

INLAND WATERWAYS AUTHORITY OF INDIA MINISTRY OF PORTS, SHIPPING & WATERWAYS, GOVT. OF INDIA

PROJECT: CAPACITY AUGMENTATION of NW-1 (JMVP)

TENDER No. IN-IWAI-392366-NC-RFB

National Competitive Bidding (Two-Envelope Bidding Process with e-Procurement)

NAME OF NON-CONSULTING SERVICE : DEVELOPMENT OF RIVER

NAVIGATION APPLICATION (RIVER PILOT) FOR NATIONAL

To 06.03.2024 Up to 1100 Hrs.

WATERWAYS

PERIOD OF SALE OF BIDDING : From 01.02.2024 1030 Hrs

DOCUMENT

PRE-BID MEETING : 12.02.2024 1600 Hrs

LAST DATE AND TIME FOR

SUBMISSION OF BIDS 06 .03.2024 Up to 1500 Hrs..

* TIME AND DATE OF OPENING : 07.03.2024 at 16:00 Hrs.

BIDS- Technical Part

PLACE OF OPENING OF BIDS : A-13, Sector-1, Noida – 201301,

Uttar Pradesh

Tel: (0120) 2544004, Fax: (0120)

2543976

OFFICER INVITING BIDS : Vice Chairman & Project Director (JMVP)

ADDRESS FOR COMMUNICATION : Inland Waterways Authority of India

A-13, Sector -1, Noida – 201 301 (UP)



Project Management Unit Jal Marg Vikas Project – II (Arth Ganga) INLAND WATERWAYS AUTHORITY OF INDIA (Ministry of Ports, Shipping and Waterways, Govt. of India)



Head Office: A-13, Sector – 1, Noida - 201 301 Phone 0120-2544004, Fax 0120-2543976, vc.iwai@nic.in

National Competitive Bidding Request For Bids

For

Development of River Navigation Application (River Pilot) for National Waterways

e-Bids are invited from interested bidders for "Development of River Navigation Application (River Pilot) for National Waterways". The Tender Documents and other relevant details are available at IWAI website www.iwai.nic.in and e-procurement site https://eprocure.gov.in/eprocure/app.

Date 01.02.2024

VICE CHAIRMAN & PROJECT DIRECTOR (JMVP)

INVITATION FOR BIDS

(IFB)

INLAND WATERWAYS AUTHORITY OF INDIA
MINISTRY OF PORTS, SHIPPING & WATERWAYS, GOVT. OF INDIA
CAPACITY AUGMENTATION of NW-1, JMVP
Invitation for Bids(IFB)
Non-Consulting Services
E-Procurement Notice
(Two-Envelope Bidding Process with e-Procurement)

NATIONAL COMPETITIVE BIDDING

Project: CAPACITY AUGMENTATION of NW-1 (JMVP)

Contract title: DEVELOPMENT OF RIVER NAVIGATION APPLICATION (RIVER PILOT)

FOR NATIONAL WATERWAYS

Loan No. /Credit No. / Grant No.: [insert reference number for loan/credit/grant]

IFB No: IN-IWAI-392366-NC-RFB

Issued on: 01.02.2023

1. The Government of India has received financing from the World Bank toward the cost of the "JMVP-II Arth Ganga", and intends to apply part of the proceeds toward payments under the contract for DEVELOPMENT OF RIVER NAVIGATION APPLICATION (RIVER PILOT) FOR NATIONAL WATERWAYS as detailed below².

Development of River Navigation Application (River Pilot) for National Waterways

2. The Inland Waterways Authority of India, Noida now invites online Bids from eligible Bidders for DEVELOPMENT OF RIVER NAVIGATION APPLICATION (RIVER PILOT) FOR NATIONAL WATERWAYS detailed in the Table. The bidders may submit bids for any or all of the Non-Consulting Services indicated therein. Bidders are advised to note the clauses on eligibility (Section I Clause 4) and minimum qualification criteria (Section III – Evaluation and Qualification Criteria), to qualify for the award of the contract. In addition, please refer to paragraphs 1.6 and 1.7 of World Bank's Procurement Guidelines setting forth the World Bank's policy on conflict of interest.

Insert if applicable: "This contract will be jointly financed by [insert name of co-financing agency]. Bidding process will be governed by the World Bank's Procurement Guidelines."

- 3. Bidding will be conducted through national competitive bidding procedures agreed with the World Bank. Bidding is open to all eligible Bidders as defined in the World Bank's Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, January 2011 revised July 2014. Bidders from India should, however, be registered with the Government of India or other State Governments/ Government of India, or State/ Central Government Undertakings. Bidders from India, who are not registered as above, on the date of bidding, can also participate provided they get themselves registered by the time of contract signing, if they become successful bidders.
- 4. Interested eligible Bidders may obtain further information from *Vice Chairman* & Project Director (JMVP) and inspect the bidding document during office hours 0930 to 1800 hours, IST at the address given below [state address at the end of this IFB]³.
- 5. The bidding document is available online on https://eprocure.gov.in/eprocure/app from 01.02.2024 10:30 Hrs to 06.03.2024 11:00 Hrs for a nonrefundable fee as indicated in the table, in the form of Demand Draft (DD) on any Scheduled/Nationalized bank payable at Noida/New Delhi in favour of IWAI FUND Jal Marg Vikas (Demand draft to be submitted subsequently as per the procedure described in paragraph 9 below). Bidders will be required to register on the website, which is free of cost. The bidder would be responsible for ensuring that any addenda available on the website is also downloaded and incorporated.
- 6. For submission of the bid, the bidder is required to have Digital Signature Certificate (DSC) from one of the Certifying Authorities authorised by Government of India for issuing DSC. Aspiring bidders who have not obtained the user ID and password for participating in e-procurement in this Project, may obtain the same from the website: A non-refundable fee of Rs2950 (inclusive of tax) is required to be paid (to be submitted along with other documents listed in paragraph 9 below) before the bid submission deadline. The mode of payment shall be in the form of DD drawn in favour of IWAI FUND Jal Marg Vikas payable at Noida /New Delhi.
- 7. Bids must be submitted online on https://eprocure.gov.in/eprocure/app on on or before 15:00 hours on 06.03.2024 and the 'Technical Part' of the bids will be opened online on the 07.03.2024 at 16:00 Hrs. The "Financial Part" shall remain unopened in the e-procurement system until the second public Bid opening for the financial part. Any bid or modifications to bid (including discount) received outside e-procurement system will not be considered. If the office happens to be closed on the date of opening of the bids as specified, the bids will be opened on the next working day at the same time and venue. The electronic bidding system would not allow any late submission of bids.
- 8. All Bids must be accompanied by a Bid Security of the amount specified for the non-consulting service in the table below, drawn in favour of IWAI FUND. Bid security will have to be in any one of the forms as specified in the bidding document and shall have to be valid for 45 days beyond the validity of the bid. Procedure for submission of bid security is described in Para 9.

The office for inquiry and issuance of Bidding Document and that for Bid submission may or may not be the same.

- 9. The bidders are required to submit (a) original demand drafts proof towards the cost of bid document and registration on e-procurement website (if not previously registered); (b) **bid security pursuant to BDS page-30 clause ITB-20.1** in approved form; and (c) original affidavit regarding correctness of information furnished with bid document with Vice Chairman & Project Director (JMVP), Inland Waterways Authority of India, A-13, Sector -1, Noida 201 301 (UP) before the opening of the technical part of the Bid i.e. before 06.03.2024 either by registered post/speed post/courier or by hand, failing which the bids will be declared non-responsive and will not be opened.
- 10. Other details can be seen in the bidding document. The Employer shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt to notify the bidders of any bid updates, the Employer shall not be liable for any information not received by the bidder. It is the bidders' responsibility to verify the website for the latest information related to this bid.
- 11. The address for communication is as under:

Vice Chairman & Project Director (JMVP)
Inland Waterways Authority of India (IWAI)
A-13, Sector -1, NOIDA,
Gautam Buddha Nagar (District)
Uttar Pradesh PIN 201301
Land Line:

e-mail ID: vc.iwai@nic.in Web site; www.iwai.gov.in

TABLE

Package No	Name of Non-Consulting Service	Bid Security in (₹)	Cost of Document in (₹)	Period of Completion
1	2	3	4	5
1	DEVELOPMENT OF RIVER NAVIGATION APPLICATION (RIVER PILOT) FOR NATIONAL WATERWAYS as per ToR	Rs 8,21,762/- (Rupees Eight Lakh Twenty One Thousand Seven Hundred & Sixty Two only)	2500/- + 18% GST= 2,950/-	Five Years and Five Months

Name of officer and title Seal of office Address

Note: *The values should be rounded off to the nearest ten thousands of rupees. The IFB should be identical to that which appeared in the press/website.

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Part I – Bidding Procedures

Section I - Instructions to Bidders

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Section I - Instructions to Bidders

A. General

1. Scope of Bid

- 1.1 In connection with the Invitation for Bids (IFB), **specified in the Bid Data Sheet (BDS)**, the Employer, as **specified in the BDS**, issues this bidding document for the delivery of Non-Consulting Services, as specified in Section VII, Employer's Requirements. The name, identification and number of lots (contracts) of this IFB procurement are **specified in the BDS**.
- 1.2 Throughout this bidding document:
 - (a) the term "in writing" means communicated in written form (e.g. by mail, e-mail, fax, including if **specified in the BDS**, distributed or received through the electronic-procurement system used by the Employer) with proof of receipt;
 - (b) if the context so requires, "singular" means "plural" and vice versa; and
 - (c) "Day" means calendar day.
- 1.3 The successful Bidder will be expected to complete the performance of the Services by the Intended Completion Date **provided in the BDS**.

2. Source of Funds

- 2.1 The Government of India or Recipient (hereinafter called "Borrower") **specified in the BDS** has applied for or received financing (hereinafter called "funds") from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called "the Bank") in an amount **specified in the BDS**, toward the project **named in the BDS**. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this bidding document is issued.
- 2.2 Payment by the Bank will be made only at the request of the Borrower and upon approval by the Bank in accordance with the terms and conditions of the Loan (or other financing) Agreement. The Loan (or other financing) Agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, equipment or materials if such payment or import is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan (or other financing) Agreement or have any claim to the proceeds of the Loan (or other financing).

3. Fraud and Corruption

- 3.1 The Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework, as set forth in Section VI.
- 3.2 In further pursuance of this policy, Bidders shall permit and shall cause their agents (whether declared or not), subcontractors, subconsultants, service providers, suppliers, and their personnel, to permit the Bank to inspect all accounts, records and other documents relating to any initial selection process, prequalification process, bid submission, proposal submission and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.

4. Eligible Bidders 4.1

- A Bidder may be a firm that is a private entity, a state-owned entity or institution subject to ITB 4.6, or any combination of such entities in the form of a Joint Venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent, unless otherwise specified in the BDS. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the Bidding process and, in the event the JV is awarded the Contract, during contract execution. This authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all members. Unless specified in the BDS, there is no limit on the number of members in a JV. In case of a successful bid, the joint venture agreement shall be registered in the place specified in BDS so as to be legally valid and binding on members.
- 4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this Bidding process, if the Bidder:
 - (a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or
 - (b) receives or has received any direct or indirect subsidy from another Bidder; or
 - (c) has the same legal representative as another Bidder; or
 - (d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the

- Bid of another Bidder, or influence the decisions of the Employer regarding this Bidding process; or
- (e) any of its affiliates participated as a consultant in the preparation of the Employer's Requirements (including Activities Schedules, Performance Specifications and Drawings) for the Non-Consulting Services that are the subject of the Bid; or
- (f) any of its affiliates has been hired (or is proposed to be hired) by the Employer or Borrower for the Contract implementation; or
- (g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS ITB 2.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or
- (h) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding document or specifications of the contract, and/or the Bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the procurement process and execution of the Contract.
- 4.3 A firm that is a Bidder (either individually or as a JV member) shall not participate in more than one Bid, except for permitted alternative Bids. This includes participation as a subcontractor. Such participation shall result in the disqualification of all Bids in which the firm is involved. A firm that is not a Bidder or a JV member, may participate as a subcontractor in more than one Bid.
- 4.4 A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.8. A Bidder shall be deemed to have the nationality of a country if the Bidder is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or subconsultants for any part of the Contract including related Services.

- 4.5 A Bidder that has been sanctioned by the Bank, pursuant to the Bank's Anti-Corruption Guidelines, and in accordance with its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework as described in Section VI paragraph 2.2 d., shall be ineligible to be prequalified for, initially selected for, bid for, propose for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address **specified in the BDS**.
- 4.6 Bidders that are state-owned enterprises or institutions in the Employer's Country may be eligible to compete and be awarded a Contract(s) only if they can establish, in a manner acceptable to the Bank, that they: (i) are legally and financially autonomous; (ii) operate under commercial law; and (iii) are not under supervision of the Employer.
- 4.7 Not used.
- 4.8 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.
- 4.9 Not used.
- 4.10 A Bidder shall provide such documentary evidence of eligibility satisfactory to the Employer, as the Employer shall reasonably request.
- 4.11 Not used.
- 5. Qualification of the Bidder
- 5.1 All Bidders shall provide in Section IV, Bidding Forms, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.
- 5.2 Not used.

B. Contents of Bidding Document

6. Sections of Bidding Document

6.1 The bidding document consists of Parts 1, 2, and 3, which include all the sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 9.

PART 1: Bidding Procedures

- Section I Instructions to Bidders (ITB)
- Section II Bid Data Sheet (BDS)
- Section III Evaluation and Qualification Criteria
- Section IV Bidding Forms
- Section V Eligible Countries
- Section VI Fraud and Corruption

PART 2: Employer's Requirements

• Section VII - Employer's Requirements

PART 3: Contract

- Section VIII General Conditions of Contract (GCC)
- Section IX Special Conditions of Contract (SCC)
- Section X Contract Forms
- 6.2 The Invitation for Bids (IFB) issued by the Employer is not part of this bidding document.
- 6.3 Unless obtained directly from the Employer, the Employer is not responsible for the completeness of the document, responses to requests for clarification, the Minutes of the pre-Bid meeting (if any), or Addenda to the bidding document in accordance with ITB 9. In case of any contradiction, documents obtained directly from the Employer shall prevail.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding document and to furnish with its Bid, all information or documentation as is required by the bidding document.
- 7. Site Visit
- 7.1 The Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the Site of required Services and its surroundings and obtain all information that may be necessary for preparing the Bid

and entering into a contract for the Services. The costs of visiting the Site shall be at the Bidder's own expense.

8. Clarification of 8.1 Bidding Document

The electronic bidding system **specified in the BDS** provides for online clarifications. A Bidder requiring any clarification of the bidding document may notify the Employer online. Clarifications requested through any other mode shall not be considered by the Employer. The Employer will respond to any request for clarification, provided that such request is received prior to the deadline for submission of Bids within a period **specified in the BDS**. Description of clarification sought, and the response of the Employer shall be uploaded for information of all Bidders without identifying the source of request for clarification. Should the clarification result in changes to the essential elements of the bidding document, the Employer shall amend the bidding document following the procedure under ITB 9 and ITB 23.2.

9. Amendment of Bidding Document

- 9.1 At any time prior to the deadline for submission of Bids, the Employer may amend the Bidding document by issuing addenda. The addendum will appear on the e-procurement system under "Latest Corrigendum" and email notification is also automatically sent to those bidders who have started working on the tender, or as **otherwise specified in BDS**.
- 9.2 Any addendum thus issued shall be part of the bidding document and shall be deemed to have been communicated to all bidders.
- 9.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer shall extend, as necessary, the deadline for submission of Bids, in accordance with ITB 23.2 below.

C. Preparation of Bids

10. Cost of Bidding

10.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall not be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

11. Language of Bid

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

12. Documents Comprising the Bid

- 12.1 The Bid shall comprise two Parts, namely the Technical Part and the Financial Part. These two Parts shall be submitted simultaneously.
- 12.2 The Technical Part shall contain the following:
 - (a) Letter of Bid Technical Part prepared in accordance with ITB 13;
 - (b) **Bid Security** in accordance with ITB 20.1;
 - (c) Alternative Bid Technical Part: if permissible in accordance with ITB 14;
 - (d) **Authorization:** written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 21.3;
 - (e) **Qualifications:** documentary evidence in accordance with ITB 18 establishing the Bidder's qualifications to perform the Contract if its Bid is accepted;
 - (f) **Bidder's Eligibility**: documentary evidence in accordance with ITB 18 establishing the Bidder's eligibility to Bid;
 - (g) **Conformity**: documentary evidence in accordance with ITB 17, that the Services conform to the bidding document; and
 - (h) any other document required in the BDS.
- 12.3 The **Financial Part** shall contain the following:
 - (a) Letter of Bid Financial Part: prepared in accordance with ITB 13 and ITB 15;
 - (b) **Schedules:** priced Activity Schedule completed in accordance with ITB 13 and ITB 15;
 - (c) Alternative Bid Financial Part: if permissible in accordance with ITB 14; and
 - (d) any other document required in the BDS.
- 12.4 The Technical Part shall not include any information related to the Bid price. Where material financial information related to the Bid price is contained in the Technical Part the Bid shall be declared non-responsive.
- 12.5 In addition to the requirements under ITB 12.2, Bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed

- by all members and submitted with the Bid, together with a copy of the proposed Agreement.
- 12.6 The Bidder shall furnish in the Letter of Bid Financial Part information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid, and to contract execution if the Bidder is awarded the contract.

13. Process of Bid Submission

- 13.1 The Letter of Bid Technical Part, Letter of Bid Financial Part, and priced Activity Schedule shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 21.3. All blank spaces shall be filled in with the information requested.
- 13.2 Entire Bid including the Letters of Bid and filled-up Activity Schedule shall be submitted online on e-procurement system specified in ITB 8.1. Details and process of online submission of the tender and relevant documents are given in the website mentioned above. Scanned copies of documents listed in ITB clauses 12 and 13.3 should also be uploaded on this website.
- 13.3 Submission of Original Documents: The bidders are required to separately submit (i) original demand drafts towards the cost of bid document and registration on e-procurement website (if not previously registered) (as per IFB); and (ii) original bid security in approved form; and (iii) original affidavit regarding correctness of information furnished with bid document, with the office **specified** in the BDS, before the bid submission deadline, either by registered/speed post/courier or by hand, failing which the bids will be declared non-responsive and will not be opened. Hard copy of rest of the bid or any other document are not to be submitted.

14. Alternative Bids

- 14.1 Unless otherwise **indicated in the BDS**, alternative Bids shall not be considered. If alternatives are permitted, only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements shall be considered by the Employer.
- 14.2 When alternative times for completion are explicitly invited, a statement to that effect will be **included in the BDS** and the method of evaluating different time schedules will be described in Section III, Evaluation and Qualification Criteria.
- 14.3 When **specified in the BDS**, Bidders are permitted to submit alternative technical solutions for specified parts of the Services, and such parts will be **identified in the BDS**, as will be the method for their evaluating, and described in Section VII, Employer's Requirements.

15. Bid Prices and Discounts

- 15.1 The prices and discounts (including any price reduction) quoted by the Bidder in the Letter of Bid Financial Part and in the Activity Schedule(s) shall conform to the requirements specified below.
- 15.2 All lots (contracts) and items must be listed and priced separately in the Activity Schedule(s).
- 15.3 The Contract shall be for the Services, as described in Appendix A to the Contract and in the Specifications (or Terms of Reference), based on the priced Activity Schedule, submitted by the Bidder.
- 15.4 The Bidder shall quote any discounts and indicate the methodology for their application in the Letter of Bid Financial Part in accordance with ITB 13.1.
- 15.5 The Bidder shall fill in rates and prices for all items of the Services described in the in Specifications (or Terms of Reference), and listed in the Activity Schedule in Section VII, Employer's Requirements. Items for 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 other rates and prices in the Activity Schedule.
- 15.6 All duties, taxes, and other levies payable by the Service Provider under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of Bids, shall be included in the total Bid price submitted by the Bidder.
- 15.7 If provided for **in the BDS**, the rates and prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract in accordance with and the provisions of Clause 6.6 of the General Conditions of Contract and/or Special Conditions of Contract. The Bidder shall submit with the Bid all the information required under the Special Conditions of Contract and the General Conditions of Contract.
- 15.8 For the purpose of determining the remuneration due for additional Services, a breakdown of the lump-sum price shall be provided by the Bidder in the form of Appendices D and E to the Contract.
- 15.9 Bidders may like to ascertain availability of tax/duty exemption benefits available in India to the contracts financed under World Bank loan/credits. They are solely responsible for obtaining such benefits which they have considered in their bid and in case of failure to receive such benefits for reasons whatsoever, the Employer will

not compensate the bidder (Service Provider). The bidder shall furnish alongwith his bid a declaration to this effect in the Declaration Format provided in Section IV of the bidding document. Where the bidder has quoted taking into account such benefits, it must give all information required for issue of certificates in terms of the Government of India's relevant Notifications as per the declaration format. In case the bidder has not provided the required information or has indicated to be furnished later on in the Declaration Format, the same shall be construed that the construction equipment/ machinery/ goods for which certificate is required is Nil.

To the extent the Employer determines the quantities indicated therein are reasonable keeping in view the specifications/performance requirements, proposed work method and schedule, the certificates will be issued within 60 [sixty] days of signing of contract and no subsequent changes will be permitted. In case of materials pertaining to Variation items and quantities, the certificate shall be issued only on request from the Service Provider when in need, and to the extent the Employer determines the quantities indicated therein are reasonable. No certificate will be issued for items where no quantity/capacity of equipment is indicated in the statement.

If the bidder has considered the tax/duty exemption for materials/construction equipment to be bought for the work, the bidder shall confirm and certify that the Employer will not be required to undertake any responsibilities of the Government of India Scheme or the said exemptions being available during the contract execution, except issuing the required certificate.

The bids which do not conform to the above provisions or any condition by the bidder which makes the bid subject to availability of tax/ duty exemption or compensation on withdrawal of any variations to the said exemptions will be treated as non-responsive and rejected. Any delay in procurement of the construction equipment/ machinery/goods as a result of the above shall not be a cause for granting any extension of time.

- 16. Currencies of Bid and Payment
- 16.1 The prices shall be quoted by the Bidder, and shall be paid for by the Employer, entirely in Indian Rupees.
- 17. Documents
 Establishing
 Conformity of
 Services
- 17.1 To establish the conformity of the Non-Consulting Services to the bidding document, the Bidder shall furnish as part of its Bid the documentary evidence that Services provided conform to the technical specifications and standards specified in Section VII, Employer's Requirements.

- 17.2 Standards for provision of the Non-Consulting Services are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality provided that it demonstrates, to the Employer's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Employer's Requirements.
- 18. Documents
 Establishing
 the Eligibility
 and
 Qualifications
 of the Bidder
- 18.1 To establish their eligibility in accordance with ITB 4, Bidders shall complete the Letter of Bid Technical Part, included in Section IV, Bidding Forms.
- 18.2 The documentary evidence of the Bidder's qualifications to perform the Contract if its Bid is accepted shall establish to the Employer's satisfaction that the Bidder meets each of the qualification criterion specified in Section III, Evaluation and Qualification Criteria.
- 18.3 All Bidders shall provide in Section IV, Bidding Forms, a preliminary description of the proposed methodology, work plan and schedule.

19. Period of Validity of Bids

- 19.1 Bids shall remain valid for the Bid Validity period **specified in the BDS.** The Bid Validity period starts from the date fixed for the Bid submission deadline date (as prescribed by the Employer in accordance with ITB 23.1). A Bid valid for a shorter period shall be rejected by the Employer as nonresponsive.
- 19.2 In exceptional circumstances, prior to the expiration of the Bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 20, it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid, except as provided in ITB 19.3.
- 19.3 If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial bid validity period, the Contract price shall be determined as follows:
 - (a) in the case of fixed price contracts, the Contract price shall be the Bid price adjusted by the factor **specified in the BDS**;
 - (b) in the case of adjustable price contracts, no adjustment shall be made;

- (c) in any case, Bid evaluation shall be based on the Bid price without taking into consideration the applicable correction from those indicated above.
- 20. Bid Security
- 20.1 Unless otherwise **specified in the BDS**, the Bidder shall furnish as part of the Technical part of its Bid, a Bid security in original form, and in the amount and currency **specified in the BDS**.
- 20.2 Not used.
- 20.3 If a Bid Security is specified pursuant to ITB 20.1, the Bid Security shall be a demand guarantee, and in any of the following forms at the Bidder's option:
 - (a) an unconditional guarantee issued by a nationalized/ scheduled bank located in India;
 - (b) an irrevocable letter of credit issued by a Nationalized/ Scheduled bank located in India;
 - (c) a cashier's or certified check or demand draft from a Nationalized/ Scheduled bank located in India; or
 - (d) another security specified in the BDS.

If the unconditional guarantee is issued by an institution located outside India, it shall be counter signed by a Nationalized/Scheduled bank located in India, to make it enforceable. In the case of a bank guarantee, the Bid security shall be submitted using the Bid Security Form included in Section IV, Bidding Forms. The form must include the complete name of the Bidder. The Bid Security shall be valid for forty-five (45) days beyond the original validity period of the Bid, or beyond any period of extension if requested under ITB 19.2.

- 20.4 If a Bid Security is specified pursuant to ITB 20.1, any Bid not accompanied by a substantially responsive Bid Security shall be rejected by the Employer as non-responsive.
- 20.5 If a Bid Security is specified pursuant to ITB 20.1, the Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the contract and furnishing the Performance Security pursuant to ITB 48.
- 20.6 The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required Performance Security.
- 20.7 The Bid Security may be forfeited:

- (a) if a Bidder withdraws/modifies/substitutes its Bid during the period of Bid validity specified by the Bidder in the Letter of Bid - Technical Part and repeated in Letter of Bid - Financial Part, or any extension thereto provided by the Bidder; or if the Bidder does not accept the correction of its Bid Price pursuant to ITB Sub-Clause 36; or
- (b) if the successful Bidder fails to:
 - (i) sign the Contract in accordance with ITB 47; or
 - (ii) furnish a performance security in accordance with ITB 48.
- 20.8 The Bid Security of a JV must be in the name of the JV that submits the Bid. If the JV has not been legally constituted into a legally enforceable JV at the time of Bidding, the Bid security shall be in the names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 12.2.
- 20.9 Not used.

21. Format and Signing of Bid

- 21.1 The Bidder shall prepare the Bid as per details given in ITB 22.
- 21.2 Bidders shall mark as "CONFIDENTIAL" information in their Bids which is confidential to their business.
- 21.3 The Bid shall be signed by a person or persons duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as **specified in the BDS** and shall be uploaded alongwith the Bid.
- 21.4 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives. Documents establishing authority to sign the bid on behalf of the JV shall be uploaded along with the Bid.
- 21.5 Any corrections can be carried out by editing the information before electronic submission on e-procurement portal.

D. Online Submission of Bids

22. Preparation of Bids

22.1 Bids, both Technical and Financial Parts, shall be submitted online on the e-procurement system specified in BDS 8.1. Detailed guidelines for viewing bids and submission of online bids are given on the website. The Invitation for Bids under this Project is published on this website. Any citizen or prospective bidder can logon to this

website and view the Invitation for Bids and can view the details of Non-Consulting Services for which bids are invited. A prospective bidder can submit its bid online; however, the bidder is required to have enrolment/registration in the website, and should have valid Digital Signature Certificate (DSC) in the form of smart card/e-token obtained from any certifying agency authorised by the Government of India (for class of DSC **specified in BDS**). The bidder should register in the website using the relevant option available. Then the Digital Signature registration has to be done with the e-token, after logging into the website. The bidder can then login the website through the secured login by entering the password of the e-token & the user id/ password chosen during registration. After getting the bid schedules, the Bidder should go through them carefully and submit the specified documents, alongwith the bid, otherwise the bid will be rejected.

- 22.2 The completed bid comprising of documents indicated in ITB 12, should be uploaded on the e-procurement portal along with scanned copies of requisite certificates as are mentioned in different sections in the bidding document and scanned copy of the bid security.
- 22.3 All the documents are required to be signed digitally by the bidder. After electronic online bid submission, the system generates a unique bid identification number which is time stamped as per server time. This shall be treated as acknowledgement of bid submission.
- 22.4 Physical, e-mail, Telex, Cable or Facsimile bids will be rejected as non-responsive.

23. Deadline for Submission of Bids

- 23.1 Bids must be uploaded online no later than the date and time specified in the BDS.
- 23.2 The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the bidding document in accordance with ITB 9, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
- 24. Late Bids
- 24.1 The electronic bidding system would not allow any late submission of bids after due date & time as per server time.
- 25. Withdrawal, Substitution and Modification of Bids
- 25.1 Bidders may modify their bids by using the appropriate option for bid modification on e-procurement portal, before the deadline for submission of bids. For this the bidder need not make any additional payment towards the cost of bid document. For bid modification and consequential re-submission, the bidder is not required to withdraw his bid submitted earlier. The last modified bid submitted by the bidder within the bid submission time shall be considered as the Bid.

For this purpose, modification/withdrawal by other means will not be accepted. In online system of bid submission, the modification and consequential re-submission of bids is allowed any number of times. A bidder may withdraw his bid by using the appropriate option for bid withdrawal, before the deadline for submission of bids, however, if the bid is withdrawn, re-submission of the bid is not allowed (or allowed **if specified in BDS**).

- 25.2 Bids requested to be withdrawn in accordance with ITB 25.1 shall not be opened.
- 25.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified by the Bidder on the Letter of Bid Technical Part and repeated in Letter of Bid Financial Part, or any extension thereof. This will result in the forfeiture of the Bid Security pursuant to ITB 20.7.

E. Public Opening of Technical Parts of Bids

- 26. Public Opening of Technical Parts of Bids
- 26.1 The Employer shall, at the Bid opening, publicly open Technical Parts of all Bids received by the deadline at the date, time and place **specified in the BDS** in the presence of Bidders' designated representatives and anyone who choose to attend, and this could also be viewed by the bidders online. The Financial Parts of the bids shall remain unopened in the e-procurement system, until the subsequent public opening, following the evaluation of the Technical Parts of the Bids. In all cases, original documents submitted as specified in ITB 13.3 shall be first scrutinized, and Bids that do not comply with the provisions of ITB 13.3 will be declared non-responsive and will not be opened. Thereafter bidder's names, Alternative Bid Technical Part, and such other details as the Employer may consider appropriate will be notified, online by the Employer at the time of bid opening.
- 26.2 The electronic summary of the bid opening will be generated and uploaded online. The Employer will also prepare minutes of the Bid opening, including the information disclosed and upload the same for viewing online. Only Technical Parts of Bids, and alternative bids technical parts if permitted in ITB 14, that are opened at Bid opening of Technical Parts shall be considered further for evaluation.

E. Evaluation and Comparison of Bids – General Provisions

27. Confidentiality 27.1 Information relating to the evaluation of Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with the Bidding process until

- information on Contract Award is transmitted to all Bidders in accordance with ITB 45.
- 27.2 Any effort by a Bidder to influence the Employer in the evaluation or contract award decisions may result in the rejection of its Bid.
- 27.3 Notwithstanding ITB 27.2, from the time of Bid opening to the time of Contract Award, if any Bidder wishes to contact the Employer on any matter related to the Bidding process, it should do so in writing.

Bids

- **28.** Clarification of 28.1 To assist in the examination, evaluation, and comparison of Bids, and qualification of the Bidders, the Employer may, at the Employer's discretion, ask any Bidder for clarification of its Bid including breakdowns of the prices in the Activity Schedule, and other information that the Employer may require. Any clarification submitted by a Bidder in respect to its Bid and that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids, in accordance with ITB 36.
 - 28.2 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.

29. Deviations. Reservations, and Omissions

- 29.1 During the evaluation of Bids, the following definitions apply:
 - (a) "Deviation" is a departure from the requirements specified in the bidding document;
 - (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the bidding document; and
 - (c) "Omission" is the failure to submit part or all of the information or documentation required in the bidding document.

s. Errors and **Omissions**

- **30.** Nonconformitie 30.1 Provided that a Bid is substantially responsive, the Employer may waive any nonconformities in the Bid which do not constitute a material deviation, reservation or omission.
 - 30.2 Provided that a Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Bid related to requirements. information documentation Requesting documentation on such nonconformities shall not be related to any

- aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.
- 30.3 Provided that a Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner **specified in the BDS**.

