

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
**Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada**
800 Burrard Street, 2nd Floor
800, rue Burrard, 2e étage
Vancouver, BC V6Z 0B9
Bid Fax: (604) 775-7526

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet NMR Spectrometer	
Solicitation No. - N° de l'invitation H4134-133091/A	Date 2013-11-26
Client Reference No. - N° de référence du client H4134-133091	
GETS Reference No. - N° de référence de SEAG PW-\$VAN-532-7144	
File No. - N° de dossier VAN-3-36201 (532)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2014-01-06	Time Zone Fuseau horaire Pacific Standard Time PST
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Takasaki, Alan H.	Buyer Id - Id de l'acheteur van532
Telephone No. - N° de téléphone (604) 775-7605 ()	FAX No. - N° de FAX (604) 775-7526
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF HEALTH DRUG ANALYSIS LABORATORY 3155 WILLINGDON GREEN BURNABY British Columbia V5G4P2 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Public Works and Government Services Canada - Pacific
Region
800 Burrard Street, 12th Floor
800, rue Burrard, 12e étage
Vancouver, BC V6Z 0B9

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation No. - N° de l'invitation

H4134-133091/A

Amd. No. - N° de la modif.

File No. - N° du dossier

Buyer ID - Id de l'acheteur

van532

Client Ref. No. - N° de réf. du client

H4134-133091

VAN-3-36201

CCC No./N° CCC - FMS No/ N° VME

TITLE:

Nuclear Magnetic Resonance (NMR) Spectrometer System

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VAN-3-33091

Buyer ID - Id de l'acheteur
van532
CCC No./N° CCC - FMS No/ N° VME

List of Annexes:

- Annex A Requirement ;
- Annex B Basis of Payment;
- Annex C Point Rated Technical Criteria.

Forms

- Form A: Bid Submission Form
- Form B: Substantiation of Technical Compliance Form;

PART 1 - GENERAL INFORMATION

1. Security Requirement

There is no security requirement associated with this bid solicitation.

2. Requirement

The requirement is detailed under Article 2 of the resulting contract clauses.

3. Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2013-06-01) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days

Insert: ninety (90) days

1.1 SACC Manual Clauses

B3000T (2006-06-16) Equivalent Products

2. Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than fourteen(14) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

4. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in British Columbia.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

5 Sample Request

Bidders interested in bidding should request the test sample for quantitation analysis (please consult Annex C - Point Rate Criteria, section R.6) as soon as possible so that the result can be included in the bidder's bid response. Due to international legislation, the test sample can only be mailed to a Canadian address. This sample will include a mixture of pseudoephedrine and caffeine; procurement of solvent and internal standard, D₂O and maleic acid, required in the analysis will be the bidder's responsibility.

Bidders are to send an email to [the al.takasaki@pwgsc.gc.ca](mailto:al.takasaki@pwgsc.gc.ca) and Elizabeth.perez@pwgsc.gc.ca . The subject Line should read Test Sample Request – RFP H3134-133091/A. In your email, please provide the complete Canadian mailing address, name, telephone # and email address.

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

- Section I: Technical Bid (3 hard copies)
- Section II: Financial Bid (1 hard copy)
- Section III: Certifications (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

The technical bid consists of the following:

a. Bid Submission Form: Bidders are requested to include the Bid Submission Form with their bids. It provides a common form in which bidders can provide information required for evaluation and contract award, such as a contact name, the Bidder's Procurement Business Number, the Bidder's status under the Federal Contractors Program for Employment Equity, etc. Using the form to provide this information is not mandatory, but it is recommended. If Canada determines that the information required by the Bid Submission Form is incomplete or requires correction, Canada will provide the Bidder with an opportunity to do so.

b. Substantiation of Technical Compliance Form: The technical bid must substantiate the compliance of the Bidder and its proposed solution with the specific articles of Annex A (Requirement) identified in the Substantiation of Technical Compliance Form, which is the requested format for providing the substantiation. The Substantiation of Technical Compliance Form is not required to address any parts of this bid solicitation not referenced in the form

Where Canada determines that the substantiation is not complete, the Bidder will be declared non-responsive and disqualified. The substantiation may refer to additional documentation submitted with the bid - this information can be referenced in the "Reference" column of the Substantiation of Technical Compliance Form, where bidders are requested to indicate where in the bid the reference material can be found, including the title of the document, and the page and

paragraph numbers; where the reference is not sufficiently precise, Canada may request that the Bidder direct Canada to the appropriate location in the documentation.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with Annex B, Basis of Payment. The total amount of Applicable Taxes must be shown separately. Unless otherwise indicated, bidders must include a single, firm, all-inclusive price quoted in Canadian dollars in each cell requiring an entry in the pricing Tables B.1 and B.2

Blank Prices: Bidders are requested to insert "\$0.00" for any item for which it does not intend to charge or for items that are already included in other prices set out in the tables. If the Bidder leaves any price blank, Canada will treat the price as "\$0.00" for evaluation purposes and may request that the Bidder confirm that the price is, in fact, \$0.00. No bidder will be permitted to add or change a price as part of this confirmation. Any bidder who does not confirm that the price for a blank item is \$0.00 will be declared non-responsive.

1.1 Exchange Rate Fluctuation

C3011T (2010-01-11), Exchange Rate Fluctuation

1.2 SACC Manual Clauses

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

1.1 Technical Evaluation

1.1.1 Mandatory Technical Criteria

a. Each bid will be reviewed for compliance with the mandatory requirements of the bid solicitation. Any element of the bid solicitation that are identified specifically with the words "must" or "mandatory" is a mandatory requirement. Bids that do not comply with each and every mandatory requirement will be declared non-responsive and be disqualified.

b. The mandatory requirements are described in Annex A and Form B.

