



PROCUREMENT OF GNSS/DGPS EQUIPMENT

WITH ALL ACCESSORIES, PROCESSING SOFTWARE, AFTER-SALES SERVICES, TESTING, COMMISSIONING, MAINTENANCE AND REQUISITE OPERATIONAL TRAINING

January 2018

UPDATED INCORPORATING ADDENDUM NO. 1

Bidding Documents



**National Engineering Services Pakistan (Pvt.) LTD
Environmental and Public Health Engineering Division
1-C, Block N, Model Town Extension, Lahore Pakistan**



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1) INSTRUCTIONS TO BIDDERS

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INSTRUCTIONS TO BIDDERS

A. GENERAL

IB.1 Scope of Bid

The Employer, as defined in the Bidding Data, (hereinafter called “the Employer”), intends to procure GNSS/DGPS equipment with all accessories, processing software, after-sales services, testing, commissioning, maintenance and requisite operational training as described in these Bidding Documents and summarized in the Bidding data hereinafter referred to as “Works”.

IB.2 Source of Funds

The Employer has arranged funds from its own sources.

IB.3 Eligible Bidders

This Invitation for Bids is open to all bidders (Manufacturers, Distributors, Resellers and Importers) meeting the requirements specified in the Bidding Data.

IB.4 One Bid per Bidder

Each bidder shall submit only one bid either by himself or jointly. A bidder who submits or participates in more than one bid will be disqualified.

IB.5 Cost of Bidding

The bidder shall bear all costs associated with the preparation and submission of its bid and the Employer in no case will be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

B. BIDDING DOCUMENTS

IB.6 Contents of Bidding Documents

In addition to Invitation for Bids, the Bidding Documents are those stated below, and should be read in conjunction with any Addendum issued in accordance with Sub-Clause IB.8.

1. Instructions to Bidders
2. Bidding Data
3. Forms of Bid (Form of Technical Bid & Form of Price Bid)
4. Appendix-A to Bid- Bidder’s Qualification and Technical Evaluation Criteria
5. Appendix B to Bid- Schedule of Prices
6. Term and Conditions of Contract
7. Special Conditions
8. Standard Forms
9. Technical Specifications



IB.7 Clarification of Bidding Documents

- 7.1 A prospective bidder requiring any clarification(s) in respect of the Bidding Documents may notify the Employer at the Employer's address indicated in the Bidding Data.
- 7.2 The Employer will respond to written request for clarification, which he receives earlier than five (5) days prior to the deadline for the submission of Bids. Copies of the Employer's response (if any) will be available at <http://nespak.com.pk/Advertisement.html>, three (3) days prior to deadline for submission of Bids

IB.8 Amendment of Bidding Documents

- 8.1 At any time prior to the deadline for submission of Bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by issuing addendum.
- 8.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 8.1 hereof, and shall be available at <http://nespak.com.pk/Advertisement.html>.
- 8.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may at its discretion extend the deadline for submission of Bids.

C. PREPARATION OF BIDS

IB.9 Language of Bid

The Bid prepared by the bidder and all correspondence and documents relating to the Bid, exchanged by the bidder and the Employer shall be written in English language, provided that any printed literature furnished by the bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the Bid, the English translation shall govern.

IB.10 Documents Comprising the Bid

The Bid prepared by the bidder shall comprise the following components:

- (a) Covering Letter
- (b) Single envelope submitted, comprising "**Technical Bid**" and "**Price Bid**" (one original one copy), containing the documents listed in Bidding Data.
- (c) Form of Bid duly filled, signed and sealed, in accordance with Sub-Clause IB.16.3.
- (d) Schedule of Prices (Appendix B to Bid) duly filled and initialled, in accordance with the instructions contained therein & in accordance with Sub-Clause IB.16.3
- (e) Bid Security furnished in accordance with Clause IB.15
- (f) Power of Attorney in accordance with Sub-Clause IB 16.5

- (g) Documentary evidence in accordance with Clause IB.13
- (h) Documentary evidence in accordance with Clause IB.14

IB.11 Sufficiency of Bid

- 11.1 Each bidder shall satisfy himself before Bidding as to the correctness and sufficiency of his Bid and of the rates and prices entered in the Schedule of Prices, which rates and prices shall except in so far as it is otherwise expressly provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper completion of the order.
- 11.2 The bidder is advised to obtain for himself at his own cost and responsibility all information that may be necessary for preparing the bid and entering into a Contract.

IB.12 Bid Prices, Currency of Bid and Payment

- 12.1 The bidder shall fill up the Schedule of Prices (Schedule B to Bid) indicating the unit rates and prices. Prices in the Schedule of Prices shall be entered keeping in view the instructions contained in the Preamble to Schedule of Prices.
- 12.2 Unless otherwise stipulated in the Terms and Conditions of Contract, prices quoted by the bidder shall remain fixed during the bidder's performance of the Contract and not subject to variation on any account.
- 12.3 The unit rates and prices in the Schedule of Prices shall be quoted by the bidder in the currency as stipulated in Bidding Data.

IB.13 Documents Establishing Bidder's Eligibility and Qualifications

- 13.1 Pursuant to Clause IB.10, the bidder shall furnish, as part of its bid, documents establishing the bidder's eligibility to bid and its qualifications to supply the order, if its bid is accepted.
- 13.2 Bidder/Manufacturer must possess and provide evidence of its capability, performance and the experience and the Qualification Criteria included in the Bidding Documents. (Appendix A).

IB.14 Documents Establishing Works' Conformity to Bidding Documents

- 14.1 The documentary evidence of the Works' conformity to the Bidding Documents may be in the form of literature, figures and tables and the bidder shall furnish documentation as set out in the Bidding Data.
- 14.2 The bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers, if any, designated by the Employer in the Technical Provisions are intended to be descriptive only and not restrictive.

IB.15 Bid Security

- 15.1 Each bidder shall furnish, as part of his Price Bid, at the option of the bidder, a Bid Security in the amount stipulated in Bidding Data in Pak. Rupees in the form of Call



Deposit or a Bank Guarantee in favour of the Employer valid for a period up to twenty eight (28) days beyond the bid validity date.