G. Evaluation of Technical Parts of Bids

- 31. Evaluation of Technical Parts
- 31.1 In evaluating the Technical Parts of each Bid, the Employer shall use the criteria and methodologies listed in ITB 32, ITB 33, and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted.
- 32. Determination of Responsiveness
- 32.1 The Employer's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in ITB 12.
- 32.2 A substantially responsive Bid is one that meets the requirements of the bidding document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:
 - (a) if accepted, would:
 - (i) affect in any substantial way the scope, quality, or performance of the Non-Consulting Services specified in the Contract; or
 - (ii) limit in any substantial way, inconsistent with the bidding document, the Employer's rights or the Bidder's obligations under the Contract; or
 - (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.
- 32.3 The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 17 and ITB 18, in particular, to confirm that all requirements of Section VII, Employer's Requirements have been met without any material deviation or reservation, or omission.
- 32.4 If a Bid is not substantially responsive to the requirements of bidding document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.
- 33. Qualification of the Bidder
- 33.1 The Employer shall determine to its satisfaction whether the eligible Bidders that have submitted substantially responsive Bid Technical

- Parts meet the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.
- 33.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 18. The determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates, subcontractors (other than specialized subcontractors if permitted in the bidding document), or any other firm(s) different from the Bidder that submitted the Bid.
- 33.3 If a Bidder does not meet the qualifying criteria specified in Section III, Evaluation and Qualification Criteria, its Bid shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.
- 33.4 Only Bids that are both substantially responsive to the bidding document, and meet all Qualification Criteria shall have the Financial Parts of their Bids opened at the second public opening.

H. Public Opening of Financial Parts of Bids

34. Public Opening of Financial Parts

- 34.1 Following the completion of the evaluation of the Technical Parts of the Bids, and the Bank has issued its no objection (if applicable), the Employer shall notify in writing those Bidders whose Bids were considered non-responsive to the bidding document or failed to meet the Qualification Criteria, advising them of the following information:
 - (a) the grounds on which their Technical Part of Bid failed to meet the requirements of the bidding document;
 - (b) their Financial Part of Bid will not be opened; and
 - (c) notify them of the date, time and location of the public opening of Financial Parts of the Bids.
- 34.2 The Employer shall, simultaneously, notify in writing those Bidders whose Technical Part have been evaluated as substantially responsive to the bidding document and met all Qualifying Criteria, advising them of the following information:
 - (a) their Bid has been evaluated as substantially responsive to the bidding document and met the Qualification Criteria;
 - (b) their Financial Part of Bid will be opened at the public opening of the Financial Parts; and

- (c) notify them of the date, time and location of the second public opening of the Financial Parts of the Bids, as specified in the BDS.
- 34.3 The opening date should allow Bidders sufficient time to make arrangements for attending the opening. The Financial Part of the Bids shall be opened publicly in the presence of Bidders' designated representatives and anyone who chooses to attend, and this could also be viewed by the bidders online. The bidder's names, the Bid prices, the total amount of each bid, per lot (contract) if applicable, including any discounts and Alternative Bid Financial Part, and such other details as the Employer may consider appropriate, will be notified online by the Employer at the time of bid opening.
- 34.4 The electronic summary of the bid opening will be generated and uploaded online. The Employer will also prepare minutes of the Bid opening, including the information disclosed and upload the same for viewing online. Only Financial Parts of Bids, Financial Parts of Alternative Bids, if permitted, and discounts that are opened at Bid opening shall be considered further for evaluation.

I. Evaluation of Financial Parts of Bids

35. Evaluation of Financial Parts

- 35.1 In evaluating the Financial Part of each Bid, the Employer will determine for each Bid the evaluated Bid cost by adjusting the Bid price as follows:
 - (a) not used;
 - (b) price adjustment due to discounts offered in accordance with ITB 15.4:
 - (c) not used;
 - (d) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 30.3;
 - (e) excluding provisional sums and the provision, if any, for contingencies in the Activity Schedule but including Daywork, when requested in the Specifications (or Terms of Reference); and
 - (f) the additional evaluation factors are specified in Section III, Evaluation and Qualification Criteria.
- 35.2 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.

35.3 If this bidding document allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated cost of the lot (contract) combinations, including any discounts offered in the Letter of Bid – Financial Part, is specified in Section III, Evaluation and Qualification Criteria.

36. Correction of Arithmetical Errors

36.1 The e-procurement system automatically calculates the total amount from unit rates and quantities, and the system also automatically populates the amount in words from the amount in figures, and therefore there is no scope of discrepancy and need for arithmetic correction.

37. Conversion to Single Currency

37.1 Not used.

38. Margin of Preference

38.1 Not used.

39. Comparison of Financial Parts of Bids

39.1 The Employer shall compare the evaluated costs of all substantially responsive Bids established in accordance with ITB 35.1 to determine the Bid that has the lowest evaluated cost.

40. Abnormally Low Bids

40.1 Not used.

41. Employer's Right to Accept Any Bid, and to Reject Any or All Bids

41.1 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 Contract Award, without thereby incurring any liability to Bidders. In case of annulment, all documents submitted and specifically, Bid securities, shall be promptly returned to the Bidders.

42. Standstill Period

42.1 Not used.

43. Notification of Intention to Award

43.1 Not used.

J. Award of Contract

44. Award Criteria

44.1 Subject to ITB 41, the Employer shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

Award

- **45.** Notification of 45.1 Prior to the expiration of the Bid Validity Period, the Employer shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification of award (hereinafter and in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Employer will pay the Service Provider in consideration of the execution of the Contract (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price").
 - 45.2 At the same time, the Employer shall publish the Contract Award Notice which shall contain, at a minimum, the following information:
 - (a) name and address of the Employer;
 - (b) name and reference number of the contract being awarded, and the selection method used;
 - (c) names of all Bidders that submitted Bids, and their Bid prices as read out at Bid opening, and as evaluated;
 - (d) name of Bidders whose Bids were rejected and the reasons for their rejection; and
 - (e) the name of the successful Bidder, the final total contract price, the contract duration and a summary of its scope.
 - 45.3 The Contract Award Notice shall be published on a National website (GoI website http://tenders.gov.in or GoI Central Public Procurement Portal https://eprocure.gov.in/cppp/) or on the Employer's website with free access if available, or in at least one newspaper of national circulation in the Employer's Country, or in the official gazette.
 - 45.4 Until a formal Contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

46. Debriefing by the Employer

46.1 Not used.

47. Signing of Contract

- 47.1 Promptly upon Notification of Award, the Employer shall prepare the Contract Agreement, and keep it ready in the office of the Employer for the signature of the Employer and the successful Bidder, within 21 days following the date of Letter of Acceptance. The Contract Agreement shall incorporate all agreements between the Employer and the successful Bidder.
- 47.2 Within twenty-one (21) days of receipt of Letter of Acceptance, the successful Bidder shall (a) furnish the performance security in accordance with ITB Clause 48, and revised methodology for delivery of services; (b) if the successful bidder is a JV, it shall also furnish the

JV agreement duly signed by all the members, if it had submitted only a letter of intent to execute the JV agreement along with the bid; and (c) shall sign, date and return the Agreement to the Employer along with the documents stated at (a) and (b) above.

47.3 The Employer shall promptly respond in writing to any unsuccessful Bidder who, after publication of contract award requests the Employer in writing to explain on which grounds its bid was not selected.

48. Performance Security

- 48.1 Within twenty-one (21) days of the receipt of the Letter of Acceptance from the Employer, the successful Bidder shall furnish the Performance Security, if required, in Indian Rupees, in accordance with the GCC 3.9, and in the amount and form **stipulated in the BDS**.
- 48.2 If the Performance Security furnished by the successful Bidder is in the form of a Bank Guarantee, it shall be issued at the Bidder's option, by a nationalized/ scheduled bank located in India, or by a foreign bank acceptable to the Employer, through a correspondent bank located in India. The performance security of a Joint Venture shall be in the name of the joint venture specifying the names of all members.
- 48.3 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Employer may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.

49. Adjudicator

49.1 The Employer proposes the person named in the BDS to be appointed as Adjudicator under the Contract, at the daily rate specified in the BDS, plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder should so state in the Bid. If, in the Letter of Acceptance, the Employer has not agreed on the appointment of the Adjudicator, the Adjudicator shall be appointed by the Appointing Authority designated in the Special Conditions of Contract at the request of either party.

Section II - Bid Data Sheet (BDS)

The following specific data for the Non-Consulting Services to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

[This section should be filled out by the Employer before issuance of the Bidding Document. Instructions for completing the Bid Data Sheet are provided, as needed, in the notes in italics mentioned for the relevant ITB]

ITB Reference	A. General	
ITB 1.1	The reference number of the Invitation for Bids (IFB) is: IN-IWAI-392366-NC-RFB	
	The Employer is: Inland Waterways Authority of India	
	The name of the IFB is: DEVELOPMENT OF RIVER NAVIGATION APPLICATION (RIVER PILOT) FOR NATIONAL WATERWAYS.	
	The number and identification of lots (contracts) comprising this IFB is: One [insert number and identification of lots (contracts)]	
ITB 1.2	The Employer shall use the e-procurement system specified in BDS 8.1.	
ITB 1.3	The Intended Completion Date is Five (05) years and Five months from the date of signing of contract.	
ITB 2.1	The Borrower is Government of India:	
	Loan or Financing Agreement amount: \$695 Million	
	The name of the Project is: Capacity Augmentation of National Waterway – 1 (Jal Marg Vikas Project)	

ITB 4.1	Bids from Joint Ventures are permitted	
	(a) Maximum number of members in the Joint Venture (JV) shall be: Three	
	(b) The Bidders to submit a Joint Venture agreement duly signed by each of the members (maximum upto three numbers) & the same to be notarized.	
	(c) A statement to the effect that all members of the joint venture shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms, shall be included in the authorization nominating a Representative or member in charge, as well as in the Bid and in the Agreement, in case of a successful bid.	
	(d) The joint venture agreement should define precisely the division of assignments to each member of JV. All members of JV should have active participation in the execution during the currency of the contract. This should not be varied/ modified subsequently without prior approval of the Employer.	
	The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the Bidding process and, in the event the JV is awarded the Contract, during contract execution. This authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all members.	
ITB 4.5	A list of debarred firms and individuals is available on the Bank's external website: http://www.worldbank.org/debarr.	
	B. Contents of Bidding Document	
ITB 8.1	Electronic –Procurement System	
	The Employer shall use the following electronic-procurement system to manage this Bidding process:	
	https://eprocure.gov.in/eprocure/app.	
	Requests for clarification should be received by the Employer no later than: 10 days from the date of publication of tender on e-procurement website.	
ITB 9.1	NIL	
	C. Preparation of Bids	
ITB 12.2 (h)	The Bidder shall submit the following additional documents in its Bid: [list any additional document not already listed in ITB 12.2 that must be	

	submitted with the Bid. The list of additional documents should include
	the following/
	1. Proof of Tender Fee
	2. ESIC & EPFO registration certificate
	The lead bidder can have ESIC & EPFO Registration at the time of award
	of contract.
	In case, the successful bidder is a JV, then all the statutory certificate should be in the name of JV.
ITB 12.3 (d)	The Bidder shall submit the following additional documents in its Bid: <i>No Additional Documents</i> .
ITB 13	Note for Bidders: Bidders have to submit the bids on the e-procurement portal along with the relevant required documents. For this purpose, the bidders shall fill up online, the forms that are available for online filling on the e-portal. The rest of the forms shall be download by the bidders and filled up. The filled up pages shall then be scanned and uploaded on the e-procurement portal along with the scanned copies of the supporting documents.
ITB 13.3	For submission of original documents, the Employer's address is:
	Attention: Vice Chairman & Project Director (JMVP)]
	Inland Waterways Authority of India
	A-13, Sector-1, Noida
	Gautam Budha Nagar, Uttar Pradesh 201 301.
ITB 14.1	Alternative Bids <i>shall not be</i> considered.
ITB 14.2	Alternative times for completion <i>shall not be</i> permitted.
ITB 14.3	Not Applicable
ITB 15.7	The prices quoted by the Bidder "shall not" be subject to adjustment during the performance of the Contract.
ITB 19.1	The Bid validity period shall be 120 days.
ITB 10	Cost of Tender is Rs. 2,950 (incl. GST)
ITB 20.1	A Bid Security shall be required.

	The amount of the Bid Security shall be Rs 8,21,762/- (Rupees Eight Lakh Twenty One Thousand Seven Hundred & Sixty Two only)
ITB 20.3 (d)	E-Bank Guarantee certificate/Bank Guarantee issued by a Nationalized/ Scheduled bank located in India for equivalent or higher values are acceptable as bid security pledged in favour of IWAI Fund.
	Name of Bank Account: - IWAI Fund Jal Marg Vikas
	Bank Name & Address: - Canara Bank, Sector-18, Morna Branch, Noida, UP
	Bank Account Number: - 87781010014534
	IFSC Code - CNRB0018778
ITB 21.3	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: Legally valid Power of Attorney is required to demonstrate the authority of the signatory to sign the Bid; and
	In the case of Bids submitted by an existing or intended JV, if permitted as per ITB 4.1, the authorization shall be evidenced by a Power of Attorney signed by legally authorized signatories of all the members.
	D. Online Submission and Opening of Bids
ITB 22.1	Class of DSC required is:IInd / IIIrd
	1
ITB 23.1	The deadline for uploading the Bids is:
ITB 23.1	-
ITB 23.1	The deadline for uploading the Bids is:
ITB 23.1	The deadline for uploading the Bids is: Date: 06 March, 2024
ITB 23.1 ITB 25.1	The deadline for uploading the Bids is: Date: 06 March, 2024
	The deadline for uploading the Bids is: Date: 06 March, 2024 Time: 1500 Hrs
	The deadline for uploading the Bids is: Date: 06 March, 2024 Time: 1500 Hrs Re-submission of the bid is <i>not allowed</i> , if withdrawn.
ITB 25.1	The deadline for uploading the Bids is: Date: 06 March, 2024 Time: 1500 Hrs Re-submission of the bid is <i>not allowed</i> , if withdrawn. E. Public Opening of Technical Parts of Bids The Electronic Envelope I – containing technical proposal along with following details shall be opened for only those bidders, whose original
ITB 25.1	The deadline for uploading the Bids is: Date: 06 March, 2024 Time: 1500 Hrs Re-submission of the bid is <i>not allowed</i> , if withdrawn. E. Public Opening of Technical Parts of Bids The Electronic Envelope I — containing technical proposal along with following details shall be opened for only those bidders, whose original documents stipulated at ITB- 20.1 (a) have been received.
ITB 25.1	The deadline for uploading the Bids is: Date: 06 March, 2024 Time: 1500 Hrs Re-submission of the bid is <i>not allowed</i> , if withdrawn. E. Public Opening of Technical Parts of Bids The Electronic Envelope I — containing technical proposal along with following details shall be opened for only those bidders, whose original documents stipulated at ITB- 20.1 (a) have been received. a) Bid Security, POA, Affidavit, etc.

The online opening of Technical Parts of Bids shall take place at:

Inland Waterways Authority of India

A-13, Sector-1, Noida

Gautam Budha Nagar, Uttar Pradesh 201 301

Date: 07.03.2024

Time: 1600 Hrs IST

In the event of the specified date of bid opening being declared a holiday for the Employer, the bids will be opened at the appointed time and location on the next working day.

The Electronic Envelope II – containing Price Proposal

The Price proposal will be opened for only those bidders who have fulfilled the Qualification Criteria and Technical requirements & Eligibility Criteria. And has been found meeting all the requirements as stipulated in this document, at a later date.

The shortlisted bidders shall be informed about such date.

F. Evaluation and Comparison of Bids – General Provisions

ITB 30.3

The adjustment shall be based on the highest price of the item or component as quoted in other substantially responsive Bids, subject to a maximum of the estimated price of the item. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Employer shall use its best estimate.

H. Public Opening of Financial Parts of Bids

ITB 34.2 (c)

Following the completion of the evaluation of the Technical Parts of the Bids, the Employer will notify all Bidders of the date, time and location of the public opening of Financial Parts of Bids.

In addition to the above the Employer shall publish a notice of the public opening of the Financial Parts of the Bid on its website e procure portal and IWAI website.

In the event of the specified date of bid opening being declared a holiday for the Employer, the bids will be opened at the appointed time and location on the next working day.

ITB 39.1

All duties, taxes and other levies payable by the bidder under the contract or for any other cause shall be included in the rates, prices and total bid prices, and will be considered in evaluation of bids.

	J. Award of Contract				
ITB 48.1	The Performance Security amount is 5 percent of Contract Amount, and the Standard Form of Performance Security acceptable to the Employer shall be a Bank Guarantee including FDR & E-Bank Guarantee.				
	Security Deposit: A sum @ 10% of the gross amount of the bill shall be deducted from each running bill of the contractor till the sum will amount to security deposit of 5% of the contract value of work.				
ITB 49	The Adjudicator proposed by the Employer The daily rate for this proposed Adjudicator shall be Rs. 10,000/ <i>CV</i> is attached at the end of this section.				

Section III - Evaluation and Qualification Criteria

This section contains the criteria that the Employer shall use to evaluate Bids and qualify Bidders through post-qualification. No other factor methods or criteria shall be used other than specified in this bidding document. The Bidder shall provide all the information requested in the forms included in Section IV, Bidding Forms.

[The Employer shall select the criteria deemed appropriate for the procurement process, insert the appropriate wording using the samples below or other acceptable wording, and delete the text in italics]

Contents

In line with the two-envelope bidding process, this section includes Evaluation and Qualification Criteria:

- (i) Technical Part; and
- (ii) Financial Part.

A. Award Criteria

The Employer shall use the criteria and methodologies listed in this Section to evaluate Bids. By applying these criteria and methodologies, the Employer shall determine the lowest evaluated Bidder whose offer is substantially responsive to the Bidding Document, and is qualified to perform the Contract satisfactorily.

B. TECHNICAL PART

1. Adequacy of Technical Proposal

In evaluating the Technical Parts of each Bid, the Employer shall use the criteria and methodologies listed in the Instructions to Bidders and Section III, Evaluation and Qualification Criteria. If a Bid is not substantially responsive to the requirements of bidding document, it shall be rejected, and Financial Part of that Bid shall not be opened.

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section VII, Employer's Requirements.

2. Qualification

- 2.1 All Bidders shall include the following information and documents with their Bids:
 - (a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the Bid to commit the Bidder;
 - (b) total monetary value of Services performed for each of the last five years;
 - (c) experience in Services of a similar nature and size for each of the last seven years, and details of Services under way or contractually committed; and names and address of clients who may be contacted for further information on those contracts;
 - (d) list of major items of equipment proposed to carry out the Contract;
 - (e) qualifications and experience of key site management and technical personnel proposed for the Contract;
 - (f) reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five years;
 - (g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources);

- (h) authority to the Employer to seek references from the Bidder's bankers;
- (i) information regarding any litigation, current or during the last five years, in which the Bidder is involved, the parties concerned, and disputed amount; and
- (j) proposals for subcontracting components of the Services amounting to more than 10 percent of the Contract Price.
- 2.2 Bids submitted by a joint venture of two or more firms as members shall comply with the following requirements, unless otherwise stated **below**:
- (a) the Bid shall include all the information listed above for each joint venture member;
- (b) the Bid shall be signed so as to be legally binding on all members;
- (c) the Bid shall include a copy of the agreement entered into by the joint venture members defining the division of assignments to each member and establishing that all members shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms, and a statement to this effect shall be included in the authorization mentioned under (d) below; alternatively, a Letter of Intent to execute a joint venture agreement in the event of a successful Bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed agreement; All members of JV should have active participation in providing services during the currency of the contract, and the division of assignments to each member should not be varied/modified subsequently without prior approval of the Employer;
- (d) one of the members shall be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of any and all members of the joint venture, and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the members;
- (e) the execution of the entire Contract, including payment, shall be done exclusively with the member in charge; and
- (f) The joint venture agreement should be registered in **India** so as to be legally valid and binding on members. The Lead Member of JV shall at all time during the execution of contract equity equivalent to at least 51% of the subscribed and paid up capital of the registered JV entity.
- 2.3 To qualify for award of the Contract, Bidders shall meet the following minimum qualifying criteria:
- (a) annual volume of Supply / Services of at least the amount specified **below**;
- (b) experience as supply / service provider in the provision of at least two supply / service contracts of a nature and complexity equivalent to the Supply / Services over the last 7 years (to comply with this requirement, Supply / Services contracts cited should be at least 70 percent complete) as specified **below**;

- (c) Not applicable;
- (d) a Contractor with five years' experience in Supply / Services of an equivalent nature and volume; and
- (e) liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than the amount specified **below**.

A consistent history of litigation or arbitration awards against the Applicant or any member of a Joint Venture may result in disqualification.

2.4 Qualification Requirements

Joint Ventures	The information needed for Bids submitted by joint ventures is as follows: <i>Proposed share holding pattern of the intended JV which would be registered, if successful.</i>								
Annual Volume	The minimum required annual turnover from the Services for the successful Bidder in any of the last five years ending with FY 2022-23 shall be:								
			Annua	al Turnov	er	in ₹ 1,23,26,	435		
Experience	The experience required to be demonstrated by the Bidder executed during the last 7 years, as per the following criteria:								
	 i) One similar work of value of Rs. 3.288 Cr Or ii) Two similar works of value of Rs. 2.055 Cr Or iii) Three similar works of value of Rs. 1.644 Cr. the bidder should provide documentary evidence (i.e. work order(s) and completion certificate issued by the client on their letterhead) to support his claim for the works mentioned above. 								
	For this purpose, the "Similar Works" means, "Experience in developing of Hydrographic / Marine / Navigation Mobile Application on Android/ iOS Platform during the last 07 (seven) years".								
Essential Equipment	Not Applicable								
Key Personnel						project imp			
	S.No.	Designati of Resour Persons		No.		nimum alification	Minim years of experie	of	Minimum experience in

								providing similar services
	1	Softwai Technic	_	01	B.E/I (CS/	B.Tech IT)	02 years	02 years
	2	GIS Ex	pert	01		c /BTech ology/Geo ormatics)	05 year	05 year
	[Indicate designation, qualification & Experience for each person and furnished their Curriculum Vitae]							
	The persons of the following department(s) are not permitted to be in the employment of the Bidder: Not Applicable							
Bank Solvency	The minir	num an	nount of	Bank	Solve			
Ĭ						in	₹	
			Bank S	Solveno	y	1.644 (Crore	
	The Bidder shall submit Bank Solvency certificate from a nationalized / scheduled bank in India for a minimum amount as mentioned above. The Bank Solvency certificate submitted by the Bidder shall not be older than six (06) months from the Bid Submission Last Date.							
Subcontractors	Subcontra	ictors' e	xperien	ce <i>shal</i>	l not	be taken:	into accou	unt.

2.5 The figures for each of the members of a joint venture shall be added together to determine the Bidder's compliance with the minimum qualifying criteria of (a), (b) and (e); however, for a joint venture to qualify the member in charge must meet at least 40 percent of those minimum criteria for an individual Bidder and other members at least 25% of the criteria. Failure to comply with this requirement will result in rejection of the joint venture's Bid.

Subcontractors' experience and resources *will not be taken* into account in determining the Bidder's compliance with the qualifying criteria, unless otherwise stated in the Qualification Requirements above.

- 2.6 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:-
- made misleading or false representations in the forms, statements, affidavits and attachments submitted in proof of the qualification requirement;
- record of poor performance such as abandoning the works or services, not properly completed or financial failures etc.;
- consistent history of litigation or arbitration awards against the bidder or any member of the joint venture.

2.7 Evaluation for Technical Qualification

2.7.1 The Bids shall be evaluated based on the eligibility & qualification criteria mentioned in above. In case a bidder fails to meet the above-mentioned eligibility & qualification criteria, their bids shall be treated as non- responsive and financial bids of such bidders shall not be opened.

3.0 Alternative Technical Solutions for specified parts of the Services

Not Applicable

C. FINANCIAL PART

1. Evaluation (ITB 35.1(f))

In addition to the criteria listed in ITB 35.1 (a) to (e) the following criteria shall apply:

NIL

2. Multiple Contracts

Pursuant to ITB 35.3 of the Instructions to Bidders, if Services are grouped in multiple contracts, evaluation will be as follows:

- (a) Award Criteria for Multiple Contracts [ITB 35.3]: Not Applicable
- (b) Qualification Criteria for Multiple Contracts:

Not Applicable.

3. Alternative Times for Completion

An alternative Completion Time, if permitted under ITB 14.2, will be evaluated as follows: NOT APPLICABLE

[describe method, i.e. adding to the bid price a penalty of a given amount per month of proposed completion time above the minimum completion time offered]

[Note: the Services specified in the Activity Schedule are required to be delivered within the acceptable time range (after the earliest and before the final date, both dates inclusive) specified

in Section VII, Activity Schedule – Completion Schedules. No credit will be given to deliveries before the earliest date, and Bids offering delivery after the final date shall be treated as nonresponsive. Within this acceptable period, an adjustment of [insert the adjustment factor e.g. 0.5% per week or part of week], will be added, for evaluation purposes only, to the Bid price of Bids offering deliveries later than the "Earliest Delivery Date" specified in Section VII, Activity Schedule]

4. Alternative Technical Solutions - Financial Part for specified parts of the Services

If permitted under ITB 14.3, will be evaluated as follows: NOT APPLICABLE

5. Sustainable procurement - Not Applicable

Section IV- Bidding Forms

Table of Forms

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Letter of Bid – Technical Part

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

The Bidder must prepare this Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Note: All italicized text is to help Bidders in preparing this form.

Date of this Bid submission: [insert date (as day, month and year) of Bid submission]

IFB No.: [insert number of IFB process]

Alternative No.: [insert identification No if this is a Bid for an alternative]

To: [insert complete name of Employer]

- (a) **No reservations:** We have examined and have no reservations to the bidding document, including Addenda issued in accordance with ITB 9;
- (b) **Eligibility**: We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;
- (c) **Conformity:** We offer to provide the Non-Consulting Services in conformity with the bidding document for the following: [insert a brief description of the Non-Consulting Services];
- (d) **Bid Validity Period:** Our Bid shall be valid for the period specified in BDS 19.1 (as amended if applicable) from the date fixed for the Bid submission deadline (specified in BDS 23.1 (as amended if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (e) **Performance Security:** If our Bid is accepted, we commit to obtain a Performance Security in accordance with the bidding document;
- (f) **One Bid Per Bidder:** We are not submitting any other Bid(s) as an individual Bidder, and we are not participating in any other Bid(s) as a Joint Venture member or as a subcontractor, and meet the requirements of ITB 4.3, other than alternative Bids submitted in accordance with ITB 14;
- (g) **Suspension and Debarment**: We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's Country laws or official regulations or pursuant to a decision of the United Nations Security Council;

- (h) **State-owned enterprise or institution**: [select the appropriate option and delete the other] [We are not a state-owned enterprise or institution] / [We are a state-owned enterprise or institution but meet the requirements of ITB 4.6];
- (i) **Binding Contract**: We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (j) **Not Bound to Accept:** We understand that you are not bound to accept the lowest evaluated Bid or any other Bid that you may receive;
- (k) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption;
- (1) We accept the appointment of *[insert name proposed in Bid Data Sheet]* as the Adjudicator

[or]

We do not accept the appoint of [insert name proposed in Bid Data Sheet] as the Adjudicator and propose instead that [insert name] be appointed as Adjudicator whose daily fees and biographical data are attached; and

(m) If awarded the contract, the person named below shall act as Service Provider's Representative:

Name of the Bidder: *[insert complete name of person signing the Bid]

Name of the person duly authorized to sign the Bid on behalf of the Bidder: **[insert complete name of person duly authorized to sign the Bid]

Title of the person signing the Bid: [insert complete title of the person signing the Bid]

Signature of the person named above: [insert signature of person whose name and capacity are shown above]

Date signed [insert date of signing] **day of** [insert month], [insert year]

- * In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder
- ** Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid Schedules.

Letter of Bid – Financial Part

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

The Bidder must prepare this Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Note: All italicized text is to help Bidders in preparing this form.

Date of this Bid submission: [insert date (as day, month and year) of Bid submission]

IFB No.: [insert number of IFB process]

Alternative No.: [insert identification No if this is a Bid for an alternative]

To: Inland Waterways Authority of India A-13, Sector-1, Noida Gautam Buda Nagar District (U.P) PIN 201 301

We, the undersigned Bidder, hereby submit the second part of our Bid, the Financial Part In submitting our Financial Part, we make the following additional declarations:

- (a) **Bid Validity Period:** Our Bid shall be valid for the period specified in BDS 19.1 (as amended if applicable) from the date fixed for the Bid submission deadline (specified in BDS 23.1 (as amended if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (b) **Bid Price:** The total price of our Bid, excluding any discounts offered in item (c) below is: [Insert one of the options below as appropriate]

 Option 1, in case of one lot: Total price is: [insert the total price of the Bid in Rs in words and figures];

Or

Option 2, in case of multiple lots: (a) Total price of each lot [insert the total price of each lot in Rs in words and figures]; and (b) Total price of all lots (sum of all lots) [insert the total price of all lots in Rs in words and figures];

- (c) **Discounts:** The discounts offered and the methodology for their application are:
 - (i) The discounts offered are: [Specify in detail each discount offered.]

(ii)	The exact method of calculations to	determine the net price after application of
	discounts is shown below: [Specify	in detail the method that shall be used to
	apply the discounts];	:

(d) Commissions, gratuities and fees: We have paid, or will pay the following commissions, gratuities, or fees with respect to the Bidding process or execution of the Contract: [insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount in Rs of each such commission or gratuity]

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")

(e) **Binding Contract**: We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed.

Name of the Bidder: *[insert complete name of person signing the Bid]

Name of the person duly authorized to sign the Bid on behalf of the Bidder: **[insert complete name of person duly authorized to sign the Bid]

Title of the person signing the Bid: [insert complete title of the person signing the Bid]

Signature of the person named above: [insert signature of person whose name and capacity are shown above]

Date signed [insert date of signing] **day of** [insert month], [insert year]

- *: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder
- **: Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid Schedules.

Appendix to Technical Part Bidder Information Form

[The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

	Date: [insert date (as day, month and] IFB No.: [insert num Alternative No.: [insert identification No if this is	nber of Bidding pro	cess]
	Page	of	pages
1. Bio	Bidder's Name [insert Bidder's legal name]		
2. In	In case of JV, legal name of each member: [insert legal name of each r	member in JV]	
	Bidder's actual or intended country of registration: [insert actual or integritation]	tended country of	
4. Bio	Bidder's actual or intended year of registration: [insert Bidder's year of	of registration]	
	Bidder's legal Address in country of registration: [insert Bidder's legal registration]	l address in country	,
6. Bio	Bidder's Authorized Representative Information		
Naı	Name: [insert Authorized Representative's name]		
Ado	Address: [insert Authorized Representative's Address]		
Tel	Telephone/Fax numbers: [insert Authorized Representative's telephone	r/fax numbers]	
Em	Email Address: [insert Authorized Representative's email address]		
7.	Attached are copies of original documents of [check the box(es) original documents]	of the attached	
	Articles of Incorporation (or equivalent documents of constitution of documents of registration of the legal entity named above, in accordance	, .	or
	In case of JV, letter of intent to form JV or JV agreement, in accord	lance with ITB 4.1.	
	In case of state-owned enterprise or institution, in accordance with lestablishing:	ITB 4.6 documents	
•	 Legal and financial autonomy Operation under commercial law Establishing that the Bidder is not under the supervision of the ag 	ency of the Employ	ver

8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

Appendix to Technical Part

Bidder's JV Members Information Form

(Where permitted as per BDS ITB 4.1)

[The Bidder shall fill in this Form in accordance with the following table shall be filled in for the Bidder and for ed Date: [insert date (as day, IFB No.: Alternative No.: [insert identification]	ach membe month and : [insert nu	er of a Joint Ver d year) of Bid s mber of Biddin	nture]. ubmission] ig process]
	Page	of	pages
1. Bidder's Name: [insert Bidder's legal name]			
2. Bidder's JV Member's name: [insert JV's Member leg	al name]		
3. Bidder's JV Member's country of registration: [in registration]	isert JV's	Member coun	ntry of
4. Bidder's JV Member's year of registration: [insert JV's	s Member y	vear of registra	tion]
5. Bidder's JV Member's legal address in country of re legal address in country of registration]	egistration:	[insert JV's N	1ember
6. Bidder's JV Member's authorized representative inform	nation		
Name: [insert name of JV's Member authorized representa	itive]		
Address: [insert address of JV's Member authorized repres	sentative]		
Telephone/Fax numbers: [insert telephone/fax numbers representative]	s of JV's	Member auti	horized
Email Address: [insert email address of JV's Member auth	orized rep	resentative]	
7. Attached are copies of original documents of [check the b documents]	pox(es) of t	he attached ori	ginal
Articles of Incorporation (or equivalent documents of const registration documents of the legal entity named above, in according to the legal entity named above.			or
☐ In case of a state-owned enterprise or institution, documents autonomy, operation in accordance with commercial law, a supervision of the Employer, in accordance with ITB 4.6.			
8. Included are the organizational chart, a list of Board of Director	rs, and the b	eneficial owners	hip.