1.1.2 Point Rated Technical Criteria

Each bid will be rated by assigning a score to the rated requirements, which are identified in the bid solicitation by the word "rated" or by reference to a score. Bidders who fail to submit complete bids with all the information requested by this bid solicitation will be rated accordingly. The rated requirements are described in Annex C.

1.2 Financial Evaluation

a. The financial evaluation will be conducted by calculating the Total Bid Price (SubTotal B1 + SubTotal B.2) using the Pricing Tables completed by the bidders.

Maximum Funding (Cost for the Initial Order – Subtotal B.1 of Annex B).

The maximum funding available for the Contract resulting from the bid solicitation is \$350,000.00 (Applicable Taxes extra). Bids valued in excess of this amount will be considered non-responsive. This disclosure does not commit Canada to pay the maximum funding available.

b. *SACC Manual* Clause A0220T (2013-04-25), Evaluation of Price

2. Basis of Selection

2.1 Basis of Selection - Highest Combined Rating of Technical Merit and Price

1. To be declared responsive, a bid must:

(a) comply with all the requirements of the bid solicitation; and

(b) meet all mandatory criteria; and

(c) obtain the required minimum points specified for each criterion for the technical evaluation, and

(d) obtain the required minimum of 56 points overall for the technical evaluation criteria which are subject to point rating.

The rating is performed on a scale of 265 points.

2. Bids not meeting (a) or (b) or (c) and (d) will be declared non-responsive.

3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 80 % for the technical merit and 20 % for the price.

4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 80 %.

5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 20 %.

6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.

Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined

rating of technical merit and price will be recommended for award of a contract, provided that the total evaluated price (Initial Order) does not exceed the budget available for this requirement.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 60/40 ratio of technical merit and price, respectively. The total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (60%) and Price (40%)

		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		115/135	89/135	92/135
Bid Evaluated Price		55,000	50,000	45,000
Calculations	Technical Merit Score	115/135 x 60 = 51.11	89/135 x 60 = 39.56	92/135 x 60 = 40.89
	Pricing Score	45/55 x 40 = 32.73	45/50 x 40 = 36.00	45/45 x 40 = 40.00
Combined Rating		83.84	75.56	80.89
Overall Rating		1st	3rd	2nd

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and documentation to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default, if any certification made by the Bidder is found to be untrue whether during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with this request will also render the bid non-responsive or will constitute a default under the Contract.

1. Mandatory Certifications Required Precedent to Contract Award

1.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (CFP) for employment equity "CFP Limited Eligibility to Bid" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Human Resources and Skills Development Canada (HRSDC) - Labour's website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

PART 6 - RESULTING CONTRACT CLAUSES

1. Security Requirement

There is no security requirement applicable to this Contract.

2. Requirement

The Contractor must provide the supply, delivery, installation and demonstration of ONE(1) only Nuclear Magnetic Resonance Mass Spectrometer (NMR-MS) _____ (Make and Model) _____ system in accordance with the Requirement at Annex "A" and the Contractor's technical bid entitled _____, dated _____.

3. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

3.1 General Conditions

2010A (2013-04-25), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

3.2 Optional Goods and/or Services:

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex B of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option within 12 months after contract award by sending a written notice to the Contractor.

4. Term of Contract

4.1 Delivery Date

4.1.1 Hardware and software:

All the deliverables must be received on or before March 28, 2014 (or _____ (if earlier)).

4.1.2 Installation and Demonstration Acceptance:

The Contractor must make the complete delivery within 4 weeks from the date of the receipt of the Hardware and Software.

4.1.3 Training:

The Contractor must make the complete delivery within 2 weeks from the date of acceptance of the Installation and Demonstration.

4.2 Shipping Instructions - Free on Board Destination

Goods must be consigned and delivered to the destination specified in the contract:

FOB Destination,

Health Canada,
Vancouver Drug Analysis Service Laboratory
Room 206, 3155 Willingdon Green,
Burnaby, BC V5G 4P2
Attn: Richard Laing
Telephone: (604)666-3582

including all delivery charges and customs duties and Applicable Taxes; and

4.3 SACC Manual clause D0018C (2007-11-30) Delivery and Unloading

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Alan Takasaki
Title: Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch Vancouver,
Address 219 - 800 Burrard St
Vancouver, BC V6Z 0B9
Telephone: (604)775-7605 Facsimile: (604)775-7526
E-mail address: al.takasaki@pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

5.2 Project Authority (To be provide at Contract award)

The Project Authority for the Contract is:

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone : _____ Facsimile: _____

E-mail address: _____

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

5.3 Contractor's Representative

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone : _____ Facsimile: _____

E-mail address: _____

6. Payment

6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm lot price(s) as specified in Annex B for a cost of \$ _____ (*insert the amount at contract award*). Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.2 Limitation of Price

SACC Manual clause C6000C (2011-05-16) Limitation of Price

6.3 Milestone Payments

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract if:

- a. an accurate and complete claim for payment using PWGSC-TPSGC 1111, Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;
- c. all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

6.4 Schedule of Milestones

The schedule of milestones for which payments will be made in accordance with the Contract is as follows:

Milestone No.	Description or Deliverables	Firm Amount (if applicable)	Due date or Delivery date
1	Hardware and Software delivery		
2	Installation, Demonstration and Warranty		
3	Training		

6.5 Advance Payment

Canada will pay the Contractor in advance for the warranty if:

- (a) An accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- (b) All such documents have been verified by Canada.

Payment in advance does not prevent Canada from exercising any or all potential remedies in relation to this payment or any of the Work, if the Work performed later proves to be unacceptable.

7. Invoicing Instructions - Progress Payment Claims

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment.