- 15.2 Any Bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
- 15.3 The bid securities of unsuccessful bidders will be returned upon award of contract to the successful bidder or on the expiry of validity of Bid Security whichever is earlier.
- 15.4 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security, pursuant to Clause IB.28 and issued the Purchase order, pursuant to Sub-Clause IB.27.2.
- 15.5 The Bid Security may be forfeited:
 - (a) If a bidder withdraws his bid during the period of bid validity; or
 - (b) If a bidder does not accept the correction of his Bid Price, pursuant to Clause IB.22 hereof; or
 - (c) In the case of a successful bidder, if he fails to:
 - (i) Furnish the required Performance Security in accordance with Clause IB.28, or
 - (ii) Issuance of the Purchase order, in accordance with Sub-Clauses IB.27.2.

IB.16 Validity of Bids, Format, Signing and Submission of Bid

- 16.1 Bids shall remain valid for the period stipulated in the Bidding Data after the date of bid opening.
- 16.2 All Appendices to Bid are to be properly completed and signed.
- 16.3 No alteration is to be made in the Forms of Bid (i.e., Form of Technical Bid & Form of Price Bid) except in filling up the blanks as directed. If any alteration be made or if these instructions be not fully complied with, the bid may be rejected.
- 16.4 Each bidder shall prepare one original and one copy of the documents comprising the bid as described in Clause IB.10 and clearly mark them “ORIGINAL” and “COPY” as appropriate.
- 16.5 The original shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign. This shall be indicated by submitting a written Power of Attorney authorizing the signatory of the bidder to act for and on behalf of the bidder. All pages of the bid shall be initialled and official seal be affixed by the person or persons signing the bid.
- 16.6 The Bid shall be delivered in person or sent by registered mail at the address to Employer as given in Bidding Data.



D. SUBMISSION OF BID

IB.17 Deadline for Submission, Modification & Withdrawal of Bids

- 17.1 Bids must be received by the Employer at the address/provided in Bidding Data not later than the time and date stipulated therein.
- 17.2 Bids submitted through telegraph, telex, fax or e-mail shall not be considered.
- 17.3 Any bid received by the Employer after the deadline for submission prescribed in Bidding Data will be returned unopened to such bidder.
- 17.4 Any bidder may modify or withdraw his bid after bid submission provided that the modification or written notice of withdrawal is received by the Employer prior to the deadline for submission of bids.
- 17.5 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Forms of Bid may result in forfeiture of the Bid Security pursuant to Sub-Clause IB.15.5 (a).

E. BID OPENING AND EVALUATION

IB.18 Bid Opening, Clarification and Evaluation

- 18.1 All the bids will be opened and evaluated by procurement Committee constituted for this purpose by the Employer. Bids shall be opened at the time of opening of bids.
- 18.2 a) The Employer shall first examine qualification and experience Data as per Appendix A to Bid submitted by the Bidder. The technical proposal examination of those bidders only shall be taken in hand who meet the minimum requirement as mentioned in Appendix A to Bid.
b) The Employer shall examine the Technical Bids to confirm that all the documents have been provided, and to determine the completeness of each document submitted in accordance with Technical Specification provided in the Bidding Documents.
- 18.3 The Employer shall confirm that all the documents and information have been provided for evaluation of Technical Bids as required under the Bidding Documents.
- 18.4 At the end of the evaluation of the Technical Bids, the Employer will consider only those bidders who have submitted substantially responsive Bid.
- 18.5 The Employer will notify Bidders in writing who have been rejected on the grounds of their Technical Bids being substantially non-responsive to the requirements of the Bidding Documents and return their Price Bids who are determined as being non-responsive.

IB.19 Process to be Confidential



- 19.1 Information relating to the examination, clarification, evaluation and comparison of bid and recommendations for the award of a Contract shall not be disclosed to bidders or any other person not officially concerned with such process before the announcement of bid evaluation report which shall be done at least ten (10) days prior to issue of Letter of Acceptance. The announcement to all Bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the bids evaluated. Any effort by a bidder to influence the Employer's processing of bids or award decisions may result in the rejection of such bidder's bid. Whereas any bidder feeling aggrieved may lodge a written complaint not later than fifteen (15) days after the announcement of the bid evaluation report; however mere fact of lodging a complaint shall not warrant suspension of the procurement process.

IB.20 Clarification of Bids

- 20.1 To assist in the examination, evaluation and comparison of bids, the Employer may, at his discretion, ask any bidder for clarification of his bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids.
- 20.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its bid may be rejected.

IB.21 Examination of Bids and Determination of Responsiveness

- 21.1 Prior to the detailed evaluation of bids, the Employer will determine whether each bid is substantially responsive to the requirements of the Bidding Documents.
- 21.2 A substantially responsive bid is one which (i) meets the eligibility criteria; (ii) has been properly signed; (iii) is accompanied by the required Bid Security; (iv) includes duly filled and signed Forms of Bids and (v) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one (i) which affect in any substantial way the scope, quality or performance of the Works; (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the bidder's obligations under the Contract; (iii) adoption/rectification whereof would affect unfairly the competitive position of other bidders presenting substantially responsive bids. Only substantially responsive bid shall be considered for further evaluation.
- 21.3 If a bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation. The employer may, however, seek confirmation/ clarification in writing which shall be responded in writing.



IB.22 Correction of Errors

- 22.1 Price Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors during the evaluation process of Price Bids. Errors will be corrected by the Employer as follows:
- (a) Where there is a discrepancy between the amounts in figures and in words, the amount in words will govern; and
 - (b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern and the unit rate will be corrected.
- 22.2 The amount stated in the Form of Price Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and with the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected Bid Price, his Bid will be rejected, and the Bid Security shall be forfeited in accordance with 15.5(b) hereof.

IB.23 Evaluation and Comparison of Bids

- 23.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause IB.21.
- 23.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:
- (a) Making any correction for errors pursuant to Clause IB.22;
- 23.3 If the Bid of the successful bidder is seriously unbalanced in relation to the Employer's estimate of the cost of work to be performed under the Contract, the Employer may require the bidder to produce detailed price analyses for any or all items of the Schedule of Prices to demonstrate the internal consistency of those prices with the construction method and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the Performance Security set forth in Clause IB.28 be increased at the expense of the successful bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful bidder under the Contract.