Appendix to Technical Part

Qualification Information

Notes on Form of Qualification Information

The information is to be filled in by individual bidders and by each member of Joint Venture in case of JV participating in the Bid. The following pages will be used for purposes of post-qualification as provided for in Clause 5 of the Instructions to Bidders. This information will not be incorporated in the Contract. Attach additional pages as necessary.

1. Individual
Bidders or
Individual
Members of
Joint Ventures

1.1 Constitution or legal status of Bidder: [attach copy]

Place of registration: [insert]
Principal place of business: [insert]

Power of attorney of signatory of Bid: [attach]

1.2 Total annual volume of Services performed in five years, and payments received in the last five years preceding the year in which bids are invited. (*Attach certificate from Chartered Accountant*):

Year (Equivalent Rs. millions) 2018 - 2019 2019 - 2020 2020 - 2021 2021 - 2022 2022 - 2023

- 1.3 Services performed as prime Service Provider (in the same name and style) on the provision of Services of a similar nature and volume over the last seven years. The values should be indicated in the same currency used for Item 1.2 above. Also list details of Services under way or committed, including expected completion date. [Attach certificate from the Engineer-in-charge.]
- A) Services performed as prime Service Provider (in the same name and style) on providing services of a similar nature and volume over the last seven years. [Attach certificate from the Engineer-incharge.]
- B) Activities executed as prime Service Provider (in the same name and style) in the last seven years.

Supply / Services performed as prime Service Provider (*in the same name and style*) on providing services of a similar nature and volume over the last seven years¹. [Attach certificate from the Engineer-in-charge.]

-

¹ Immediately preceding the financial year in which bids are received.

Order	any

^{[@} The items or activities for which data is requested should tally with that specified in Section III, Item 2 Qualification.

2021 - 2022 2022 - 2023

1.4 Major items of Service Provider's Equipment proposed for carrying out the Services. List all information requested below.

ty age Condition	Number Owned	Leased	Purchased
(Years)	available		
aci	7 6	7 8	, , ,

1.5 Qualifications and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data. Refer to GCC Clause 4.1.

Position	Name	Qualification	Years of experience	Years of experience in
			(general)	proposed position

^{*} Attach certificates from Engineer in-charge]

² Immediately preceding the financial year in which bids are received.

1.6 Proposed subcontracts and firms involved. Refer to GCC Clause 3.5.

Castiana aftha	17.	1 of	Cultaraturatan	Fii	
Sections of the Services		lue of contract	Subcontractor (name and address)	Experience i similar S	
(a)	3400	Contract	(name and address)	Sillitar	oci vices
(b)					
	·		ctors will also be assesse cording approval to him.	ed (on the same	lines as for
	1.7		reports for the last five y ments, auditors' reports		-
	1.8	requirement attach cop	of access to financial resents: cash in hand, lines pies of support documen with eligibility requirements.	of credit, etc. ts ³ . We certify/o	List below and confirm that we
	1.9		dress, and telephone, te t may provide references		
	1 10	. I C at:		:	:41.i 41 1
	1.10		on regarding any litigat s, in which the Bidder is		
Other party(ies)	Cau	se of disput	Details of litigation award(Court or Arbitration)	Amount P involved	resent status
(a)					
(b)					

- 1.11 Statement of compliance with the requirements of ITB 4.2.
- 1.12 Proposed Program (service work method and schedule). Descriptions, drawings, and charts, as necessary, to comply with the requirements of the bidding document.

³Attach certificate from a Nationalized/ Scheduled Bank in the format given in point 2 below.

Financial Standing of the Bidder

Financial Statements Summary: To be submitted by each bidder including each member of JV.

	SUMMARY OF FINANCIAL STATEMENTS									
Name of bidder/JV Member:										
	(Equivalent Rs. Million)									
S.No.	Financial	Actuals for Previous five years Ref. of								
	Information in	exclud	ding th	e curre	nt fina	ncial	Page Nos.			
	Rupee equivalent	excluding the current financial Page N year of								
	with exchange	Balance								
	rate at the end of	sheets								
	concerned year									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)			
1.	Total Assets									
2.	Total Turnover									
3.	Current Assets									
4.	Current Assets +									
	Loan & Advances									
5.	Total Liabilities									
6.	Current Liabilities									
7.	Current liabilities									
	& provision									
8.	Profit before									
	Interest and Tax									
9.	Profit before Tax									
10.	Profit after Tax									
11.	Shareholder's									
	Funds (Net									
	Worth)=(Paid up									
	equity +Reserves)-									
	(revaluation									
	reserves +									
12.	Miscellaneous									
	expenditure not									
	written off)									
13.	Depreciation									
	Current Ration									
	(2)/(5)									
14.	Net cash accruals=									
	Profit after Tax +									
	depreciation									

This information should be extracted from the Annual Financial Statements/Balance sheets, which should be enclosed. Year 1 will be the latest year for which audited financial statements are available. Year 2 shall be the year immediately preceding year 1 and year 3 shall be the year immediately preceding Year 2.

SAMPLE FORMAT (no substitute is acceptable) FOR EVIDENCE OF ACCESS TO FINANCIAL RESOURCES OR AVAILABILITY OF CREDIT FACILITIES* (Refer point 1.8 above)

(Refer point 1.8 above)	
BANK CERTIFICATE	
This is to certify that M/sis a reputed compa financial standing.	any with a good
If the contract for the Services, namely	ovide overdraft/credit
S	Sd
Nar	me of Bank
Sen	nior Bank Manager
Ado	dress of the Bank
* Change the text as follows for Joint Venture:	
This is to certify that M/s	
If the contract for the Services, namely	rdraft/credit facilities
[This should be given by the JV members in proportion to their financial	al participation.]
(To be given from a nationalized or scheduled bank in India. No of be acceptable)	her substitute will

3. Joint Ventures

- 3.1 The information listed in 1.1 1.11 above shall be provided for each member of the joint venture.
- 3.2 The information in 1.12 above shall be provided for the joint venture.
- 3.3 Attach the power of attorney of the signatory(ies) of the Bid authorizing signature of the Bid on behalf of the joint venture.
- 3.4 Attach the Agreement among all members of the joint venture (and which is legally binding on all members), which shows that
 - (a) all members shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;
 - (b) one of the members will be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of any and all members of the joint venture;
 - (c) the execution of the entire Contract, including payment, shall be done exclusively with the member in charge;
 - (d) All members of JV shall have active participation in providing services during the currency of the contract, and the division of assignments to each member shall not be varied/modified subsequently without prior approval of the Employer; and
 - (e) The joint venture agreement shall be registered in the place specified in *Section III*, *Item 2 Qualification*, so as to be legally valid and binding on members.
- 3.5 Alternatively, a Letter of Intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all members and submitted with the bid, together with a copy of the proposed Agreement.

4. Additional Requirements

4.1 Bidders should provide any additional information required in the BDS.

5. Furnish details of participation proposed in the joint venture as below:

Details of participation in the joint venture

PARTICIPATION DETAILS	FIRM 'A' (Lead Member)	FIRM 'B'	FIRM 'C'
Financial			
Name of the Banker(s)			
Planning			
Construction Equipment			
Key Personnel			
Execution of Services (Give details on proposed contribution of each)			

Appendix to Technical Part

	Appendix to Technic	ai i ai t
	(Name of the Project	Form
	(1. umo oy viic 1. oyeev	,
	(Declaration regarding tax/duty exempequipment bought for providing	· ·
(Bida	der's Name and Address)	
		To:(Name of the Employer & address)
Dear	Sir:	
	Re: [Name of Service]	
Gov	Certificate for Import/Procurement of vernment Order/Circular Number under which tax/dut	* *
1.	We confirm that we are solely responsible for obtain considered in our bid and in case of failure to receive whatsoever, the employer will not compensate us.	•
2.	We are furnishing below the information required by necessary certificates in terms of the Government of	•

_	TD1 1 /	. •	•	0 1 1	• 😁		1
12	The goodgloomgt	mintion oc	urumant t	tow tribach	agetitiantag	and modified one on	1140 0 044
.) .	The goods/const	LUCHOH EC		OI WILL	CELLILICATES &	116 16001160 816 88	uniciei.

Items	Make/	Capacity	Quantity	Value	State whether	Remarks
(modify the	Brand	[where			it will be	regarding
list suitably	Name	applicable]			procured	justification for
for each					locally or	the quantity
specific					imported [if so	and their usage
Service)*					from which	in providing
					country]	the Services
	•		•	•		

- 4. We agree that no modification to the above list is permitted after bids are opened.
- 5. We agree that the certificate will be issued only to the extent considered reasonable by the Employer for the Services, based on the activities and the programme and methodology as furnished by us alongwith the bid.
- 6. We confirm that the above goods and equipment will be exclusively used for the providing the above Services and the equipment will not be sold or otherwise disposed of in any manner for a period of five years from the date of acquisition.

Date:	(Signature)
Place:	(Printed Name)
	(Designation)
	(Common Seal)

[This certificate will be issued within 60 days of signing of contract and no subsequent changes will be permitted.]

^{*} Modify the above to suit the requirements given in Government of India's Notification as current of date of bidding.

Schedule Forms

[The Bidder shall fill in these Forms in accordance with the instructions indicated. The list of line items in column 1 of the **Activity Schedules** shall coincide with the List of Non-Consulting Services specified in the Employer's Requirements.]

Appendix to Technical Part Method Statement

Appendix to Technical Part Work Plan

Appendix to Technical Part

Form of Bid Security

(Bank Guarantee)

[Guarantor letterhead or SWIFT identifier code]

	No[insert guarantee reference number][insert date of issue of the guarantee]
submitted his Bi	
of	OPLE by these presents that We
SEALED with th	e Common Seal of the said Bank this day of 20
THE CONDITIO	NS of this obligation are:
(1)	If after Bid opening the Applicant (a) withdraws his bid during the period of Bid validity specified in the Letter of Bid, ("the Bid Validity Period"); or (b) does not accept the correction of the Bid Price pursuant to ITB 36;
or	
(2)	If the Applicant having been notified of the acceptance of his bid by the Employer during the period of Bid validity:
	(a) fails or refuses to execute the Contract Agreement in accordance with the Instructions to Bidders, if required; or

⁷ In the case of a JV, the bidder should be stated as "a Joint Venture consisting of, and".

⁸ The Applicant should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 20.1 of the Instructions to Bidders.

((b)	fails or refuses to furnish the Performance Security, in account Instruction to Bidders.	cordance with the
without the Employ note that the amoun	er havin nt claim	Employer up to the above amount upon receipt of his first ag to substantiate his demand, provided that in his demand the dead by him is due to him owing to the occurrence of one occurred condition or conditions.	he Employer will
deadline for submis extended by the En	ssion of a nployer,	in force up to and including the date Bids as such deadline is stated in the Instructions to Bidder notice of which extension(s) to the Bank is hereby waived ould reach the Bank not later than the above date.	rs or as it may be
DATE		SIGNATURE OF THE BANK	
WITNESS		SEAL	_
[signature, name, an	nd addres	ss]	

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

⁹ 45 days after the end of the validity period of the Bid.

Section IV - Bidding Forms

Form of Bid-Securing Declaration (Not Applicable)

Date: [insert date (as day, month and year)]

Bid No.: [insert number of bidding process]

Alternative No.: [insert identification No if this is a Bid for an alternative]

To: [insert complete name of Employer] We, the undersigned, declare that:

We understand that, according to your conditions, bids must be supported by a Bid-Securing Declaration.

We accept that we will automatically be suspended from being eligible for bidding in any contract with the entity that invited Bids for the period of time of 03 Years starting on *[insert date]*, if we are in breach of our obligation(s) under the bid conditions, because we:

- (a) have withdrawn our Bid during the period of bid validity specified in the Letter of Bid; or
- (b) having been notified of the acceptance of our Bid by the Employer during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the ITB.

We understand this Bid-Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of our Bid.

Name of the Bidder*	[insert complete name of person signing the Bid]				
Name of the person duly authorized to sign the Bissign the Bisl	d on behalf of the Bidder** <i>[insert complete name of person duly authorized to</i>				
Title of the person signing the Bid <i>[insert complet</i>]	e title of the person signing the Bid]				
Signature of the person named above	[insert signature of person whose name and capacity are shown				
above/					
Date signed <i>[insert date of signing]</i> day of <i>[insert date of signing]</i> d	t month , insert year				

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**: Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid [Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all members to the Joint Venture that submits the bid.]

Section IV - Bidding Forms 62

Appendix to Financial Part

Activity Schedule

);		Jamonov. Is	ndian Rupees	Date:			
	C	urrency – n			ĪFB	No:	
				Alte	ernative No:		
						Pag	e N° of
1	2	3	4	5	6	7	8
Service N°	Description of Services	Unit	Delivery Date	Quantity and physical unit	Unit price	GST	Total Price per Service (Col. {6+7}x5)
[insert number of the Service]	[insert name of Services]		[insert delivery date at place of final destination per Service]	[insert number of units]	[insert unit price per unit]	[insert unit price per unit]	[insert total price per unit]
1	Development of River Navigation Application & Dedicated control center at IWAI H.O.	Nos.	5 months	1			
2	Charges for Cloud Based App for 5 years	Months	6-65 months	60 months			
3	Expert man power for 5 years	Months	6-65 months	60 months			
4	Regular Upgradation Maintenance & Enhancement for 5 years	Months	6-65 Months	60 Months			
			Total Bid Price				

Name of Bidder [insert complete name of Bidder] Signature of Bidder [signature of person signing the Bid] Date [insert date]

Appendix to Financial Part Others - Time Schedule

(to be used by Bidder when alternative Time for Completion is invited in ITB 14.2)

Section V - Eligible Countries

Eligibility for the Provision of Goods, Works and Services in Bank-Financed Procurement

In reference to ITB 4.8, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this Bidding process:

Under ITB 4.8 (a) None

Under ITB 4.8 (b) None

Section VI - Fraud and Corruption

(Section VI shall not be modified)

1. Purpose

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

- a. Defines, for the purposes of this provision, the terms set forth below as follows:
 - i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
 - iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
 - iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
 - v. "obstructive practice" is:
 - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.
- b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or

indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank's Anti- Corruption Guidelines and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner; (ii) to be a nominated sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect³ all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated subcontractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

Part II – Employer's Requirement

Section VII – Employer Requirements

SCOPE OF WORK

1. Overview:

Inland Waterways Authority of India intends to develop a Vessel Tracker application for facilitating the vessel operators with navigational routes, depth information, water level data, river information, metadata, bridge clearances, terminal details and navigational hazards for smooth voyage in the National Waterways. The application also enables tracking the movement of vessels in the Waterways. The terms of reference in this regard are given below:

- **2.** <u>Terms of Reference:</u> A GIS solution is to be built which should comprise of two major components which are a Mobile App and a Web Portal.
- (a) Development of Vessel Tracker Mobile Application: The Mobile application shall be a GIS based application that can draw its connectivity entirely through the towers and repeaters of various mobile network providers as well as the satellite based services like GPS which are normally available in the current age smartphones/devices. The functional features of the app are as mentioned below:
 - i. Layers of Spatial, Temporal and Periodical Survey Data: The mobile application should be able to incorporate multi layers of information to users such as the Global maps, Satellite imagery, Electronic Navigational Charts, Navigational Aids, Navigational Hazards, Survey Data (soundings) and any other data recommended by IWAI.
 - ii. Spatial Information and Analytics: Users should be able to access features like Viewing of existing points of importance, adding of users own points of interests. Analytics like measurement of point to point distances, Calculation of Areas, Measurement of Distance between the vessel/ship and any other vessel/ship/point.
 - **iii. Geo-Fencing & Traffic Information:** With the help of technologies like geo-fencing, proximity analysis & buffer analysis, users should be able to identify the deviation of vessel from identified path or movement of any other vessel in the proximity. An alarm based solution will be required in this regard.
 - iv. Tracking of Vessels and Maintaining Log Data: The application should be capable of tracking the movement of vessels/ships. The log data of the previous tracks shall also be available
 - v. Communication and Outreach: The application should be incorporated with a 24x7 alert system through which the service provider may convey any information of utmost importance/urgency. Also the user shall be able to search any information available on the app (like vessel movement) through a dedicated search bar.

- vi. Login Access: Mobile app should have facility for authorized users / field personnel access to the application through Mobile interface after registration.
- **vii. Monitoring:** Departmental user should able to update or upload data through the mobile application with online and offline capturing and synchronization of with central repository.
- **viii.** The tool should provide the Identify tool to view details of the selected point of the active theme on map.
- ix. The application should have provisions for the user to add waypoints, route, hazards or any other information for his usage, which shall be made available for public access upon its necessity and approval from IWAI.
- x. Advanced features: Real Time Traffic and Vessel Tracking, Customized Contextual Alerts and Notifications, Sharing and Social integration, Offline Maps and Navigation, Hands Free Operation, Integration of AIS Data from IWAI RIS network, Collaborative Navigation, Electronic log Book, Emergency Response Features, Historic Data and Trends, Localized Points of Interest, User Generated content, development, security and operations (DevSecOps) Updation / enhancement of features as per requirement.
- xi. **Ease of use features:** Intuitive User Interface, Quick Start Guide, One Click Navigation, Single Sign On (SSO) Facility, Contextual Help, Saved Favorites, Customizable dashboard, Minimal data Entry, Offline Functionalities, Smart Notification, Easy Route Modifications, Instant Sharing, Cross Device Synch, Feedback Mechanism.
- xii. Real-Time Weather Data Integration: The application shall be able to incorporate all the weather data that is made available by any authentic sources.
- xiii. Global adoptability of the software solution. Real Time / Live Tracking of vessels. Event based SMS and Email Alerts. Vessel Stop alert through remote Server Communication. Speed Monitoring Graph. Support Web Based/Android/iOS Application. Geofence and Landmarks functionalities.
- **xiv. Real-Time Water Level Data:** The App shall be able to integrate real time water level data through IWAI/CWC Portals.
- **xv.** The mobile app should be able to integrate satellite data from Bhuvan/Google and Open Street Map information.
- **(b) Web-Based Admin Portal:** A web based portal shall be developed for maintaining and managing the vessel movements by the service provider i.e., IWAI. The main features of Web-Based Portal are as follows:
 - i. Updating of Data feed: The web portal should be able to facilitate updating of survey data or any other such as Virtual/ actual Navigation aids and Markers, Electronic navigational Charts (ENCs), Route Planning and Restrictions, Water levels and Conditions, Emergency Contact Information, Vessel Information, Maintenance Schedules, Regulatory Updates, Incident Reporting and Navigations, User Communication, Feedback Management, Data Validation and Quality Control, Multilingual Content, User Profiles

- and Monitoring, Collaborate with Authorities, App Updates and maintenance.
- **ii. Monitoring of Vessel Movements:** All the vessels using Vessel Tracking application shall be monitored by IWAI through this portal. Also, the historical data of previous vessel tracks shall be accessible to IWAI through the Web Based Admin Portal.
- iii. Query Resolution and Advisory Management: The web-based portal should also have provisions for the employer to resolve any queries raised by users and to issue any advisories through the mobile application. Multi-Channel Support, Automated responses, Knowledge Base and FAQ, Live Chat, Mobile App Integration, Multi-Lingual Support, Escalation Procedures, Training for Support Team, User Feedback and Improvements, Crisis Management, Proactive Communication, Social media Monitoring, Continuous Improvement.
- iv. Adherence to IALA/IMO guidelines: Virtual/ actual Navigation Aids as per Navigation Channel, AIS data Integration, Electronic Navigational Charts/ Thalweg data updation, Water Way Markings, Light Characteristics, Safer Water Depth, Weather and Environmental Information, Emergency Procedures, Regulatory Compliance, User Education, Updates, Collaboration with Authorities. Guidelines will be provided by IWAI.
- v. Graphical Reports. Activity Report. Log History. Back up data storage capacity- minimum 90 days (Engine log hours, movement details, speed etc.)
- vi. The platform should be with all extensions and SDK's for further development of any application.
- vii. It should support the concept of Multi Tenancy so that the various department of IWAI can work in different tenants and store relevant data, configure various kinds of dashboards, analytical applications and user in their tenants. Department should also share data as service and application with other departments for collaboration. Multi-tenancy is a reference to the mode of operation of software where multiple independent instances of one or multiple applications operate in a shared environment. The instances (tenants) should be logically isolated, but physically integrated.
- viii. It should support smart tiling. Tile cache should automatically be built from a combination of techniques: zoom level dependent vector cache versions, quadtree data structures, and automatic geometry simplification. It automatically creates bigger tile sets where the vector data density is low, and smaller and finer tile sets wherever vector data density is high.
- ix. Geospatial Data Cataloging server should serve as a robust data management server solution, facilitating the identification, location, security, and organization of geospatial and related business data.

- **x.** Geospatial Data Cataloging server should have support for S-57 data, conforming to the S-52 standard for visualization. This includes the ability to serve maritime charts through OGC-compliant services.
- **xi.** GIS application should support 64-bit Windows and 64-bit Linux platform in native mode.
- **xii.** The GIS server should have in built map caching capability for enhanced performance.
- **xiii.** The GIS Server should provide freely available 2D and 3D Maps as base layers and also host the available map data with IWAI.
- xiv. Other details are as follows:
 - a. The identification of navigational paths through hydrography survey data that will be provided by IWAI to identify the navigable paths that can be used for vessel operations. The data will be of two types, a) Thalweg data and b) 2D Bathymetry from stretches where dredging takes place. IWAI shall provide these critical data immediately as and when it is available to enhance safety of navigation.
 - b. Water level data along the river as and when available.
 - c. Development of the Digital Navigational Charts (DNC) based on the hydrography data made available from IWAI.
 - d. Design and development of navigational way points and virtual buoys based on the draft required for the ferry operations at different locations of the river sections.
 - e. The Navigational buoys with unique IDs to mark the water depths.
 - i.Routing clearly marking the areas offering LAD (Least Available Depth) making the river column navigable.
 - ii. Interface for users to add points of interest where navigational events are experienced.
 - iii. Web-based Admin panel to track different vessels in real time to avoid collisions and incidents.
 - iv. History of all past routes recorded duly taken for the knowledge of IWT operator and Admin.
 - v.Facility to update the route in the e-Navigation software every fortnight/month based on the thalweg survey.
- **3.** <u>Setting up of Command Control Centre:</u> A command control is to be set up at any location as decided by the employer through which the regular monitoring of the application along with any updates are to be maintained. The key features are mentioned below:
 - i. The setting up of Control Centre IT hardware infrastructure and software solutions that includes:
 - ii. Identification of suitable sensors, instrumentation, infrastructure, software systems, communication protocols, for centralized Control Centre including site testing identified by IWAI for effective communication/ range.

- iii. Hardware to be supplied to the Control Centre are as follows:
 - a. LED Data wall of atleast 80 inch in size is to be setup at a location decided by the employer.
 - b. Supporting IT infrastructure like Desktop Monitor and all the accessories associated with it.
 - c. All the hardware supplied shall have warranty for the tender period.
- iv. Design and identification for IT infrastructure, Large scale display and integration requirements as part of setting up of Control Centre and Ops for real time monitoring of vessels.
- v. Manning and operations of Command Centre and Ops for real time tracking of vessels and incident management system.
- **4.** <u>Hosted on Cloud Servers:</u> The whole GIS should be hosted on cloud based servers and the bidder may choose their Cloud Service Provider who shall possess atleast but may not be limited to the following qualifications.

Qualification of the Cloud Service Provider

S. No.	Qualification Criteria	Supporting Documents
1.	CSP should be either:	Certificate of Incorporation or
	I. A company registered under the Indian	Certificate of Registration issued by
	Companies Act, 2013 OR	the Registrars of Companies
	II. A partnership firm registered under the	
	Limited Liability Partnerships (LLP) Act,	
	2008 OR	
	III. A partnership firm registered under the	
	Indian Partnership Act, 1932.	
2.	Proposed CSP shall be MeitY empaneled &	Empanelment Certificate issued by
	STQC audited as per Ministry of Electronics	MeitY / Confirmation from MeitY
	and Information Technology (MeitY)	website
	empanelment process as on the last date of	
	submission of the bid and the offered facilities	
	for DC & DR should also be empaneled and	
	STQC audited. The CSP should have at least 3	
	Data Centers empaneled with MEITY and	
	STQC audited at the bid submission.	
3.	CSP should not be blacklisted by any	
	Government and State Government /State	blacklisting
	Sector in India	

S.	Qualification Criteria	Supporting Documents
4.	Proposed CSP should have accreditations relevant to security, availability, confidentiality, processing integrity, and/or privacy Trust Services principles. SOC 1, SOC 2, SOC 3 and PCI DSS	
5.	CSP should have successfully implemented / commissioned at least two (02) projects of DC/DR with Cloud Deployment.	Letter from Authorized signatory on the letter head as well as public links of the published case studies on the CSP website
6.	CSP shall have published on its public facing website- 1. Cloud services' rates for India 2. Service Level Agreements (SLAs) 3. Dashboard live-status of cloud services' health across global data center and outage details (if any) with RCA	An undertaking from the CSP with the links to its relevant public facing website(s) covering the details
7.	CSP should offer the following cloud native managed services (All these services should be CSP managed and should be managed automatically by CSP with no manual intervention by the MSP or bidder) 1. Managed Databases including PostGre-SQL, My SQL, MS SQL, Oracle, etc. 2. NoSQL databases including Mongo DB compatible database services 3. Content Delivery Services for data transfer 4. Internet of Things services 5. Security Services such as Network Firewall with IPS/IDS capability, Anti-DDoS, Cloud Security Posture Management, Encryption capability with secured key storage in a Hardware Security Module which is FIPS 140-2 level 3 compliant, Web Application Firewall, etc.	An undertaking from the CSP with the links to its relevant public facing website(s) covering the details
8.	CSP should be certified for ISO/IEC 27017:2015-Code of Practice for information security for cloud services and Information Technology.	Valid Copy of Certificate.

5. Other Terms of Reference:

- i. Upgradation, maintenance & enhancement of application as per ToR & user feedback for 05 years.
- ii. Establishment of dedicated Control Centre at IWAI H.O. Noida & deployment of GIS expert with at least 05 years' experience and a computer operator.
- iii. Providing of Cloud based application services.
- iv. The employer may commercialize the app at any appropriate stage will be indicated separately and the following methods of commercialization shall be followed:

a. Methods of commercializing:

- i. Freemium Model: Free version of the app with basic features and limited functionality. Users can then upgrade to a premium version by subscribing or making in-app purchases to access advanced features, additional content, or enhanced support.
- ii. **Subscription Model:** Provide different subscription tiers (e.g., monthly, yearly) that offer varying levels of access, features, or benefits. Ensures model a steady stream of recurring revenue.
- iii. **Ad-Supported Model:** Free version of the app supported by advertisements. Advertisers pay to display targeted ads to users, and earn revenue based on impressions, clicks, or engagement.
- iv. **Affiliate Marketing:** Partner with companies that offer products or services relevant to inland waterways (e.g., marine equipment, navigation tools). Earn a commission for each referral or sale generated through your app.
- v. Partnerships with Waterway Authorities: Collaborate with government agencies or organizations responsible for managing inland waterways. Provide them with specialized tools and features for a fee, ensuring efficient waterway management

Functional Requirement Specifications given below are indicative. Detailed Functional requirement needs to be captured by the SI during the design phase of the project.

FRS: User Registration Module

S.no	Requirement Description	Whether complied or not (Yes/No)	Reference Document
1.	System shall provide single interface for registration to all the stakeholders involved (IWAI Officials (Contractual & Permanent), Marine users, Private Users.))		
2.	System shall provide facility to register according to the Category: IWAI Officials (Contractual & Permanent), Marine users, Private Users. etc.		