Each claim must show:

- a. all information required on form PWGSC-TPSGC 1111;
 - b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
 - c. the description and value of the milestone claimed as detailed in the Contract
2. There is no hold back.
 3. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the Project Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

The Project Authority will then forward the original and two (2) copies of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

4. The Contractor must not submit claims until all work identified in the claim is completed.

8. Certifications

8.1 Compliance

Compliance with the certifications and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification, provide the related documentation or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

9. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____.

10. Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the general conditions 2010A (2013-04-25),- Goods (Medium Complexity);
- (c) Annex A, Requirement;
- (d) Annex B, Basis of Payment;
- (e) the Contractor's bid dated _____ (*insert date of bid*) (*If the bid was clarified or amended, insert at the time of contract award: “, as clarified on _____” or “, as amended on _____” and insert date(s) of clarification(s) or amendment(s)*)

11. SACC Manual Clauses

B7500C (2006-06-16) Excess Goods

B1501C (2006-06-16) Electrical Equipment

12 Warranty – Contractor responsible for all costs

Section 09 entitled *Warranty of general conditions 2010A* is amended by deleting subsection 2 in its entirety and replacing it with the following:

1. The Contractor must pay the transportation cost associated with returning the Work or any part of the Work to the Contractor's plant for replacement, repair or making good. The Contractor must also pay the transportation cost associated with forwarding the replacement or returning the Work or part of the Work when rectified to the delivery

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point specified in the Contract or to another location as directed by Canada. If, in the opinion of Canada, it is not expedient to remove the Work from its location, the Contractor must carry out any necessary repair or making good of the Work at that location. In such cases, the Contractor will be responsible for all Costs (including travel and living expenses) incurred in so doing, Canada will not reimburse these Costs.

All other provisions of the warranty section remain in effect.

ANNEX "A"

REQUIREMENT

This year, Vancouver Drug Analysis Service (DAS) laboratory is forecast to receive and analyze over 28,000 drug exhibits from seizures by police services, the RCMP and border services from Manitoba, Saskatchewan, Alberta, British Columbia and the Territories. Of these, an estimated 350 samples will be further analyzed quantitatively, to precisely identify the percent composition of a commodity. This number is severely restricted because of current technical limitations; Vancouver DAS offers quantitation services for cocaine, heroin, methamphetamine and MDMA only. Using existing methodology, the turnaround times for six samples of one drug type range between two to three days, and the analyses require certified standards, which are costly, time-consuming to obtain. Frequently the lab is requested to provide a purity determination on a new emerging drug which it cannot do with these limitations.

A Nuclear Magnetic Resonance (NMR) spectrometer is being sought to improve and expedite quantitation, among other important applications. Quantitative NMR (qNMR) is a robust method recognized for the certification of reference materials. Because NMR is insensitive to impurities, the ratios obtained are highly precise; there is no need for chemically identical standards, or calibration, or conditioning, and turnaround time can be less than two minutes per sample. This application of NMR is well established; the American Drug Enforcement Administration (DEA) has developed a turn-key, automated analysis system for its field labs to quantitate hundreds of commodities and have been using qNMR for almost two decades. The DEA Special Testing Laboratory has agreed to provide Vancouver DAS with a copy of the macroinstructions that they have developed in-house for the automated analysis of samples for quantitation and facilitate sharing of methods and conclusions from analyses of interest (ie. international trafficking investigations) as shipping forensic drug samples cross international borders is not practical, especially on a time sensitive scenario. These macros are written using the Agilent coding language MAGICAL II.

Additionally to qNMR, another application of NMR is sample linking, which has been requested by our clients, but that we cannot provide at present. Lastly, NMR would enable Vancouver DAS to verify standards, and to identify novel designer drugs that could not previously be certified in the absence of standards.

1.0 Scope

1.1 Title

Nuclear Magnetic Resonance (NMR) Spectrometer Request for Purchase for Vancouver Drug Analysis Service (DAS) Laboratory

1.2 Introduction

Vancouver Drug Analysis Service (DAS) laboratory requires a 400 MHz Nuclear Magnetic Resonance (NMR) Spectrometer for quantitation of commodities, sample linking through relative composition analysis, standard verification, and structural elucidation of novel designer drugs.

1.3 Objectives and Requirements

The Vancouver DAS laboratory requires a 400 MHz NMR spectrometer comprised of a superconducting magnet, magnet stand, high-sensitivity probe, a console, an autosampler and a fully customizable, automated acquisition and processing software that is compatible with the macros written by the DEA, or comes with equivalent macros that are ready to use and automated. The specifications are further detailed in this RFP.

1.4 Background, Assumptions and Specific Scope of the Requirement

Vancouver DAS offers quantitation services for samples containing cocaine, heroin, methamphetamine or MDMA. The uncertainty of the current methodology using High Performance Liquid Chromatography (HPLC) is estimated at 3%; turnaround times for six samples of one drug type range between one to one and half days requiring certified standards. Alternatively, uncertainty for qNMR experiments can be <0.1% with a 95% confidence interval without the use of chemically identical standards, no calibration or conditioning, and with a turnaround time of less than two minutes per sample (sample size approximately 2.5 mg). Using qNMR would not only increase efficiency, but it would also increase the number of commodities that can be quantified because it would eliminate the need for large quantities of standards. Furthermore, the relative concentrations of the components of a mixture and small impurities, whether from the synthetic process or environmental contaminants, will vary between samples, especially in the absence of analytical quality control by the producers. By comparing these relative ratios it is possible to assess the similarity between samples, which is a service we cannot presently offer. Lastly, the universality of NMR spectra will allow for fast and reliable standard verification that can be easily compared against literature data, or analysed to prove the presence of the correct number of protons, and their correct arrangement within the molecule. In conjunction with MS data, standards can be reliably verified and their purity can be assessed simultaneously with high precision.

