



**KOLKATA PORT TRUST
KOLKATA DOCK SYSTEM**

P & R Division, Finance Department,
15, Strand Road, 6TH Floor
Kolkata - 700001,
West Bengal, India.

Email: jt.dir.pr@kolkataporttrust.gov.in
FAX: 033-22303058

KOLKATA DOCK SYSTEM (KDS), Kolkata Port Trust (KoPT) invites E-Tender under single stage two part system (Part I: Techno-Commercial Bid and Part II: Price Bid) from bonafide and reputed System Integrator (SI) / Organization for RFID based Port Access Control & Tracking System (PACTS), which includes supply, installation, integration, testing, customizing, configuring, commissioning, manning, operating & maintaining Radio Frequency Identification (RFID) based solution at KOLKATA DOCK SYSTEM, Kolkata Port Trust.

Bid Document may be downloaded from MSTC website www.mstcecommerce.com. Corrigendum / addendum / clarifications, if any, shall be hosted on the above mentioned website only. Tenderer should visit the website frequently.

SCHEDULE OF TENDER (SOT):

a.	TENDER NO.	Plg/165/RFID/2016/10951/Re-tender/1
b.	MODE OF TENDER	e-Procurement System (Online Part I - Techno-Commercial Bid and Part II - Price Bid) through www.mstcecommerce.com of MSTC Ltd. The intending bidders are required to submit their offer electronically through e-tendering portal. No physical tender shall be accepted by KOLKATA DOCK SYSTEM, Kolkata Port Trust.
c.	E-Tender No.	
d.	Date of NIT available to parties to download	May 26, 2016
e.	Offline Pre-Bid Meeting starting date & Time	June 03, 2016, 11:00 hours
f.	Pre-Bid Meeting closing date & time	N/A
g.	i) Earnest Money Deposit	The intending bidders should submit Earnest Money of INR 40,00,000/- (Rupees Forty Lacs only) to KOLKATA DOCK SYSTEM along with their offer otherwise their offer will be summarily rejected. The bidders are advised to deposit Earnest Money through ECS (RTGS/NEFT) in favour of Kolkata Port Trust, KOLKATA DOCK SYSTEM directly into the designated bank account.

		Details of the bank account are appended hereunder. Further, out of the Rs. 40 lakhs EMD amount, first Rs.10 lakhs should be paid in the form of DD/Pay Order/ Bankers' Cheque in favour of Kolkata Port Trust and balance Rs.30 lakhs in the form of Bank Guarantee in favour of Kolkata Port Trust. Bank Guarantee format for the same is available at Annexure-XXI. a) Name of Bank & Branch: State Bank of Mysore, IFB Branch, Kolkata b) Beneficiary Name : Kolkata Port Trust c) Beneficiary Account No.: 54027971277 d) IFSC Code: SBMY0040259 Concerned tenderers must ensure that the remitting bank positively enters their name and System Generated E - Tender no. in the 'Sender to Receiver' column at the time of making payment of earnest money by RTGS/NEFT. Tenderers should deposit Earnest Money before filling and submission of bids. Details of Earnest money remitted should be entered by the participating vendor/contractor in the space provided in the e-tender as indicated hereunder : a) Name of remitting vendor/contractor : b) E-Tender No. as above. c) Amount remitted : d) Remittance Bank Details: e) U.T.R No. : f) Date:
	ii)	Bid Document fee The intending bidders should submit the tender cost of INR 10000/- (Rupees Ten Thousand only) (non-refundable) as per the payment

