on the procurement portal where the tender was originally advertised and bids will be assumed to take account of any such modifications and amendments.

## 2.11 Responding to the Tender

In responding to this tender, the bidder you specifically agrees to the following:

Having examined all parts of the tender that the supply of the Goods and/or Services to NML will be at the rates/prices as provided. All prices must be quoted on the basis indicated in the accompanying documents, except where the bidder proposes alternative priced procedures, and should **exclude VAT.** Discounts for prompt payment should be stated. The basis of the price shall be inclusive of all costs and delivery to NML.

That any contract whatsoever that may result from this tender shall be subject to the laws of England and Wales as interpreted in an English Court.

The prices quoted and all other information supplied in this tender are valid and open to acceptance by NML for a period three calendar months from the tender return date specified in the tender

The essence of competitive tendering is that NML shall receive bona fide competitive tenders from all companies tendering. In recognition of this principle, any response is declared to be a bona fide tender, intended to be competitive and that the bidder (or representatives) have not fixed or adjusted the amount of the tender by or under or in accordance with any agreement or arrangement with any other person.

The bidder declares that you have not done and undertake that you will not do any of the following acts:-

* communicate with a person, other than the person calling for this tender, the amount or approximate amount of the proposed tender.
* enter into any agreement or arrangement with any other person that he shall refrain from tendering or as to the amount of any tender to be submitted.
* offer to pay or give, or agree to pay or give, any sum of money or valuable consideration directly or indirectly to any person for doing or having done or causing or having caused to be done in relation to any other tender or proposed tender for the requirement any act or thing of the sort described above.

|  |  |  |
| --- | --- | --- |
| |  |  | | --- | --- | | Tender Timing, Scoring and Process |  | |

## 3.1 Questions and Additional Information

Formal queries concerning the content of this tender and the bidder’s submission should be submitted in writing by e-mail to Ian Lindsay ([Ian.Lindsay@liverpoolmuseums.org.uk](mailto:Ian.Lindsay@liverpoolmuseums.org.uk)) with the subject title “Portable XRF Analyser Tender”.

Where questions are raised by bidders and answers given clarify NMLs requirements for the tender, then these questions and answers may be shared with other bidders responding to this tender.

Queries must not be directed through any other employee, contractor or consultant who is engaged as part of the tender working party.

## 3.2 Target Timetable

The target timetable for this project is shown in the table below but bidders must be aware that whilst every effort will be made to meet these dates, the timetable may change for operational reasons

|  |  |  |
| --- | --- | --- |
| **Step** | **Task** | **Date** |
| 1. | Tender issued | **26/11/2020** |
| 3. | Deadline for clarification questions | **09/12/2020** |
| 4.. | Responses to clarification questions issued | **10/12/2020** |
| 5. | **Deadline for Bid Submission** | **16/12/2020** |
| 6 | Evaluation of the Tender Responses commences | **16/12/2020** |
| 8. | Notification to unsuccessful Bidder | **22/12/2020** |
| 9. | Provisional notification to Successful Bidder | **22/12/2020** |
| 10. | Order Placed & contracts signed | **04/01/2021** |
| 11. | Installation complete | **11/03/2021** |

Note – all deadlines are at Noon on that business day.

## 3.3 Timing and Delivery

The bidder must provide a full submission by email. Bids should be in Microsoft Word, Excel or PDF format. The submission must include a copy of “Appendix A - Form of Tender”.

The submission must be made to [Tenders@liverpoolmuseums.org.uk](mailto:Tenders@liverpoolmuseums.org.uk). To ensure that your submission is successful you should ensure that each email is less than 8Mb. Emails should be titled “Portable XRF Analyser Tender”. If multiple emails are sent the header should indicate they are “Part x of xx”.

Bid submissions must be received no later the date as specified in section 3.3 above**.** Any response received after this date and time may be discounted from further consideration. Any requirement that the bidder might have for proof of delivery is at the bidder’s discretion and cost.