2.0 Requirements

2.1 Tasks, Activities, Deliverables and Milestones

The contractor will deliver a system to the Vancouver DAS laboratory at 3155 Willingdon Green, Burnaby, BC by March 31, 2014; the system must be in compliance with the specifications detailed in this document. Installation, installation qualification, operation qualification and onsite training must be completed by the end of April, 2014. Software validation must be provided on a certificate. Upon completion of installation, all components

of the system must be fully operational and ready for analysis. The macroinstructions provided by the DEA or written by the manufacturer will be assessed before the system is accepted by DAS. Training, including software and instrument use and maintenance and troubleshooting, must be completed before the final acceptance of the system by DAS. The instrument must include clearly written and comprehensive English-language user manuals for reference. The supplier must continue to provide technical assistance to DAS laboratory staff during regular working hours by phone or email at no added cost to DAS. In the event of servicing or repairs to the instrument, the manufacturer must respond within five business days from the time the request is made to the manufacturer.

2.2 Specifications and Standards

The system must be in accordance with the following specifications. If any additional components, peripherals or supplies are necessary to operate the instrument upon arrival at the DAS laboratory but were not included in the contractor's bid, the contractor must absorb all the costs of providing the required omissions. This includes installation, utility requirements such as compressed gas, cryogenics, ventilation requirements, power supply, etc.

A. General Requirements

In the context of this document, the definition of *fully automated* is a system that is macro-driven that, with the exception of sample preparation and placement on the carousel/autosampler, must automatically run, acquire, process, quantitate and generate a report for a sample. This system must perform analyses unattended for a series of samples limited only by the size of the carousel/autosampler.

- A.1 Must include a shielded NMR magnet with a frequency of 400 MHz.
MANDATORY
 - Shielded magnet's axial stray field must not exceed 1.2 m, and radial stray field must not exceed 0.75 m. MANDATORY
- A.2 Must include anti-vibration legs or equivalent vibration isolation system.
MANDATORY
- A.3 Must include a He transfer line. MANDATORY
- A.4 Must include a N₂ transfer line. MANDATORY
- A.5 Must have He and N₂ level sensors. MANDATORY
 - Sensory accuracy must be > 4%. MANDATORY
- A.6 Must have a He hold time > 200 days and a hold volume > 50 L.
MANDATORY

-
- A.7** Must have a N₂ hold time > 14 days and a hold volume > 50 L.
MANDATORY
- A.8** Must perform pulsed field gradient experiments. MANDATORY
- A.9** Must be equipped with shims. MANDATORY
- A.10** Must perform automated gradient shimming. MANDATORY
- A.11** Must have a temperature controller. MANDATORY
- A.12** Must have two broadband frequency channels (minimum 6 MHz to 440 MHz each), with fully digital generation of offset frequencies and phases (direct digital synthesis) for long-term accuracy and stability.
MANDATORY
- A.13** Must have two linear amplifiers. MANDATORY
- A.14** Must have two radio frequency (RF) channels. MANDATORY
- A.15** Must perform the following experiments:
- a) ¹H; MANDATORY
 - b) ¹³C; MANDATORY
 - c) Distortionless Enhancement by Polarization Transfer (DEPT) and Attached Proton Test (APT); MANDATORY
 - d) 2D Correlation Spectroscopy (COSY); MANDATORY
 - e) 2D Diffusion Ordered Spectroscopy (DOSY); MANDATORY
 - f) 2D Heteronuclear Multiple-Bond Correlation spectroscopy (HMBC); MANDATORY
 - g) 2D Heteronuclear Single Quantum Coherence (HSQC); MANDATORY
 - h) 2D Nuclear Overhauser Effect Spectroscopy (NOESY); MANDATORY
 - i) 2D Total Correlation Spectroscopy (TOCSY); MANDATORY
 - j) 2D Heterocorrelation (HETCOR). MANDATORY
- A.16** Must include a room temperature (RT) probe: MANDATORY
- a) Must be a 5 mm probe; MANDATORY
 - b) Must be a pulsed field gradient probe; MANDATORY

- c) Must be fitted with an actively shielded single axis Z-gradient; MANDATORY
- d) Must have an automatic tuning and matching accessory; MANDATORY
- e) Must have variable temperature range of RT to 150°C minimum; MANDATORY
- f) Must have a ^2H lock channel; MANDATORY
- g) Must have a tunable outer NMR coil for either ^1H decoupling, or observation; MANDATORY
- h) Must have a broadband channel tunable to the following nuclei: ^1H , ^{13}C and ^{15}N to ^{31}P ; MANDATORY
- i) Must have a signal/ noise sensitivity of: $^{13}\text{C} > 150:1$ (American Society for Testing and Materials (ASTM) sample, 60% C_6D_6 and 40% p-Dioxane), $^1\text{H} > 250:1$ (0.1% ethylbenzene). MANDATORY

A.17 Probe must have ^{13}C decoupling capability. MANDATORY

A.18 Must be capable of digital filtering. MANDATORY

A.19 Must include a desktop host workstation with:

- a) Fully configured computer with necessary accessories to operate the system and set up automated sequences. MANDATORY
- b) Minimum one terabyte of internal memory; MANDATORY
- c) One year manufacturer warranty on computer and parts; MANDATORY
- d) Computer must be able to accept a second network (NIC) card. MANDATORY
- e) Two NIC cards must be included. MANDATORY
- f) Minimum 22" LCD screen; MANDATORY
- g) Ethernet adapter; MANDATORY
- h) Mouse; MANDATORY
- i) Keyboard; MANDATORY
- j) One 250-500 page tray capacity, colour laser printer (includes duplexing capability); MANDATORY and

k) Computer table that can accommodate all the components listed above. MANDATORY

A.20 Must include a(n) autosampler/sample carousel with twelve positions minimum. MANDATORY