			mode mentioned above [Refer to item g (i)] along with their offer otherwise their offer will be summarily rejected. Bidders should deposit bid document fee before filling and submission of bids. Details of Tender Cost remitted should be entered by the participating vendor/contractor in the space provided in the e-tender as indicated hereunder : a) Name of remitting vendor/contractor : b) E- Tender No. as above c) Amount remitted : d) Remittance Bank Details: e) U.T.R No. : f) Date:
	iii)	Transaction Fee	INR 15,000 (Rupees fifteen thousand only) plus applicable Taxes (ST @15% w.e.f. 01-Jun-16). Payment of Transaction fee by NEFT/RTGS in favour of MSTC LIMITED (refer clause. No. 4 of Annexure -I)
h.	Last date of submission of EMD & Bid Document fee at KDS.		June 16, 2016 upto 14:30 hours
i.	Last date of submission of Transaction fee through RTGS/NEFT in favour of MSTC Limited, Kolkata.		Three working days before the last date of <u>closing of online bidding for the e-tender.</u>
j.	Date of Starting of e-Tender for submission of online Techno-Commercial Bid and price Bid at www.mstcecommerce.com/eprochome/kopt		June 10, 2016 09:30 hours
k.	Date of closing of online e-tender for submission of Techno-Commercial Bid & Price Bid.		June 16, 2016 14:30 hours
l.	Date & time of opening of Part-I (i.e. Techno-Commercial Bid). (Date of opening of Part II i.e. price bid shall		June 16, 2016 15:30 hours

be informed separately)	
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<u>List of Annexure :</u>		
Important Instructions to Bidders	:	Annexure – I
Necessary Information for Commissioning the Project	:	Annexure – II
Commercial Terms & Conditions	:	Annexure - III
Scope of Work	:	Annexure- IV
General Conditions of Contract	:	Annexure- V
Documents to be uploaded	:	Annexure- VI
Price Bid	:	Annexure-VII
Drawing of Coverage Area and Nomenclature of Zones	:	Annexure - VIII
Historical information	:	Annexure - IX
Declaration by the Bidder	:	Annexure - X
Profile of the Bidder	:	Annexure-XI
Format of Power of Attorney	:	Annexure-XII
Format for Power of Attorney for Lead Member of Consortium	:	Annexure -XIII
Affidavit Format in case the Bidder is not covered under ESI Act or exempted from it	:	Annexure - XIV
Indemnity Bond	:	Annexure - XV
Performance Guarantee Format	:	Annexure - XVI
Joint Bidding Agreement	:	Annexure -XVII
Details of Financial Capability of The Tenderer	:	Annexure –XVIII
Service Level Agreement (SLA)	:	Annexure –XIX
Non-Disclosure Agreement	:	Annexure –XX
BG Format for EMD	:	Annexure –XXI
Drawing of KP Dock Gates	:	Annexure –XXII
Gate Entry / Exit Procedures	:	Annexure –XXIII
Minimum Guiding Technical Specification	:	Annexure –XXIV

Important instructions to the Bidder for E-procurement

This is an e-procurement event of KOLKATA DOCK SYSTEM, Kolkata Port Trust. The e-procurement service provider is MSTC Ltd., 225C, A.J.C. Bose Road, Kolkata-700 020.

Bidders are requested to read the terms & conditions (**Annexure- II**) of this tender before submitting online tender. Bidders who do not comply with the conditions with documentary proof (wherever required) will not qualify in the Tender for opening of price bid.