No bid submission will be opened until the deadline as specified in section 3.3 above**.**

To enable an efficient and fair evaluation process this process must be strictly adhered to. If a bidder does not comply with the requirements contained in this Section, NML may (in its sole discretion) disqualify the bidder from the competition.

**Bidders should send another email to request receipt of submission. NML accept no responsibility for receipt of submissions and subsequent inclusion in review and evaluation, until NML have confirmed receipt by sending a confirmation email (non auto generated).**

**3.4 Compliance**

The bid submissions will be checked initially for compliance with this tender and for completeness. Responses that are not substantially complete and/or compliant will be rejected.

The compliance criteria are as follows:

Tender documentation received by specified deadline

All relevant questions answered

All relevant information provided

Compliance with any specified timescales

Signed Form of Tender

Signed Acknowledgement of NML Procurement Protocol form

Signed completion of Health & Safety forms (if applicable)

**3.5 Evaluation**

Bid submissions that pass the compliance checks will then be evaluated against the criteria specified below. During the evaluation period, NML reserves the right to call for further information from

The bid submissions will be evaluated according to the following criteria, to determine the highest scoring responses. :

|  |  |  |
| --- | --- | --- |
| **Criteria** | **Element of Evaluation** | **Max Score Available** |
| Quality | The range of elements detectable by the handheld pXRF analyser and, in particular, sensitivity to low element detection in air and with helium. | 20 |
|  | Fit for purpose and meeting all points on the Technical specification e.g. flexibility of use, ability to also be attachable to mounts/stands, remote visualisation of spectra and control of analyser, the quality of support software for the analysis of spectra. | 20 |
|  | References – evidence of supply and installation of a similar solution within the last 12 months and client satisfaction for ease of use and versatility particularly in use within the Heritage Sector. | 15 |
|  | Ongoing customer support, maintenance and training. | 5 |
|  |  |  |
| Cost | Initial Purchase cost | 35 |
|  | 3 year maintenance contract | 5 |
|  |  |  |
|  | **Total** | **100** |
|  |  |  |
|  | **Minimum Quality Score threshold (60%)** | **36** |

Only information provided as a direct response to this tender will be evaluated. Information and detail which forms part of general company literature or promotional brochures etc. will not form part of the evaluation process. Supplementary documentation may be attached where you have been directed to do so. All sections must be answered unless advised otherwise.

**In order to protect the quality of any procurement, any tender response that scores below the minimum quality score threshold will not be considered.**

|  |  |
| --- | --- |
| Bid Requirements |  |

## 4.1 Introduction

This section provides bidders with details of the form and content of bids that are invited and sets out the procedural requirements with which bidders must comply when submitting bids in order for their bids to be considered by NML. The process is intended to:

• assist NML in choosing the most economically advantageous bid;

• make clear the requirements with which bidders must comply and the basis on which the bids will be evaluated; and

• maintain competition throughout.

If a bidder does not comply with the requirements contained in this Section, NML may (in its sole discretion) disqualify the Bidder from the competition. Bids should be as concise as possible, whilst providing sufficient information to enable NML to evaluate bids in accordance with this tender.

The bidder is required to prepare the proposal and pricing based on the requirements specification detailed in section 5 of this document. Any assumptions that the bidder makes must be clearly stated in the appropriate section.

The costs must be fully itemised and transparent.

If the bidder has additional information that is directly relevant to the stated requirements but not explicitly requested, this may be added to the end of the most appropriate section under the heading “Additional Information” or referenced out to appendices.

Failure to return all of the requested documentation may result in your tender not being considered further.

This document details baseline requirements for the solution. This is not meant to be an exhaustive list of requirements but it will however serve to identify suitable solutions and bidders. NML reserves the right to modify its requirements at any time.

## 4.2 Management Summary

The bidder must provide a concise management summary of their offering, including the following:

1. A brief overview of the proposed solution including reference to any partners and third parties.
2. Reasons why NML should choose the proposed bidder and solution.
3. Summary of the bidder’s commercial offer.