A.21 Must perform analyses unattended. MANDATORY

Automation capability will be point-rated. POINT-RATED R.4

A.22 The contractor must provide timely call-response and on-site response to service calls. MANDATORY

How quickly a response is provided as well as the cost will be point-rated. POINT-RATED R.3

A.23 Warranty for all non-consumable components must be a minimum of twelve months beginning from the date of acceptance of the system by DAS. Warranty must cover all parts, freight costs, labour, technician travel and lodging, or any other associated costs. MANDATORY

B. General Software Requirements

B.1 Must include an up-to-date operating system with the latest service pack. MANDATORY

B.2 Must include software suite for signal acquisition and signal analysis. MANDATORY

B.3 The software must be compatible with the macroinstructions written by the DEA, OR the manufacturer must provide equivalent macroinstructions compatible with the instrument's software. MANDATORY

A comprehensive list of the macros is not currently available. These include, but are not limited to:

- a) Individual macros for the automated identification and quantitation of several hundred compounds of interest;
- b) Macros for adjusting integrals;
- c) Macros for batch processing;
- d) Macros for baseline processing;
- e) Macros for spectral comparison (capable of comparing up to 7 spectra at a time);

- f) Macros for phasing optimization for quantitation;
- g) Macros for automated library searches;
- h) Macros for peak width normalization; and
- i) Macros to facilitate the development of new quantitative macros.

Macro-development will be point-rated. POINT-RATED R.6

- B.4** Software must include Complete Reduction to Amplitude Frequency Table (CRAFT), OR equivalent comparative analysis program. MANDATORY
- B.5** Software must have a function to create spectral libraries. MANDATORY
- B.6** The analysis software must be compatible with Windows operating system. MANDATORY
- B.7** One perpetual licence for the analysis software must be provided to run on the instrument console. MANDATORY
- B.8** The contractor must provide free upgrades for all instrument software suites for a minimum of two years, plus all application modules as they become commercially available. MANDATORY

C. Training Requirements

- C.1** Training must be provided by a qualified NMR technician in-house, for two people. MANDATORY
- C.2** Must demonstrate instrument maintenance and troubleshooting. MANDATORY
- C.3** Must demonstrate software use, use of macroinstructions, and macroinstruction modification. MANDATORY

D. Mandatory Performance Specifications

Acceptance of the instrument will be determined on-site in the presence of the user after installation by the following criteria in addition to the manufacturer specified performance specifications for that system:

- D.1** Has a signal to noise sensitivity of $^{13}\text{C} > 150:1$ (American Society for Testing and Materials (ASTM) sample, 60% C_6D_6 and 40% p-Dioxane), $^1\text{H} > 250:1$ (0.1% ethylbenzene). MANDATORY

- D.2** Can be used to quantitate cocaine, heroin, methamphetamine and MDMA using DEA-supplied macros or equivalent supplier-provided macros. MANDATORY
- D.3** Can be used to differentiation between N-methyl-2,3-methylenedioxyamphetamine and N-methyl-3,4-methylenedioxyamphetamine. MANDATORY

The contractor will be responsible for providing all relevant reference standards for use during on-site acceptance testing, with the exception of cocaine, heroin, methamphetamine, MDMA, N-methyl-2,3-methylenedioxyamphetamine and N-methyl-3,4-methylenedioxyamphetamine. MANDATORY

E. Options Goods and Services

Note: Contractor may list items and their relevant cost and specifications that may become part of this tender.

Prices quoted for the following items will be valid after 12 months of the system acceptance date. The contractor can provide more options than the following as deemed to be useful for the user.

- E.1** Include low temperature kit.
- E.2** Include 12 or more spinner turbines in addition to those included with the carousel/autosampler.
- E.3** Access to established spectral libraries.
- E.4** Second work station consisting of a fully configured computer, monitor, mouse, and keyboard.
- E.5** A 24+ sample carousel/autosampler.
- E.6** Second licence for the analysis software to run on an external computer.
- E.7** Twelve-month extension of the standard warranty.
- E.8** Twenty four-month extension of the standard warranty.

ANNEX "B"
Basis of Payment

Table B.1 – Initial Order

Item #	Description	Qty	U of I	Unit price	Extended total
1	NMR-MS Hardware and Software Make and Model _____	2	EA	\$	\$
2	Year 1 - on-site warranty	2	EA	\$	\$
3	Installation and Demonstration	2	lot	\$	\$
4	Training	2	lot	\$	\$

SubTotal B.1 \$

Table B.2 - Optional Goods and Services

5	Year 2 - on-site warranty	2	ea	\$	\$
6	Year 3 – on-site warranty	2	ea	\$	\$
7	24 or more sample carousel / autosampler	1	ea	\$	\$
8	2nd fully configured Computer with monitor, mouse and keyboards	1	ea	\$	\$
9	2 nd license for the analysis software to run on external computer	1	ea	\$	\$
Other Value Added Items offered by the Contractor will be considered optional goods and services, less a discount of ____ % (or as listed herein).					