F. AWARD OF CONTRACT

IB.24. Post Qualification

- 24.1 The Employer, at any stage of the bid evaluation, having credible reasons for or prima facie evidence of any defect in bidder's capacities, may require the bidder to provide information concerning their professional, technical, financial, legal or managerial competence whether already qualified or not:



Provided that such qualification shall only be laid down after recording reasons, therefore, in writing. They shall form part of the records of that bid evaluation report.

- 24.2 The determination will take into account the bidder's financial and technical capabilities. It will be based upon an examination of the documentary evidence of the bidders' qualifications submitted under Clause IB.11, as well as such other information required in the Bidding Documents.

IB.25 Award Criteria

- 25.1 Subject to Clauses IB.26, the Employer will award the Contract to the bidder who bid has submitted substantially responsive Technical Bid and who has offered the lowest evaluated Bid Price, provided that such bidder has been determined to be eligible in accordance with the provisions of Clause IB.3 and qualify pursuant to Sub-Clause IB 25.2.
- 25.2 The Employer, at any stage of the bid evaluation, having credible reasons for or *prima facie* evidence of any defect in Bidder's capacities, may require the Bidders to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not:

Provided that such qualification shall only be laid down after recording reasons in writing. They shall form part of the records of that bid evaluation report.

IB.26 Employer's Right to accept any Bid and to reject any or all Bids

- 26.1 Notwithstanding Clause IB.25, the Employer reserves the right to accept or reject any Bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidders or any obligation except that the grounds for rejection of all bids shall upon request be communicated to any bidder who submitted a bid, without justification of grounds. Rejection of all bids shall be notified to all bidders promptly.

IB.27 Issuance of the Purchase Order

- 27.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing ("Letter of Acceptance") that his bid has been accepted.
- 27.2 Within seven (07) days from the date of furnishing of acceptable Performance Security under the Term and Conditions of Contract, the Employer will send the successful bidder the purchase Order.

IB.28 Performance Security

- 28.1 The successful bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Term and Conditions of Contract within a period of three (03) days after the receipt of Letter of Acceptance/ Letter of Award.
- 28.2 Failure of the successful bidder to comply with the requirements of Sub-Clauses IB.27.2 or 28.1 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.



2) BIDDING DATA

BIDDING DATA

The following specific data for the Works to be bid shall complement, amend, or supplement the provisions in the Instructions to Bidders. Wherever there is a conflict, the provisions herein shall prevail over those in the Instructions to Bidders.

Reference to Instruction to Bidder	BIDDING DATA
IB.1	<p>Scope of Bid: Supply of GNSS/ DGPS equipment including all accessories, processing software, after-sales services, testing, commissioning, maintenance and requisite operational training.</p>
IB.2	<p>Source of Funds: The Employer has arranged funds from its own sources.</p>
IB.3	<p>Eligible Bidders Bidding is open to all Manufacturers/Distributors/Resellers/Importers of GNSS/DGPS equipment meeting the following requirements:</p> <ul style="list-style-type: none"> a) Registration with Income Tax and Sales Tax departments. b) Certificate from OEM for warranty, after sale services and training of equipment in Pakistan. c) Should have annual turnover of Pak Rs.10 million during the last three financial years. d) Should have completed at least five (5) contracts of similar nature in last 5 years. e) Only Brands having at least 10 years' experience of manufacturing GNSS/DGPS instrument will be considered for technical evaluation. f) Information on any litigation or arbitration resulting from contracts completed or under execution by the Bidder over the last ten (10) years.
IB-7 7.1	<p>Clarification of Bidding Documents A pre-bid meeting will be held on February 06, 2018 at conference room of WRD Division NESPAK, Lahore at 11:00 AM. All communications regarding clarification of the bids shall be in writing.</p>
IB.9	<p>Language of Bid English.</p>

<p>FEIB.12</p> <p>12.3</p>	<p>Currencies of Bid and Payment</p> <p>The rates shall be quoted in Pak Rupees inclusive of all taxes. A bidder expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer's country shall bear all costs and risks for arranging the requirements of such currencies through his own resources. The currency of Payment is Pak Rupees.</p>
<p>IB.15</p> <p>15.1</p>	<p>Amount of Bid Security</p> <p>Amount of Bid Security shall be @ 2% of the Bid Price.</p>
<p>IB.16</p> <p>16.1</p> <p>16.6</p>	<p>Validity of Bids</p> <p>Period of Bid Validity is 90 days after the date of bid opening.</p> <p>Name and Address of the Employer: National Engineering Services Pakistan (NESPAK) (Pvt.) Ltd. NESPAK House, 1-C, Block-N, Model Town Extension, Lahore 54700, Pakistan</p> <p>Employer's Representative: Vice President/Head, WR Division, 2nd Floor, NESPAK House, 1-C, Block-N, Model Town Extension, Lahore 54700, Pakistan Phone: 92-42-99090000 (Ext. 286 and 558), Fax: 92-42-99231940, Email: wa@nespak.com.pk</p>
<p>IB-17</p>	<p>Deadline for Submission, Modification & Withdrawal of Bids</p> <p>Time and date of Bid submission is 11:00 AM on February 19, 2018. If in any case/scenario the last date of submission is declared a public holiday, the next working day shall be considered as the deadline for submission of bids.</p>
<p>IB.18</p>	<p>Bid Opening</p> <p>Technical & Price Bids will be opened on 11:30 AM on February 19, 2018 in the presence of bidders or their authorized representatives who may choose to attend.</p>
<p>IB.25</p>	<p>Award Criteria</p> <p>The evaluated technically responsive bidder who has offered the lowest evaluated Bid Price shall be awarded the Contract.</p>



IB.28	Performance Security The Performance Security (unconditional bank guarantee) shall be of an amount equal to 10% of the Contract Price stated in the Letter of Acceptance. The format of such guarantee has been provided in the Bidding Documents.
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3) FORMS OF BID

- i) Form of Technical Bid**
- ii) Form of Price Bid**



i) FORM OF TECHNICAL BID



FORM OF TECHNICAL BID

Bid Reference No. _____

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PROCUREMENT OF GNSS/DGPS EQUIPMENT WITH ALL ACCESSORIES, PROCESSING SOFTWARE, AFTER-SALES SERVICES, TESTING, COMMISSIONING, MAINTENANCE AND REQUISITE OPERATIONAL TRAINING