1.	Process of E-tender : A) Registration: The process involves vendor's registration with MSTC e-procurement portal which is free of cost. Only after registration, the vendor(s) can submit his/their bids electronically. Electronic Bidding for submission of Techno-Commercial Bid as well as Price Bid over the internet will be done. The Vendor should possess Class III signing type digital certificate. Vendors are to make their own arrangement for bidding from a P.C. connected with Internet. MSTC is not responsible for making such arrangement. (Bids will not be recorded without Digital Signature). SPECIAL NOTE: THE PRICE BID AND THE COMMERCIAL BID HAS TO BE SUBMITTED ON-LINE AT www.mstcecommerce.com/eprochome/kopt 1) Vendors are required to register themselves online with www.mstcecommerce.com → e-Procurement → PSUs/Govt. Departments → Register as Vendor Filling up details and creating own user id and password → Submit. 2) Vendors will receive a system generated mail confirming their registration in their email which has been provided during filling the registration form. Tenderers are requested to submit bid keeping sufficient time in hand. They should not wait for last minute to avoid any problem. In case of any clarification, please contact KDS/MSTC (before the scheduled time of the e- tender). Contact Person (KOLKATA DOCK SYSTEM): <table border="0"> <tr> <td>1. Mrs. Rebecca Das Joint Director (P&R) KOLKATA DOCK SYSTEM Ph. No.- 033-22107365 E-Mail : jt.dir.pr@kolkataporttrust.gov.in</td> <td>2. Mr. Naba Dey Roy Sr. Dy. Director (EDP) KOLKATA DOCK SYSTEM Ph. No.- 033-71003464. E-Mail: nabadeyroy@kolkataporttrust.gov.in</td> </tr> <tr> <td>3. Mr. Shivasish Chakraborty Dy. Director (EDP) KOLKATA DOCK SYSTEM Ph. No.- 033-71003466 E-Mail:</td> <td>4. Mr. Naba Kumar Sarkar Dy. Director (EDP) KOLKATA DOCK SYSTEM Ph. No.- 033-71003465. E-Mail:</td> </tr> </table>	1. Mrs. Rebecca Das Joint Director (P&R) KOLKATA DOCK SYSTEM Ph. No.- 033-22107365 E-Mail : jt.dir.pr@kolkataporttrust.gov.in	2. Mr. Naba Dey Roy Sr. Dy. Director (EDP) KOLKATA DOCK SYSTEM Ph. No.- 033-71003464. E-Mail: nabadeyroy@kolkataporttrust.gov.in	3. Mr. Shivasish Chakraborty Dy. Director (EDP) KOLKATA DOCK SYSTEM Ph. No.- 033-71003466 E-Mail:	4. Mr. Naba Kumar Sarkar Dy. Director (EDP) KOLKATA DOCK SYSTEM Ph. No.- 033-71003465. E-Mail:
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	shivasish@kolkataporttrust.gov.in nksarkar@kolkataporttrust.gov.in Contact Person (MSTC Ltd): <table border="0"> <tr> <td>1. Mr. Arindam Bhattacharjee Deputy Manager (E-commerce) Mobile : 09330102643 Landline:033 22901004 Email-arindam@mstcindia.co.in</td><td>2. Mr. Sabyasachi Mukherjee Junior Manager (E-commerce) Mobile : 07278030407 Email: smukherjee@mstcindia.co.in</td></tr> </table> B) System Requirement: i) Windows 98 / XP-SP3 & above/Windows 7 Operating System / Windows 8 ii) IE-7 and above Internet browser. iv) Signing type digital signature v) JRE 7 update 9 and above software to be downloaded and installed in the system. To enable ALL active X controls and disable 'use pop up blocker' under Tools→Internet Options→custom level	1. Mr. Arindam Bhattacharjee Deputy Manager (E-commerce) Mobile : 09330102643 Landline:033 22901004 Email-arindam@mstcindia.co.in	2. Mr. Sabyasachi Mukherjee Junior Manager (E-commerce) Mobile : 07278030407 Email: smukherjee@mstcindia.co.in
1. Mr. Arindam Bhattacharjee Deputy Manager (E-commerce) Mobile : 09330102643 Landline:033 22901004 Email-arindam@mstcindia.co.in	2. Mr. Sabyasachi Mukherjee Junior Manager (E-commerce) Mobile : 07278030407 Email: smukherjee@mstcindia.co.in		
2.	(A) Part I Techno-Commercial bid will be opened electronically on specified date and time as given in the NIT. Bidder(s) can witness electronic opening of bid. (B) Part II Price bid will be opened electronically of only those bidder(s) whose Part I Techno-Commercial Bid is found to be Techno-Commercially acceptable by KDS. Such bidder(s) will be intimated date of opening of Part II Price bid, through valid email confirmed by them.		
3.	All entries in the tender should be entered in online Technical & Commercial Formats without any ambiguity.		
4.	<u>Special Note towards Transaction fee:</u> PAYMENT OF Transaction fee BY RTGS in favour of MSTC Limited .The Bank details, format etc for sending Transaction fee by RTGS to MSTC is detailed below : Bank Details : Axis Bank, Shakespeare Sarani Branch Account Details : Axis Bank A/c.No.005010200057840 IFSC Code No. : UTIB00000005. "The vendors shall enter the transaction fee details by using the "Transaction Fee Entry" Link under "My Menu" in the vendor login. The vendors have to select the particular tender in which they want to participate against the transaction fee by clicking on the tick box at the right and then Clicking on the "Submit" Button at the bottom of the page. Then the page appears where the vendors are required to fill up the transaction details, namely the UTR No, Date of Transaction and the Remitting Bank in the given fields and then click on the "Confirm" Button". NOTE : The bidders should submit the transaction fee well in advance before the last date of submission of tender as they will be activated for bid submission only after receipt of transaction		