SubTotal B.2 \$

ANNEX C
Point - rated Technical Criteria

<p>Bidders: Write beside each of the criteria the relevant page number(s) from your proposal which addresses the requirement identified in the criteria. Please provide a written description of how each requirement is met. Score column reserved for the evaluation team.</p> <p>Bids that fail to meet the mandatory requirements will not be rated and the bid will not be considered.</p>					
Criteria			Pg #	Score	
General Requirements		Max.: 60 points	Min. Required: 6 points		/60
<p>R.1 Quantitation of a caffeine sample in CDCl₃ using maleic acid, where the transmitter offset is modified such that the proton signal at 7.51 ppm is shifted to approximately 10 ppm, 6 ppm, 4 ppm, 2 ppm and 0 ppm. Vendor is to provide a hard copy of a report that demonstrates that the peak integration ratios are preserved when changing the transmitter offset.</p>					/20
<p>R.2 Ability to create spectral library (Section E.3) A higher score will be given to systems that are capable creating a spectral library from acquired spectra.</p> <p>10 points if system is capable of creating a spectral library.</p> <p>10 points if can accommodate more than 200 spectra.</p>					/20
<p>R.3 Timely response to service calls (Section A.22) Please provide a detailed written response describing your process for providing call back service (including time for technician to call back) and on-site service and the expected timelines for responses to on-site service requests. Please provide two references that can verify the call back response times. Please include the costs of on-site response, including travel and at least 8 hours of technician service.</p> <p>A minimum of 6 points is required for the bid to pass this section.</p>					/20
Automation Requirements		Max.: 125 points	Min. Required: 50 points		/125
<p>R.4 The system must have the ability to analyse at least 12 samples (using a carousel/autosampler) automatically and sequentially without the user being present. The user prepares the sample and initiates the sequence to analyse the first sample and the system automatically resumes the analysis of the remaining samples. A higher score will be given for the ability to analyse more than 15 samples automatically and sequentially (solid and liquid concurrently).</p> <p>10 points: 12 -15 samples</p> <p>15 points: 16-20 samples</p> <p>25 points: > 20 samples</p>					/25

Bidders: Write beside each of the criteria the relevant page number(s) from your proposal which addresses the requirement identified in the criteria. Please provide a written description of how each requirement is met. Score column reserved for the evaluation team.

Bids that fail to meet the mandatory requirements will not be rated and the bid will not be considered.

Criteria	Pg #	Score
<p>R.5 The vendor is to describe each step that the system will perform to automatically quantitate 12 samples in a row once the samples are loaded onto the carousel and the operator initiates the sequence. The vendor is to specify if a step in the acquisition or processing sequence requires operator involvement.</p> <p>10 points will be added for automation of each of the following processes:</p> <ul style="list-style-type: none"> - Shimming - Deuterium-frequency lock - Acquisition - Base line correct - Phase correct - Peak identification - Peak integration - Quantitation with respect to internal standard - Result presentation/summary - Report/print out 		/100
Macroinstruction Requirements	Max.: 60 points	/60
<p>R.6 A mixture of pseudoephedrine and caffeine in D₂O with maleic acid as internal standard is to be quantitated using a specially created macroinstruction. The analysis must be fully automated; this includes automated phase correction, peak integration, peak selection, assignment, and quantitation calculations. Vendor is to provide a hard copy of a report on the macros coding used to automate this process.</p> <p>Vendors are to request the sample for quantitation analysis. Due to international legislation, the sample can only be mailed to a Canadian address. The sample will include a mixture of pseudoephedrine and caffeine; D₂O and maleic acid will be provided by the vendor.</p> <p>No points will be attributed if the quantitation error is greater than 3% 5 points: quantitation error is < 3% 10 points: quantitation error is < 1%</p> <p>50 points: fully automated macro-driven process 10 points will be subtracted for each non-automated process required to attain the result</p>		

Bidders: Write beside each of the criteria the relevant page number(s) from your proposal which addresses the requirement identified in the criteria. Please provide a written description of how each requirement is met. Score column reserved for the evaluation team.

Bids that fail to meet the mandatory requirements will not be rated and the bid will not be considered.

Criteria		Pg #	Score
Options:	Max.: 20 points		/20
R.7 The vendor must describe how the probe or the system analysis software is able to remove C13 satellites from a proton spectrum to optimize quantitation analysis. 10 points if C13 satellites can be removed. 0 points if C13 satellites cannot be removed. Does the quoted probe allow for decoupling of ¹³ C? 10 points if yes 0 points if no			/20

Call Response (the time it takes to get a call back from service technician once a request by customer has been made):

- 8 points if within 1 hour
- 6 points if within 2 hours
- 4 points if within 4 hours
- 2 points if within 1 day
- 0 points if greater than 1 day

On-Site Service Requests:

Time for a technician to arrive on-site:

- 8 points if within 1 day
- 6 points if up to 2 days
- 4 points if up to 4 days
- 2 points if up to 6 days
- 0 points if more than 6 days

Cost for on-site service, response within 4 days (including travel and at least 8 hours of technician labour on-site):

- 4 points if less than \$ 2500
- 1 point if \$ 2500 or more

Solicitation No. - N° de l'invitation
H4134-133091/A
Client Ref. No. - N° de réf. du client
H4134-133091

Amd. No. - N° de la modif.
File No. - N° du dossier
VAN-3-33091

Buyer ID - Id de l'acheteur
van532
CCC No./N° CCC - FMS No/ N° VME

FORMS

FORM A - BID SUBMISSION FORM

BID SUBMISSION FORM (A)		
Bidder's full legal name		
Authorized Representative of Bidder for evaluation purposes (e.g., clarifications)	Name	
	Title	
	Address	
	Tel #	
	Fax #	
	Email	
Bidder's Procurement Business Number (PBN) [see the <i>Standard Instructions 2003</i>]		
Jurisdiction of Contract: Province in Canada the bidder wishes to be the legal jurisdiction applicable to any resulting contract (if other than as specified in solicitation)		
Signature of Authorized Representative of Bidder		

Solicitation No. - N° de l'invitation
H4134-133091/A
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H4134-133091

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VAN-3-33091

Buyer ID - Id de l'acheteur
van532
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FORM B: Substantiation of Technical Compliance Form

(Form B is attached at the end of this RFP)

Solicitation No. - N° de l'invitation
H4134-133091/A
Client Ref. No. - N° de réf. du client
H4134-133091

Amd. No. - N° de la modif.
File No. - N° du dossier
VAN-3-33091

Buyer ID - Id de l'acheteur
van532
CCC No./N° CCC - FMS No/ N° VME

NOTE TO BIDDERS: Please use ONE of the two mailing labels below and affix it securely to the outside of the envelope or package containing your bid submitted by mail or courier. For bids submitted by facsimile (Bid receiving fax (604) 775-7526), use this sheet as the cover sheet. Always ensure your company name, return address, open bidding solicitation number and closing date appear legibly on the outside of your bid submission.