To:

Vice President/Head,
WR Division, 2nd Floor,
NESPAK House,
1-C, Block-N, Model Town Extension,
Lahore 54700, Pakistan
Phone: 92-42-99090000 (Ext. 286 and 558), Fax: 92-42-99231940,
Email: wa@nespak.com.pk

Gentleman,

1. Having examined the Bidding Documents including Instructions to Bidders, Bidding Data, Terms and Conditions of Contract, Technical Specifications, Appendices to Bid, Schedule of Prices and Addenda Nos. _____ for the execution of the above-named Works, we, the undersigned, being a company doing business under the name of _____ and _____ address _____ and _____ being duly incorporated under the laws of _____ hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said Documents including Addenda thereto.
2. We understand that all the Appendices attached here to form part of this Bid.
3. As security for due performance of the undertakings and obligations of this Bid, we confirm that Bid Security in the amount equivalent to 2% of the Bid Price and valid for a period of twenty-eight (28) days beyond the date of Bid Opening, is attached with Price Bid.
4. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the whole of the Works comprised in the Contract within the time(s) stated in Terms and Conditions of Contract.
5. We agree to abide by this Bid for the period of ninety (90) days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
6. Unless and until a formal Purchase Order is placed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
7. We undertake, if our Bid is accepted, to execute the Performance Security specified under the Terms and Conditions of Contract for the due performance of the Contract.



8. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a Bid for the Works.
9. We do hereby declare that our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries [insert the nationality of the Bidder, including that of all parties that comprise the Bidder if the Bidder is a consortium or association, and the nationality of each Subcontractor and Supplier]
10. We, including any subcontractors or suppliers for any part of the Contract, do not have any conflict of interest.
11. We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process.
12. We confirm, if our Bid is accepted, that all partners of the joint venture shall be liable jointly and severally for the execution of the Contract and the composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer. (Please delete in case of Bid from a single firm).

Dated this _____ day of _____ 2018

Signature _____ in the capacity of _____ duly authorized to sign bids for and on behalf of _____

(Name of Bidder in Block Letters)

(Seal)

Address _____

Witness:

Signature _____

Name _____

Address: _____

Occupation/Position in Firm _____



ii) FORM OF PRICE BID



FORM OF PRICE BID

Bid Reference No. _____

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PROCUREMENT OF GNSS/DGPS EQUIPMENT WITH ALL ACCESSORIES, PROCESSING SOFTWARE, AFTER-SALES SERVICES, TESTING, COMMISSIONING, MAINTENANCE AND REQUISITE OPERATIONAL TRAINING

To:

Vice President/Head,
WR Division, 2nd Floor,
NESPAK House,
1-C, Block-N, Model Town Extension,
Lahore 54700, Pakistan
Phone: 92-42-99090000 (Ext. 286 and 558), Fax: 92-42-99231940,
Email: wa@nespak.com.pk

Gentlemen,

1. Having examined the Bidding Documents including Instructions to Bidders, Bidding Data, Terms and Conditions of Contract, Technical Specifications, Appendices to Bid, Schedule of Prices and Addenda Nos. _____ for the execution of the above-named Works, we, the undersigned, being a company doing business under the name of and address _____ and being duly incorporated under the laws of _____ hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Bid Price comprising of only local currency component of Rs. _____ (Rupees _____) or such other sum as may be ascertained in accordance with the said Documents.
2. We understand that all the Appendices attached hereto form part of this Bid.
3. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the whole of the Works comprised in the Contract within the time(s) stated in Terms and Conditions of Contract.
4. We agree to abide by this Bid for the period of ninety (90) days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
5. Unless and until a formal Purchase Order is placed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
6. We undertake, if our Bid is accepted to execute the Performance Security as specified under the Terms and Conditions of Contract for the due performance of the Contract.
7. We understand that you are not bound to accept the lowest or any Bid you may receive.



8. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a Bid for the Works.
9. We confirm, if our Bid is accepted, that all partners of the joint venture shall be liable jointly and severally for the execution of the Contract and the composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer. (Please delete in case of Bid from a single firm).

Dated this _____ day of _____ 2018
Signature _____ in the capacity of _____ duly
authorized to sign bids for and on behalf of _____

(Name of Bidder in Block Letters)

(Seal)

Address _____

Witness:

Signature _____

Name _____

Address: _____

Occupation/Position in Firm _____



4) APPENDIX-A TO BID

APPENDIX-A TO BID

BIDDER'S QUALIFICATION/ TECHNICAL EVALUATION CRITERIA

Sr. No.	Requirement	Yes	No
1	Submitted Bid is in accordance with the Technical equipment Specifications/ requirements*		
2	Registration with Income Tax Department		
3	Registration with Sales Tax Department		
4	Certificate from OEM for warranty, after sale services and training of equipment in Pakistan.		
5	Annual turnover of Pak Rs.10 million during the last three financial years.		
6	Completed at least five (5) contracts of similar nature in last 5 years.		
7	Bid Security @ 2 % of the Bid Price.		
8	Only the Manufacturer having at least 10 years' experience of manufacturing GNSS/DGPS instrument will be considered for technical evaluation.		
9	Information on any litigation or arbitration resulting from contracts completed or under execution by the Bidder over the last ten (10) years.		

*Detailed component/ item wise evaluation will be carried out for each bid for acceptance or rejection.



5) APPENDIX-B TO BID

SCHEDULE OF PRICES

PREAMBLE TO SCHEDULE OF PRICES

1. General

1.1 The Schedule of Prices shall be read in conjunction with the Terms and Conditions of Contract, Instruction to Bidders, Bidding Data together with the Technical Specifications and tables, (if any).

1.2 Bids must be for the complete Scope of Work.

2. Description

2.1 The general directions and descriptions of works and materials are not necessarily repeated nor summarized in the Schedule of Prices. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the Schedule of Prices.

3. Units & Abbreviations

3.1 Units of measurement, symbols and abbreviations expressed in the Bidding Documents shall comply with the System International Unites (SI Units).