## 4.3 Company Background

### 4.3.1 Company Details

The bidder must provide the following information:

1. The registered name and address of the company
2. Details of any holding companies
3. The date the company was established
4. The main activities of the company
5. The proportion of the total business accounted for by the proposed services
6. The number and location of offices, identifying the main functions of each
7. Insurance details (Professional Indemnity cover, Employers Liability cover, IPR cover)
8. Company accreditations (professional body accreditations and trade body accreditations but excluding awards)
9. Certifications and last audit dates, e.g. ISO9000 / 9001
10. An organisation chart that highlights those functions that would be involved in the delivery and subsequent support of the proposed services
11. The quality assurance mechanisms employed by the bidder
12. Describe any recent mergers or acquisitions
13. Detail any significant partnerships that will be used to deliver the proposed services. Detail the specific nature of each partnership and describe the commercial and contractual implications

### 4.3.2 Financial Information

The bidder must provide audited accounts for the last three financial years. If the organisation has not been in existence for three years then supply all available accounts.

### 4.3.3 Third Party Services

The bidder must provide the following information for each of the proposed third parties / sub-contractors that may form part of the proposed solution to this tender:

1. Service
2. Supplying bidder name
3. Product name / version
4. List of relevant clients where the bidder has provided that service

### 4.3.4 Relevant Experience & Performance

The bidder must provide evidence of previous experience in relation to expertise required and performance in completing past projects to the required standards.

As part of the selection process NML will require to contact existing customers of the bidder for similar solutions. The bidder must select 2 reference clients and provide the following contact information:

1. Client name and address
2. Description of solution provided
3. Key contact name, title, and contact information
4. Length of the supply relationship
5. Relevance to this tender
6. Size and duration of project
7. Role of the tenderer
8. Performance, in relation to time, budget, claims, project management and value of the solution.

NML undertakes not to contact any reference company without arranging such contact via the bidder’s Account Manager first.

### 4.4 NML Procurement Protocol

As part of the NML Procurement protocol and procedures, NML expect suppliers to uphold similar business standards, particularly in relation to sustainability, ethics and the Modern Slavery Act. NML will require potential bidders to agree to NML’s Procurement Protocol and their agreement to uphold those values. Please review the enclosed document:

i) Appendix B – NML Procurement Protocol

Please complete and return the NML Procurement Protocol Supplier Agreement.

### 4.5 Timetable

Please note that the project must be completed by 11th March 2021.

Bidders should present a detailed timetable for planning, installation and completion for the project as a whole, indicating how this date will be achieved.

## 4.6 Contractual Considerations

The bidder must provide a copy of their standard Terms and Conditions for the proposed services.

**4.7 Costs**

A full breakdown of all costs is to be provided. One off costs and continuing running costs should be clearly distinguished. Please provide details of any potential extra costs.

Cost breakdown should include the following as a minimum:

As an exempt charity and an educational institution funded by government (DCMS). NML generally qualifies for academia, educational or charity pricing schemes offered by many bidders and manufacturers and this must be taken into account when tendering.

We would look for a phased payment schedule across the lifetime of the schedule, with minimal upfront payment. We would expect each phased payment to be invoiced with accompanying evidence of work completed and time spent.

**4.8 Summary of Documents to be returned as part of Submission**

Bidders are required to provide the following completed documents as part of their tender return, if a bidder fails to return the below items the tender submission will be considered invalid:

* + 1. Form of Tender
    2. Pricing document - Cost breakdown
    3. Management summary answers (section 4.2)
    4. All requirements referenced in point 4.3
    5. Confirmation of Delivery dates/Programme
    6. Detailed specification of proposed solution
    7. Acknowledgement of NML Procurement Protocol form
    8. Standard Terms & Conditions
    9. Answers to additional questions

|  |  |
| --- | --- |
| Requirements Specification |  |

**5.1 Requirements Detail**

This document details baseline requirements for the new system. This is not meant to be an exhaustive list of requirements but it will however serve to identify suitable solutions and bidders. NML reserves the right to modify its requirements at any time.

**5.2 Detailed specification of requirements**

The bidder MUST indicate compliancy against each requirement. All non-compliant responses should describe the reason(s) why and how the bidder proposes to meet or partially meet the requirement.