AVIS AUX FOURNISSEURS: Pour le retour par la poste ou par messenger, veuillez utiliser UNE des étiquettes d'envoi ci-dessous et apposez-la à l'extérieur de votre enveloppe ou du colis contenant votre offre. Pour les offres soumises par télécopieur (n° du télécopieur pour la réception des offres: (604) 775-7526), utilisez cette page comme bordereau de télécopie. Assurez-vous que le nom de votre compagnie, l'adresse de retour, le numéro de l'invitation ouverte à soumissionner et la date de clôture soient lisibles à l'extérieur de votre offre.

**Bid Receiving
Public Works & Government Services Canada
2nd FLOOR - 800 BURRARD STREET
VANCOUVER BC V6Z 0B9**

Solicitation No. : H4134-133091/A

**Solicitation Closes at : 14:00 PT
on : January 06, 2014**

**Réception des soumissions
Travaux publics et services gouvernementaux Canada
800 rue Burrard, 2e étage
Vancouver (C.-B) V6Z 0B9**

N° de l'invitation : H4134-133091/A

**La réception des soumissions prend fin le : janvier 06 2014
à : 14:00 PT**

Form B: Substantiation of Technical Compliance Form				
Sec	Description	Comply		Comments / References page #
		Yes	No	
2.1	<p>Tasks, Activities, Deliverables and Milestones</p> <ol style="list-style-type: none"> 1) The contractor will deliver a system to the Vancouver DAS laboratory at 3155 Willingdon Green, Burnaby, BC by March 31, 2014; 2) The system must be in compliance with the specifications detailed in this document. 3) Installation, installation qualification, operation qualification and onsite training must be completed by 15 May 2014. 4) Software validation must be provided on a certificate. Upon completion of installation, all components of the system must be fully operational and ready for analysis. 5) The macroinstructions provided by the DEA or written by the manufacturer will be assessed before the system is accepted by DAS. 6) Training, including software and instrument use and maintenance and troubleshooting, must be completed before the final acceptance of the system by DAS. 7) The instrument must include clearly written and comprehensive English-language user manuals for reference. 8) The supplier must continue to provide technical assistance to DAS laboratory staff during regular working hours by phone or email at no added cost to DAS. 9) In the event of servicing or repairs to the instrument, the manufacturer must respond within five business days from the time the request is made to the manufacturer. 			
2.2	<p>Specifications and Standards (MANDATORY)</p> <p>The system must be in accordance with the following specifications. If any additional components, peripherals or supplies are necessary to operate the instrument upon arrival at the DAS laboratory but were not included in the contractor's bid, the contractor must absorb all the costs of providing the required omissions. This includes installation, utility requirements such as compressed gas, cryogens, ventilation requirements, power supply, etc.</p>			
A	<p>General Requirements</p> <p>In the context of this document, the definition of <i>fully automated</i> is a system that is macro-driven that, with the exception of sample preparation and placement on the carousel/autosampler, must automatically run, acquire, process, quantitate and generate a report for a</p>			

Form B: Substantiation of Technical Compliance Form				
Sec	Description	Comply		Comments / References page #
		Yes	No	
	sample. This system must perform analyses unattended for a series of samples limited only by the size of the carousel/autosampler.			
	A.1 Must include a shielded NMR magnet with a frequency of 400 MHz. MANDATORY Shielded magnet's axial stray field must not exceed 1.2 m, and radial stray field must not exceed 0.75 m. MANDATORY			
	A.2 Must include anti-vibration legs or equivalent vibration isolation system. MANDATORY			
	A.3 Must include a He transfer line. MANDATORY			
	A.4 Must include a N ₂ transfer line. MANDATORY			
	A.5 Must have He and N ₂ level sensors. MANDATORY Sensory accuracy must be > 4%. MANDATORY			
	A.6 Must have a He hold time > 200 days and a hold volume > 50 L. MANDATORY			
	A.7 Must have a N ₂ hold time > 14 days and a hold volume > 50 L. MANDATORY			
	A.8 Must perform pulsed field gradient experiments. MANDATORY			
	A.9 Must be equipped with shims. MANDATORY			
	A.10 Must perform automated gradient shimming. MANDATORY			
	A.11 Must have a temperature controller. MANDATORY			
	A.12 Must have two broadband frequency channels (minimum 6 MHz to 440 MHz each), with fully digital generation of offset frequencies and phases (direct digital synthesis) for long-term accuracy and stability. MANDATORY			
	A.13 Must have two linear amplifiers. MANDATORY			
	A.14 Must have two radio frequency (RF) channels. MANDATORY			
	A.15 Must perform the following experiments: <ol style="list-style-type: none"> 1) ¹H; 2) ¹³C; 3) Distortionless Enhancement by Polarization Transfer (DEPT) and Attached Proton Test (APT); 4) 2D Correlation Spectroscopy (COSY); 5) 2 DDiffusion Ordered Spectroscopy (DOSY); 6) 2D Heteronuclear Multiple-Bond Correlation 			