4. Rates and Prices

4.1 Except as otherwise expressly provided under the Term and Conditions of Contract, the rates and amounts entered in the Schedule of Prices shall be the rates at which the Bidder shall be paid and shall be the full inclusive value of the works set forth or implied in the Contract.

4.2 Unless otherwise stipulated in the Bidding Documents, the rates and prices entered by the bidder shall not be subject to adjustment during the performance of the Contract.

4.3 All duties, taxes and other levies payable by the Contractor/ vendor shall be included in the rates and prices.

4.4 The whole cost of complying with the provisions of the Contract shall be included in the items provided in the Schedule of Prices, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the Works and no separate payment will be made for those items.

The rates, prices and amounts shall be entered against each item in the Schedule of Prices. Any item against which no rate or price is entered by the bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates and prices for other items in the Schedule of Prices.



Appendix-B to Bid

- 4.5 (a) The bidder shall be deemed to have obtained all information as to and all requirements related thereto which may affect the bid price.
- (b) The Contractor shall be responsible to make complete arrangements for the transportation to the Employer's designated place in Pakistan.
- 4.6 The Bidder shall provide for all parts of the Works to be completed in every respect. Notwithstanding that any details, accessories, etc., required for the complete installation and satisfactory operation of the GPR, are not specifically mentioned in the Specifications, such details shall be considered as included in the Contract Price.

5. Bid Prices

5.1 Break-up of Bid Prices

The various elements of Bid Prices shall be quoted as detailed by the Employer in the format of Schedule of Prices.

The bidder shall recognize such elements of the costs which he expects to incur in the performance of the Works and shall include all such costs in the rates and amounts entered in the Schedule of Prices.

5.2 Total Bid Price

The total of bid prices shall be entered in the Schedule of Prices.



SUPPLY OF GNSS/DGPS EQUIPMENT WITH ALL ACCESSORIES, PROCESSING SOFTWARE, AFTER-SALES SERVICES, TESTING, COMMISSIONING, MAINTENANCE AND REQUISITE OPERATIONAL TRAINING

SCHEDULE OF PRICES

Sr. No.	Description	Unit	Qty.	Rate/Unit (Pak Rs.)	Total Amount incl. of Taxes (Pak Rs.)
1	GNSS/DGPS Base Station with standard accessories mentioned in Specification document	No.	2		
2	GNSS/DGPS Rovers with standard accessories mentioned in Specification document	No.	6		
3	Processing Software	No.	1		
4	Operational Training in Pakistan		1		
TOTAL BID PRICE		Total Amount (Pak. Rs.)			
		Amount in Words (Pak. Rs.)			



6) GENERAL CONDITIONS OF CONTRACT



GENERAL CONDITIONS OF CONTRACT

General Conditions for Procurement of GNSS/DGPS equipment are as follow:

- 1) “Employer” means the entity purchasing the Goods and Related Services, as specified in Special Conditions.
- 2) “Employer’s Country” is the country specified in Special Conditions.
- 3) “Goods” means all of the commodities, material, machinery and equipment, and/or other materials that the Contractor is required to supply to the Employer under the Contract.

4) **Language**

The Contract as well as all correspondence and documents relating to the Contract exchanged by the Bidder and the Employer, shall be written in the language specified in Special Conditions. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified, in which case, for purposes of interpretation of the Contract, this translation shall govern.

The Bidder shall bear all costs of translation to the governing language and all risks of the accuracy of such translation, for documents provided by the Contractor.

5) **Notices**

Any notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in Special Conditions. The term “in writing” means communicated in written form with proof of receipt.

6) **Governing Law**

The Contract shall be governed by and interpreted in accordance with the laws of the Employer’s Country, unless otherwise specified in Special Conditions.

7) **Commencement Date**

The time for Commencement is as specified in Special Conditions.

8) **Delivery and Completion Schedule**

The Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in Special Conditions.

9) **Commissioning**

On site startup / commissioning of the equipment in Pakistan by the manufacturer expert free of charge will be the responsibility of the Contractor.

10) **Warranty**

- i) The Contractor warrants that all the Goods are new, unused, and of the most



For goods Manufactured within the Employer's country, the Contractor shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Employer.

14) Performance Security

- i) The Contractor shall, within three (03) days after the receipt of Letter of Acceptance/ Letter of Award, provide a performance security for the due performance of the Contract in the amount and form specified in Special Conditions.
- ii) The proceeds of the Performance Security shall be payable to the Employer as compensation for any loss resulting from the Contractor's failure to complete its obligations under the Contract.
- iii) The Performance Security shall be discharged by the Employer and returned to the Contractor as specified in Special Conditions.

15) Insurance of Works

The Goods supplied under the Contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery in the manner specified in Special Conditions.

16) Taking Over Certificate

The taking over certificate is as follow:

- Availability of spares/workshop and after sales service in Pakistan must be ensured. Name, E-mail, telephone and fax No. of original manufacturer of complete GNSS/DGPS set must be provided to ensure after sale technical sport on 24 hours basis.
- Only the bid from the sole/authorized distributor of the GNSS/DGPS sets will be considered for technical evaluation. The bidder must provide OEM certificate of main equipment, technical specifications, and brochures of each item in schedule of requirement of quoted model in English.
- Details of the factory(ies) where the offered equipment is proposed to be manufactured.
- All bidders are advised to comply strictly with the document specifications and no deviation shall be allowed.
- The bidder will provide the sale record of the quoted model of GNSS/DGPS sets sold in different departments and institutions in Pakistan/ Abroad.
- The system must be based on latest specifications (Hardware &Software), model and technology.
- Technical evaluation will be carried out on complete package basis.
- Any omission to bid for an item or sub-items related to a main item shall be considered as incomplete bid for the entire Group and may result in rejection of the bid.
- The transportation and accommodation for the training staff of OEM shall be liability of the successful Bidder.



- Taking over certificate will be issued to contractor as specified in special conditions.



7) SPECIAL CONDITIONS

SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is conflict, the provisions herein shall prevail over those in GCC.