S.no	Requirement Description	Whether	Reference
		complied	Document
		or not (Yes/No)	
3.	System shall capture the following indicative	(168/110)	
	information of the applicants according to the		
	Category type,		
	A. In case of IWAI Officials:		
	i. Name of the Employee:		
	ii. Email Id		
	iii. Phone No.		
	iv. Employment Type:		
	v. Regional/Sub-Office:		
	B. In case of Private User:		
	i. Name		
	ii. Email Id iii. Phone No.		
	v. Company name		
	vi.Company Address:		
	vi. Company ruaress.		
4.	System shall implement the validation controls to		
''	ensure that all the mandatory fields are filled by the		
	user		
5.	Facilitate the applicants to save a partly filled		
	application form for registration in 'Save Draft'		
	mode for a period of 7 days. Further, once the basic		
	profile is created, the System should also have		
	'Auto- Save' functionality to ensure that additional		
	information already entered by the user does not		
	have to be re-entered in case of any outages/navigation errors.		
6.	System should allow the Designated Authority /		
0.	IWAI administrator to activate or reject the		
	registration		
7.	System should generate and send profile activation		
	link, once the registration has been successful and		
	activated by the Designated Authority / IWAI		
	Administrator		
8.	System shall facilitate creation of new user ID and		
0	password through activation link		
9.	System shall provide alerts to the competent		
	authority for the new user registration requests received in the system		
	received in the system		

S.no	Requirement Description	Whether	Reference
		complied	Document
		or not	
10	Create whell he integrated to E-mail whateau and	(Yes/No)	
10.	System shall be integrated to E-mail, whatsapp and SMS gateway for email, whatsapp and SMS		
	notifications and alerts		
11.	System shall be flexible to integrate with other		
	external gateways depending upon the requirement		
	of user's or user's company information		
12.	The information retrieved from the external		
	gateways should not be editable by the user. For		
	changing such information, the system shall		
	implement workflow and approval process, which		
10	must require approval from the government.		
13.	System shall perform validations for the		
	information supplied by the user (including		
	verification of mandatory fields, usage of same e- mail address and existence of same username,		
	existence of same company etc.)		
14.	Upon completion of the information entry, system		
	shall display the data entered by the user in a		
	consolidated view for verification and confirmation		
	by the user.		
15.	System shall inform user of a failure in case the		
	same username already exists in the system, inform		
	the user of the failure through an appropriate		
1.6	message and propose alternative usernames		
16.	Registration shall be carried out in a secure and		
17.	encrypted session in Central Database System User credentials (e.g.: passwords, Aadhaar		
1/.	User credentials (e.g.: passwords, Aadhaar number) must be stored in an encrypted/hashed		
	format and access to such information must be		
	restricted from all categories of users, including		
	DBAs.		
18.	Registration process must ensure the		
	confidentiality, integrity and non- repudiation of		
	the user and user's organization credentials during		
1.0	information transfer and storage		
19.	System shall maintain the detailed audit trails for		
	the registration application submitted in the system		
	including the date and time of receipt of the application form		
	application form		

S.no	Requirement Description	Whether	Reference
		complied	Document
		or not	
		(Yes/No)	
20.	System shall adopt the best practices of secure		
	portal design and development and database		
	management		

FRS: Log in Module

S.no	Requirement Description	Whether complied or not (Yes/No)	Reference Document
1.	System should provide single interface for login to all IWAI Officials (Contractual & Permanent), Marine users, Private Users and other users		
2.	System should provide facility/forms/tools for online user login		
3.	System should implement the validation controls to ensure that all the mandatory fields are filled by the user.		
4.	System shall provide the facility to reset password through 'Forgot Password' option, in case the user forgets the password		
5.	System shall facilitate two types of login: a) Login using mobile number and OTP and b) Login using registered username and password		
6.	In 'Login using mobile number', the system shall request for OTP generated on mobile after entering mobile number as User ID		
7.	System shall validate the user ID: username/mobile/Aadhaar number and password/OTP entered for successful login		
8.	System shall open the user instance – Homepage after successful login		
9.	System shall perform field validations for the login information (For example: mobile number, password etc.)		
10.	System shall use masking for password/ OTP input in login form		
11.	System shall inform user of a failure in case the wrong login credentials, inform the user of the failure through an appropriate message		
12.	Login shall be carried out in a secured and encrypted session in the Central Database System		
13.	System shall maintain the detailed audit trails for the user login in the system including the date and time of login		
14.	System shall be highly secure, and the security measures should be up to date to prevent existing/new cyber attacks		

FRS: System Software and Support Services

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not (Yes/ No)	
1.	D . 1.T . 1	Application shall make data available to the	(103/110)	
	Portal Level	authorized users in an expedient and secure		
	Security	environment		
2.	Portal Level	Application shall prevent unauthorized		
	Security	users from accessing Solution.		
3.		The system should have facility to restrict		
		user access to:		
		- Module Menus		
	Portal Level	- Sub- menus - Screens		
	Security	- Fields		
		- Reports		
		- Combination of the above		
		-Search etc.		
4.		If access is denied following repeated		
	Portal Level	unsuccessful logon attempts, this should be		
	Security	treated by the application as a security		
		incident and handled accordingly.		
5.	Portal Level	The System to define Maximum Inactive		
	Security	Time after which a user should be		
	,	automatically logged out of the system.		
6.	Portal Level	Application shall provide access monitoring to compile and report security violations		
	Security	and attempted security violations.		
7.		Application shall have the thorough		
/ .	Portal Level	capability to a log record of an unauthorized		
	Security	attempt.		
8.	Portal Level	Application shall provide physical and		
	Security	remote access control to components.		
9.		Application shall use audit controls, , data		
	Portal Level	encryption and other methods to assure the		
	Security	authenticity of transaction and other		
	-	relevant data.		
10.	Portal Level	Application shall implement controls to		
	Security	ensure the authenticity of data is preserved.		
11.		Application shall comply with the		
	Portal Level	Application Security Plan and security		
	Security	guidelines of each of the stakeholder		
		involved.		
12.		Application shall adhere to guidelines for		
12.	Portal Level			
	Security	physical, personnel, computer,		
		communications, and internal data security.		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not (Yes/ No)	
13.		Application shall be foreseen of user	(165/110)	
	Portal Level	registration Solution allowing distinguishing		
	Security	different user roles; authorization of users;		
14.		Application shall be foreseen with an access		
		control policy functionality allowing access		
		of users in different roles to different		
	Portal Level	functionalities of Application. At least the		
	Security	following roles shall be introduced for		
		Application: Supervisor, Operator, Solution		
		support, User		
15.	D . 17 1	Registered users shall be allowed to log-on		
	Portal Level	only to those Application functions which		
	Security	they are authorized to access and use.		
16.		Registration of users in their respective		
	Portal Level	roles shall be valid only for a limited period		
	Security	of time, where after their authorization shall		
		be re-confirmed and prolonged.		
17.	Portal Level	The logon processes shall display only the		
	Security	minimum amount of information to assist		
	Security	users.		
18.	Portal Level	The logon processes shall prohibit the		
	Security	display of help screens.		
19.	Portal Level	The logon processes shall minimize the		
	Security	opportunities for unauthorized connections		
	,	to application.		
20.		The logon processes shall prohibit the		
	Portal Level	display of the solution or the application		
	Security	details until the process has been		
21		successfully completed.		
21.	Portal Level	The logon process shall deny access if either		
	Security	the username or password is invalid without		
22	-	identifying the specific erroneous element.		
22.	Portal Level	The logon process shall allow only a fixed		
	Security	number of logons attempts before disabling the terminal.		
23.				
23.	D4-17 1	If access is denied following repeated		
	Portal Level Security	unsuccessful logon attempts, this shall be treated by the application as a security		
	Security	incident and handled accordingly.		
24.	Portal Level	The logoff procedure shall clear any screen		
۷٦.	Security	displays prior to terminating the application.		
	Security	displays prior to terminating the application.		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not (Yes/ No)	
25.	Portal Level	Application shall disallow simultaneous	(103/110)	
	Security	logon by the same user.		
26.		Passwords to log-on to Application (and		
		additional access control devices) shall have		
	Portal Level	at least the length of 8 characters. The		
	Security	password management solution shall require		
		the enforcement of a minimum password		
		length.		
27.	D . 1 I . 1	The password management solution shall		
	Portal Level	require the use of quality (i.e. difficult to		
	Security	guess) passwords.		
28.	D 4 1 I 1	The password management solution shall		
	Portal Level	require the enforcement of a password		
	Security	change after a 3 months' period.		
29.	D (11 1	The password management solution shall		
	Portal Level Security	include non-display of the password when		
	Security	being entered.		
30.	D1	The password management solution shall		
	Portal Level Security	require the storage of passwords in		
	Security	encrypted form.		
31.		For all security incidents alarm functionality		
	Portal Level	shall be implemented, which immediately		
	Security	informs the supervisor role of these		
		incidents.		
32.		Application shall treat the following events		
	Portal Level	as security incidents: unsuccessful log-on,		
	Security	intrusion detection, malfunctioning of		
		encryption facility		
33.	Data	The application should have a secure		
	Exchange	mechanism to exchange data among		
	Zarenange	applications		
34.		The application should ensure that each		
	Data	unique identifier is associated with the		
	Exchange	rightful user of the application and ensure		
	-8-	the active management and maintenance of		
		such identifiers		
35.		The application should ensure that the		
	Data	personal information of the users which is		
	Exchange	being used and stored is being appropriately		
		secured and protected from unauthorized		
		access and disclosure		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not (Yes/ No)	
36.		The application should ensure, at a	(103/110)	
	Data	minimum, two-factor authentication for		
	Exchange	identity verification and validation		
		involving communication with a service.		
37.		The application should establish/demarcate		
	Data	data retention and deletion periods		
	Exchange	commensurate to the business need or legal		
		obligation.		
38.		The application must explicitly state to the		
		user,		
	D .	i. the information that the application		
	Data	will access, collect, use, store and share; and		
	Exchange	ii. For what specific purpose the		
		information is being used.		
		before using the application.		
39.		The user must be made aware of the identity		
		of the entity which will collect or use		
	Data	personal information in the scope of usage		
	Exchange	of the application and he/she shall be able to		
		contact the entity which owns the		
		application.		
40.		The application should proactively provide		
	Data	the users with a mechanism to access and		
	Exchange	rectify any personal information of the		
		users, supplied by the users and stored &		
		used by the application.		
41.		The application should seek to minimise		
	Data	data collection from the user and use this		
	Exchange	personal information within the range of		
		user's expectations and for legally permitted		
12		business/service purposes.		
42.		The application shall proactively provide		
		users with the information of non-obvious		
	D (or secondary uses (including sharing of data		
	Data	with third parties, storage of data		
	Exchange	immediately after use such as location), of		
		personal information of the users which has been captured and provide users with a		
		mechanism to grant or withdraw consent.		
43.	Data	The application shall allow the users with		
٦٥.	Data Exchange	opportunities to determine the nature and		
	Lachange	opportunities to determine the nature and		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not	
		frequency of user authorisation prompts in	(Yes/ No)	
		order to enhance their privacy experience.		
44.		The application shall proactively notify		
' ' '		users about any change in the information		
	Data	collection and usage mechanism of the		
	Exchange	application prior to the change being		
		applied.		
45.		The application should provide the users		
	Data	with adequate information regarding the		
	Exchange	privacy settings and implications with		
		regards to the application.		
46.		The application should proactively ensure		
	Data	obtaining users' consent for registration and		
	Exchange	mapping to social networks.		
47.		The application should proactively inform		
	_	the user about the privacy settings,		
	Data	specifically how their personal information		
	Exchange	may be made visible/searchable to the		
		public.		
48.		The application must adhere to		
	Data	country/geography specific policies relating		
	Exchange	to security of children including publishing		
		contact details or location		
49.		The application should allow the user to		
	Data	delete the profile or uninstall mobile		
	Exchange	application following which the personal		
	Exchange	information and content related to the		
		specific user must be completely removed.		
50.		The system shall have a workflow engine to		
	General	support different types of document routing mechanism including:		
51.		Sequential routing –Tasks are to be		
	General	performed one after the other in a sequence		
52.		Parallel routing – Tasks can be performed in		
		parallel by splitting the tasks among multiple		
		users and then merging as single composite		
	General	work item. The system shall support conditional merging of multiple parallel		
		activities i.e. Response from mandatory		
		parallel work stages before it can be		
		forwarded to next stage		
53.	General	Rule based routing - One or another task is to		
	301101011	be performed, depending on predefined rules		

S.no	Area	Requirement Description	Whether	Reference
5.110	711 Cu	requirement Bescription	Complied	Documents
			or not	
			(Yes/ No)	
54.	General	Ad-hoc routing: Changing the routing		
	General	sequence by authorized personnel		
55.		The workflow management system shall		
	General	support Inbuilt Graphical route designer for		
	General	modelling complex Business Processes using		
		drag and drop facilities.		
56.		The system shall allow process designers to		
	General	define multiple automatic system defined		
		stages, where no human intervention is		
57.		required.		
37.		The interface shall be easy to use so that Process owners can change the business		
	General	process as and when required without any		
		programming knowledge.		
58.		The system shall enable process designers to		
50.		design multiple sub-processes. This includes		
	General	mapping of the existing process instance to		
		the newly created process instance as per		
		mapping defined in the route.		
59.		The workflow management system		
	General	development environment shall provide easy		
	General	navigation to choose sub-processes as		
		required to be invoked from within a process.		
60.	General	Facility to copy and paste work stages along		
	0 0110101	with all its properties.		
61.	General	Facility to define documents viewed and to		
62.		be attached at individual stages.		
62.		The Process designer shall support multiple Introduction stages for introducing different		
	General	document types from different acquisition		
		sources		
63.		Facility to define multiple archive stages for		
03.	General	archive selected documents and indexes at		
		any stage of workflow process.		
64.		The system shall provide facility to define		
		hold stages so that a particular instance or the		
		workflow can be kept on hold for specified		
	General	interval on the basis of pre-defined condition.		
		The system shall also provide facility to		
		define conditions for resuming the instance		
(5		from hold stage.		
65.		The system shall allow process designers to		
	General	design properties for each work stage like default document view, form view or		
		Exception view etc.		
66.		The system shall allow users to define entry-		
00.	General	level settings like Increase of priority or		
		sending an email trigger on the basis of pre-		
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S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not	
		defined conditions or setting up particular	(Yes/ No)	
		variable or property etc.		
67.		The workflow management system shall		
	General	support the definition of roles and allow		
		many-to-many relationships between users		
(0		and roles to be defined.		
68.		The workflow management system shall be capable of automatically deploying an entire		
	General	business process application (including		
	General	forms and adapters) to the servers from the		
		development environment		
69.	I1	The system shall provide inbuilt facility to		
	Inbuilt Form Designer	design Custom forms that can be attached at		
	Designer	one or more stages of workflow.		
70.	Inbuilt Form	The Form designer interface shall support		
	Designer	facility to define text boxes, Combo boxes,		
71		radio buttons, Drop down etc.		
71.	Inbuilt Form	The system shall provide facility to define variables in the process or in external		
	Designer	database tables, which can be linked to fields		
	Designer	defined in the form for efficient data entry.		
72.		The system shall provide facility to define		
	Inbuilt Form	zones at forms and images, so that relevant		
	Designer	part of the image is highlighted for Image		
		assisted data entry.		
73.	Inbuilt Form	The system shall support field level		
7.4	Designer	calculations at form level		
74.	Inbuilt Form Designer	Facility to use scripts for defining field level validations		
75.	Automatic	The system shall provide facility to define		
75.	Escalations	multi-level escalation procedures		
76.	25000000000	The system shall provide facility to define		
		deadlines to individual work stages and		
		escalation to respective or group of		
	Automatic	individuals, if the instance is not processed in		
	Escalations	specified time frame.		
77.		The system shall provide facility to define		
		multi-level escalations on the basis of deadlines i.e. Level 1 escalation after		
	Automatic	specified time and Level 2 escalation after		
	Escalations	specified time and Level 2 escalation after specified time.		
78.	Automatic	Facility to raise custom triggers like Email,		
	Escalations	SMS etc. for escalations.		
79.		The system shall support inbuilt calendar for		
		defining Holidays and Working hours and the		
	Automatic	escalations and reminders shall be raised on		
	Escalations	the basis of this i.e. if the escalation time is		

S.no	Area	Requirement Description	Whether	Reference
		i i	Complied	Documents
			or not	
			(Yes/ No)	
		set for 2 days and there is Sunday in between		
		then it shall not be included		
80.		The system shall provide facility to define		
	Automatic	exceptions at individual stages, which shall		
	Escalations	dynamically change the route on execution.		
81.		The system shall facility to give rights to raise		
	Automatic	and clear exceptions at different stages of the		
	Escalations	process with user comments.		
82.	Automatic	Facility to raise triggers on the basis of		
	Escalations	exceptions.		
83.	Automatic	Facility to raise automatic exceptions on the		
0.4	Escalations	basis of pre-defined conditions.		
84.		The system shall track all the exceptions		
	Automatic	raised in the course of process and shall		
	Escalations	maintain history of that with username, date, time and comments.		
85.	Automatic	The system shall clearly differentiate process		
05.	Escalations	instances with and without exception		
86.		The system shall provide facility to define		
	Automatic	tasks for individual or group of users with		
	Escalations	deadlines.		
87.		The system shall provide facility to define		
		check lists for individual stage with option to		
	Automatic	make particular checklist items as		
	Escalations	mandatory.		
88.	Automatic	Facility to raise triggers on the basis of		
90	Escalations	checklist.		
89.		The workflow management system shall have email notification to user when the user		
		is not logged on to the workflow management		
	Automatic	system. Upon receiving the email, the user		
	Escalations	shall be able to click on the attachment in the		
	Listantions	email to automatically launch the Workflow		
		management system and present the user		
		with the task to act on.		
90.	Automatic	Automatic reminders to concerned users for		
	Escalations	delegated tasks.		
91.		The system shall allow definition of audit		
		stages to audit work of new users. The users		
	Automatic	shall be able to define percentage of work to		
	Escalations	be audited on the basis of which, random		
		instances shall be picked up and sent to auditing supervisor.		
92.	Automatic	The workflow management system shall		
12.	Escalations	provide user-definable job filters and sorters		
<u> </u>	Localations	provide aber definació job inters and sorters	<u> </u>	

S.no	Area	Requirement Description	Whether	Reference
		i i	Complied	Documents
			or not	
			(Yes/No)	
		for the outstanding tasks for viewing and		
02		work prioritization.		
93.	Automotic	The workflow management system shall		
	Automatic Escalations	allow the users to route/re-route the jobs to		
	Escalations	one or more other users by job and by users (e.g. on long leave, resignation).		
94.		The workflow management system shall		
/4.	Automatic	allow automatic temporary re-routing of jobs		
	Escalations	to one or more other users (e.g. temporary		
	Estatations	covering of duties).		
95.		The system shall provide facility to define		
	Automatic	custom triggers like Emails, Word template		
	Escalations	or launching executable etc. on predefined		
		conditions		
96.	Automatic	The system shall provide facility to define		
	Escalations	custom templates for the triggers with static		
	Liscalations	and dynamic data.		
97.		The system shall provide facility to generate		
	Automatic	event-based triggers for automatically		
	Escalations	sending mails/ fax, generating responses,		
		invoking data form for data entry,		
08		communicating from external systems.		
98.		The workflow management system shall have email notification to user when the user		
		is not logged on to the workflow management		
	Automatic	system. Upon receiving the email, the user		
	Escalations	shall be able to click on the URL in the email		
		to automatically launch the Workflow		
		management system and present the user		
		with the task to act on.		
99.	Architecture	The workflow management system shall be		
	and	based on an N-tier, open, scalable		
	Technology	architecture.		
100.	Architecture	The workflow management system shall		
	and	support thin client architecture.		
101	Technology			
101.	Architecture	The workflow management system shall		
	and Technology	support Web based interfaces.		
102.	Architecture	The workflow management system shall		
102.	and	support XML messaging and SOA		
	Technology	Architecture.		
103.	Architecture	The workflow management system shall		
105.	and	have the ability to integrate through		
	Technology	messaging.		
104.	Architecture			
	and	The workflow management system shall have the ability to integrate through APIs.		
	Technology	have the ability to integrate through APIs.		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not (Yes/ No)	
105.		The workflow management system	(163/110)	
	Architecture	architecture must be scalable and can support		
	and	increasing number of users and concurrent		
	Technology	transactions.		
106.	Architecture	The workflow management system shall run		
	and	in a clustered environment.		
107.	Technology	The worldlow management system shall be		
107.	Architecture	The workflow management system shall be scalable through both horizontal clustering		
	and	(multiple channels) and vertical clustering		
	Technology	(multiple instances per machine).		
108.	Architecture	The Workflow management system must be		
	and	Unicode compliant and shall also support		
1.00	Technology	customizing the interface in Local language.		
109.	Architecture	The system should have the capability to		
	and Technology	interface with industry standard web services through simple interfaces.		
110.		The workflow management system shall be		
110.	Process	able to support complete administration		
	Management	through a web browser interface.		
111.		The workflow management system shall		
	Process	allow administrators to manage users,		
	Management	groups, Roles and other document		
112.		management operations.		
112.	Process	The workflow management system shall allow administrators to suspend, resume and		
	Management	control various processes from the same		
	8	interface		
113.	Process	The workflow management system shall		
	Management	have audit trail to maintain history of all		
114		transactions performed on the system.		
114.	Dragge	The system shall give flexibility to		
	Process Management	administrator to do selective logging i.e. suspend and resume audit trail generation for		
	17141145CIIICIII	specific system and user activities.		
115.		The workflow system shall give a facility to		
	Process	define Turnaround time for the complete		
	Management	process and also for the individual work		
116		stages for efficient monitoring		
116.		The workflow system shall give a facility to		
	Process	set Audit percentage for multiple users at different stages, so that the specified		
	Management	percentage of work randomly goes for work		
		audit.		
117.	Process	The workflow system shall give a facility to		
	Management	review the audit done by different auditors.		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not (Yes/ No)	
118.		The workflow system shall display all the	(103/110)	
	Process	queues corresponding to particular process		
	Management	and add and remove multiple users to		
		particular queue.		
119.	Process	The workflow system shall allow		
	Management	administrator to set properties of particular		
120		queue i.e. FIFO, Dynamic etc.		
120.		The system shall support Load balancing of		
	Process	work items in case of Dynamic Queues i.e. if more than one user is associated with		
	Management	particular queue, work items shall be		
		assigned on the basis of current load.		
121.		The Workflow system shall support the		
	Process	concept of Shared and Personal Queues, so		
	Management	that work items can either be permanently		
	Management	assigned to user's Personal queue or can be		
100		routed to shred pool of users.		
122.	Process	The workflow management system shall		
	Management	allow administrator to add new queues and associate multiple work steps with them.		
123.		The workflow system shall give a facility to		
123.	Process	set diversions for particular users so that all		
	Management	the incoming work items are routed to		
	\mathcal{E}	assigned person or group of users.		
124.	Application	The workflow management system shall		
	Access	provide comprehensive access control		
	Control	mechanism.		
125.		All users of the workflow management		
	Application	system shall be able to access to their own		
	Access	work queues and other work queues with access granted by the workflow		
	Control	access granted by the workflow administrator. They shall not be able to delete		
		assigned tasks from the work queues.		
126.		Process Owners or workflow administrator		
	Application	shall be able to intervene the flow of work		
	Access	items and reassign to specific user and shall		
	Control	also support ad-hoc routing to specific stage		
12-		in case of delays or bottleneck.		
127.	A1:	The application shall log all the actions done		
		1 3		
	Collubi			
128.	Application			
	Access	access so that authorized users can only edit		
	Control	them.		
128.		•		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not (Yes/ No)	
129.	Application	The workflow management system shall	(105/110)	
	Access	allow process owners to track the following		
	Control	status:		
130.	Application	For a task in progress or a completed task on		
	Access	Name of Officer, Start Date, End Date,		
131.	Control Process	Duration The world law management system shall be		
131.	Monitoring	The workflow management system shall be able to keep track of the work item status, the		
	and	date/time the jobs are started and ended, the		
	Reporting	creation and archival date of the documents.		
132.	Process			
	Monitoring	The workflow management system shall provide graphical and tabular tools to view		
	and	progress of each individual process		
122	Reporting	Propress of each marriagan process		
133.	Process	The workflow management system shall		
	Monitoring and	support the generation of performance		
	Reporting	comparison reports.		
134.	Process	The workflow management system shall		
	Monitoring	support users drill down from a higher-level		
	and	view of business processes to lower level		
	Reporting	details.		
135.	Process	The workflow management system shall		
	Monitoring	support statistical reports like Total		
	and Reporting	turnaround time and delay report for complete process or specific work stages		
136.	Process			
150.		The workflow management system shall		
	and			
	Reporting	based on exposed data points.		
137.		The workflow management system shall also		
		*		
	•			
	Reporting			
138.	User	The workflow management system shall		
	Management	support integration with domain level		
	and Security	authentication and single sign on.		
139.	User	The workflow management system shall		
	•	11		
140	and Security			
140.	User			
	Management			
	and Security	forms and also to the data fields.		
138.	Process Monitoring and Reporting User Management and Security User Management and Security User Management and Security User	support definition of new customized reports based on exposed data points. The workflow management system shall also provide dashboard interface for online reporting of various processes. The interface shall give a flexibility to toggle between graphical and tabular view and tile different windows in the same interface The workflow management system shall support integration with domain level authentication and single sign on. The workflow management system shall support integration with database-based authentication. The workflow management system shall be capable of giving access rights to users/groups on work stages, documents,		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not	
			(Yes/ No)	
141.		The workflow management system shall		
	T.T.,	support extensive password validations i.e.		
	User	locking of user account after specified		
	Management and Security	number of unsuccessful login attempts, password history, password expiry,		
	and Security	password mistory, password expiry, passwords must be alphanumeric and of		
		minimum character length etc.		
142.	User	The workflow management system shall		
	Management	support SSL, HTTPS and session timeouts.		
1.42	and Security	**		
143.	Intoquotion	The workflow management system shall		
	Integration and Web	provide support to invocation of external programs to perform activities of a process		
	services	like launching core application screen for		
		data entry.		
144.	Integration	The workflow management system shall		
	and Web	support integration based on messaging.		
1.45	services			
145.	Integration and Web	The workflow management system shall support integration based on standards such		
	services	as XML		
146.	Integration	The workflow management system shall		
	and Web	support message-based collaboration based		
	services	on protocols such as HTTP, FTP and SMTP.		
147.	Integration	The workflow management system shall		
	and Web	support actions to be taken on business		
1.40	services	processes based on messaging.		
148.	Integration	The workflow management system shall allow documents used in processes to come		
	and Web	from inbuilt proposed Document		
	services	Management System.		
149.	Integration	The workflow management system shall		
	and Web	support integration with Email Servers.		
1.70	services	***		
150.	Intoquation	The workflow management system shall		
	Integration and Web	support email-steps to be fully integrated into business processes, not just for		
	251.1000	work step.		
151.	Integration	The workflow management system shall		
	and Web	provide fully functional APIs for Process,		
1.72	services	Rules and Integration engines.		
152.		The workflow management system shall		
		support Web services.		
153		The workflow management system shall		
155.	and Web	enable the work items to access the Web		
	services	methods of a remotely deployed web service		
151. 152. 153.	and Web services Integration and Web services Integration and Web	notification but also to initiate or complete a work step. The workflow management system shall provide fully functional APIs for Process, Rules and Integration engines. The workflow management system shall support Web services. The workflow management system shall enable the work items to access the Web		

S.no	Area	Requirement Description	Whether Complied	Reference Documents
			or not	Documents
			(Yes/ No)	
154.	Integration	The system shall allow the data to be		
	and Web	mapped from the workflow to Web method		
155.	services Integration	parameters and vice versa. The system shall allow support of both		
133.	and Web	synchronous as well as asynchronous mode		
	services	to invoke Web methods		
156.		The workflow management system shall		
	Integration and Web	allow a step of a business process or		
	services	integration process to be performed by Web		
1.55	561 11665	services.		
157.	Integration	The workflow management system shall		
	and Web	allow for an integration flow or a business process to be made available as Web		
	services	services		
158.	Backup &	The system should be able to export system		
	Archival	records, logs, user files and other folders		
		along with their constituent records and		
		contents to another content management		
		system		
159.	Backup &	The system should be able to archive		
	Archival	system records, logs, user files and other		
		folders along with their constituent records		
		and contents		
160.	Backup &	The system should be able to export /		
	Archival	archive whole electronic folders, and		
		groups of folders, and all associated records		
		in one sequence of operations such that:		
		· All components of an electronic record,		
		when the record consists of more than one		
		component, are exported / archived as an		
		integral unit.		
		· All structural links between records, parts		
		and folders are retained		
161.	Backup &	The system should be able to include a		
	Archival	copy of audit trail data associated with		
		records, parts and folders as part of the		
		export or archival process		
162.	Backup &	The system should produce a report		
	Archival	detailing any failure completely to export or		
		transfer any element of electronic records,		
		parts and folders		

S.no	Area	Requirement Description	Whether Complied or not (Yes/ No)	Reference Documents
163.	Backup & Archival	The system should follow two-stage export/archival process, consisting of:		
164.	Backup & Archival	The system should seek confirmation of deletion from an authorized user as a mandatory step in the deletion process, before any action is taken on folders, parts or records.		
165.	Backup & Archival	The system should allow for cancellation of the deletion process in case the confirmation is not given		
166.	Backup & Archival	The system should ensure that any function to delete records, parts or folders on an ad hoc basis is restricted to only the highest level of Administrator.		
167.	Area	Requirement Description		
168.	System Login and Access Control	The system should provide access rights and privileges according to login ID and password		
169.	System Login and Access Control	The system should prompt the user for 3 unsuccessful login attempts through SMS/ email		
170.	System Login and Access Control	The system should allow authorized users to access various functions, forms, screens, sub modules, information etc.		
171.	System Login and Access Control	The system should allow single sign on to all modules/sub-modules as per rights and privileges of the user		
172.	System Login and Access Control	The system should have a mechanism for resetting and emailing the new password to the user's registered email ID, in case one forgets his password.		
173.	System Login and Access Control	The system must prompt the user to change the password on the first login.		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not (Yes/ No)	
174.	System Login	The system shall as a part of registration	(103/110)	
	and Access	establish challenge and responses		
	Control	mechanisms for session validation for		
		future online sessions. Details such as a		
		username and password, challenge question		
		and response answer should be asked if		
		login details are forgotten etc.		
175.	System Login	The system shall apply spam control		
	and Access	measures like 'captcha' images during		
	Control	registration to avoid spurious details being		
		automatically submitted and ensure that		
		data is not submitted by non-humans.		
176.	System Login	The system shall maintain non editable		
	and Access	audit trail of all activities carried out by any		
	Control	user in the system		
177.	System Login	The online systems shall have the provision		
	and Access	to view records captured by Audit Trail		
	Control	feature		
178.	Integration	Wherever required, modules and sub-		
	with SMS &	modules should have integration with an		
	Email Solution	SMS solution for SMS based		
	Solution	communication to users and other		
		notification recipients		
179.	Integration	Wherever required, modules and sub-		
	with SMS & Email	modules should have integration with an		
	Solution	Email solution for email-based		
	Solution	communication to users and other		
		notification recipients		
180.	Solution wide	The system shall support consistent,		
	functionalities	globally unique naming and addressing		
		scheme for data made centrally and		
101	~ 1	automatically/systemically.		
181.	Solution wide	The system shall allow user to manage data		
	functionalities	independently of the processes that create		
102	G 1 4: :1	or use that data.		
182.	Solution wide functionalities	The system shall allow user to scale up or		
		scale out solution with easy to use GUI.		_
183.	Solution wide	Online application shall be designed to		
	functionalities	permit user for easy insertion of new		
		modules and new enhancements.		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not (Yes/ No)	
184.	Solution wide	Application shall have the capability to	(103/110)	
	functionalities	complete all requests (e.g. store, retrieve,		
		update, etc.) without any data loss.		
185.	Solution wide	Application shall have a system of record		
	functionalities	for legal purposes and shall maintain an		
		audit file in chronological sequence of each		
		transaction and all corresponding		
		corrections made during the transaction by		
		clients or their facilitators		
186.	Solution wide	The system shall have the capability to		
	functionalities	organize and store all data for aggregation		
		and analysis.		
187.	Solution wide	Application shall be designed to		
	functionalities	accommodate growth in data rates and		
		volumes for communications, networks,		
		hardware and storage.		
188.	Solution	The system shall incorporate interfaces for		
	Management	authorized users for management		
	Requirements	capabilities, which shall include:		
		Configuration Management, Testing &		
		Validation, Fault Detection, Fault Isolation,		
		Fault Recovery, Data collection, Data		
		Analysis.		
189.	Solution	The system shall provide reports and MIS		
	Management Requirements	to authorized user for end-to-end		
	•	performance monitoring and control.		
190.	Solution	The system shall provide data quality		
	Management Requirements	determination and analysis, error		
	Requirements	correction, recovery processing, and related		
101	0.1	quality control procedures and processes.		
191.	Solution	Infrastructure components should be		
	Management Requirements	implemented to permit management to		
102		monitor and measure the effectiveness		
192.	Solution Management	System shall permit inclusion of new or		
	Requirements	modified requirements during the life of		
		application with appropriate established		
102	Omanation al	change control procedures.		
193.	Operational Requirements	Application shall be accessible to users 24		
	Requirements	hours per day, 7 days per week on a continuous basis.		
		Continuous basis.		

S.no	.no Area Requirement Description		Whether Complied	Reference Documents
			or not (Yes/ No)	Documents
194.	Operational Requirements	Data inputs to the application shall be validated prior to being processed	(103/110)	
195.	Operational Requirements	Input data shall be validated for out of range values.		
196.	Operational Requirements	Input data shall be validated for missing or incomplete data.		
197.	Operational Requirements	Input data shall be validated for unauthorized or inconsistent control data.		
198.	Operational Requirements	Input data shall be validated for values or volumes that are exceptional to the norm.		
199.	Operational Requirements	Invalid input data shall be rejected, and security incident shall be initiated.		
200.	Operational Requirements	Integrity checks functionality on any data generated by solution shall be provided.		
201.	Operational Requirements	Functionality necessary for scheduling of Application to certain days, dates or time of day, shall be provided.		
202.	Operational Requirements	Functionality necessary for 'roll back' or recovery routines if applicable fails to operate as planned shall be provided		
203.	Operational Requirements	Application shall have 'Tooltip Text' for input fields to guide the user while entering data.		
204.	Operational Requirements	Application shall be fully compatible with all major web browser e.g. Firefox, Google Chrome, Internet Explorer, Opera, Safari etc.		
205.	Human Engineering Requirements	The system shall provide a menu driven screen interface permitting a user to navigate easily through the different functions of Solution.		
206.	Human Engineering Requirements	The system shall provide users with access to information management services		
207.	Human Engineering Requirements	The user interface shall be tailored to functions, which are authorized for the user.		