Form B: Substantiation of Technical Compliance Form				
Sec	Description	Comply		Comments / References page #
		Yes	No	
	spectroscopy (HMBC); 7) 2D Heteronuclear Single Quantum Coherence (HSQC); 8) 2D Nuclear Overhauser Effect Spectroscopy (NOESY); 9) 2D Total Correlation Spectroscopy (TOCSY); 10) 2D Heterocorrelation (HETCOR).			
	A.16 Must include a room temperature (RT) probe: MANDATORY 1) Must be a 5 mm probe; MANDATORY 2) Must be a pulsed field gradient probe; MANDATORY 3) Must be fitted with an actively shielded single axis Z-gradient; MANDATORY 4) Must have an automatic tuning and matching accessory; MANDATORY 5) Must have variable temperature range of RT to 150°C minimum; MANDATORY 6) Must have a ² H lock channel; MANDATORY 7) Must have a tunable outer NMR coil for either ¹ H decoupling, or observation; MANDATORY 8) Must have a broadband channel tunable to the following nuclei: ¹ H, ¹³ C and ¹⁵ N to ³¹ P; MANDATORY 9) Must have a signal/ noise sensitivity of: ¹³ C > 150:1 (American Society for Testing and Materials (ASTM) sample, 60% C ₆ D ₆ and 40% p-Dioxane), ¹ H > 250:1 (0.1% ethylbenzene). MANDATORY			
	A.17 Probe must have ¹³ C decoupling capability. MANDATORY			
	A.18 Must be capable of digital filtering. MANDATORY			
	A.19 Must include a desktop host workstation with: 1) Fully configured computer with necessary accessories to operate the system and set up automated sequences. MANDATORY 2) Minimum one terabyte of internal memory; MANDATORY 3) One year manufacturer warranty on computer and parts; MANDATORY 4) Computer must be able to accept a second network (NIC) card. MANDATORY 5) Two NIC cards must be included. MANDATORY 6) Minimum 22" LCD screen; MANDATORY 7) Ethernet adapter; MANDATORY			

Form B: Substantiation of Technical Compliance Form				
Sec	Description	Comply		Comments / References page #
		Yes	No	
	<p>8) Mouse; MANDATORY</p> <p>9) Keyboard; MANDATORY</p> <p>10) One 250-500 page tray capacity colour laser printer (includes duplexing capability); MANDATORY and</p> <p>11) Computer table that can accommodate all the components listed above. MANDATORY</p>			
	A.20 Must include a(n) autosampler/sample carousel with twelve positions minimum. MANDATORY			
	<p>A.21 Must perform analyses unattended. MANDATORY</p> <p>Automation capability will be point-rated. POINT-RATED R.4</p>			
	<p>A.22 The contractor must provide timely call-response and on-site response to service calls. MANDATORY</p> <p>How quickly a response is provided as well as the cost will be point-rated. POINT-RATED R.3</p>			
	<p>A.23 Warranty for all non-consumable components must be a minimum of twelve months beginning from the date of acceptance of the system by DAS. Warranty must cover all parts, freight costs, labour, technician travel and lodging, or any other associated costs. MANDATORY</p>			
B	General Software Requirements			
	B.1 Must include an up-to-date operating system with the latest service pack. MANDATORY			
	B.2 Must include software suite for signal acquisition and signal analysis. MANDATORY			
	<p>B.3 The software must be compatible with the macroinstructions written by the DEA, OR the manufacturer must provide equivalent macroinstructions compatible with the instrument's software. MANDATORY</p> <p>A comprehensive list of the macros is not currently available. These include, but are not limited to: Individual macros for the automated identification and quantitation of several hundred compounds of interest;</p> <ul style="list-style-type: none"> - Macros for adjusting integrals; - Macros for batch processing; - Macros for baseline processing; - Macros for spectral comparison (capable of comparing up to 7 spectra at a time); - Macros for phasing optimization for quantitation; - Macros for automated library searches; 			

Form B: Substantiation of Technical Compliance Form				
Sec	Description	Comply		Comments / References page #
		Yes	No	
	<ul style="list-style-type: none"> - Macros for peak width normalization; and - Macros to facilitate the development of new quantitative macros. - <p>Macro-development will be point-rated. POINT-RATED R.6</p>			
	B.4 Software must include Complete Reduction to Amplitude Frequency Table (CRAFT), OR equivalent comparative analysis program. MANDATORY			
	B.5 Software must have a function to create spectral libraries. MANDATORY			
	B.6 The analysis software must be compatible with Windows operating system. MANDATORY			
	B.7 One perpetual licence for the analysis software must be provided to run on the instrument console. MANDATORY			
	B.8 The contractor must provide free upgrades for all instrument software suites for a minimum of two years, plus all application modules as they become commercially available. MANDATORY			
C	Training Requirements			
	C.1 Training must be provided by a qualified NMR technician in-house, for two people. MANDATORY			
	C.2 Must demonstrate instrument maintenance and troubleshooting. MANDATORY			
	C.3 Must demonstrate software use, use of macroinstructions, and macroinstruction modification. MANDATORY			
D	Mandatory Performance Specifications			
	Acceptance of the instrument will be determined on-site in the presence of the user after installation by the following criteria in addition to the manufacturer specified performance specifications for that system:			
	D.1 Has a signal to noise sensitivity of $^{13}\text{C} > 150:1$ (American Society for Testing and Materials (ASTM) sample, 60% C_6D_6 and 40% p-Dioxane), $^1\text{H} > 250:1$ (0.1% ethylbenzene). MANDATORY			
	D.2 Can be used to quantitate cocaine, heroin, methamphetamine and MDMA using DEA-supplied macros or equivalent supplier-provided macros. MANDATORY			
	D.3 Can be used to differentiation between N-methyl-2,3-methylenedioxyamphetamine and N-methyl-3,4-methylenedioxyamphetamine. MANDATORY			
	The contractor will be responsible for providing all			

Form B: Substantiation of Technical Compliance Form				
Sec	Description	Comply		Comments / References page #
		Yes	No	
	relevant reference standards for use during on-site acceptance testing, with the exception of cocaine, heroin, methamphetamine, MDMA, N-methyl-2,3-methylenedioxyamphetamine and N-methyl-3,4-methylenedioxyamphetamine. MANDATORY			