Sr No	GC Clause No	Description	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.	1	Employer's name and address	Vice President/Head, WR Division, 2nd Floor, NESPAK House, 1-C, Block-N, Model Town Extension, Lahore 54700, Pakistan Phone: 92-42-99090000 (Ext. 286 and 558), Fax: 92-42-99231940, Email: wa@nespak.com.pk
2.	2	Employer's Country	The Employer's country is: Islamic Republic of Pakistan
3.	4	Language	The Language is English.
4.	5	Notices	For notices , the Employer's address shall be: As specified under SCC 1 above.
5.	6	Governing Law	The governing law shall be the law of: Islamic Republic of Pakistan
6.	7	Commencement Date	Immediately on issuance of Purchase Order/ Award Letter to the Contractor.
7.	8	Delivery Time	30 days from the date of commencement.
8.	10	Warranty	The warranty shall remain valid for twelve (12) months after the issuance of Taking Over Certificate.
9.	12 (b)	Mode of Payment	28 days of submission of invoice to the Employer upon successful completion of respective obligations, up to satisfaction of the Employer in GC.
	12 (d)	Currency of Payment	The Currency of payment is PKR (Pak Rupees).
10.	14 (i)	Performance Security Time for Furnishing Performance Security	

Sr No	GC Clause No	Description	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
		Amount of Performance Security	10% of Contract Price stated in the Letter of Acceptance/Award, in the form of unconditional, irrevocable Bank Guarantee from Schedule Bank of Pakistan acceptable to the Employer. .
	14(iii)	Period of validity of Performance Security	01 month from the date of Completion of Warranty Obligations during of the contract
11.	15	Insurance of Works, Goods/Plant, and Contractor's Equipment and other things	<p>The Contractor shall insure:</p> <p>a) the Works, together with Goods and materials for incorporation therein to the full replacement cost;</p> <p>b) an additional sum of 15 percent of such replacement cost, to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the works.</p> <p>c) The Contractor shall be obliged to place all insurances relating to the Contract with either National Insurance Company of Pakistan or any other insurance company operating in Pakistan and acceptable to the Employer.</p> <p>Costs of such insurances shall be borne by the Contractor.</p>
12.	16	Taking Over Certificate	<p>Only One Certificate shall be issued.</p> <p>The Work shall be considered substantially completed if the whole of the work completed to the satisfaction of the Employer.</p>



8) STANDARD FORMS

**BID SECURITY
(Bank Guarantee)**

Security Executed on _____
(Date)

Name of Surety (Bank) with Address: _____
(Scheduled Bank in Pakistan)

Name of Principal (Bidder) with Address _____

Penal Sum of Security Rupees. _____ (Rs. _____)

Bid Reference No. _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid and at the request of the said Principal (Bidder) we, the Surety above named, are held and firmly bound unto

_____ (hereinafter called the 'Employer') in the sum stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Bidder has submitted the accompanying Bid dated _____ for Bid No. _____ for _____ (Particulars of Bid) to the said Employer; and

WHEREAS, the Employer has required as a condition for considering said Bid that the Bidder furnishes a Bid Security in the above said sum from a Scheduled Bank in Pakistan or from a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan, to the Employer, conditioned as under:

- (1) that the Bid Security shall remain in force up to and including the date 28 days after the deadline for validity of bids as stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Surety is hereby waived;
- (2) that the Bid Security of unsuccessful Bidders will be returned by the Employer after expiry of its validity or upon signing of the Contract Agreement; and
- (3) that in the event of failure of the successful Bidder to execute the proposed Contract Agreement for such work and furnish the required Performance Security, the entire said sum be paid immediately to the said Employer pursuant to Clause 15.6 of the Instruction to Bidders for the successful Bidder's failure to perform.

NOW THEREFORE, if the successful Bidder shall, within the period specified therefore, on the prescribed form presented to him for signature enter into a formal Contract with the said Employer in accordance with his Bid as accepted and furnish within twenty eight (28) days of his being requested to do so, a Performance Security with good and sufficient surety, as may be required, upon the form prescribed by the said Employer for the faithful performance and proper fulfilment of the said Contract or in the event of non-withdrawal of the said Bid within the time specified for its validity then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

PROVIDED THAT the Surety shall forthwith pay the Employer the said sum upon first written demand of the Employer (without cavil or argument) and without requiring the Employer to prove or

[TYPE HERE]

to show grounds or reasons for such demand, notice of which shall be sent by the Employer by registered post duly addressed to the Surety at its address given above.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the Principal (Bidder) has duly performed his obligations to sign the Contract Agreement and to furnish the requisite Performance Security within the time stated above, or has defaulted in fulfilling said requirements and the Surety shall pay without objection the said sum upon demand from the Employer forthwith and without any reference to the Principal (Bidder) or any other person.

IN WITNESS WHEREOF, the above bounden Surety has executed the instrument under its seal on the date indicated above, the name and seal of the Surety being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

SURETY (Bank)

WITNESS:

Signature _____

1. _____

Name _____

Title _____

Corporate Secretary (Seal)

Corporate Guarantor (Seal)

2. _____

Name, Title & Address

**FORM OF PERFORMANCE SECURITY
(Bank Guarantee)**

Guarantee No. _____

Executed on _____

Expiry date

Name of Guarantor (Bank) with address: _____

(Scheduled Bank in Pakistan)

Name of Principal (Contractor) with address: _____

Penal Sum of Security (express in words and figures) _____

Letter of Acceptance No. _____ Dated _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal we, the Guarantor above named, are held and firmly bound unto the _____ (hereinafter called the Employer) in the penal sum of the amount stated above for the payment of which sum well and truly to be made to the said Employer, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Employer's above said Letter of Acceptance for _____ (Name of Contractor) of _____ Contract for _____ the _____ (Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Employer, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause 49, Defects Liability, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We, _____ (the Guarantor), waiving all objections and defences under the Contract, do hereby irrevocably and independently guarantee to pay to the Em-

[TYPE HERE]

ployer without delay upon the Employer's first written demand without cavil or arguments and without requiring the Employer to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer's written declaration that the Principal has refused or failed to perform the obligations under the Contract which payment will be effected by the Guarantor to Employer's designated Bank & Account Number.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the Principal (Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Employer forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above-bounden Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