S.no	Area	Requirement Description		Reference Documents
			Complied or not (Yes/ No)	Documents
208.	Logs	The following operations shall be logged by means of automatic (machine generated) logs:		
209.	Logs	Logs shall include process start and finish time and date		
210.	Logs	Log shall include log-in details (username, login timestamp and logout timestamp), IP/MAC addresses		
211.	Logs	Logs shall include Application faults, errors and recovery processes.		
212.	Logs	Logs shall include the use of any privileged passwords.		
213.	Logs	Logs shall include the use of any privileged utilities.		
214.	Logs	Logs shall include automatically generated data necessary to assess the application performance.		
215.	Logs	The frequency of logs generation shall be mutually agreed upon, in order to be consistent with the ability to trace appropriate actions of the application.		
216.	Logs	Logs shall include all log-ons and logouts as well as all attempts (whether successful or not) to log-on		
217.	Logs	Logs shall have appropriate mutually agreed upon retention period.		
218.	Logs	The log generating software shall prohibit amendment of log details and disabling of the recording of events.		
219.	Logs	The log generating software shall include review of log-on patterns to determine potentially abnormal Solution use and who accesses the application		
220.	Logs	Files of logged events shall be protected from amendment or deletion.		
221.	Logs	Logging process shall always be enabled		

S.no	Area	Requirement Description	Whether Complied or not (Yes/ No)	Reference Documents
222.	Regulatory requirements	Application shall provide flexibility to easily modify Solution to handle changes and addition of core or third-party services		
223.	Common Technical Requirements	The system shall have ability to customize user menus and screens based on user access authority.		
224.	Common Technical Requirements	The system shall be able to archive transactional database records to prevent long term speed concerns. Solution must also feature functionality for efficient retrieval of archived data.		
225.	Common Technical Requirements	There should be a standby Database available. All the transactions should be committed in the standby Database in regular interval of times. In case of a failure, the Standby Database should take over as main Database.		
226.	Common Technical Requirements	Application must erase browser history and session while logout process.		
227.	Common Technical Requirements	The system shall be capable of generating event notifications and interfacing with E-mail Solution and must support e-mail triggers as part of Solution's workflow.		
228.	Common Technical Requirements	The system shall provide a report-writing tool, which can be used to generate customized reports at any level.		

FRS - Adherence to IALA/IMO guidelines

	Adherence to IALA/IMO guidelines						
Sr. No.	Description of Requirement	Compliance (Yes/No)	Details of Reference Document for verifying compliance	Reference Page No			
1	Adherence to IALA/IMO Guidelines						

FRS – Updation of Data Feed by Admin

	Updation of Data Feed by Admin					
Sr. No.	Description of Requirement	Compliance (Yes/No)	Details of Reference Document for verifying compliance	Reference Page No		
1	Virtual/ actual Navigation aids and Markers		•			
2	Electronic navigational Charts (ENCs), S57 Format					
3	The Portal should be able to support the data sets in the formats .xyz, .lnw, .dxf, .dwg, .kmz or any other such extensions as deemed by IWAI.					
4	Route Planning and Restrictions					
5	Water levels and Conditions					
6	Emergency Contact Information					
7	Vessel Information, Maintenance Schedules, Regulatory Updates					
8	Incident Reporting and Navigations, User Communication, Feedback Management					
9	Data Validation and Quality Control					
10	Multilingual Content, User Profiles and Monitoring					

11	Collaborate with Authorities, App Updates		
	and maintenance.		

FRS – Dedicated Customer Care Support

	Dedicated Customer Care Support					
Sr. No.	Description of Requirement	Compliance (Yes/No)	Details of Reference Document for verifying compliance	Reference Page No		
1	Multi-Channel Support, Automated responses					
2	Knowledge Base and FAQ					
3	Live Chat, Mobile App Integration					
4	Multi-Lingual Support					
5	Escalation Procedures					
6	Training for Support Team					
7	User Feedback and Improvements					
8	Proactive Communication, Social media Monitoring, Continuous Improvement					

	Cloud Application and Platform Services					
#	Description of Requirement	Compliance (Yes/No)	Details of Reference Document forverifying complianc e	Referenc ePage No		
1	Bidder to ensure secure isolated applications (PaaS) Platform as a Service					
2	Bidder to follow guidelines to create secure cloud applications (PaaS)					
3	Bidder to ensure automated checking of customer applications for application vulnerabilities, particularly before going live (PaaS)					
4	Bidder to ensure patch and change management (patches, updates and service packs deployed swiftly) and release management is adequate					
5	Patches are compatible on test systems before adopting them inproduction					

	MANAGEMENT SYSTEM					
#	Nature of Requireme nt	Minimum Requirement Description for EMS	Complianc e(Y/N)	Reasons for Deviatio n (if any)	Details	
1	Basic Requirement	Solution should provide for future scalability of the whole system without major architectural changes.		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
2	Basic Requirement	Should be SNMP compliant.				
3	Basic Requirement	Filtering of events should be possible, with advance sort option based on components, type of message, time etc.				
4	Basic Requirement	Should support Web / AdministrationInterface.				
5	Basic Requirement	Should provide compatibility to standard RDBMS.				
6	Basic Requirement	Solution should be open, distributed, and scalable and open to third party integration.				
7	Basic Requirement	Should provide fault and performance management for multi-vendor TCP/IP networks.				
8	Security	Should be able to provide secured windows based consoles / secured web based consoles for accessibilityto EMS.				
9	Security	Should have web browser interface with user name and Password Authentication.				
10	Security	Administrator / Manager should have privilege to create / modify / delete user.				
11	Polling Cycle	Support discriminated polling				
12	Polling Cycle	Should be able to update device configuration changes				
13	Fault Management	Should be able to get fault information in real time and presentthe same in alarm window with description, affected component, time stamp etc.				

		T	I	
		Should be able to get fault		
14	Fault	information from heterogeneous		
	Management	devices routers, switches, servers		
		etc.		
		Event related to servers should go		
	Fault	to a common enterprise event		
15	Management	console where a set of automated		
		tasks can be defined based on the		
		policy.		
		Should have ability to correlate		
16	Fault	events across the entire		
	Management	infrastructure components of		
	1 Transage Interior	DC/DR.		
	E 1	Should support automatic event		
17	Fault	correlation in order to reduce events		
1 /	Management	occurring in DC/DR.		
	Fault	Should support advanced filtering		
18	Management	toeliminate extraneous data /		
	Management	alarms		
		in Web browser and GUI.		
		Should be configurable to		
19	Fault	suppress events for key		
	Management	systems/devices that		
		are down for routine maintenance		
		orplanned outage. Should be able to monitor on		
	F 14	user- defined thresholds for		
20	Fault			
20	Management	warning/ critical states and escalate events toevent console		
		of enterprise management system.		
		Should provide out of the box		
21	Fault	rootcause analysis with multiple		
21	Management	root cause algorithms inbuilt for		
	Management	root		
		cause analysis.		
		Should have self-certification		
22	Fault	capabilities so that it can easily		
	Management	addsupport for new traps and		
	Management	automatically generate alarms.		
		Should provide sufficient reports		
		pertaining to asset and change		
23	Fault	management, alarms and		
-	Management	availabilityof critical network		
		resources as well as network		
		response times for		
		crifical links.		
		The tool shall integrate network,		
		server and database		
		performanceinformation and		
	P 1	alarms in a singleconsole and		
24	Fault	provide a unified reporting		
	Management	interface for network andsystem		
		components. The current		
		performance state of the entire		
L		network and system		
		-		

		infrastructure shall be visible in an integrated console.		
25	Fault Management	Should provide an integrated performance view for all the managed systems and networks along with the various threshold violations alarms in them. It shouldbe possible to drill-down into the performance view to executecontext specific reports.		
26	Fault Management	Should provide the following reports for troubleshooting, diagnosis, analysis and resolution purposes: Trend Reports, At-A-Glance Reports, & capacity predictionreports.		
27	Fault Management	Should be able to auto-calculate resource utilization baselines for theentire managed systems and networks and allow user to set corresponding upper and lowerthreshold limits.		
28	Discovery	Should provide accurate discovery of layer 3 and heterogeneous layer 2 switched networks for Ethernet, LAN, and Servers etc.		
29	Discovery	Manual discovery can be done for identified network segment, single, or multiple devices.		
30	Presentation	Should be able to discover links with proper colour status propagation forcomplete network visualization.		
31	Presentation	Should support dynamic object collections and auto discovery. The topology of the entire Network should be available in a single map.		
32	Presentation	Should give user option to create his /or her map based on certain groupof devices or region.		

Should monitor various operating system parameters such as processors, memory, files, processes, file systems etc. where applicable using agents on theservers to be monitored. Provide performance threshold configuration for all the agents to be done from a central GUI based console that provide a common lookand feel across various platforms inthe enterprise. These agents could then dynamically reconfigure them to use these threshold profiles theyreceive. System Monitoring Paging and swap statistics System Monitoring Paging and swap statistics Monitoring Monitoring Memory System Monitoring Monitoring Monitoring Monitoring Paging and swap statistics System Monitoring Monitoring Physical disk System Monitoring Physical disk System Monitoring Process Mo					
files, processes, file systems etc. where applicable using agents on theservers to be monitored. Provide performance threshold configuration for all the agents to be done from a central GUI based console that provide a common lookand feel across various platforms inthe enterprise. These agents could then dynamically reconfigure them to use these threshold profiles theyreceive. System Monitoring System Should be able to monitor/manage large heterogeneous systems environment continuously. System Monitoring Event log monitoring. System Monitoring Paging and swap statistics System Monitoring Operating system Monitoring Memory System Monitoring Paging and swap statistics System Monitoring Departing system Monitoring Physical disk System Monitoring Process System Monitoring Process Process Process System Monitoring Process Process Process System Monitoring Process Pro	34	A gents			
on theservers to be monitored. Provide performance threshold configuration for all the agents to be done from a central GUI based console that provide a common lookand feel across various platforms inthe enterprise. These agents could then dynamically reconfigure them to use these threshold profiles theyreceive. System Monitoring System Monitoring System Monitoring System Monitoring System Monitoring Type of the provide a common lookand feel across various platforms inthe enterprise. These agents could then dynamically reconfigure them to use these threshold profiles theyreceive. System Monitoring System Monitoring System Monitoring System Monitoring Process Process Process Processor System Monitoring Monitoring Monitoring Monitoring Monitoring Monitoring Monitoring Monitoring Monitoring System Monitoring Monitoring Monitoring Monitoring System Monitoring Monitoring System Monitoring Monitoring System Monitoring Cache System Monitoring Monitoring Monitoring System Monitoring System Monitoring Monitoring Monitoring System Monitoring Monitoring System Monitoring Monitoring Monitoring Monitoring System Monitoring Monitoring System Monitoring Monitoring System Mon	34	Agents	files, processes, file systems etc.		
Configuration for all the agents to be done from a central GUI based common lookand feel across various platforms inthe enterprise. These agents could then dynamically reconfigure them to use these threshold profiles theyreceive. System					
be done from a central GUI based console that provide a common lookand feel across various platforms inthe enterprise. These agents could then dynamically reconfigure them to use these threshold profiles theyreceive. System Monitoring System enterogeneous systems environment continuously. System Monitoring Event log monitor/manage large heterogeneous systems environment continuously. System Monitoring Event log monitoring. System Monitoring Paging and swap statistics System Monitoring Operating system Monitoring Memory System Monitoring Physical disk System Monitoring Physical disk System Monitoring Process Monitoring Process System Monitoring Process Monitoring Paging file System Monitoring Paging file Monitoring System Monitoring Paging file System Monitoring Paging file System Monitoring Paging file System Monitoring Paging file Monitoring System Monitoring Paging file System Monitoring Paging file System Monitoring Paging file System Monitoring Network interface traffic Monitoring System Monitoring System Monitoring System Monitoring Paging file System Monitoring Network interface traffic System Monitoring System Should monitor following with statistics: System Monitoring System Should monitor following with statistics: System Monitoring CPU Utilization, CPU LoadAverages Monitoring (includesswapping and paging)					
Agents					
platforms inthe enterprise. These agents could then dynamically reconfigure them to use these threshold profiles theyreceive. System Monitoring Should be able to monitor/manage large heterogeneous systems environment continuously. System Monitoring Should monitor / manage following(based on Stack): System Monitoring Event log monitoring. System Monitoring Paging and swap statistics System Monitoring Operating system Monitoring Memory System Monitoring Physical disk System Monitoring Physical disk System Monitoring Process System Monitoring Processor System Monitoring Paging file Monitoring System Monitoring Cache System Monitoring Cache System Monitoring Active Directory / LDAP Services Monitoring System Monitoring System System Sould monitor following with statistics: System Monitoring System System System System System Monitoring CPU Utilization, CPU LoadAverages System Monitoring System System System System System System Monitoring CPU Utilization, CPU LoadAverages System Monitoring System Syste	35	Agents			
System Monitoring Memory Memory Monitoring System Monitoring Monito		8			
System Monitoring System Monitoring Memory Monitoring Memory Monitoring Monito					
System Monitoring heterogeneous systems environment continuously. System Monitoring System Monitoring Event log monitor/manage following(based on Stack): System Monitoring Paging and swap statistics System Monitoring Operating system System Monitoring Memory System Monitoring Physical disk System Monitoring Memory Logical disk System Monitoring Physical disk System Monitoring Physical disk System Monitoring Process System Monitoring Processor System Monitoring Paging file System Monitoring Paging file Monitoring System Monitoring IP statistics System Monitoring System Monitoring System Monitoring ICMP statistics System Monitoring Cache System Monitoring Cache System Monitoring Cache System Monitoring System System Should monitor following with statistics: System Monitoring System CPU Utilization, CPU LoadAverages System Monitoring (includesswapping and paging) System Monitoring (includesswapping and paging)					
Monitoring Monitoring Monitoring Monitoring Monitoring Monitoring System Monitoring Event log monitoring Monitoring Event log monitoring Monitoring Monitoring Monitoring Monitoring Paging and swap statistics Monitoring Cache Monitoring Active Directory / LDAP Services Monitoring System Monitoring Monitoring Monitoring Monitoring Monitoring Monitoring Monitoring Monitoring System Monitoring System Monitoring System Should monitor following with System Monitoring System Monitoring System Monitoring System Monitoring System Syst		System	Should be able to		
System Should monitor / manage following (based on Stack):	36				
Monitoring System System Wirtual and physical memorystatistics			environment continuously.		
Monitoring Event log monitoring.	37	Monitoring			
Monitoring Monitoring Paging and swap statistics	38				
Monitoring Paging and swap statistics	39				
41 System Monitoring System 42 Monitoring Memory 43 System Monitoring Logical disk 44 System Monitoring Physical disk 45 System Monitoring Process 46 Monitoring Process 47 System Monitoring Paging file 48 System Monitoring IP statistics 49 Monitoring System Monitoring ICMP statistics 50 System Monitoring Network interface traffic 51 System Monitoring Cache 52 System Monitoring Active Directory / LDAP Services 53 System Monitoring Should monitor following with statistics: 54 System Monitoring System Wonitoring System System Monitoring Statistics: 55 System System System System System Virtual memory (includesswapping and paging) 55 System System System System System System Virtual memory (includesswapping and paging) 55 System	40		Paging and swap statistics		
Monitoring Memory	41	System Monitoring	Operating system		
Monitoring Logical disk System Monitoring Process	42	Monitoring	Memory		
Monitoring Physical disk	43	Monitoring	Logical disk		
Monitoring Process	44	Monitoring	Physical disk		
46 Monitoring Processor 47 System Monitoring Paging file 48 System Monitoring IP statistics 49 System Monitoring ICMP statistics 50 System Monitoring Network interface traffic 51 System Monitoring Cache 52 System Monitoring Active Directory / LDAP Services 53 System Monitoring Should monitor following with statistics: 54 System Monitoring CPU Utilization, CPU LoadAverages 55 System Monitoring System virtual memory (includesswapping and paging) 56 System System 57 System System Virtual memory (includesswapping and paging)	45	Monitoring	Process		
47 Monitoring Paging file 48 System Monitoring IP statistics 49 System Monitoring ICMP statistics 50 System Monitoring Network interface traffic 51 System Monitoring Cache 52 System Monitoring Active Directory / LDAP Services 53 System Monitoring Should monitor following with statistics: 54 System Monitoring CPU Utilization, CPU LoadAverages 55 System Monitoring System virtual memory (includesswapping and paging) 56 System District LL	46	Monitoring	Processor		
Monitoring IP statistics System Monitoring ICMP statistics Monitoring System Network interface traffic System Monitoring Cache System Monitoring Active Directory / LDAP Services System Should monitor following with statistics: System CPU Utilization, CPU LoadAverages System System System virtual memory (includesswapping and paging) System System System Virtual Memory (includesswapping and paging)	47	Monitoring	Paging file		
Monitoring ICMP statistics System Monitoring Cache System Monitoring Cache System Monitoring Active Directory / LDAP Services System Should monitor following with statistics: System CPU Utilization, CPU LoadAverages System System System virtual memory (includesswapping and paging) System System CPU Load System System Virtual memory (includesswapping and paging)	48	Monitoring	IP statistics		
Monitoring System Monitoring Cache System Monitoring Active Directory / LDAP Services System Monitoring System Monitoring System Monitoring CPU Utilization, CPU LoadAverages System Monitoring System System Monitoring System System Monitoring System System System Monitoring System Sy	49	Monitoring	ICMP statistics		
Monitoring Cache	50	Monitoring	Network interface traffic		
Monitoring Active Directory / LDAP Services	51	Monitoring	Cache		
Monitoring statistics :	52	Monitoring	· ·		
54 Monitoring LoadAverages 55 System System virtual memory Monitoring (includesswapping and paging) 56 System Dial H	53	Monitoring	statistics:		
System System virtual memory (includesswapping and paging) System System Dial H	54	Monitoring	LoadAverages		
56 System Monitoring Disk Usage	55	Monitoring			
	56	System Monitoring	Disk Usage		

	T Q			
57	System Monitoring	No. of Nodes in each file system		
58	System Monitoring	Network interface traffic		
59	System Monitoring	Critical System log integration		
60	Infrastructure Services	IIS / Tomcat / Apache / Web serverstatistics		
61	Infrastructure Services	HTTP service		
62	Infrastructure Services	HTTPS services & CRIMINALTRACKING NETWORK AND SYSTEMS		
63	Infrastructure Services	FTP server statistics		
64	Infrastructure Services	POP/ SMTP Services		
65	Infrastructure Services	ICMP services		
66	Infrastructure Services	Database Services – Monitor various critical relational database management system (RDBMS) parameters such as database tables / table spaces, logs etc.		
67	Application Performance Management	End to end Management of applications (J2EE/.NET based)		
68	Application Performance Management	Determination of the root cause of performance issues whether inside the		
69	Application Performance Management	Java / .Net application in connected back-end systems or at the networklayer.		
70	Application Performance Management	Automatic discovery and monitoring of the web application environment		
71	Application Performance Management	Ability to monitor applications with adashboard.		
72	Application Performance Management	Ability to expose performance of individual SQL statements withinproblem transactions.		
73	Application Performance Management	Monitoring of third-party applications without any source code change requirements.		
74	Application Performance Management	Proactive monitoring of all end usertransactions; detecting failed transactions; gathering evidence necessary for problem diagnose.		
75	Application Performance Management	Storage of historical data is for problem diagnosis, trend analysis		

		etc.			
		Cic.			
	Application	Monitoring of application			
76	Performance Management	performance based on transaction			
	Wianagement	type.			
	Application				
77	Performance	Ability to identify the potential causeof memory leaks.			
	Management				
78	Reporting	Should able to generate reports			
		onpredefined / customized			
		hours. Should be able to present the			
79	Reporting	reports through web and also			
19	Reporting	generate "pdf" / CSV / reports of			
		the			
		same.			
		Should provide user flexibility to			
80	Reporting	create his /or her custom reports			
		onthe basis of time duration,			
		group of elements, custom elements etc.			
		Should provide information			
81	Reporting	regarding interface utilization			
		and			
		error statistics for physical and			
		logical links. Should create historical			
82	Reporting	performance and trend analysis			
02	Reporting	for			
		capacity planning.			
		Should be capable to send the			
83	Reporting	reports through e-mail to pre- defineduser with pre-defined			
		interval.			
		Should have capability to exclude			
84	Reporting	the planned-downtimes or downtimeoutside SLA.			
		Should be able to generate web-			
		based reports, historical data for			
85	Reporting	thesystems and network devices			
		and			
		Near Real Time reports on the			
		localmanagement console.			
86	Reporting	Should be able to generate thereports for Server,			
		Application.			
		Provide Historical Data			
		Analysis: The software should			
	_	be able to provide a time			
87	Reporting	snapshot of the required			
		information as well as the			
		period analysis of the same in			
		order to help in projecting the demand			
		forbandwidth in the future.			
	I .		1	I.	l

		T	1	
88	Availability	Availability and Uptime –		
00	Reports	Daily, Weekly, Monthly and		
	1	Yearly Basis		
	Availability	•		
89	Reports	Trend Report		
0.0	Availability	G .		
90	Reports	Custom report		
0.1	Availability	ACTOR 1ACTOR		
91	Reports	MTBF and MTTR reports		
02	Performance	Device Performance – CPU and		
92	Reports	Memory utilized		
0.2	Performance	I4C		
93	Reports	Interface errors		
0.4	Performance	Server and Infrastructure service		
94	Reports	statistics		
95	Performance	Trend report based on Historical		
93	Reports	Information		
96	Performance	Custom report		
90	Reports	Custom report		
97	Performance	SLA Reporting		
71	Reports	1 0		
98	Performance	Computation of SLA for		
	Reports	entireDC/DR Infrastructure		
99	Performance	Automated Daily, Weekly,		
	Reports	Monthly, Quarterly and Yearly		
		SLA reports.		
100	Data	For reporting, required RDBMS		
100	Collection	tobe provided with all licenses.		
		Should have sufficient Storage		
101	Data	capacity should to support all		
101	Collection	reporting data		
		Should be able to receive and		
102	Integration	process SNMP traps from		
102	integration	infrastructure components such		
		asrouter, switch, servers etc.		
100		Should be able integrate with		
103	Integration	Helpdesk system for incidents.		
		Should be able to send e-mail or		
104	Intoquotion	Mobile –SMS to pre-defined		
104	Integration	users		
		for predefined faults.		
105	T.,4			
105	Integration	actions based on incoming		
		events / traps. These actions can		
		be automated		
		scripts/batch files.		
		The Network Management		
106	Network	functionmust monitor		
	Management	performance across		
		heterogeneous networks from		
		one		
		end of the enterprise to the other.		
	Network	It should proactively analyze		
107	Management	problems to improve network		
	ivianagement	performance.		
	Network	The Network Management		
108	Management	function		
	Management	should create a graphical display		

		ofall discovered resources.		
109	Network Management	The Network Management function should have extensive reporting facility, providing the ability to format and present data in a graphical andtabular display.		
110	Network Management	The Network Management function should collect and analyze the data. Once collected, it should automatically store data gathered bythe NMS system in a database. Thisenterprise-wide data should be easily accessed from a central location and used to help with		

		capacity planning, reporting, andanalysis.		
111	Network Management	The Network Management functionshould also provide information on performance of Ethernet segments, including capacity utilization and error statistics for the segment, WAN links and routers.		
112	Network Management	Alerts should be shown on the EventManagement map when thresholds are exceeded and should subsequently be able to inform Network Operations Center (NOC) and notify concerned authority using different methods such as emails, etc.		
113	Network Management	It should be able to automatically generate a notification in the eventof a link failure to ensure proper handling of link related issues.		
114	Network Management	The Systems and Distributed Monitoring (Operating Systems) ofEMS should be able to monitor:		
115	Network Management	Processors: Each processor in thesystem should be monitored for CPU utilization. Current utilization should be compared against userspecified warning and critical thresholds.		
116	Network Management	File Systems: Each file system should be monitored for the amount of file system space used, which is compared to user-defined warningand critical thresholds.		

		Log Files: Logs should be		
		monitoredto detect faults in the		
	Network	operating system, the		
117	Management	communication subsystem and in		
	Management	applications. The function should		
		also analyze the		
		files residing on the host		
		forspecified string		
		patterns.		
		System Processes: The System		
		Management function should		
		provide real-time collection of		
		datafrom all system processes.		
118	Network	This should identify whether or		
110	Management	not an important process has		
		stopped unexpectedly. Critical		
		processes should be		
		automatically restarted using the		
		System Management		
		function.		
	Network	Memory: The System		
119	Management	Management		
	Wianagement	function should monitor memory utilization and available swap		
		space.		
	CI A	The SLA Monitoring		
120	SLA Monitoring	component of EMS will have to		
120	Widilitoring	possess the		
		following capabilities:		
		EMS should integrate with the		
	SLA	application software		
121	Monitoring	component of portal software		
		that measures		
		performance of system against		
	CY A	thefollowing SLA parameters:		
122	SLA Monitoring	Response times of Portal;		
	SLA	1		
123	Monitoring	Uptime of IT Infrastructure;		
124	SLA	Meantime for restoration of		
124	Monitoring	services		
		etc.		
		EMS should compile the		
	SLA	performance statistics from all the		
125	Monitoring	IT systems involved and compute		
	1.1011110111115	the average of the parameters		
		over a quarter, and compare it		
		with the SLA		
		metrics laid down in the RFP.		

		The EMS should compute the		
	SLA	weighted average score of the		
126	Monitoring	SLA metrics and arrive at the		
	Widilitoring	quarterly service charges payable		
		to the Agency after applying the		
		system of		
		penalties and rewards.		
	GT A	The SLA monitoring component		
127	SLA Manitanina	of the EMS should be under the		
12/	Monitoring	control of the authority that is		
		nominated the client so as to ensure that it is in		
		atrusted environment.		
		The SLA monitoring		
	SLA	component of the EMS should		
128	Monitoring	be subject to random third party		
	1,101110111118	audit to		
		vouchsafe its accuracy,		
		reliability, and integrity.		
		Helpdesk system would		
		automatically generate the		
		incident tickets and log the call.		
		Such calls are forwarded to the		
		desired system support personnel		
129	ITIL based	deputed by the Implementation		
127	Helpdesk	Agency. These personnel would		
	-	look into the problem, diagnose		
		and isolate suchfaults and		
		resolve the issues timely. The		
		helpdesk system would be		
		having necessary workflow for		
		transparent, smoother and		
		cordialDC/DR support framework.		
		The Helpdesk system should		
130	ITIL based	provide flexibility of logging		
130	Helpdesk	incident		
	Ticipuesk	manually via windows GUI and		
		webinterface.		
		The web interface console of the		
131	ITIL based	incident tracking system would		
	Helpdesk	allow		
	_	viewing, updating, and		
		closing ofincident tickets.		
		The trouble-ticket should be		
132	ITIL based	generated for each complaint and		
	Helpdesk	given to asset owner immediately		
		as		
		well as part of email.		

		1 == 1 1 1		
		Helpdesk system should		
133	ITIL based	allow detailed multiple		
	Helpdesk	levels/tiers of categorization		
	1	on the type of security		
		incident being logged.		
		It should provide classification		
	ITH based	todifferentiate the criticality of		
134	ITIL based	1		
134	Helpdesk	the security incident via the		
		priority		
		levels, severity levels and		
		impactlevels.		
		It should allow SLA to be		
125	ITIL based	associated with a ticket based on		
135	Helpdesk	priority, severity, incident type,		
		requestor, asset, location or group		
		individually		
		as well as collectively.		
		It should maintain the SLA for		
	ITIL based	each item/service. The system		
136	Helpdesk	should be able to generate report		
	r	on the SLA violation or regular		
		SLA compliancelevels.		
		It should be possible to sort		
127	ITH 1 1			
137	ITIL based	requests based on how close are		
	Helpdesk	the requests to violate their		
		defined SLA's.		
	ITIL based	It should support multiple time		
138	Helpdesk	zones and work shifts for SLA &		
	Troip desir	automatic ticket assignment.		
		It should allow the helpdesk		
	ITIL based	administrator to define escalation		
139	Helpdesk	policy, with multiple levels &		
	r	notification, through easy to use		
		window GUI / console.		
		System should provide a		
140	ITIL based	knowledgebase to store history of		
140	Helpdesk	useful incident resolution.		
	17777 1 1	It should have an updateable		
111	ITIL based	knowledge base for technical		
141	Helpdesk	analysis and further help end-users		
		to search solutions for previously		
		solved issues.		
		The web-based knowledge tool		
142	ITIL based	would allow users to access his /		
	Helpdesk	her knowledge article for quick		
	1	references.		
		It should provide functionality to		
143	ITIL based	add / remove a knowledge base		
143	Helpdesk	solutionbased on prior approval		
	Ticipuesk	from the concerned authorities.		

	ı	1		
	ITIL based	Provide seamless integration to		
144	Helpdesk	generate events/incident		
	Helpuesk	automatically from NMS / EMS.		
		Each incident could be able to		
	ITIL based	associate multiple activity logs		
145		entries manually or automatically		
	Helpdesk			
		events / incidents from other		
		security tools or EMS / NMS.		
146	ITIL based	Allow categorization on the type of		
140	Helpdesk	incident being logged.		
	•	Provide audit logs and reports to		
147	ITIL based	track the updating of each incident		
14/	Helpdesk	ticket.		
	ITH 1 1			
148	ITIL based	Proposed incident tracking system		
	Helpdesk	would be ITIL compliant.		
		It should be possible to do any		
149	ITIL based	customizations or policy updates		
	Helpdesk	inflash with zero or very minimal		
	l 1101p dresit	coding or down time.		
		It should integrate with Enterprise		
	ITIL based	Management System event		
150		, ,		
130	Helpdesk	management and support automatic		
		problem registration, based on		
		predefined policies.		
151	ITIL based	It should be able to log and escalate		
	Helpdesk	user interactions and requests.		
		It should support tracking of SLA		
152	ITIL based	(service level agreements) for call		
102	Helpdesk	requests within the help desk		
	Trespuesik	through service types.		
		It should be capable of assigning		
		call requests to technical staff		
153	ITIL based	manually as well as automatically		
	Helpdesk	based on predefined rules, and		
		should support notification and		
		escalation over email, web etc.		
	ITIL based	It should provide status of		
154	Helpdesk	registered calls to end-users over		
	Treipuesk	email and		
		through web.		
		The solution should provide web		
155	ITIL based	based administration so that the		
	Helpdesk	same can be performed from		
	Treipuesk	anywhere.		
		It should have a customized		
150	ITH 1 1			
156	ITIL based	Management Dashboard for		
	Helpdesk	seniorexecutives with live reports		
ĺ		from helpdesk database.		

		The proposed desktop		
	Client	management system should		
157	Management	provide single integrated agent for		
157	System	asset management, remote software		
	System	deployment and remote desktop		
		control.		
		The proposed Asset Management		
		solution must provide inventory of		
	Asset	hardware and software		
158	Management	applications on end-user desktops		
138	System	including information on		
	System	processor, memory, operating		
		system, mouse, key board		
		of desktops etc. through agents		
		installed on them.		
		The proposed Asset		
		Management solution must have		
	Asset	reporting capabilities; provide		
159	Management	predefined reports and the		
	System	possibility to createcustomized		
		reports on data in the inventory		
		database. Report results could be		
		displayed as lists or		
		graphs.		
1.00	Asset	The proposed Asset Management solution must have		
160	Management	the capability to		
	System	export the reports to CSV,		
		HTMLand XML format.		
	Asset	The proposed Asset		
161	Management	Management solution must		
	System	provide the facility foruser		
	System	defined templates to collect		
		custom information from desktops.		
	Asset	The proposed Asset		
162	Management	Managementsolution must		
	System	provide facility to		
		recognize custom applications ondesktops.		
		The proposed Asset Management		
		solution must support		
		administrators to register a new		
	Asset	application to the detectable		
163	Management	application list using certain		
	System	identification criteria's (Like		
		executable, Date/time stamp etc.).		
		The new application must be		
		detected automatically from next		
		time the inventory is scanned.		

164	Asset Management System	The proposed Asset Management solution must provide facility for queries and automated policies tobe set up		
		and permit scheduling of collecting engines to pick up the data at defined intervals.		
165	Asset Management System	The proposed Asset Management solution must be able to collectWBEM information.		
166	Asset Management System	The proposed Asset Management solution must integrate with the helpdesk solution and allow ticket creation automatically on an event defined in asset management solution. It should also allow manualticket creation also.		
167	Asset Management System	The proposed Asset Management solution must support Software metering to audit and control software usage where launching of an application can be prevented based on centrally configured number of licenses for an application.		
168	Remote Software Deployment System	It should provide delivery, installation, and un-installation of software (ex. Patches of Antivirus solution etc.) installed on end-user desktops by software delivery remotely through agents installed onthem. It must allow preand post- installation steps to be specified if required & support rollback in the event of failure in installing softwareto end-user desktops.		
169	Remote Software Deployment System	The tool should have the capability to install applications based on interdependencies i.e. to be installed in a particular order.		
170	Remote Software Deployment System	It should support deployment of MSI based packages using drag and drop method.		