	fee by MSTC. Contact Details : Fax No. : 033- 22831002 Email ids: sanjibpoddar@mstcindia.co.in, arindam@mstcindia.co.in, rpradhan@mstcindia.co.in, smukherjee@mstcindia.co.in. Bidders may please note that the transaction fee should be deposited by debiting the account of the bidder only; transaction fee deposited from or by debiting any other party's account will not be accepted. Transaction fee is nonrefundable. In case of failure to access the payment towards Transaction fee for any reason, the vendor, in term, will not have the access to online e-tender.	
5.	In case of failure to access the payment towards cost of tender document & EMD for any reason, the vender, in term, will not have the access to online e-tender and no correspondence in this respect will be entertained and KDS will not be responsible for any such lapses on this account. Bidder(s) are advised to make remittance of tender fee and EMD through ECS (RTGS/NEFT) well in advance and verify completion of transaction in respect of tender fee and EMD. Vendors are instructed to use Upload Documents link in My menu to upload documents in document library. Multiple documents can be uploaded. Maximum size of single document for upload is 5 MB. Once documents are uploaded in the library, vendors can attach documents through Attach Document link against the particular tender. For further assistance please follow instructions of vendor guide.	
6.	All notices and correspondence to the bidder(s) shall be sent by email only during the process till finalization of tender by KDS. Hence the bidders are required to ensure that their corporate email I.D. provided is valid and updated at the stage of registration of vendor with MSTC (i.e. Service Provider). Bidders are also requested to ensure validity of their DSC (Digital Signature Certificate).	
7.	(i)	Please note that there is no provision to take out the list of parties downloading the tender document from the website mentioned in NIT. As such, bidders are requested to see the website once again before the due date of tender opening to ensure that they have not missed any corrigendum uploaded against the said tender after downloading the tender document. The responsibility of downloading the related addendum / corrigendum, if any, will be that of the downloading parties.
	(ii)	No separate intimation in respect of corrigendum to this NIT (if any) will be sent to tenderer (s) who have downloaded the documents from website. Please see website www.mstcecommerce.com/eprochome/ of MSTC Ltd.
8.	E-tender cannot be accessed after the due date and time mentioned in NIT.	