<p>Witness:</p> <p>1. _____</p> <p>_____</p> <p>Corporate Secretary (Seal)</p> <p>2. _____</p> <p>_____</p> <p>Name, Title & Address</p>	<p>_____ Guarantor (Bank)</p> <p>Signature _____</p> <p>Name _____</p> <p>Title _____</p> <p>_____</p> <p>Corporate Guarantor (Seal)</p>
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9) TECHNICAL SPECIFICATION



TECHNICAL SPECIFICATIONS

GNSS/DGPS Equipment Requirements

Item No. 1: GNSS/DGPS Base Station (Quantity: 2 Units) with standard accessories (with following specifications:

S.#	Items	Minimum Specifications
1	Tracking	Number of channels: ≥ 220 Tracking signals GPS: L1CA, L/2, Pcode, L2C, (code and carrier) Glonass: L1/L2 CA, L1/L2 Pcode SBAS: WAAS, EGNOS, MSAS, QZSS L1/L2 (GPS, GLONASS, Galileo, BeiDou, QZSS)
2	Survey Accuracy	Static: L1 Only: H: 3mm + 0.8 ppm, V: 4mm + 1 ppm Fast Static: L1 + L2: H: 3mm + 0.5 ppm, V: 5mm + 0.5 ppm Kinematic L1 + L2: H: 10mm + 1ppm, V: 20mm + 1 ppm RTK L1/L1 + L2: H: 10mm + 1ppm, V: 20mm + 1 ppm GNSS/DGPS Post Processing/RTCM: Typically, less than 0.5m Cold Start: < 60 sec Warm Start: <35 sec Reacquisition: <1 sec
3	RTK Operation	Correction format: CMR/CMR+, RTCM SC104 ver 2.2, 2.3, 3.0 or 3.1 RTCM message type: User selectable Ambiguity initialize: OTF (L1, L1/L2) Baseline length: at-least 50 km Initialize time: > 15 seconds, typical Output interval for CMR/RTCM: Up to 20 hz Elevation: 0 to 90 degrees (independent of data logging) Solution mode: Delay (synchronization) Process interval: up to 20 hz
4	Data Features	Formats: TPS, NMEA, RTCM, CMR/CMR+ Features: Up to 20 hz update rate for real time position and raw data (code and carrier) 10 cm code phase and 0.1mm carrier phase precision RTCM SC104 version 2.1, 2.2, 2.3, 3.0 and 3.1 I/O Multiple Base RTCM Geoid and Magnetic Variation models Different Datum support Output of grid coordinates CMR and CMR+ support Internet/GSM data communication Support Webserver
5	Memory	Internal Memory: SD/SDHC card, removable Internet memory or Capacity: Dependent on capacity of the installed SD/SDHC card



S.#	Items	Minimum Specifications
		Logging interval: 0.005 to 86400 seconds, depending on purchased options
6	Bluetooth Module Details	Range: Up to 10 m (indoor), up to 50m (outdoor) Type: Class 1 Service classes: Miscellaneous Supported profiles: SSP Frequency country code: North America and Europe
7	Internal Digital UHF II Modem	Operating frequency range: UHF 400 – 470 MHz Modulation techniques: GMSK and 4-Level FSK (4FSK) Protocols: Satel 4FSK, PDL GMSK, PDL 4FSK, Trim-Talk GMSK Occupied bandwidth (channel spacing): 25 Khz, 20 Khz or 12.5 Khz Data Transmission rate at 25 Khz channel spacing: 9600 bps GMSK, 19200 bps 4FSK Data transmission rate at 20 Khz: 4800 bps GMSK, 9600 4FSK Data transmission rate at 12.5 Khz: 4800 bps GMSK, 9600 bps 4FSK Data speed of serial interface: Max 115200 bps Forward Error correction: Yes Scrambling: Yes Communication mode: Half Duplex Transmitter (TX) Carrier power: 250 mW-0.5w, user selectable Receiver (RX) Sensitivity: -105 dBm at 10-4 BER Dynamic range: 105 dBm Data communications Serial interface: RS232 Serial data rate: 9600, 19200, 38400, 57600 bps, user selectable Effective radio link rate: 9600, 10200, 17000, 51000 bps Error correction: FEC (15.7) majority decoding Antenna Type: Type: ½ wave sleeve dipole Connector: Reverse polarity TNC Gain: 2.1 dBi
8	Environmental	Dust/Water Protection: IP67 Shock: 2m pole drop Operating Temperature: -20c to +55c
9	Power Supply	Standard battery: Detachable, li-ion rechargeable battery 7.2v Operating Time: >7.5 hours in static mode
10	Additional Power Supply (01)	Standard battery: Detachable, li-ion rechargeable battery 7.2v Operating Time: >7.5 hours in static mode
11	Dual battery Charger (02)	Battery charger can charge up 4 batteries at a time



S.#	Items	Minimum Specifications
12	Radio Antenna & GSM	Built in antenna for RTK radio and GSM 2 G and 3G communications
13	Power cable	Power cable for 12-volt battery for input of sensor
14	Measuring Tape 3 m	
15	Tribrach with adopter	
16	External radio 30-35 watts RTK	<ol style="list-style-type: none"> 1. On/Off Button* 2. ("Auto Power On" enabled when connected to power source) 3. Channel Button with AutoBase™ and Auto-Rover™ 4. Digital Display 5. Modem/Power Status Indicators 6. RF Power Select Toggle Switch 7. Power External 8. 9 – 16 VDC 9. Internal Battery N/A 10. During TX (nominal) 110 Watt s (35W) 11. During RX (nominal) 1.9 Watt s
17	External antenna	50 Ohm, BNC
18	Field Controller /Data Logger controller with field software	controllers feature bright sunlight readable displays, integrated digital cameras, internal cellular modems, rugged and superior computing power.
19	Accessories	Including all the accessories for a base station.
20	Preferred Brands	Leica, Topcon, Sokkia & Trimble
Note: One year standard warrantee (preferably three years extended warrantee)		

Item No. 2: GNSS/DGPS Rovers (Quantity: 6 Units) with following specifications:

S.#	Items	Minimum Specifications
1	Tracking	Number of channels: ≥ 220 Tracking signals GPS: L1CA, L/2, Pcode, L2C, (code and carrier) Glonass: L1/L2 CA, L1/L2 Pcode SBAS: WAAS, EGNOS, MSAS, QZSS L1/L2 (GPS, GLONASS, Galileo, BeiDou, QZSS)
2	Survey Accuracy	Static: L1 Only: H: 3mm + 0.8 ppm, V: 4mm + 1 ppm L1+L2: H: 3mm + 0.5ppm, V: 5mm + 0.5 ppm Fast Static: L1 + L2: H: 3mm + 0.5 ppm, V: 5mm + 0.5 ppm Kinematic L1 + L2: H: 10mm + 1ppm, V: 20mm + 1 ppm RTK L1/L1 + L2: H: 10mm + 1ppm, V: 20mm + 1 ppm



		<p>GNSS/DGPS Post Processing/RTCM: Typically, less than 0.5m Cold Start: < 60 sec Warm Start: <35 sec Reacquisition: <1 sec</p>
3	RTK Operation	<p>Correction format: CMR/CMR+, RTCM SC104 ver 2.2, 2.3, 3.0 or 3.1 RTCM message type: User selectable Ambiguity initialize: OTF (L1, L1/L2) Baseline length: at-least 50 km Initialize time: > 15 seconds, typical Output interval for CMR/RTCM: Up to 5 hz Elevation: 0 to 90 degrees (independent of data logging) Solution mode: Delay (synchronization) Process interval: up to 5 hz</p>
4	Data Features	<p>Formats: TPS, NMEA, RTCM, CMR/CMR+ Features: Up to 5 hz update rate for real time position and raw data (code and carrier) 10 cm code phase and 0.1mm carrier phase precision RTCM SC104 version 2.1, 2.2, 2.3, 3.0 and 3.1 I/O Multiple Base RTCM Geoid and Magnetic Variation models Different Datum support Output of grid coordinates CMR and CMR+ support GSM data communication Support</p>
5	Memory	<p>Internal Memory Or SD/SDHC card, removable Capacity: Dependent on capacity of the installed SD/SDHC card Logging interval: 0.005 to 86400 seconds, depending on purchased options</p>
6	Bluetooth Module Details	<p>Range: Up to 10 m (indoor), up to 50m (outdoor) Type: Class 1 Service classes: Miscellaneous Supported profiles: SSP Frequency country code: North America and Europe</p>
7	Internal Digital UHF II Modem	<p>Operating frequency range: UHF 400 – 470 MHz Modulation techniques: GMSK and 4-Level FSK (4FSK) Protocols: Satel 4FSK, PDL GMSK, PDL 4FSK, TrimTalk GMSK Occupied bandwidth (channel spacing): 25 Khz, 20 Khz or 12.5 Khz Data Transmission rate at 25 Khz channel spacing: 9600 bps GMSK, 19200 bps 4FSK Data transmission rate at 20 Khz: 4800 bps GMSK, 9600 4FSK Data transmission rate at 12.5 Khz: 4800 bps GMSK, 9600 bps 4FSK Data speed of serial interface: Max 115200 bps Forward Error correction: Yes</p>



		<p>Scrambling: Yes Communication mode: Half Duplex</p> <p>Transmitter (TX) Carrier power: 250 mW-0.5W, user selectable</p> <p>Receiver (RX) Sensitivity: -105 dBm at 10-4 BER Dynamic range: 105 dBm</p> <p>Data communications Serial interface: RS232 Serial data rate: 9600, 19200, 38400, 57600 bps, user selectable Effective radio link rate: 9600, 10200, 17000, 51000 bps Error correction: FEC (15.7) majority decoding</p> <p>Antenna Type: Type: ½ wave sleeve dipole Connector: Reverse polarity TNC Gain: 2.1 dBi</p>
8	Environmental	<p>Dust/Water Protection: IP67 Shock: 2m pole drop Operating Temperature: -20c to +55c</p>
9	Power Supply	<p>Standard battery: Detachable, li-ion rechargeable battery 7.2v Operating Time: >7.5 hours in static mode</p>
10	Additional Power Supply (01)	<p>Standard battery: Detachable, li-ion rechargeable battery 7.2v Operating Time: >7.5 hours in static mode</p>
11	Radio Antenna & GSM	Internal Antenna With GSM communication in 2G and 3 G
12	Field Controller /Data Logger with field software	controllers feature bright sunlight readable displays, integrated digital cameras, internal cellular modems, rugged and superior computing power
13	Accessories	Including all the standard accessories to work as the Rover
14	Preferred Brands	Leica, Topcon, Sokkia & Trimble
Note: One year standard warrantee (preferably three years extended warrantee)		

Item No. 3: RAW Data Processing Software (Quantity: 1) with following specifications:

S.#	Items	Minimum Specifications
1	Field Processing Software	<p>The system software shall run on a personal computer under 32-bit Microsoft® Windows™ or XP platforms. Microsoft® Windows™ 64-bit operating systems also be supported.</p> <p>The system software shall process all types of L1/L2 (GPS, GLONASS, Galileo, BeiDou, QZSS) data:</p> <ul style="list-style-type: none"> • Dual frequency • Single frequency • Code • Phase • Static



S.#	Items	Minimum Specifications
		<ul style="list-style-type: none"> • Rapid Static • Kinematic • On-The-Fly <p>The system software shall have ability to import GNSS (GPS & GLONASS or GPS only) raw data, GNSS Real Time data, and combine Real Time result with Post-Processed results</p> <p>The system software must include the following capabilities:</p> <ul style="list-style-type: none"> • Configuration • Survey Planning • Project Management • Data Import • RINEX Import * • GNSS Data Processing * • Viewing and Editing • Coordinate Systems: Ellipsoids, Map • Projections, Geoidal Models, • Transformation Parameters • Datum Transformations * • Reporting • Code / Attribute Lists • Export to Other Systems • GIS / CAD Export * • GPS Antenna Management
<p>Note: One year standard warrantee with new module updating</p>		

Item No. 4: Operational Training:

S.#	Items	Minimum Specifications
1	Operational Training	<p>a) Application and operational training of the NESPAK staff will be provided by the official trainer(s) of the original equipment in Pakistan. The training will cover all aspect of the instrument operation and application in detail including instrument setting, calibration, measurements, preventive maintenance, result interpretation, use of processing software, interfacing with AutoCAD and GIS applications etc.</p>