171	Remote Software Deployment System	It should perform actual distribution of software remotely, not mere file transfer and manual installation at other end. Automated installation should be possible.	
172	Remote Software Deployment System	It should include a Software packager for creating software packages to be delivered to enduser desktops which uses a snapshot technology.	
173	Remote Software Deployment System	It should support both push and pull software distribution modes. A catalog/advertisement option of the existing software delivery packagesmust be provided for enduser to download and install software of his / her choice.	
174	Remote Software Deployment System	Users must be allowed to cancel jobs if they are launched at an inconvenient time. Cancelled jobs must be allowed to be reactivated. Forcing packages onto the computermust also be possible.	
175	Remote Desktop Control Management System	The proposed solution should allow remote control of end-user desktopfor facilitating resolution of desktop issues without the need to go to the end-user desktop, through agents installed on them.	
176	Remote Desktop Control Management System	It should provide the capability of taking Remote control of Linux systems also using Views sitting on Windows platform.	
177	Remote Desktop Control Management System	It should provide Windows integrated authentication as well as application based authentication option to choose from for the agent installed.	
178	Remote Desktop Control Management System	It should allow host enabled recording which allows the end userto initiate a recording session.	

179	Remote Desktop Control Management System	It should have the ability to convert the recorded sessions in AVI/WMA format so it can be replayed using commonly available Windows media player.	
180	Remote Desktop Control Management System	Centralized User Management should allow administrators to centrally manage remote control users' and their access rights. Administrators must be able to define preferences and capabilities different users or user groups have, as well as defining which targets they can control.	
181	Remote Desktop Control Management System	It should support Seamless integration with management applications such as helpdesk, asset management and Software delivery.	
182	Remote Desktop Control Management System	It should support remote Reboot & Chat functions between nodes.	
183	Remote Desktop Control Management System	It should provide facility for encrypting the authentication traffic and support AES 256.	

	Firewall Services					
Sr. No.	Description of Requirement	Compliance (Yes/No)	Details of Reference Document forverifying compliance	Referenc ePage No		
1	Solution/offering would be a cloud-based Firewall service.					
2	The Firewall Appliance / solution / offering should have certificationslike NDPP / ICSA / EAL4 or more.					

3	The Appliance / virtual /cloud		
	offering based security platform		
	should be capable of providing		
	firewall, IPS, and VPN (both		
	IPSecand SSL) functionality in a		
	single		
	appliance		
4	The Appliance / virtual /cloud		
	offering hardware should be a		
	multicore CPU architecture		
	with a hardened operating		
	system to support higher		
	11 0		
5	memory		
3	Proposed Firewall should be		
	open architecture based on		
	multi-core cpu's to protect &		
	scale against dynamic latest		
	security threats.		
6	Firewall should support atleast		
	sufficient concurrent VPN peers		
	IPSec / SSL		
7	Firewall should support		
	minimum vlans as required in		
	the project		
8	Firewall should support virtual		
	firewalls from day one & support		
	licensed based scalability as &		
	whenrequired		
9	Firewall should provide		
	application inspection for DNS,		
	FTP, HTTP, SMTP,ESMTP,		
	LDAP, VLAN, VXLAN,		
	MGCP, RTSP, SIP, SCCP,		
	SQLNET, TFTP, H.323, SNMP		
10			
10	Should be able to group multiple		
	firewalls together as a single		
	logical device and should scale		
	performance in term of combined		
	throughput, connections and		
	connections per second		
11	Firewall should support creating		
	access-rules with IPv4 & IPv6		
	objects simultaneously		
12	Firewall should support operating		
	in routed & transparent mode.		
	Should		
	be able to set mode independently		
	for each context in multi-context		
	mode		

10		
13	In transparent mode firewall should	
	support arp-inspection to prevent	
	spoofing at Layer-2	
14	Should support Non-Stop	
* '	11 1	
	Forwarding in HA during failover	
	and Graceful Restart	
15	Firewall should support static nat,	
	pat, dynamic nat, pat & destination	
	based nat	
16	Firewall should support Nat66	
	(IPv6-to-IPv6), Nat 64 (IPv6-to-	
	IPv4) & Nat46 (IPv4-to-IPv6)	
1.7	functionality	
17	Should support Remotely	
	TriggeredBlack Hole for Border	
	Gateway	
	protocol security	
18		
10	Firewall should support Restful	
	APIfor integration with 3rd party	
	solutions like Software Defined	
	Networking	
19	Firewall should support stateful	
	failover of sessions in	
	Active/Standby or Active/Active	
20	mode	
20	Firewall should support	
	etherchannel functionality for the	
	failover control & date interfaces	
	forprovide additional level of	
	redundancy	
21		
21	Firewall should support redundant	
	interfaces to provide interface level	
	redundancy before device failover	
22	Firewall should support 802.3ad	
	Etherchannel functionality to	
	increase the bandwidth for a	
	segment across different modules	
23	Firewall should support failover	
23	of	
	IPv4 & IPv6 sessions	
24	Firewall should replicate Nat	
-		
	translations, TCP,UDP	
	connection states, ARP table,	
	ISAKMP & IPSec	
	SA's, SIP signalling sessions	
25	Firewall should have integrated	
	redundant power supply	
26	Firewall should support client	
-0		
	basedand clientless SSL vpn peers	
	from	
	day one.	

	1	
27	Firewall should support RFC	
	6379based Suite-B Cryptography	
	Suites/algorithms like AES-	
	GCM/GMAC support (128-, 192-	
	, and 256-bit keys), ECDH	
	support (groups 19, 20, and 21),	
	ECDSA	
	support (256-, 384-, and 521-bit	
	elliptic curves) for enhanced VPN security.	
28		
20	Firewall should support latest	
	IKEv2 standards for supporting	
	SHA-2 256, 384 & 512 bit	
	message integrity algorithms in	
	hardware to ensure	
	there is no performance bottleneck	
	& higher security.	
29	Firewall should support RFC	
	6379based Suite-B Cryptography	
	Suites/algorithms like AES-	
	GCM/GMAC support (128-, 192-	
	, and 256-bit keys), ECDH	
	support (groups 19, 20, and 21),	
	ECDSA	
	support (256-, 384-, and 521-bit	
	elliptic curves) for enhanced VPN	
	security.	
30	The proposed solution should be	
	VPNC/ICSA compliant for	
	interoperability.	
31	Should support pre-shared keys &	
	Digital Certificates for VPN peer	
	authentication	
32	Should support perfect forward	
	secrecy & dead peer detection	
	functionality	
33	Should support Nat-T for IPSec	
	VPN	
34	Routing Features	
35	Firewall should support IPv4 &	
	IPv6static routing, RIP, OSPF v2	
	& v3, PBR, VLAN, VXLAN for	
	PBR, PBR	
	for IPv6 BGP and BGPv6	
36	Firewall should support PIM	
	multicast routing	
37	Firewall should support SLA	
	monitoring for static routes	
38	Firewall should support	
	management of firewall policies	
	via Cli, SSH & inbuilt GUI	
1		

	management interface.		
39	Firewall should support SNMP v1,2c& 3 simultaneously		
40	Firewall should support packet capturing functionality		
41	Firewall should support the functionality of Auto-Update to check for latest software versions & download the same		

FRS: Content Management Module

Sr. no.	Area	Requirement Description	Whether Complied or not (Yes/No)	Reference Documents
	Content	System shall provide FAQs on all the		
1.	Management	modules which provides interface from		
1.	System	the user. FAQs shall be made available for		
		public view		
	Content	System shall provide web-based training		
	Management	videos (WBT) demonstrating all the user		
	System	interaction related modules in detail. Such		
		videos shall explain each phase of the		
2.		registration process, contents and		
		documents to be attached during		
		registration etc. Online training		
		Programmes shall be in both English and		
		local language (Hindi).		
3.	Content	System shall provide a 'Help/Guidance'		
	Management	page which includes the video tutorials for		
	System	end-to-end process for each type of		
		stakeholder	_	
4.	Content	System shall provide User Manual for		
	Management	each type of stakeholder. The user manual		
	System	shall be in English and Hindi		

Sr. no.	Area	Requirement Description	Whether Complied or not (Yes/No)	Reference Documents
5.	Content	System shall provide up-to-date content		
	Management	and the content shall be ease in		
	System	understanding and engaging for the		
		viewer		
6.	Content	System shall also capture the		
	Management	feedbacks/suggestions from the user of		
	System	the central database system		
7.	Content	There shall be also hybrid mobile app for		
	Management	vessel owners etc for this module		
	System			

FRS: Analytics, Reporting Generation and Dynamic Dashboard/MIS Report

S.no	Area	Requirement Description	Whether complied	Reference documents
			or not (Yes/No)	
1.	Dashboard	The system will have a unified dashboard		
2		for reporting purpose		
2.	Dashboard	The system will provide for descriptive analysis dashboard inclusive of but not		
	Dasiiooaiu	limited to following		
3.	Dashboard	Number of central database system users		
4.		Number of Stakeholders interacting with		
	Dashboard	the system		
5.		Number/Type of Registration undertaken in		
	Dashboard	month/quarter/yearly by the Designated		
		Authority		
6.	D 11 1	Number of incidents cases occurred, if any		
	Dashboard	under the jurisdiction of Designated Authority		
7.		•		
/.	Dashboard	Number/Type of Survey undertaken in month/quarter/yearly by the Designated		
	Dasiiboaiu	Authority		
8.		The system will also provide dwell time		
	Dashboard	monitoring related to Registration &		
		Survey.		
9.		The system will also provide transactions		
		during a specified period, transaction		
	Dashboard	density trends for any specified periodicity		
		(weekly, monthly) and any bottleneck		
10.		situation creating dependency at any stage The system will generate reports consisting		
10.		of, but not limited to, central database		
	MIS	system user details, stakeholder at the		
		Maritime Boards / Inland Water Transport		
		Depts using central database system		
11.	MIS	The system will support creating of		
12		customized reports		
12.		The system will allow filtering the reports		
	MIS	based on the number/type of Registration and Survey by respective Maritime Boards /		
	141112	Inland Water Transport Depts in a		
		day/week/month		

S.no	Area	Requirement Description	Whether complied or not (Yes/No)	Reference documents
13.	MIS	The system will also provide the data on the number of stakeholders request for various services by Designated Authority		
14.	MIS	The reports will be made available in multiple formats like Adobe PDF, MS Excel and other relevant formats		

FRS: Presentation Layer

S.no	Area	Requirement Description	Whether Complied or not (Yes or No)	Reference Documents
1.	Common requirements of Portal	System should have a web portal for central database system which shall be user friendly, informative, interactive and easily accessible.		
2.	Common requirements of Portal	The system should follow GIGW guidelines		
3.	Common requirements of Portal	The web portal should meet and compliant the web design and security guidelines of Govt. of India		
4.	Common requirements of Portal	The system should adhere to Best/Standard programming practices and OWASP-recommended security practices that can help authorized user to easily extend the functionality of the portal.		
5.	Common requirements of Portal	The system should provide consistent look & feel, Themes, Navigation to the users and the standards defined for content, structure and presentation of the portal should be applied and followed throughout the portal.		

S.no	Area	Requirement Description	Whether Complied or not (Yes or No)	Reference Documents
6.	Common requirements of Portal	All the sections of the web portal should be of dynamic nature and must be supported with easy content management and administration of the same.		
7.	Common requirements of Portal	The Web portal should be providing role-based content pages as well as content pages for Un-authenticated (guest) user.		
8.	Audit trail	The system should display the date and time of last login when the user logs in.		
9.	Login Users	System should allow following type of user logins: a) Ship Owners b) DA/IWAI Admin c) Ship Managers d) Ship Builders e) Designers f) Classification Societies g) Maritime Training Institutes h) Others		
10.	Unique ID	All stakeholders are required to have a unique central database system ID. The unique central database system ID should be created at the time of registration. The format for central database system ID should be discussed with IWAI		
11.	Auto Information Population	All forms are required to be streamlined to remove redundancies in terms of seeking information. Wherever the information can be retrieved from the system will be pre-loaded on the relevant application forms. However, it is required that before submission of prepopulated		

S.no	Area	Requirement Description	Whether Complied or not (Yes or No)	Reference Documents
		data, stakeholder is provided an option to review the pre-populated data.		
12.	Personalized Homepage	The home page of the central database system is required to be personalized view for different set of stakeholders, wherein, all information and services displayed are related to the persona only. The services display on home page is hence, required to be dynamic. However, flexibility is required to be built in the system to include other services.		
13.	Device Agnostic Platform	The platform will be accessible through multiple devices such as desktop, laptop, mobile, tablet etc. There will be a webbased portal for access by desktop and laptop; and a mobile app for access by mobile and platform available on leading platforms such as Android and iOS.		
14.	Mobile App	System shall interface for login to both IWAI and other stakeholders like Designated Authorities, Ship Owners, Ship Managers, Ship Builders, Designers, MTI, Terminal Operators, Others.		
15.	Mobile App	System should provide facility/forms/tools for online user login		
16.	Mobile App	System should implement the validation controls to ensure that all the mandatory fields are filled by the user		
17.	Mobile App	System shall provide the facility to reset password through 'Forgot Password' option, in case the user forgets the password		

S.no	Area	Requirement Description	Whether Complied or not (Yes or No)	Reference Documents
18.	Mobile App	System shall facilitate three types of login: a) Login using mobile number and OTP b) Login using IE number and OTP c) Login using registered username and password		
19.	Mobile App	In 'Login using mobile number', the system shall request for OTP generated on mobile after entering mobile number as User ID		
20.	Mobile App	System shall validate the user ID: username/mobile/IE number and password/OTP entered for successful login		
21.	Mobile App	System shall auto-detect OTP received on the mobile device		
22.	Mobile App	System shall perform field validations for the login information (For example: mobile number, password etc.)		
23.	Mobile App	System shall use masking for password/ OTP input in login form		
24.	Mobile App	System shall inform user of a failure in case the wrong login credentials, inform the user of the failure through an appropriate message		
25.	Mobile App	In case of Login through mobile and through IE number, the maximum time allowed to enter OTP should not be more than 180 seconds		
26.	Mobile App	System shall maintain the detailed audit trails for the user login in the system including the date and time of login		
27.	Mobile App	System shall be highly secure, and the security measures should be up to date to prevent existing/new cyber attacks		
28.	Mobile App	The Mobile Application should provide an intuitive and user friendly		

S.no	Area	Requirement Description	Whether Complied or not (Yes or No)	Reference Documents
		GUI that enables users to navigate and apply actions with ease. The GUI should be responsive with very little or no delays or time lag at launch or whilst navigating through screens.		
29.	Mobile App	It should enable ease of configuration and changes to existing GUIs, and support the introduction of new screens.		
30.	Mobile App	It should provide on screen tips and online help to aid users while interacting with it.		
31.	Mobile App	Should make use of data available in the existing database and reduce duplicate data entry		
32.	Mobile App	Incorporate analytics into mobile app, to track and identify users experienceand actions.		
33.	Mobile App	Should support real time information subject to internet availability		
34.	Mobile App	Application should ensure Compatibility with all platforms suchas, Google Android, & Apple iOS.		
35.	Mobile App	Solution should develop resolution independent design structure i.e. Mobile Application should adjust itself automatically as per the screen resolution of the Mobile		
36.	Mobile App	Mobile Apps should work flawlessly across different platforms		
37.	Mobile App	There should be limited or zero useof flash contents so that home page should be loaded quickly		
38.	Mobile App	It should not occupy excess client's Mobile RAM.		
39.	Mobile App	Should be able to capture and trackall events at device and console.		

S.no	Area	Requirement Description	Whether Complied or not (Yes or No)	Reference Documents
40.	Mobile App	Should support authentication using OTP / native biometric or user authentication feature of mobile		
41.	Mobile App	Should have facility to download and upload files, including eForms		
42.	Mobile App	Mobile applications should be designed and developed in a way that it ensures security of the application and data on the device.		
43.	Mobile App	All appropriate field on the systemscreen should be populated and contextual information is displayedwhere necessary (e.g., payment information will display on the payment screen).		
44.	Mobile App	The system should be capable of displaying the previous interaction histories on email / SMS, and the same should be available to voice based users.		

FRS: SMS / WhatsApp Gateway

Sr. No.	Description of Requirement	Compliance (Yes/No)	Reasons of Deviatio n (If any)	Details
1	System should allow SMS text messages to be sent and/or receivedby email, from web pages or from software applications.			
2	Gateway should connect directly to a Mobile Operator's SMSC via theInternet			
3	System should use HTTP API protocol which allows to send messages using simple HTTPrequests			
4	System should be able to handle high volume of bulk SMS at the same time (of the order of 500 messages /second)			
5	System should support dual core and multiprocessor system			

6	System should be independent of		
	platform, operating system and programming language		
	programming language		
7	System should support Unicodeformat		
8	System should show the status of SMS as		
	pending, sent, time out, scheduled, not sent etc		
	scheduled, not sent etc		
9	System should be able to send	_	
	customized SMS to users as		
	Applicable		

FRS: API Management

S.no	Area	Requirement Description	Whether Complied or not (Yes/No)	Reference Documents
1.	API Manager	API Manager should be able to perform following functionalities but not limited to • API Integration • API Transformation • API Metering • API Version management • API Analytics • API Throttling		
2.	API Manager	API Manager should have provision for the developer to design, develop and publish APIs		
3.	API Manager	API Manager should provide a repository wherein APIs can be published, and attributes can be discovered		
4.	API Manager	API Manager should allow role-based access to APIs		
5.	API Manager	API Manager should have provision to monitor the API access		
6.	API Manager	API Manager should have provision for API lifecycle management		
7.	API Manager	API Manager should be able to manage API versions		
8.	API Manager	System should have support multiple editions for Cloud based deployment		
9.	API Manager	System should support clustered architecture to allow linear scalability		

S.no	Area	Requirement Description	Whether	Reference
			Complied	Documents
			or not	
			(Yes/No)	
		across multiple instances with		
		automatic failover		
10.		System should provide a standardized		
	API Manager	comprehensive platform for API and		
	7 H I Wanager	application development and		
		execution.		
11.		System should have facility for online		
		centralized portal that allows		
	API Manager	stakeholders to manage internal or		
		external developers, publish APIs for		
		consumption and provide analytics on		
12		API usage/performance		
12.	API Manager	System should support major industry standards		
13.		System should help with effective		
13.		Governance and control all APIs by		
	API Manager	supporting branching of API's, global		
	Airivianagei	API parameters, API debug tracing,		
		real time API validation		
14.		System should generate API		
1		documentation, API explorer,		
	API Manager	example code and sample applications		
		to help developers/partners speed the		
		creation of applications		
15.		System should support throttling, rate		
	API Manager	limiting, traffic prioritization and		
		message caching		
16.		System should support features to		
	API Manager	limit API access based on user, time		
1.5		of day and/or IP address		
17.		System should support route API		
	API Manager	traffic based on geography, IP address		
10		and/or backend response times		
18.	A DI Marra	System should support System level		
	API Manager	monitoring/alerting, auditing and		
10		logging System should support consurrent		
19.		System should support concurrent		
	API Manager	processing logic with support for dynamic and intelligent routing to		
		backend service instances		
20.		System should support for centralized		
20.	API Manager	administration of all APIs, along with		
	l	administration of all Al 18, along With	1	

S.no	Area	Requirement Description	Whether Complied	Reference Documents
			or not	Documents
			(Yes/No)	
		Single, real-time management view		
		(i.e. dashboard) of all APIs		
21.		System should support remote		
		patching, remote restoration, support		
	API Manager	for disaster recovery along with		
		facility to access it via third party /		
		remote management		
22.		Systems should have in-built features		
	API Manager	to handle composition, versioning,		
		rollback and orchestration of API's		
23.		Systems should support facility to		
		automate API migration across		
	API Manager	environments and geographies with		
		feature to automatically resolve		
2.4		dependencies.		
24.	ADIM	System should have the ability to		
	API Manager	generate reports in multiple formats		
25.		(i.e. CSV, PDF and HMTL etc.) System should be able to support real-		
23.	API Manager	time reporting of service activity		
26.		System should support for industry		
20.	API Manager	standard cryptographic algorithms		
	711 1 Wanager	(Triple DES, AES, SHA, RSA etc.)		
27.		System should be compliant to		
	ADIM	common criteria qualifications and		
	API Manager	other industry level certification and		
		compliance standards		
28.		System should be able to do threat		
	API Manager	detection and message content		
		filtering		
29.		The proposed solution should be able		
		to detect and filter for		
	API Manager	sensitive/confidential content with		
		subsequent scrubbing, rejection or		
		reduction of messages		
30.	API Manager	System should support protection		
		against viruses		
31.		System should support features to		
	API Manager	track failed authentications and/or		
		violations to identify and report		
		patterns and potential threats		

S.no	Area	Requirement Description	Whether	Reference
			Complied or not (Yes/No)	Documents
32.	Gateway	System should have API Gateway which would act as an API front-end, receives API requests	(Tes/110)	
33.	Gateway	System should have API Gateway to enforces throttling and security policies		
34.	Gateway	System should pass requests to the back-end service and then passes the response back to the requested		
35.	Gateway	System should have a gateway with dynamic nature which includes a transformation engine to manage and modify the requests and responses on the fly.		
36.	Gateway	System should have provision of collecting analytics data and provide caching		
37.	Gateway	System should have API Gateway that provides functionality to support authentication, authorization, security, audit and regulatory compliance.		
38.	Publishing Tool	System should have API Publishing tool for API Management		
39.	Publishing Tool	System should have ability to define and configure API's		
40.	Publishing Tool	System should have ability to manage access and usage policies for APIs		
41.	Publishing Tool	System should have ability to test and debug the execution of API, including security testing and automated generation of tests and test suites, deploy APIs into production, staging, and quality assurance environments, and coordinate the overall API lifecycle.		
42.				
43.	Developer Portal	System should have an interactive API console and sandbox to trial APIs, the ability to subscribe to the APIs and manage subscription keys and obtain support from the API		

S.no	Area	Requirement Description	Whether	Reference
			Complied or not	Documents
			(Yes/No)	
		provider and user and community as	(103/110)	
		and when required		
44.		System should have functionality for		
	API Analytics	providing API analytics		
45.		System should have functionality to		
		monitor API usage and load over		
		different parameters like overall hits,		
	ADIA 14	completed transactions, number of		
	API Analytics	data objects returned, amount of		
		compute time and other internal		
		resources consumed, volume of data		
		transferred etc.		
46.		System should have ability for real-		
		time monitoring of the API with alerts		
		being raised directly or via a higher-		
		level network management system,		
	API Analytics	for instance, if the load on an API has		
		become too great, as well as		
		functionality to analyse historical		
		data, such as transaction logs, to		
		detect usage trends.		
47.		System should have ability to create		
	API Analytics	dummy transactions that can be used		
		to test the performance and behaviour		
10		of API endpoints.		
48.		System should have ability to		
	Monetization	monetization of API as and when		
40		required		
49.	Managing	System should have ability for easy		
	Monetization	integration with analytics and billing		
50		Services System should have provision to		
50.	Manatization	System should have provision to		
	Monetization	provide API on different models like		
51.		freemium, subscription etc. System should allow API to support		
31.		11		
	Monetization	the expansion across a wide range of platforms, apps, devices, partners and		
		third parties etc.		
52.		System should have functionality to		
54.	Monetization	support charging for access to		
	ivionicuzation	commercial APIs		
		Commercial Ar is		

S.no	Area	Requirement Description	Whether Complied or not (Yes/No)	Reference Documents
53.		System should support setting up pricing rules, based on usage, load and		
	Monetization	functionality, issuing invoices and		
		collecting payments including		
		multiple types of payments		
54.	API Security	System should have specialised		
		provision for API privacy and security		
55.		System should provide threat		
		detection and neutralization for key		
	API Security	OWASP vulnerabilities such as SQL		
		injections, cross-site scripting, denial-		
		of-service (DDoS) attacks etc.		

FRS: Grievance Reporting

Sr. no.	Requirement Description	Whether Complied or not (Yes/no)	Reference Documents
1.	System shall provide single interface for IWAI Officials, Marine User, Private users and other users to register the grievances		
2.	System shall provide the facility to capture grievance related information from the user		
3.	System shall allow uploading of supporting images/documents along with the grievances information		
4.	System shall implement the validation controls to ensure that all the mandatory fields are filled by the user		
5.	System shall check for spywares/adware/viruses on the uploaded document/image		
6.	System shall send notification to the user providing the acknowledgement of the grievance submission		
7.	System shall maintain the detailed audit trails for the grievances submission		
8.	System shall record the date and timestamp of grievances submission		

Sr. no.	Requirement Description	Whether Complied or not (Yes/no)	Reference Documents
9.	System shall allow Designated Authority / IWAI to submit the query response		
10.	System shall send grievances query response to the complainant		

Compliance with latest Security guidelines

S.No.	Requirement	Compliance
		(Yes/No)
1	The security of the solution developed, and cloud	
	provisioning should be compliant with the latest National	
	Critical Information Infrastructure Protection Centre	
	(NCIIPC) guidelines	
2	The security of the solution developed, and cloud	
	provisioning should be compliant with the latest Meity	
	guidelines	

Deliverables Schedule for River Navigation Application				
Sl.No.	Milestones	Deliverables	Timeline (T=0 at issue of LoA)	
1	Submit of Project Charter and Project Plan.	D1	T+0.5 Months	
2	Submission of Software Requirement Specifications (SRS), Master Design Document and Prototyping.	D2	T+1 Months	
3	Cloud Data Centre Establishment, Software Development and Establishment of Control Centre at IWAI H.O. (Data Wall, Server and Resource Persons)	D3	T+3 Months	
4	Unit Testing, Integrated Testing and User Acceptance Test (UAT).	D4	T+3.5 Months	
5	Security Audit & Certification	D5	T+4.5 Months	
6	Go-Live of River Navigational Application	D6	T+5 Months	
7	Hosting the Application in Cloud Based Servers for five years	D7	Fortnightly	
8	Regular Upgradation, Maintenance & Enhancement of App for five years	D8	Fortnightly	
9	Resource Persons at IWAI H.O Control Centre for five years.	D9	Fortnightly	

Performance Specifications and Drawings

(Describe Outputs and Performances, rather than Inputs, wherever possible)

Notes on Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Employer without qualifying or conditioning their Bids. In the context of open competitive Bidding, the specifications must be drafted to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of economy, efficiency, and fairness in procurement be realized, responsiveness of Bids be ensured, and the subsequent task of Bid evaluation facilitated. The specifications should require that all goods and materials to be incorporated in the Services be new, unused, of the most recent or current models, and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.

Samples of specifications from previous similar projects in India are useful in this respect. The use of metric units is encouraged by the World Bank. Most specifications are normally written specially by the Employer to suit the Contract in hand. There is no standard set of Specifications for universal application in all sectors in all countries, but there are established principles and practices, which are reflected in this document

There are considerable advantages in standardizing General Specifications for repetitive Services in recognized public sectors, such as education, health, sanitation, social and urban housing, roads, ports, railways, irrigation, and water supply, in the same country or region where similar conditions prevail. The General Specifications should cover all classes of workmanship, materials, and equipment commonly involved in the provision of Services, although not necessarily to be used in a particular Services Contract. Deletions or addenda should then adapt the General Specifications to the particular Services.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for goods, materials, Services, and workmanship, recognized national standards should be used as much as possible. Where other particular standards are used, the specifications should state that goods, materials, Services and workmanship that meet other authoritative standards, and which ensure substantially equal or higher quality than the standards mentioned, will also be acceptable.

The following clause may be inserted in the Special Conditions or Specifications.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished, and Services or work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless

otherwise expressly stated in the Contract. Where such standards and codes relate to other countries or regions, other authoritative standards that ensure a substantially equal or higher quality than the standards and codes specified will be accepted subject to the Employer prior review and written consent. Differences between the standards specified and the proposed alternative standards shall be fully described in writing by the Service Provider and submitted to the Employer at least 28 days prior to the date when the Service Provider desires the Employer consent. In the event the Employer determines that such proposed deviations do not ensure substantially equal or higher quality, the Service Provider shall comply with the standards specified in the documents.

If technical alternatives for parts of the Services are permitted in the bidding document, these parts shall be described in this Section.

These Notes for Preparing Specifications are intended only as information for the Employer or the person drafting the bidding document.

Notes on Drawings

Insert here a list of Drawings. The actual Drawings, including performance diagrams or curves, etc. and site plans, geographical areas covered, should be attached to this section or annexed in a separate folder.

Part III – Conditions of Contract and Contract Forms

Section VIII: Conditions of Contract

- 1. This sample contract for the Provision of Services shall be used when the firms hired to provide Services are paid on the basis of lump-sum remuneration.
- 2. Lump-sum contracts are used when definition of the tasks to be performed is clear and unambiguous, when the commercial risk taken by the Service Provider is minimal, and when therefore such Service Provider/s are prepared to perform the assignment for an agreed predetermined lump-sum price. Such price is arrived at on the basis of inputs—including rates—provided by the Service Provider. The Employer agrees to pay the Service Provider according to a schedule of payments linked to the delivery of certain outputs. A major advantage of the lump-sum contract is the simplicity of its administration, the Employer having only to be satisfied with the outputs without monitoring the staff inputs.
- 3. The Contract includes four parts: the Form of Contract, the General Conditions of Contract, the Special Conditions of Contract, and the Appendices. The Employer using this sample contract should not alter the General Conditions. Any adjustment to meet project features should be made only in the Special Conditions.

Section VIII - General Conditions of Contract

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Section VIII - General Conditions of Contract

A. General Provisions

1.1 Definitions

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings.

- (a) The Adjudicator is the person appointed jointly by the Employer and the Service Provider to resolve disputes in the first instance, as provided for in Sub-Clause 8.2 hereunder.
- (b) "Activity Schedule" is the priced and completed list of items of Services to be performed by the Service Provider forming part of his Bid.
- (c) "Bank" means the International Bank for Reconstruction and Development, Washington, D.C., U.S.A.
- (c) "Association" means the International Development Association, Washington, D.C., U.S.A.
- (d) "Completion Date" means the date of completion of the Services by the Service Provider as certified by the Employer.
- (e) "Contract" means the Contract signed by the Parties, to which these General Conditions of Contract (GCC) are attached, together with all the documents listed in Clause 1 of such signed Contract.
- (f) "Contract Price" means the price to be paid for the performance of the Services, in accordance with Clause 6.
- (g) "Dayworks" means varied work inputs subject to payment on a time basis for the Service Provider's employees and equipment, in addition to payments for associated materials and administration.
- (h) "Employer" means the party who employs the Service Provider.
- (i) "Foreign Currency" means any currency other than the currency of the country of the Employer.
- (j) "GCC" means these General Conditions of Contract.
- (k) "Government" means the Government of India.
- (1) "Local Currency" means Indian Rupees.
- (m) "Member," in case the Service Provider consist of a joint venture of more than one entity, means any of these entities; "Members"

means all these entities, and "Member in Charge" means the entity **specified in the SCC** to act on their behalf in exercising all the Service Provider' rights and obligations towards the Employer under this Contract.

- (n) "Party" means the Employer or the Service Provider, as the case may be, and "Parties" means both of them.
- (o) "Personnel" means persons hired by the Service Provider or by any Subcontractor as employees and assigned to the performance of the Services or any part thereof.
- (p) "Service Provider" is a person or corporate body whose Bid to provide the Services has been accepted by the Employer.
- (q) "Service Provider's Bid" means the completed Bidding Document submitted by the Service Provider to the Employer. Where the context so requires, the general term 'Contractor' also includes/means 'Service Provider'.
- (r) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented.
- (s) "Specifications" means the specifications of the service included in the Bidding Document submitted by the Service Provider to the Employer.
- (t) "Services" means the work to be performed by the Service Provider pursuant to this Contract, as described in Appendix A; and in the Specifications and Schedule of Activities included in the Service Provider's Bid.
- (u) "Subcontractor" means any entity to which the Service Provider subcontracts any part of the Services in accordance with the provisions of Sub-Clauses 3.5 and 4.