Further information on how the proposed solution meets the requirement can be added in the Notes field.

**Technical specification**

NML is looking to procure a handheld pXRF analyser that allows flexible elemental analysis of a wide range of museum collections, including 2D and 3D artworks, with minimal handling of the objects being examined. The pXRF analyser is also be required for the elemental analysis of geological samples, soil samples and for identification of harmful heavy metals and pesticides used historically to preserve biological collections.

Analyser:

* Minimum range of detectable elements from Na up to U
* Minimum detectable element in air: Mg (or lower if available)
* 1µm Graphene window for greater sensitivity to low atomic number elements down to F (Fluorine), and where required, with the use of a helium purge.
* Voltage and current to be adjustable on p-XRF analyser
* The provision of easily switchable 3mm and 8mm collimators is essential.
* In-built camera on instrument to enable analysis target area to be seen and recorded
* Spectra to be viewable on instrument screen
* Ability to save file in raw data format for subsequent analysis
* The analyser should have the ability to transfer data to a PC via WiFi and/or Bluetooth, as well as by cable
* Flexibility to use in vertical and horizontal orientation
* Provision for instrument to be attached to variety of tripods or stands
* Calibration sets to be provided including modern alloy, plastics, geoscience and bulk soil standards

Software:

* PC Software for viewing and deconvolution of spectra compatible with Microsoft Windows 10
* Ability to see live analyser in-built camera view and analysis spectra remotely on linked PC/laptop
* Software to allow creation of user defined calibration standards
* Ability to apply retrospective calibrations to data sets

Options:

* Analytical work-stands with safety interlocked sample chambers
* Soil feet
* GPS/GLONASS location recording

Servicing & Calibration:

* 3 year maintenance contract to cover calibration, servicing and user support of the p-XRF

Delivery and installation is to be completed no later than 11th March 2021

**5.3 Implementation / Installation**

NML expects the installation of the equipment to cause minimum disruption or disturbance in the venues. NML would expect the system to be fully installed, tested and operational in order to minimise the disruption.

NML expects the implementation of the solution to be fully project managed, ensuring that the required delivery dates are met.

NML also expect the implementation to include the appropriate levels of on-site presence to ensure smooth delivery of key stages, specifically go-live.

**5.4 Support/Maintenance**

Details of the training provided as standard and optional training should be included.

Details of support provided to be included as optional extras in the tender submission.

|  |  |
| --- | --- |
| Additional Questions |  |

**6.1 Introduction**

NML requires the tender to answer specific questions in relation to the submission.

Each question will be scored as per the evaluation summary in section 3.6.

## If you fail to provide a response to any applicable question, your bid may be deemed to be non-compliant. If a bid is deemed to be non-compliant, the bid may be rejected.

## Responses to questions should be limited to and focused on the specific requirement. Bidders should refrain from including generalised statements, information not relevant to the requirement and information relating to general marketing of your organisation. Each question answered must be complete in its own right and tailored towards that specific question.

**6.2 Questions**

Please expand each section of the answer table to include all relevant information.

|  |  |
| --- | --- |
| **Question 1** | Marks Assigned: 20 |
| What are the range of elements detectable by the handheld pXRF analyser and the sensitivity to low element detection in air and with helium. | |
| **Answer:** | |

|  |  |
| --- | --- |
| **Question 2** | Marks Assigned: 20 |
| How does the p-XRF meet all points on theTechnical specification e.g. flexibility of use, ability to also be attachable to mounts/stands, remote visualisation of spectra and control of analyser, the quality of support software for the analysis of spectra. | |
| **Answer:** | |

|  |  |
| --- | --- |
| **Question 3** | Marks Assigned: 15 |
| Please supply details of references to show evidence of supply and installation of a similar solution within the last 12 months and client satisfaction for ease of use and versatility particularly in use within the Heritage Sector. | |
| **Answer:** | |

|  |  |
| --- | --- |
| **Question 4** | Marks Assigned: 5 |
| What ongoing customer support, maintenance and training do you provide | |
| **Answer:** | |