1.2 Applicable Law The Contract shall be interpreted in accordance with the laws of Union of India.

Salient features of major labour and other laws that are normally applicable `in India are given as Appendix H. to these General Conditions of Contract.

- 1.2.1 Throughout the execution of the Contract, the Service Provider shall comply with the import of goods and services prohibitions in the India, when
- (a) as a matter of law or official regulations, India prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, India prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

1.3 Language

This Contract has been executed in English, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

1.4 Notices

Any notice, request, or consent made pursuant to this Contract shall be in writing and shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram, or facsimile to such Party at the address **specified in the SCC.**

1.5 Location

The Services shall be performed at such locations as are specified in Appendix A, in the specifications and, where the location of a particular task is not so specified, at such locations, whether in the India or elsewhere, as the Employer may approve.

1.6 Authorized Representatives

Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Employer or the Service Provider may be taken or executed by the officials specified in the SCC.

1.7 Inspection and Audit by the Bank

Pursuant to paragraph 2.2 e. of Attachment 1 to the General Conditions, the Service Provider shall permit and shall cause its subcontractors and sub consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Service Provider's and its Subcontractors' and sub consultants' attention is drawn to Sub-Clause 3.10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank's prevailing sanctions procedures).

1.8 Taxes and Duties

The Service Provider, Subcontractors, and their Personnel shall pay such taxes, duties, fees, and other impositions as may be levied under the Applicable Law, the amount of which is deemed to have been included in the Contract Price.

2. Commencement, Completion, Modification, and Termination of Contract

2.1 Effectiveness of Contract

This Contract shall come into effect on the date the Contract is signed by both parties or such other later date as may be **stated in the SCC.**

2.2 Commencement of Services

2.2.1 Program

Before commencement of the Services, the Service Provider shall submit to the Employer for approval a revised Program (revising the Program given along with the Bid) showing the general methods, arrangements, order and timing for all activities. The Services shall be carried out in accordance with the approved Program as updated.

2.2.2 Starting Date

The Service Provider shall start carrying out the Services thirty (30) days after the date the Contract becomes effective, or at such other date as may be **specified in the SCC.**

2.3 Intended Completion Date

Unless terminated earlier pursuant to Sub-Clause 2.6, the Service Provider shall complete the activities by the Intended Completion Date, as is **specified in the SCC.** If the Service Provider does not complete the activities by the Intended Completion Date, it shall be liable to pay liquidated damage as per Sub-Clause 3.8. In this case, the Completion Date will be the date of completion of all activities.

2.4 Modification

Modification of the terms and conditions of this Contract, including any modification of the scope of the Services or of the Contract Price, may only be made by written agreement between the Parties. In particular contract cases where clearance of the Bank or the Association is required for such modifications, the modification shall not be effective until the consent of the Bank or of the Association, as the case may be, has been obtained.

2.4.1 Value Engineering

Deleted.

2.5 Force Majeure

2.5.1 Definition

For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party and which makes a Party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

2.5.2 No Breach of Contract

The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures in order to carry out the terms and conditions of this

Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.

2.5.3 Extension of Time

Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

2.5.4 Payments

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Service Provider shall be entitled to continue to be paid under the terms of this Contract, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Service after the end of such period.

2.6 Termination

2.6.1 By the Employer

The Employer may terminate this Contract, by not less than thirty (30) days' written notice of termination to the Service Provider, to be given after the occurrence of any of the events specified in paragraphs (a) through (d) of this Sub-Clause 2.6.1:

- (a) if the Service Provider does not remedy a failure in the performance of its obligations under the Contract, within thirty (30) days after being notified or within any further period as the Employer may have subsequently approved in writing;
- (b) if the Service Provider become insolvent or bankrupt, or goes into liquidation other than for a reconstruction or amalgamation;
- (c) if, as the result of Force Majeure, the Service Provider is unable to perform a material portion of the Services for a period of not less than sixty (60) days; or
- (d) if the Service Provider, in the judgment of the Employer has engaged in Fraud and Corruption, as defined in paragraph 2.2
 a. of Attachment 1 to the GCC, in competing for or in executing the Contract

2.6.2 By the Service Provider

The Service Provider may terminate this Contract, by not less than thirty (30) days' written notice to the Employer, such notice to be given after the occurrence of any of the events specified in paragraphs (a) and (b) of this Sub-Clause 2.6.2:

(a) if the Employer fails to pay any monies due to the Service Provider pursuant to this Contract and not subject to dispute pursuant to Clause 7 within forty-five (45) days after receiving written notice from the Service Provider that such payment is overdue; or

(b) if, as the result of Force Majeure, the Service Provider is unable to perform a material portion of the Services for a period of not less than sixty (60) days.

2.6.3 Suspension of Loan or Credit

In the event that the World Bank suspends the loan or Credit to the Employer, from which part of the payments to the Service Provider are being made:

- (a) The Employer is obligated to notify the Service Provider of such suspension within 7 days of having received the World Bank's suspension notice.
- (b) If the Service Provider has not received sums due to by the due date stated in the SCC in accordance with Sub-Clause 6.5 the Service Provider may immediately issue a 14 day termination notice.

2.6.4 Payment upon Terminatio n

Upon termination of this Contract pursuant to Sub-Clauses 2.6.1 or 2.6.2, the Employer shall make the following payments to the Service Provider:

- (a) remuneration pursuant to Clause 6 for Services satisfactorily performed less advances or other recoveries or any taxes to be deducted at source [TDS] as per applicable law, prior to the effective date of termination;
- (b) except in the case of termination pursuant to paragraphs (a), (b),(d) of Sub-Clause 2.6.1, reimbursement of any reasonable cost incident to the prompt and orderly termination of the Contract, including the cost of the return travel of the Personnel.

3. Obligations of the Service Provider

3.1 General

The Service Provider shall perform the Services in accordance with the Specifications and the Activity Schedule, and carry out its obligations with all due diligence, efficiency, and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe methods. The Service Provider shall always act, in respect of any matter relating to this Contract or to the Services, as faithful adviser to the Employer, and shall at all times support and safeguard the Employer's legitimate interests in any dealings with Subcontractors or third parties.

3.2 Conflict of Interests

3.2.1 Service Provider Not to Benefit from Commissio ns and Discounts.

The remuneration of the Service Provider pursuant to Clause 6 shall constitute the Service Provider's sole remuneration in connection with this Contract or the Services, and the Service Provider shall not accept for their own benefit any trade commission, discount, or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations under the Contract, and the Service Provider shall use their best efforts to ensure that the Personnel, any Subcontractors, and agents of either of them similarly shall not receive any such additional remuneration.

3.2.2 Service Provider and Affiliates Not to be Otherwise Interested in Project

The Service Provider agree that, during the term of this Contract and after its termination, the Service Provider and its affiliates, as well as any Subcontractor and any of its affiliates, shall be disqualified from providing goods, works, or Services (other than the Services and any continuation thereof) for any project resulting from or closely related to the Services.

3.2.3

Prohibition of Conflicting Activities

Neither the Service Provider nor its Subcontractors nor the Personnel shall engage, either directly or indirectly, in any of the following activities:

- (a) during the term of this Contract, any business or professional activities in India which would conflict with the activities assigned to them under this Contract;
- (b) during the term of this Contract, neither the Service Provider nor their Subcontractors shall hire public employees in active duty or on any type of leave, to perform any activity under this Contract;
- (c) after the termination of this Contract, such other activities as may be **specified in the SCC.**

3.3 Confidentiality

The Service Provider, its Subcontractors, and the Personnel of either of them shall not, either during the term or within two (2) years after the expiration of this Contract, disclose any proprietary or confidential information relating to the Project, the Services, this Contract, or the Employer's business or operations without the prior written consent of the Employer.

3.4 Insurance to be Taken Out by

The Service Provider (a) shall take out and maintain, and shall cause any Subcontractors to take out and maintain, at its (or the Subcontractors', as the case may be) own cost but on terms and

the Service Provider

conditions approved by the Employer, insurance against the risks, and for the coverage, as shall be **specified in the SCC**; and (b) at the Employer's request, shall provide evidence to the Employer showing that such insurance has been taken out and maintained and that the current premiums have been paid.

3.5 Service Provider's Actions Requiring Employer's Prior Approval

The Service Provider shall obtain the Employer's prior approval in writing before taking any of the following actions:

- (a) entering into a subcontract for the performance of any part of the Services,
- (b) appointing such members of the Personnel not listed by name in Appendix C ("Key Personnel and Subcontractors"),
- (c) changing the Program of activities; and
- (d) any other action that may be specified in the SCC.

3.6 Reporting Obligations

The Service Provider shall submit to the Employer the reports and documents specified in Appendix B in the form, in the numbers, and within the periods set forth in the said Appendix.

3.7 Documents
Prepared by the
Service
Provider to Be
the Property of
the Employer

All plans, drawings, specifications, designs, reports, and other documents and software submitted by the Service Provider in accordance with Sub-Clause 3.6 shall become and remain the property of the Employer, and the Service Provider shall, not later than upon termination or expiration of this Contract, deliver all such documents and software to the Employer, together with a detailed inventory thereof. The Service Provider may retain a copy of such documents and software. Restrictions about the future use of these documents, if any, shall be **specified in the SCC.**

3.8 Liquidated Damages

3.8.1 Payments of Liquidated Damages

The Service Provider shall pay liquidated damages to the Employer at the rate per day **stated in the SCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount **defined in the SCC.** The Employer may deduct liquidated damages from payments due to the Service Provider. Payment of liquidated damages shall not affect the Service Provider's liabilities.

Time is the essence of the contract and payment or deduction of liquidated damages shall not relieve the Service Provider from his obligation to complete the work as per agreed Program and order and timing of all Activities, or from any of the Service Provider's other obligations and liabilities under the contract.

3.8.2 Correction for Overpayment

If the Intended Completion Date is extended after liquidated damages have been paid, the Employer shall correct any overpayment of liquidated damages by the Service Provider by adjusting the next payment certificate. The Service Provider shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in Sub-Clause 6.5.

3.8.3 Lack of performanc e penalty

If the Service Provider has not corrected a Defect within the time specified in the Employer's notice, a penalty for Lack of performance will be paid by the Service Provider. The amount to be paid will be calculated as a percentage of the cost of having the Defect corrected, assessed as described in Sub-Clause 7.2 and specified in the SCC.

3.9 Performance Security

The Service Provider shall provide the Performance Security to the Employer no later than the date specified in the Letter of acceptance. The Performance Security shall be issued in an amount and form by a bank acceptable to the Employer, and denominated in Indian Rupees. The performance Security shall be valid until a date 28 days from the Completion Date of the Contract.

3.10 Fraud and Corruption

The Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework, as set forth in the Attachment 1 to the GCC.

The Employer requires the Service Provider to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

3.11 Sustainable Procurement

Deleted.

4. Service Provider's Personnel

4.1 Description of Personnel

The titles, agreed job descriptions, minimum qualifications, and estimated periods of engagement in the carrying out of the Services of the Service Provider's Key Personnel are described in Appendix C. The Key Personnel and Subcontractors listed by title as well as by name in Appendix C are hereby approved by the Employer.

4.2 Removal and/or Replacement of Personnel

- a) Except as the Employer may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Service Provider, it becomes necessary to replace any of the Key Personnel, the Service Provider shall provide as a replacement a person of equivalent or better qualifications.
- (b) If the Employer finds that any of the Personnel have (i) committed serious misconduct or have been charged with having committed a criminal action, or (ii) have reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Service Provider shall, at the Employer's written request specifying the grounds thereof, provide as a replacement a person with qualifications and experience acceptable to the Employer.
- (c) The Service Provider shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

5. Obligations of the Employer

5.1 Assistance and Exemptions

The Employer shall use its best efforts where legally warranted, to ensure that the Government shall provide the Service Provider such assistance and exemptions as **specified in the SCC.**

5.2 Change in the Applicable Law

If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost of the Services rendered by the Service Provider, then the remuneration and reimbursable expenses otherwise payable to the Service Provider under this Contract shall be increased or decreased accordingly by agreement between the Parties, and corresponding adjustments shall be made to the amounts referred to in Sub-Clauses 6.2 (a) or (b), as the case may be.

5.3 Services and Facilities

The Employer shall make available to the Service Provider the Services and Facilities listed under Appendix F.

6. Payments to the Service Provider

6.1 Lump-Sum Remuneration

The Service Provider's remuneration shall not exceed the Contract Price and shall be a fixed lump-sum including all Subcontractors' costs, and all other costs incurred by the Service Provider in carrying out the Services described in Appendix A. Except as provided in Sub-Clause 5.2, the Contract Price may only be increased above the amounts stated in Sub-Clause 6.2 if the Parties have agreed to additional payments in accordance with Sub-Clauses 2.4 and 6.3.

6.2 Contract Price

The price is payable in Indian Rupees and is **set forth in the SCC.**

- 6.3 Payment for Additional Services, and Performance Incentive Compensation
- 6.3.1 For the purpose of determining the remuneration due for additional Services as may be agreed under Sub-Clause 2.4, a breakdown of the lump-sum price is provided in Appendices D and E.
- 6.3.2 **If the SCC so specify,** the service provider shall be paid performance incentive compensation as set out in the Performance Incentive Compensation appendix.
- 6.4 Terms and Conditions of Payment

Payments will be made to the Service Provider according to the payment schedule **stated in the SCC**. **Unless otherwise stated in the SCC**, the advance payment (Advance for Mobilization, Materials and Supplies) shall be made against the provision by the Service Provider of a bank guarantee for the same amount, and shall be valid for the period **stated in the SCC**. Any other payment shall be made after the conditions **listed in the SCC** for such payment have been met, and the Service Provider have submitted an invoice to the Employer specifying the amount due.

6.5 Interest on Delayed Payments If the Employer has delayed payments beyond fifteen (15) days after the due date stated in the SCC, interest shall be paid to the Service Provider for each day of delay at the rate **stated in the SCC**.

6.6 Price Adjustment 6.6.1 Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC.** If so provided, the amounts certified in each payment certificate, after deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type indicated below applies to each Contract currency:

$P_c = A_c + B_c Lmc/Loc + C_c Imc/Ioc$

Where:

P_c is the adjustment factor for the portion of the Contract Price payable in a specific currency "c".

 A_c , B_c and C_c are coefficients **specified in the SCC**, representing: A_c the nonadjustable portion; B_c the adjustable portion relative to labor costs and C_c the adjustable portion for other inputs, of the Contract Price payable in that specific currency "c"; and

Lmc is the index prevailing at the first day of the month of the corresponding invoice date and Loc is the index prevailing 28 days before Bid opening for labor; both in the specific currency "c".

Imc is the index prevailing at the first day of the month of the corresponding invoice date and Ioc is the index prevailing 28 days before Bid opening for other inputs payable; both in the specific currency "c".

6.6.2 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

6.7 Dayworks

- 6.7.1 If applicable, the Daywork rates in the Service Provider's Bid shall be used for small additional amounts of Services only when the Employer has given written instructions in advance for additional services to be paid in that way.
- 6.7.2 All work to be paid for as Dayworks shall be recorded by the Service Provider on forms approved by the Employer. Each completed form shall be verified and signed by the Employer representative as indicated in Sub-Clause 1.6 within two days of the Services being performed.
- 6.7.3 The Service Provider shall be paid for Dayworks subject to obtaining signed Dayworks forms as indicated in Sub-Clause 6.7.2.

7. Quality Control

7.1 Identifying Defects

- 7.1.1 The principle and modalities of Inspection of the Services by the Employer shall be as **indicated in the SCC**. The Employer shall check the Service Provider's performance and notify him of any Defects that are found specifying a time by which these should be corrected. Such checking shall not affect the Service Provider's responsibilities. The Employer may instruct the Service Provider to search for a Defect and to uncover and test any service that the Employer considers may have a Defect. Defect Liability Period is as **defined in the SCC**.
- 7.1.2 The Service Provider shall permit the Employer's Technical auditor to check the Service provider's work and notify the Employer and Service provider of any defects that are found. Such a check shall not affect the Service Provider's or the

Employer's responsibility as defined in the Contract Agreement.

7.2 Correction of Defects, and Lack of Performance Penalty

- (a) The Employer shall give notice to the Service Provider of any Defects (specifying a time limit by which it should be corrected) before the end of the Contract. The Defects liability period shall be extended for as long as Defects remain to be corrected.
- (b) Every time notice a Defect is given, the Service Provider shall correct the notified Defect within the length of time specified by the Employer's notice.
- (c) If the Service Provider has not corrected a Defect within the time specified in the Employer's notice, the Employer will assess the cost of having the Defect corrected, the Service Provider will pay this amount, and a Penalty for Lack of Performance calculated as described in Sub-Clause 3.8.

8. Settlement of Disputes

8.1 Amicable Settlement

The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.

8.2 Dispute Settlement

- 8.2.1 If any dispute arises between the Employer and the Service Provider in connection with, or arising out of, the Contract or the provision of the Services, whether during carrying out the Services or after their completion, the matter shall be referred to the Adjudicator within 14 days of the notification of disagreement of one party to the other.
- 8.2.2 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.
- 8.2.3 The Adjudicator shall be paid at the per day rate **specified in the BDS and SCC**, together with reimbursable expenses of the types **specified in the SCC**, and the cost shall be divided equally between the Employer and the Service Provider, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision will be final and binding.
- 8.2.4 The arbitration shall be conducted in accordance with the arbitration procedure published by the institution named and in the place **shown in the SCC.**

The Arbitrator shall give a decision in writing within 120 days of start of the proceedings except otherwise agreed to by the Parties. The Arbitrators shall entertain only those issues which have been earlier referred to the Adjudicator and either party is dissatisfied with the decision given by the Adjudicator.

- 8.2.5 (a) The Adjudicator shall be appointed jointly by the Employer and the Service Provider, at the time of the Employer's issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the Employer does not agree on the appointment of the Adjudicator, the Employer will request the Appointing Authority **designated** in the SCC, to appoint the Adjudicator within 14 days of receipt of such request.
 - (b) The Adjudicator should be in position before "notice to proceed with work" is issued to the Service Provider and an agreement should be signed with the Adjudicator jointly by the Employer and the Service Provider in the form attached Appendix I.
 - (c) Should the Adjudicator resign or die, or should the Employer and the Service Provider agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator will be jointly appointed by the Employer and the Service Provider. In case of disagreement between the Employer and the Service Provider, within 30 days, the Adjudicator shall be designated by the Appointing Authority designated in the SCC at the request of either party, within 14 days of receipt of such request.

ATTACHMENT 1

Fraud and Corruption

(Text in this Attachment shall not be modified)

1. Purpose

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

- a. Defines, for the purposes of this provision, the terms set forth below as follows:
 - "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
 - iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
 - iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
 - v. "obstructive practice" is:
 - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

- b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank's Anti- Corruption Guidelines and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner; (ii) to be a nominated sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect³ all accounts, records and other documents relating to procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated subcontractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

Section IX - Special Conditions of Contract

Number of GCC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(a)	The Adjudicator is
1.1(e)	The Contract name is <i>DEVELOPMENT OF RIVER NAVIGATION APPLICATION (RIVER PILOT) FOR NATIONAL WATERWAYS</i>
1.1(h)	The Employer is Inland Waterways Authority of India, Ministry of Ports, Shipping & Waterways, Government of India
1.1(m)	The Member in Charge is
1.1(p)	The Service Provider is
1.4	The addresses are: Employer: Inland Waterways Authority of India Attention: Vice Chairman & Project Director. Telex: Facsimile: Email: vc@iwai.gov.in Service Provider: Attention: Telex: Facsimile: Facsimile:
1.6	Email: The Authorized Representatives are: For the Employer: Vice Chairman & Project Director. For the Service Provider:
2.1	The date on which this Contract shall come into effect is [Note: The date may be specified by reference to conditions of effectiveness of the Contract, such as approval of the Contract by the Bank, effectiveness of Bank Loan/IDA Credit, receipt by Service Provider of advance payment and by Employer of bank guarantee (see Sub-Clause 6.4), etc.]
2.2.2	The Starting Date for the commencement of Services is as per Scope of Work

Number of GCC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
2.3	As per Scope of Work.
2.6 (e)	New Clause
	Foreclosure of Contract in full or in part due to abandonment or reduction in scope of work
	If at any time after acceptance of the tender the authority decides abandon or reduce the scope of the works for reasons whatsoever and hence does not require the whole or any part of the works to be carried out, the Engineer-in-Charge shall give notice in writing to that effect to the contractor and the contractor shall have no claim to any payment to compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he could not derive in consequence of the foreclosure of the whole or part of the works.
3.2.3	Activities prohibited after termination of this Contract are:
	a) Unauthorized sharing / distribution of collected data
3.4	The risks and coverage by insurance shall be:
	(i) Third Party motor vehicle: <i>Not applicable</i> ;
	(ii) Third Party liability "in accordance with the applicable law in India"];
	(iii) Employer's liability and workers' compensation <u>in accordance with the applicable</u> <u>law in India";</u>
	(iv) Professional liability <u>limited to the value of contract</u> ;
	(v) Loss or damage to equipment and property limited to the value of contract;
3.5(d)	Operation and Maintenance of Application
3.7	Restrictions on the use of documents prepared by the Service Provider are:
	No data, analytics and report should be stored / used for any purpose without explicit permission of IWAI.
3.8.1	. If the contractor fails to complete any items of works as defined at SECTION-VII – Activity Schedule, Clause-19: Delivery Schedule (Scope of Work) within the period(s) of completion as stipulated in the aforesaid tender or any extended period (not due to the fault of the contractor) as may be agreed, he shall without prejudice to any other right or remedy of the Authority on account of such default, pay compensation (not by way of penalty) at the rate of 1/2 % (half percent) per week or part of the week on pro rata basis subject to a maximum of 10% of the total value of the contract and the same will be deducted from the RA Bills for not adhering with the deliverable while executing work in services for 5 years.
3.8.3	b. If the Contractor, having been notified, fails to remedy the defects (s) in accordance with the contract, the Authority may proceed to take such remedial action as may be necessary at the Contractor expense. The Contractor warranty pursuant to this clause is without

Number of GCC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract				
	1 .	to any other rights or remedie r under the contract.	es, which	the Authority	may have against the
3.9	New Clau	ise			
	of letter o	nce Security of 5% of the contract of award for a period of 28 days d replacements carried out by co	more tha	in the period of	-
	from eac	Proposit: A sum @ 10% of the ch running bill of the contract of 5% of the contract value of eposit.	ctor till	the sum wil	1 amount to security
		ormance security and security on of defect liability period.	deposit	would be re	leased after successful
5.1	The assist	ance and exemptions provided to	the Serv	vice Provider an	e: Nil
6.2	The amou	nt in Indian Rupees is		[insert a	mount].
6.3.2	The perfo	rmance incentive paid to the Ser	vice Prov	ider shall be: N	Not Applicable.
6.4	The rates quoted by the Service Provider shall be deemed to be inclusive of the GST and other taxes that the Service provider will have to pay for the performance of this Contract The Employer will perform such duties in regard to the deduction of such taxes at source [TDS] as per applicable law.		rmance of this Contract.		
	Payments shall be made according to the following stages on completion of works as per Scope of Work:				
	Deli	verables Schedule for	River	· Navigatio	n Application
	Sl.No. Milestones Deliverable (T=0 at issue of LoA) Payment Percentage		Payment Percentage		
Submit of Project Charter and Project Plan. D1 T+0.5 Months NA		NA			
Submission of Software Requirement Specifications (SRS), Master Design Document and Prototyping. D2 T+1 Months NA		NA			

Number of GCC Clause	Amendn	nents of, and Supplements to, C	lauses ir	the General (Conditions of Contract
	3	Cloud Data Centre Establishment, Software Development and Establishment of Control Centre at IWAI H.O. (Data Wall, Server and Resource Persons)	D3	T+3 Months	NA
	4	Unit Testing, Integrated Testing and User Acceptance Test (UAT).	D4	T+3.5 Months	60% of BOQ Sl No. 1
	5	Security Audit & Certification	D5	T+4.5 Months	NA
	6	Go-Live of River Navigational Application	D6	T+5 Months	40% of BOQ Sl No. 1
	7	Hosting the Application in Cloud Based Servers for five years	D7	Fortnightly	Payment will be made on Quarterly (3 Months) basis on BOQ Sl No. 2.
	8	Regular Upgradation, Maintenance & Enhancement of App for five years	D8	Fortnightly	Payment will be made on Quarterly (3 Months) basis on BOQ Sl No. 4.
	9	Resource Persons at IWAI H.O Control Centre for five years.	D9	Fortnightly	Payment will be made on Quarterly (3 Months) basis on BOQ Sl No. 3.

The supplier will furnish the invoice for as per Scope of Work and as per above payment stages. The respective Officer-in-Charge of the authority or their representative would certify the invoice within 15 days of receipt of invoice after checking the data.

Payment on account for amount admissible shall be made by the E-I-C certifying the sum to which the Supplier is considered entitled by way of payment for the payment stages on completion of works as per Scope of Work after deducting there from the amount already paid and such other amount as may be withheld / deductible or recoverable in terms of the contract.

Number of GCC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
	All the payments shall be made in Indian Rupees only and shall be subject to applicable
	Indian Laws for withholding taxes, if any.
	Note: All the payments shall be made by IWAI Noida.
	The "Authority" may terminate this contract at any time for unsatisfactory performance by the Contractor (s), for which "AUTHORITY" shall inform in writing and a proportionate amount, if any, shall be payable for that part of the supply only.
6.5	Payment shall be made within 30 days of receipt of the invoice and the relevant documents specified in Sub-Clause 6.4, and within 60 days in the case of the final payment.
	The interest rate is 6.65% per annum.
6.6.1	Price adjustment is <i>not to be applied</i> in accordance with Sub-Clause 6.6.
7.1	The principle and modalities of inspection of the works by the Employer are as follows:
	 a. The Engineer-in-charge or his representative may inspect, co-ordinate, and certify the work. He has the right to inspect at any time during the contract period for inspection. b. Inspection of the works and data quality check may be carried out by the third party. c. One copy of the Contract furnished to the successful Bidder as aforesaid shall be kept by the successful Bidder and the same shall at all reasonable time be available for inspection and use by the 'IWAI" or his representative or by other Inspecting officers of the IWAI. d. The contractor shall provide all assistance and adhere to the instruction of E.I.C/Engineer during the course of surveying, inspection, etc. e. Periodic inspection will be carried out by the EIC or his representative by suitable means. The contractor can have the inspection schedules finalized with the Engineer-in-charge. Generally, all attempts should be made to have joint inspection and number of inspections be not less than three. f. The Defects Liability Period is 3 months from the expiry of the contract.
8.2.3	The agreed Adjudicator is
	Daily rate and types of reimbursable expenses to be paid to the Adjudicator: [insert daily fees [not less than Rs.10,000 per day] and reimbursable expenses — boarding/lodging/travel etc.].
8.2.4	The procedure for adhoc arbitration will be as follows:
	(a) In case of Dispute or difference arising between the Employer and a Service Provider relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 Arbitrators one each

Number of GCC Clause	Ame	endments of, and Supplements to, Clauses in the General Conditions of Contract
		to be appointed by the Employer and the Service Provider. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding Arbitrator. In case of failure of the two Arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the Arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the* Indian Council of Arbitration/ President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India).
	(b)	If one of the parties fails to appoint its Arbitrator in pursuance of sub-clause (a) and (b) above within 30 days after receipt of the notice of the appointment of its Arbitrator by the other party, then the *Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India), shall appoint the Arbitrator. A certified copy of the order of the* Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India), making such an appointment shall be furnished to each of the parties.
	(c)	Arbitration proceedings shall be held at Delhi India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
	(d)	The decision of the majority of Arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings as also the fees and expenses paid to the Arbitrator appointed by such party or on its behalf shall be borne by each party itself.
	(e)	Where the value of the contract is Rs.50 million and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority, namely the * Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India).
	(f)	The Arbitrator should give final award within days of starting of the proceedings [indicate the days (Between 120-180) by which arbitrator should give award].
	(g)	Performance under the contract shall continue during the arbitration proceedings and payments due to the Service Provider by the Employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.

Number of GCC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
	* Choose one alternative. Insert any other appropriate institution depending on the type of Services.
	Alternatively
	[Apart from the adhoc arbitration services obtained through mutually agreed Arbitrator(s) as above, Institutional arbitration services are also available in India. Institutional arbitration (and mediation) dispute resolution mechanisms can be gainfully used, preferably for relatively larger contracts. Following clause may be included, if it is decided to use Institutional Services for arbitration for resolution of disputes, and in such a case other clauses related to Arbitration/ Arbitrator would be deleted. In the sample clause below, substitute the reference to 'Rules of Domestic Commercial Arbitration of the Indian Council of Arbitration' by the specific institution that is sought to be engaged e.g. The International Centre for Alternative Dispute Resolution (ICADR), The Indian Institute of Arbitration and Mediation (IIAM), Indian Chamber's Council of Arbitration, Delhi International Arbitration Centre (DAC), Construction Industry Arbitration Council (CIAC), Council for National and International Commercial Arbitration, London Court of International Arbitration (India Centre) or the like.]
	"Any dispute or difference whatsoever arising between the parties out of or relating to the construction, meaning, scope, operation or effect of this contract or the validity or the breach thereof shall be settled by arbitration in accordance with the Rules of Domestic Commercial Arbitration of the Indian Council of Arbitration and the award made in pursuance thereof shall be binding on the parties.
	The arbitral tribunal shall consist of 3 Arbitrators, arbitration proceedings shall be held at, India and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English". [ICA rules provide for arbitration tribunal of 3 arbitrators if the value of claim is over Rs 1 crore unless the parties have agreed otherwise for a sole arbitrator].
8.2.5 (a) and (c)	The designated Appointing Authority for a new Adjudicator is
	[Note: if ITB 49 provides for an Adjudicator from list provided by an Institution, insert the name of the same institution as the appointing authority]

Appendices

Appendix A - Description of the Services

Give detailed descriptions of the Services to be provided, dates for completion of various tasks, place of performance for different tasks, specific tasks to be approved by Employer, etc.

Appendix B - Schedule of Payments and Reporting Requirements

List all milestones for payments and list the format, frequency, and contents of reports or products to be delivered; persons to receive them; dates of submission; etc. If no reports are to be submitted, state here "Not applicable."

Appendix C - Key Personnel and Subcontractors

- List under:
- C-1 Titles [and names, if already available], detailed job descriptions and minimum qualifications of Key Personnel to be assigned to work, and staffmonths for each.
- C-2 List of approved Subcontractors (if already available); same information with respect to their Personnel as in C-1 above.

Appendix D—Breakdown of Contract Price in Foreign Currency(ies) – Not Used

Appendix E - Breakdown of Contract Price in Indian Rupees

List here the elements of cost used to arrive at the breakdown of the lump-sum price:

- 1. Rates for Equipment Usage or Rental or for Personnel (Key Personnel and other Personnel).
- 2. Reimbursable expenditures.

This appendix will exclusively be used for determining remuneration for additional Services.

Appendix F - Services and Facilities Provided by the Employer

Appendix G - Performance Incentive Compensation Appendix- Not Applicable

Performance Incentive Compensation Appendix Provisions

ARTICLE 1- GENERAL

1.1 Documents Comprising the Performance Incentive Compensation Appendix

The Performance Incentive Compensation Appendix consists of:

- (a) the Performance Incentive Compensation Appendix Provisions;
- (b) Attachment #1G Incentive Compensation Calculation Procedure Notes; and
- (c) Attachment #2G Incentive Compensation Charts 1-[].

ARTICLE 2- THE PERFORMANCE INCENTIVE COMPENSATION

2.1 Performance Incentive Compensation Limits

- (1) The Performance Incentive Compensation paid to the Service Provider shall not exceed Rs [] over the term of the Contract.
- (2) The actual amount paid to the service Provider as Performance Incentive Compensation shall be determined by the extent to which the Service Provider achieves the performance criteria set out in the Incentive Compensation Charts and by the application of the calculations set out in the Incentive Calculation Procedure Notes for the applicable Contract Year.
- (3) If the Service Provider fails to meet the "Excellent" rating set out in the Incentive Compensation Chart, in any Contract Year, the Service Provider will be obliged to make up the shortfall in the subsequent Contract Year, as well as meet the performance targets for that Contract Year.
- (4) Except as the Employer may, in its sole discretion, otherwise determine based on exceptional circumstances, if the Service Provider fails to attain the Maximum Annual Incentive Compensation in any Contract Year, the shortfall will not be available to the Service Provider in the subsequent Contract Years and Rs [] per Contract Year maximum will not be increased.

ATTACHMENT # 1G – APPENDIX G INCENTIVE COMPENSATION CALCULATION PROCEDURE NOTES

[SAMPLE: This part is to be designed on a case by case approach]

PART A THE METHOD FOR CALCULATING PERFORMANCE INCENTIVE COMPENSATION IN EACH CONTRACT YEAR

I. The Performance Incentive Compensation for each Contract Year shall be calculated as follows:

Compensation = Composite Score × 0.2 × Maximum Annual Incentive Compensation

Where:

- (i) The Maximum Annual Incentive Compensation is calculated as set out in Section 2.1 of the Performance Incentive Compensation Appendix Provisions; and
- (ii) The Composite Score is calculated in accordance with "Part B-The Method for Calculating the Composite Score" of these Incentive Compensation Calculation Procedure Notes.

PART B THE METHOD FOR CALCULATING THE COMPOSITE SCORE

1. The Composite Score for each Contract Year shall be as follows:

Composite Score Total of All Weighted Scores for the Performance Criteria

Where:

- (i) The Weighted Score for each Performance Criterion equals Criterion Weight x Criterion Value;
- (ii) The Criterion Value is measured from "Excellent" to "Poor" with corresponding values of 5 (for "Excellent" performance) to I (for "Poor" performance) as set out in the Incentive Compensation Charts and evaluated based on the performance of the Service Provider;
- (iii) The Criterion Value which the Operator receives for any Performance Criterion is based upon the technical standards set out in the Incentive Compensation Charts under the headings, "Excellent", "Very Good", "Good", "Fair", and "Poor" as compared against the Operator's actual technical standards in each Contract Year; and
- (iv) If the Service Provider's actual performance in a Contract Year,
 - (a) exceeds the technical standards for an "Excellent" Criterion Value, then the Criterion Value shall be 5;
 - (b) is less than the technical standards for a "Poor" Criterion Value, then the Criterion Value shall be zero; or
 - (c) is in between the technical standards for two Criterion Values, then the Criterion

Value shall be rounded down to the nearest whole number or 0.5 decimal point.

- 2. For the purpose of clarity, it is noted that there are only ten Criterion Values to be used as follows: 0, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5 and 5.
- 3. Notwithstanding paragraphs 1 and 2 above, with respect to the Performance Criterion relating to institutional improvements in Attachment #2G The Incentive Compensation Charts 1-8,
 - (a) if the Service Provider's actual performance in a Contract Year is less than the technical standard for a "Fair" Criterion Value, then the Criterion Value shall be zero;
 - (b) for the purpose of clarity, it is noted that there are only three Criterion Values to be used as follows: 0, 2 and 5; and
 - (c) each of the documents or plans listed under the Performance Criterion shall be scored with the appropriate Criterion Value and a mean average score will be taken to calculate the Criterion Value for the Performance Criterion, which shall be rounded down to the nearest whole point or 0.5 decimal point.
- 4. For ease of reference, the following calculation represents the calculation of the Composite Score for a hypothetical Service Provider for four performance criteria in one Contract Year.

Sample Incentive Compensation Chart

			Criterion Values				
Performance Criterion		Units	Weight				
			Excellent	Very	Good	Fair	Poor
				Good			
1.	e.g. Electricity use [%	0.30	65	55	50	40	30
	reduction in kW. hr						
	consumed from Base Year]						
2	[Criterion 2] []	0.25	20	19	17	16	15
3.	[Criterion 3] []	0.15	30	25	20	15	10
4.	[Criterion ~] []	0.30	90	85	80	75	70

The following table demonstrates the procedure for the calculation of the "Composite Score", if at the end of the year the achievements of the Service Provider are as follows:

1.	[e.g. Electricity use]	57
2.	[Criterion 2]	22
3.	[Criterion 3]	29
4.	[Criterion 4]	69

Performance Incentive Compensation Appendix

Chart 1
Performance Incentive Obligations
Year [1]

Services				Criterion Values				
Apndx. Ref.	Performance Criterion	Units	Weight	Excellent 5	Very Good 4	Good 3	Fair 2	Poor 1
	[Development of Plans and Programs ¹]	Quality and Timeliness	[0 45]	Completed on time with no need for revision to the substance of the document	N/A	N/A	Completed on time but requires revision to the substance of the document	N/A
	[Energy Management]	% reduction of kilowatt hours of electricity per unit produced from Base Year	[0.25]	4	3.5	3	2.5	2
	[Computerized Billing and Collection System]	number of days after the Starting Date until the computerized billing and collection system is in place	[0.30]	140	150	160	170	180

[Note: The chart is a sample only.]

(1) In respect of the Plans and Programs each plan or program listed in Section [•] shall be given a score of either 5 (Excellent), 2 (Fair) or (0) and the average score for all plans and programs shall be multiplied by the Criteria Weight. The average score shall be rounded to the nearest .5 decimal.

Appendix H

Salient Features of Labour & Environment Protection Laws¹

SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK

- (a) <u>Employees Compensation Act 1923</u>: The Act provides for compensation in case of injury, disease or death arising out of and during the course of employment.
- (b) Payment of Gratuity Act 1972: gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years' service or more or on death at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- (c) Employees P.F. and Miscellaneous Provision Act 1952 (since amended): The Act provides for monthly contribution by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are:
 - (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in harness of the worker.
 - (iii) Payment of P.F. accumulation on retirement/death etc.
- (d) <u>Maternity Benefit Act 1961</u>: The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- (e) Sexual Harassment of Women at the Workplace (Prevention, Prohibition and Redressal) Act, 2013: This Act defines sexual harassment in the workplace, provides for an enquiry procedure in case of complaints and mandates the setting up of an Internal Complaints Committee or a Local Complaints Committee
- (f) Contract Labour (Regulation & Abolition) Act 1970: The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labour.

¹ This list is only illustrative and not exhaustive. Bidders and Contractors are responsible for checking the correctness and completeness of the list. The law as current on the date of bid opening will apply. The term 'contractor' also means 'Service Provider' referred to at other places in this bidding document.

- (g) <u>Minimum Wages Act 1948</u>: The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employments.
- (h) <u>Payment of Wages Act 1936</u>: It lays down the mode, manner and by what date the wages are to be paid, what deductions can be made from the wages of the workers.
- (i) Equal Remuneration Act 1976: The Act provides for payment of equal wages for work of equal nature to male and female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.
- (j) Payment of Bonus Act 1965: The Act is applicable to all establishments employing 20 or more employees. Some of the State Governments have reduced this requirement from 20 to 10. The Act provides for payments of annual bonus subject to a minimum of 8.33% of the wages drawn in the relevant year. It applies to skilled or unskilled manual, supervisory, managerial, administrative, technical or clerical work for hire or reward to employees who draw a salary of Rs. 10,000/per month or less. To be eligible for bonus, the employee should have worked in the establishment for not less than 30 working days in the relevant year. The Act does not apply to certain establishments.
- (k) <u>Industrial Disputes Act 1947</u>: the Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations, a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- (l) <u>Trade Unions Act 1926</u>: The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.
- (m) <u>Child Labour (Prohibition & Regulation) Act 1986</u>: The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in the Building and Construction Industry.
- (n) <u>Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979</u>: The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home upto the establishment and back, etc.

- (o) The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Building and Other Construction Workers Welfare Cess Act, 1996 (BOCWW Cess Act): All the establishments who carry on any building or other construction work and employ 10 or more workers are covered under these Acts. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be notified by the Government. The Employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as Canteens, First Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.
- (p) Factories Act 1948: the Act lays down the procedure for approval of plans before setting up a factory engaged in manufacturing processes, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power.
- (q) Weekly Holidays Act -1942
- (r) <u>Bonded Labour System (Abolition) Act, 1976</u>: The Act provides for the abolition of bonded labour system with a view to preventing the economic and physical exploitation of weaker sections of society. Bonded labour covers all forms of forced labour, including that arising out of a loan, debt or advance.
- (s) Employer's Liability Act, 1938: This Act protects workmen who bring suits for damages against employers in case of injuries endured in the course of employment. Such injuries could be on account of negligence on the part of the employer or persons employed by them in maintenance of all machinery, equipment etc. in healthy and sound condition.
- (t) Employees State Insurance Act 1948: The Act provides for certain benefits to insured employees and their families in case of sickness, maternity and disablement arising out of an employment injury. The Act applies to all employees in factories (as defined) or establishments which may be so notified by the appropriate Government. The Act provides for the setting up of an Employees' State Insurance Fund, which is to be administered by the Employees State Insurance Corporation. Contributions to the Fund are paid by the employer and the employee at rates as prescribed by the Central Government. The Act also provides for benefits to dependents of insured persons in case of death as a result of an employment injury.
- (u) <u>The Personal Injuries (Compensation Insurance) Act, 1963</u>: This Act provides for the employer's liability and responsibility to pay compensation to employees where workmen sustain personal injuries in the course of employment.

(v) <u>Industrial Employment (Standing Order) Act 1946</u>: It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.

SALIENT FEATURES OF SOME OF THE MAJOR LAWS THAT ARE APPLICABLE FOR PROTECTION OF ENVIRONMENT.

- 1. The Environment (Protection) Act, 1986 and as amended: This provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.
- 2. The Forest Conservation Act, 1980, as amended, and Forest (Conservation) Rules, 1981 as amended: These provides for protection of forests by restricting conversion of forested areas into non- forested areas and prevention of deforestation, and stipulates the procedures for cutting any trees that might be required by the applicable rules. Permissions under the Act also stipulates the norms and compliance requirements of the employer and any contractor on behalf of the employer.
- 3. State Tree Preservation Acts as may be in force: These provide for protection of trees of important species. Contractors will be required to obtain prior permission for full or partial cutting, uprooting, or pruning of any such trees.
- 4. The Wildlife (Protection) Act, 1972, and as amended: This provides for protection of wildlife through notifying National Parks and Sanctuaries and buffer areas around these zones; and to protect individuals of nationally important species listed in the Annex of the Act.
- 5. The Biological Diversity Act, 2002: This provides for conservation of biological diversity, sustainable use of components of biological diversity, and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith or incidental thereto.
- 6. The Public Liability Insurance Act, 1991 as amended and The Public Liability Insurance Rules, 1991 as amended: These provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for mattes connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.
- 7. The Ancient Monuments and Archaeological Sites and Remains Act, 1958 and the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010, the Ancient Monuments and Archaeological Sites and Remains Rules, 1959 amended 2011, the National Monuments Authority Rules, 2011 and the similar State Acts: These provide for conservation of cultural and historical remains found in India. Accordingly, area within the radii of 100m and 300m from the "protected property" are designated as "protected area" and "controlled area" respectively. No development activity (including building, mining, excavating, blasting) is permitted in the "protected area" and development activities likely to damage the protected property is not permitted in the "controlled area" without prior

permission of the Archaeological Survey of India (ASI) or the State Departments of Art and Culture or Archaeology as applicable.

- 8. The Environmental Impact Assessment Notification, 2006 and as amended: This provides for prior environmental clearance for new, modernization and expansion projects listed in Schedule 1 of the Notification. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any environmental management plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.
- 9. The Water (Prevention and Control of Pollution) Act, 1974 as amended, and the Water (Prevention and Control of Pollution) Rules, 1975 as amended: These provide for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water(whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms. Contractors will need to obtain consent for establishment and consent for operation of any item of work or installation of equipment that generates waste water, and observe the required standards of establishment and operation of these items of work or installations; as well as install and operate all required waste water treatment facilities.
- 10. The Water (Prevention and Control of Pollution) Cess Act, 1977 and The Water (Prevention and Control of Pollution) Cess Rules, 1978: These provide for the levy and collection of a cess on water consumed by persons carrying on certain industries and by local authorities, with a view to augment the resources of the Central Board and the State Boards for the prevention and control of water pollution under the Water (Prevention and Control of Pollution) Act, 1974.
- 11. The Air (Prevention and Control of Pollution) Act, 1981 as amended, and the Air (Prevention and Control of Pollution) Rules, 1982: These provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment. Contractors will need to obtain consent for establishment and consent for operation of any item of work or installation of equipment that generates air pollution such as batching plants, hot mix plants, power generators, backup power generation, material handling processes, and observe the required standards of establishment and operation of these items of work or installations.
- 12. Noise Pollution (Control and Regulation) Rules, 2000, and as amended: This provides for standards for noise for day and night for various land uses and specifies special standards in and around sensitive receptors of noise such as schools and hospitals. Contractors will need

- to ensure compliance to the applicable standards, and install and operate all required noise control devices as may be required for all plants and work processes.
- 13. Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996: This provides for Requirement of preparation of on-site and off-site Disaster Management Plans for accident-prone areas.
- 14. The Explosives Act 1884 and the Explosives Rules, 2008: These provide for safe manufacture, possession, sale, use, transportation and import of explosive materials such as diesel, Oil and lubricants etc.; and also for regulating the use of any explosives used in blasting and/or demolition. All applicable provisions will need compliance by the contractors.
- 15. The Petroleum Rules, 2002: This provides for safe use and storage of petroleum products, and will need to be complied by the contractors.
- 16. The Gas Cylinder Rules 2004 and amendments: This provides for regulations related to storage of gas, and possession of gas cylinder more than the exempted quantity. Contractors should comply with all the requirements of this Rule.
- 17. Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 and as amended: These provide for use and storage of hazardous material such as highly inflammable liquids like HSD/LPG. Contractors will need to ensure compliance to the Rules; and in the event where the storage quantity exceeds the regulated threshold limit, the contractors will be responsible for regular safety audits and other reporting requirements as prescribed in the Rules.
- 18. Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016: These provide for protection of general public from improper handling storage and disposal of hazardous waste. The rules prescribe the management requirement of hazardous wastes from its generation to final disposal. Contractors will need to obtain permission from the State Pollution Control Boards and other designated authorities for storage and handling of any hazardous material; and will to ensure full compliance to these rules and any conditions imposed in the permit.
- 19. The Bio Medical Waste Management Rules, 2016: This provides for control, storage, transportation and disposal of bio-medical wastes. As and where the contractor has any first aid facility and dispensaries, established in either temporary or permanent manner, compliance to these Rules are mandatory.
- 20. Construction and Demolition Waste Management Rules, 2016: This provides for management of construction and demolition waste (such as building materials possible to be reused, rubble and debris or the like); and applies to all those waste resulting from construction, re-modelling, repair or demolition of any civil structure. Contractor will need to prepare a waste disposal plan and obtain required approval from local authorities, if waste generation is more than 20 tons in any day or 300 tons in any month during the contract period; and ensure full compliance to these rules and any conditions imposed in the regulatory approval.

- 21. The E-Waste (Management) Rules, 2016: This provides for management of E-wastes (but not covering lead acid batteries and radio-active wastes) aiming to enable the recovery and/or reuse of useful material from e-waste, thereby reducing the hazardous wastes destined for disposal and to ensure the environmentally sound management of all types of waste of electrical and electronic equipment. This Rule applies to every manufacturer, producer, consumer, bulk consumer, collection centers, dealers, e-retailer, refurbisher, dismantler and recycler involved in manufacture, sale, transfer, purchase, collection, storage and processing of e-waste or electrical and electronic equipment listed in Schedule I, including their components, consumables, parts and spares which make the product operational.
- 22. Plastic waste Management Rules, 2016: This provides for control and management of the plastic waste generated from any activity. Contractors will ensure compliance to this Rule.
- 23. The Batteries (Management and Handling) Rules 2001: This provides for ensuring safe disposal and recycling of discarded lead acid batteries likely to be used in any equipment during construction and operation stage. Rules require proper control and record keeping on the sale or import of lead acid batteries and recollection of the used batteries by registered recyclers to ensure environmentally sound recycling of used batteries. Contractors will ensure compliance to this Rule.
- 24. The Ozone Depleting Substances (Regulation and Control) Rules, 2000 and as amended: This provides for regulation of production and consumption of ozone depleting substances in the country, and specifically prohibits export to or import from countries not specified in the Rules, and prohibits unless specifically permitted, any use of ozone depleting substance.
- 25. The Coastal Regulation Zone Notifications, 1991 and as amended: This provides for regulation of development activities within the 500m of high tide line in coastal zone and 100m of stretches of rivers and estuaries influenced by tides. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.
- 26. The Motor Vehicle Act 1988 as amended (and State Motor Vehicle Acts as may be in force) and the Motor Vehicle Rules, 1989, and as amended (and State Motor Vehicle Rules as may be in force): To minimize the road accidents, penalizing the guilty, provision of compensation to victim and family and check vehicular air and noise pollution. Contractors will be required to ensure full compliance to these rules.
- 27. Easement Act, 1882: This provides for the rights of landowners on groundwater. Contractors will need to ensure that other landowners' rights under the Act is not affected by any groundwater abstraction by the contractors.
- 28. State Groundwater Acts and Rules as may be in force and the Guidelines for Groundwater Abstraction for drinking and domestic purposes in Notified Areas and Industry/Infrastructure project proposals in Non-Notified areas, 2012: These provide for regulating extraction of

- ground water for construction/industrial and drinking and domestic purposes. Contractors will need to obtain permission from Central/State Groundwater Boards prior to groundwater abstraction through digging any bore well or through any other means; and will to ensure full compliance to these rules and any conditions imposed in the permit.
- 29. The Mines Act, 1952 as amended; the Minor Mineral and concession Rules as amended; and the State Mineral (Rights and Taxation) Acts as may be in force: These provide for for safe and sound mining activity. The contractors will procure aggregates and other building materials from quarries and borrow areas approved under such Acts. In the event the contractors open any new quarry and/or borrow areas, appropriate prior permission from the State Departments of Minerals and Geology will need to be obtained. Contractors will also need to ensure full compliance to these rules and any conditions imposed in the permit.
- 30. The Insecticides Act, 1968 and Insecticides Rules, 1971 and as amended: These provide for regulates the manufacture, sale, transport, distribution, export, import and use of pesticides to prevent risk to human beings or animals, and for matters connected therewith. No one should import or manufacture; sell, stock or exhibit foe sale; distribute, transport, use: (i) any misbranded insecticides, (ii) any insecticide the sale, distribution or use of which is for the time being prohibited under the Act; and (iii) any insecticide except in accordance with the condition on which it was registered under the Act.
- 31. National Building Codes of India, 2005 and as amended: This provides guidelines for regulating the building construction activities in India. The code mainly contains administrative regulations, development control rules and general building requirements; stipulations regarding materials, structural design and construction; and building and plumbing services. Contractors will be required to comply with all Bureau of Indian Standards Codes dealing with: (i) use and disposal of asbestos containing materials in construction; (ii) paints containing lead; (iii) permanent and temporary ventilations in workplace; (iv) safety, and hygiene at the workplace; (v) prevention of fire; (vi) prevention of accidents from faulty electrical gadgets, equipment and accessories; and all other such codes incidental to the Contract.

Appendix I-Appointment of Adjudicator

Suggested Draft of Letter of Appointment of Adjudicators in contracts		
Sub:	(Name of the Contract)	
То		
Name and address of the Adjudicato	r	
We hereby confirm your appointment assignment specified in this Letter of	nt as adjudicator for the above contract to carry out the f Appointment.	
relevant information needed to carry	(name of the officer representing the inister the assignment and to provide the Adjudicator with all out the assignment on behalf of both the employer and the be required during the period of contract for the Services	
indicated above or as specifically recent of defects liability period with p The duration of each visit shall ordin	nce in 3 (three) months till the completion of the Services quested by employer/service provider for the period upto the rior intimation to the employer and the service provider. narily be for one day only. These durations are approximate the of the Service Provider) may find it necessary to postpone ten or extend the duration.	
Adjudicator shall be liable for terminissue of the notice, if both Employer	ive upon confirmation of letter by you. The appointment of nation under a 30 (thirty) days written notice from the date of and the Service Provider so desire. Also the appointment 14 days after the defect notice / correction period as stated	
visit at the worksite. The actual expassignment will be reimbursed to the bill in triplicate to the employer indisupport of the actual expenditure[on against boarding, lodging and travelithe Employer will make the admissiprovider's share) to the Adjudicator	f Rs (Rupees only) per each day of enses for boarding and traveling in connection with the e Adjudicator. The Adjudicator will submit a pre-receipted cating the date of the visit, fees for the visit and a proof in ly for items valued above Rs200 each) incurred by him ing expenses after performing the visit on each occasion. ible payment (both the Employer's and the Service within 30 days of the receipt of the bill. The Service of the paid amount) will be recovered by the Employer from ervices	

In accepting this assignment, the Adjudicator should understand and agree that he is responsible for any liabilities and costs arising out of risks associated with travel to and from the place of emergency repatriation, loss or damage to personal/professional effects and property. The Adjudicator is advised to effect personal insurance cover in respect of such risks if he does not already have such cover in place. In this regard, the Adjudicator shall maintain appropriate medical, travel, accident and third-party liability insurance. The obligation under this paragraph will survive till termination of this appointment.

Procedures for resolution of disputes by the Adjudicator is described in the contract of ______ (name of the contract) between the employer and the Service Provider vide clause 8 of GCC/SCC. Your recommendation should be given in the format attached, within 28 days of receipt of a notification of dispute.

The Adjudicator will carry out the assignment in accordance with the highest standard of professional and ethical competence and integrity, having due regard to the nature and purpose of the assignment, and will conduct himself in a manner consistent herewith. After visiting the site, the Adjudicator will discuss the matter with the Employer and if necessary with the Service Provider before arriving at any decision.

The Adjudicator will agree that all knowledge and information not within the public domain, which may be acquired while carrying out this service shall be all time and for all purpose, regarded as strictly confidential and held in confidence, and shall not be directly or indirectly disclosed to any party whatsoever, except with the permission of the employer and the Service Provider. The Adjudicator's decision should be communicated in the form of a speaking order specifying the reasons.

The Adjudicator will agree that any manufacturing or construction or consulting firm with which he might be associated with, will not be eligible to participate in bidding for any goods or works or non-consulting or consulting services resulting from or associated with the project of which this non-consulting assignment forms a part

Read and Agreed Name of Adjudicator Signature

Place:

Date:

Name of Employer Signature of authorized representative of Employer

Name of the Service Provider Signature of authorized representative of Service Provider

Attachment: Copy of contract document between the employer and Service Provider and format for recommendation.

SUMMARY OF ADJUDICATOR'S RESPONSIBILITIES

The Adjudicator has the following principal responsibilities:

- 1. Visit the site periodically.
- 2. Keep abreast of job activities and developments.
- 3. Encourage the resolution of disputes by the parties.
- 4. When a dispute is referred to it, conduct a hearing (no legal presentation), complete its deliberations, and prepare recommendations in a professional and timely manner (as per sample format)

Sample Format of Adjudicator's Recommendation

[Project Name] Recommendation of Adjudicator

Dispute No. XX [NAME OF DISPUTE] Hearing Date:			
Dispute			
Description of dispute. A one or two sentence summation of the dispute.			
Service Provider's Position			
A short summation of the Service Provider's position as understood by the Adjudicator.			
Employer's Position			
A short summation of the Employer's position as understood by the Adjudicator.			
Recommendation			
The Adjudicator's specific recommendation for settlement of the dispute. (<i>The recommended course is consistent with the explanation</i>).			
Explanation			
(This section could also be called Considerations, Rationale, Findings, Discussion, and so on.)			
The Adjudicator's description of how each recommendation was reached.			
Respectfully submitted,			
Date:			
Date:			
Date:			

Section X - Contract Forms

Table of Forms

- 1. Letter of Acceptance
- 2. Form of Contract
- 3. Issue of Notice to proceed with the Services
- 4. Performance Security
- 5. Advance Payment Security

Notification of Award - Letter of Acceptance

[letterhead paper of the Employer]

[The Letter of Acceptance shall be the basis for formation of the Contract as described in ITB Clause 45. This Standard Form of Letter of Acceptance shall be filled in and sent to the successful Bidder only after evaluation of bids has been completed, subject to any review by the World Bank required under the Loan Agreement.]

[date]

Identification No and Title of Contract: [insert identification number and title of the Contract]

To: [name and address of the Service Provider]

This is to notify you that your Bid dated [date] for execution of the [name of the Contract and identification number, as given in the Special Conditions of Contract] for the Contract Price of Rs..... [insert amount in numbers and words], as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

We have reviewed the proposed methodology submitted by you along with the bid in response to ITB Clause 5.1 and our comments are given in the attachment. You are requested to submit a revised Program as per Clause 2.2.of General Conditions of Contract within 14 days of receipt of this letter of acceptance.

Note: Insert one of the 3 options for the second paragraph. The first option should be used if the Bidder has not objected to the name proposed for Adjudicator. The second option if the Bidder has objected to the proposed Adjudicator and proposed a name for a substitute, who was accepted by the Employer. And the third option if the Bidder has objected to the proposed Adjudicator and proposed a name for a substitute, who was not accepted by the Employer.

We confirm that [insert name proposed by Employer in the Bid Data Sheet] be appointed as the Adjudicator,

or

¹ Delete "as corrected and modified" if not applicable.

We accept that [name proposed by Bidder] be appointed as the Adjudicator

or

We do not accept that [name proposed by Bidder] be appointed as Adjudicator, and by sending a copy of this letter of acceptance to [insert the name of the Appointing Authority], we are hereby requesting [name], the Appointing Authority, to appoint the Adjudicator in accordance with ITB 49.1

We note that as per your bid, you do not intend to subcontract any component of services.

[OR]
We note that as per your bid, you propose to employ M/s
Authorized Signature:

Attachment: Contract

Form of Contract

[letterhead paper of the Employer]

LUMP-SUM REMUNERATION

This CONTRACT (hereinafter called the "Contract") is made the [day] day of the month of [month], [year], between, on the one hand, [name of Employer] (hereinafter called the "Employer") and, on the other hand, [name of Service Provider] (hereinafter called the "Service Provider").

[Note: In the text below text in brackets is optional; all notes should be deleted in final text. If the Service Provider consist of more than one entity, the above should be partially amended to read as follows: "...(hereinafter called the "Employer") and, on the other hand, a joint venture consisting of the following entities, each of which will be jointly and severally liable to the Employer for all the Service Provider's obligations under this Contract, namely, [name of Service Provider] and [name of Service Provider] (hereinafter called the "Service Provider").]

WHEREAS

- (a) the Employer has requested the Service Provider to provide certain Services as defined in the General Conditions of Contract attached to this Contract (hereinafter called the "Services");
- (b) the Service Provider, having represented to the Employer that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract at a contract price of Rs;
- (c) the Employer has received [or has applied for] a loan from the International Bank for Reconstruction and Development (hereinafter called the "Bank") [or a credit from the International Development Association (hereinafter called the "Association")] towards the cost of the Services and intends to apply a portion of the proceeds of this loan [or credit] to eligible payments under this Contract, it being understood (i) that payments by the Bank [or Association] will be made only at the request of the Employer and upon approval by the Bank [or Association], (ii) that such payments will be subject, in all respects, to the terms and conditions of the agreement providing for the loan [or credit], and (iii) that no party other than the Employer shall derive any rights from the agreement providing for the loan [or credit] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

- 1. The following documents shall be deemed to form and be read and construed as part of this Agreement, and the priority of the documents shall be as follows:
 - (a) the Letter of Acceptance;
 - (b) the Service Provider's Bid
 - (c) the Special Conditions of Contract;

- (d) the General Conditions of Contract;
- (e) the Specifications;
- (f) the Priced Activity Schedule; and
- (g) The following Appendices: [Note: If any of these Appendices are not used, the words "Not Used" should be inserted below next to the title of the Appendix and on the sheet attached hereto carrying the title of that Appendix.]

Appendix A: Description of the Services

Appendix B: Schedule of Payments

Appendix C: Key Personnel and Subcontractors

Appendix D: Breakdown of Contract Price in Foreign Currency (Not used)

Appendix E: Breakdown of Contract Price in Local Currency

Appendix F: Services and Facilities Provided by the Employer

Appendix G: Performance Incentive Compensation

- 2. The mutual rights and obligations of the Employer and the Service Provider shall be as set forth in the Contract, in particular:
 - (a) the Service Provider shall carry out the Services in accordance with the provisions of the Contract; and
 - (b) the Employer shall make payments to the Service Provider in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of [name of Employer]

[Authorized Representative]	
For and on behalf of [name of Service Provider]	
[Authorized Representative]	

[Note: If the Service Provider consists of more than one entity, all these entities should appear as signatories, e.g., in the following manner:]

For and on behalf of each of the Members of the Service Provider

[Authorized Representative]

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Issue of Notice to proceed with the Services (letterhead of the Employer)

			(date)
То			
	(name and address of	f the Service Provider)	
Dear Sirs:			
insurance policy as per GCC 3.4, contract agreement for providing	methodology as stated in the Services of	at a Bid Price of	ng of the
Rs, you are hereby accordance with the contract doc	-	1 the execution of the said Serv	vices in
		Yours faithfully,	
		(Signature, name and title of	
		signatory authorized to sign of behalf of Employer)	

Performance Security - Bank Guarantee

[Guarantor letterhead or SWIFT identifier code]

	ince Guarantee No				
To: _	[name of Employer]				
_	[address of Employer]				
called "the	[name and address of Service Provider ²] (hereinafter e Applicant") has undertaken, in pursuance of Contract No [insert reference number of act] dated [insert date] to execute [insert name ct and brief description of the Non-Consulting Services] (hereinafter called "the Contract");				
you with a	ND WHEREAS it has been stipulated by you in the said Contract that the Applicant shall furnish a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance bligations in accordance with the Contract;				
A	ND WHEREAS we have agreed to give the Applicant such a Bank Guarantee;				
of the A	OW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf Applicant, up to a total of [amount of guarantee ³] [in words], such sum being payable in the types and proportions of s in which the Contract Price is payable, and we undertake to pay you, upon your first written and without cavil or argument, any sum or sums within the limits of				
[amount c	of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your or the sum specified therein.				
	We hereby waive the necessity of your demanding the said debt from the Applicant before g us with the demand.				
W	Ve further agree that no change or addition to or other modification of the terms of the Contract or				

of the Non-Consulting Services to be performed thereunder or of any of the Contract documents which may

 $^{^2}$ In the case of a JV, insert the name of the Joint Venture 3 An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract less provisional sums, if any, and denominated in Indian Rupees.

be made between you and the Applicant shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until (i.e.)⁴ 28 days after the expected completion date as described in the GCC, and any demand for payment under it must be received by us at this office on or before that date.

of the guarantor		
	of the guarantor	of the guarantor

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

_

⁴ The Service Provider should note that in the event of an extension of this date for completion of the Contract, the Service Provider would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Service Provider might consider adding the following text to the form, at the end of this paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to your written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Advance Payment Security

Demand Guarantee

[Guarantor letterhead or SWIFT identifier code]

Advance Payment Guarantee No
To: [name of Employer]
[address of Employer]
[name of Contract]
Gentlemen:
In accordance with the provisions of the Conditions of Contract, Sub-clause 6.4 ("Advance Payment") of the above-mentioned Contract,
We, the [bank or financial institution], as instructed by the Applicant, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to [name of Employer] on his first demand without whatsoever right of objection on our part and without his first claim to the Applicant, in the amount not exceeding [amount of guarantee] [in words].
We further agree that no change or addition to or other modification of the terms of the Contract or of Non-Consulting Services to be performed thereunder or of any of the Contract documents which may be made between [name of Employer] and the Applicant, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

⁵ In the case of a JV, insert the name of the Joint Venture ⁶ An amount shall be inserted by the bank representing the amount of the Advance Payment, and denominated in Indian Rupees.

	nd in full effect from the date of the advance payment under the
Contract until	[name of Employer] receives full repayment of the same
amount from the Applicant. Consequently a	any demand for payment under this guarantee must be received
by us at this office on or before that date.	
Yo	ours truly,
Si	gnature and seal:
Na	ame of Bank:
Ad	ldress:
Da	ate:

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.