9.	<u>Bidding in e-tender:</u>
	a. Bidder(s) need to submit necessary EMD, Tender fees (if any) and Transaction fees to be eligible to bid online in the e-tender. Tender fees and Transaction fees are non refundable. No interest will be paid on EMD. EMD of the unsuccessful bidder(s) will be refunded by KDS. Bank details i.e. name of bank and & address, Current a/c no, IFS Code to be mentioned by the tenderer for refund.
	b. The process involves Electronic Bidding for submission of Techno Commercial Bid as well as Price Bid.
	c. The bidder(s) who have submitted the above fees can only submit their Techno Commercial Bids and Price Bid through internet in MSTC website <u>www.mstcecommerce.com</u> → e-procurement → PSUs/Govt. Departments→ Login →My menu→ Auction Floor Manager→ live event →Selection of the live event→ Techno Commercial Bid.
	d. The bidder should allow to run an application namely enApple by accepting the risk and clicking on run. This exercise has to be done twice immediately after clicking on the Techno-Commercial bid. If this application is not run then the bidder will not be able to save/submit his bid.
	e. After filling the Techno-Commercial Bid, bidder should click 'save' for recording their Techno-Commercial bid. Once the same is done, the Price Bid link becomes active and the same has to filled up and then bidder should click on "save" to record their price bid. Then once both the Techno-Commercial bid & price bid has been saved, the bidder can click on the "Submit" button to register their bid
	NOTE: - The Techno-Commercial Bid & price bid cannot be revised once the submit button has been clicked by the bidder.
	a. In all cases, bidder should use their own ID and Password along with Digital Signature at the time of submission of their bid.
	b. During the entire e-tender process, the bidders will remain completely anonymous to one another and also to everybody else.
	c. The e-tender floor shall remain open from the pre-announced date & time and for as much duration as mentioned above.
	d. All electronic bids submitted during the e-tender process shall be legally binding on the bidder. Any bid will be considered as the valid bid offered by that bidder and acceptance of the same by the Buyer will form a binding contract between Buyer and the Bidder for execution of supply. Such successful tenderer shall be called hereafter SUPPLIER.
	e. It is mandatory that all the bids are submitted with digital signature certificate otherwise the same will not be accepted by the system.
	f. Buyer reserves the right to cancel or reject or accept or withdraw or extend the tender in full or part as the case may be without assigning any reason thereof.
	g. No deviation of the terms and conditions of the tender document is acceptable. Submission of bid in the e-tender floor by any bidder confirms his acceptance of terms & conditions for the tender.
	h. Unit of Measure (UOM) is indicated in the e-tender Floor. Rate to be quoted should be in Indian Rupee as per UOM indicated in the e-tender floor/tender document.
10	Any order resulting from this open e-tender shall be governed by the terms and conditions mentioned therein.

11.	No deviation to the technical and commercial terms & conditions are allowed.
12.	After submitting online bid, the bidder cannot access the tender, once it has been submitted with digital signature.
13.	KDS has the right to cancel this e-tender without assigning any reason thereof.
14.	The online tender should be submitted strictly as per the terms and conditions and procedures laid down in the website www.mstcecommerce.com/eprochome/mstc of MSTC Ltd.
15.	The bidders must upload all the documents required as per terms of NIT. Any other document uploaded which is not required as per the terms of the NIT shall not be considered.
16.	The bid will be evaluated based on the filled-in technical & commercial formats.
17.	The documents uploaded by bidder(s) will be scrutinized. In case any of the information furnished by the bidder is found to be false during scrutiny, EMD of defaulting bidder(s) will be forfeited. Punitive action including suspension and banning of business can also be taken against defaulting bidders.
18.	Necessary addendum / corrigendum (if any) of tender would only be hosted in the e-tendering portal of M.S.T.C.
19.	Micro & Small Enterprises (MSEs) registered with NSIC (under single point registration scheme) are exempted from depositing Cost of Tender Document and Earnest Money having valid NSIC Certificate for MSEs along with DIC's (DISTRICT INDUSTRIES CENTRE) Certificate.
20.	Micro & Small Enterprises (MSEs) registered with NSIC under Single Point Registration Scheme (SPRS) are eligible to get the benefits under new Public Procurement policies for MSEs as notified by Govt. of India, Ministry of Micro, Small & Medium Enterprises (MSME) vide Gazette Notification, dated 26.03.2012. When splitting of tender quantity is not possible purely on technical ground, trustees reserve the right not to negotiate price with MSE if their price is within the band of L1+15% in comparison with L1 price of non-MSE for consideration of award of order for 20% of tender quantity against any item as per new public procurement policy.
21.	If Micro & Small Enterprises (MSEs) registered with NSIC intends to participate in the tender, for the items they are not registered with NSIC, then they will have to deposit cost of Tender Document, full amount of Earnest Money as per NIT. Otherwise their offer for those items will not be considered.
22.	Copy of valid NSIC Certificate for MSEs along with DIC's (DISTRICT INDUSTRIES CENTRE) Certificate has to be submitted along with the bid.
23.	Due date of submission of tender will not be extended under any situation.

1. NECESSARY INFORMATION FOR COMMISSIONING THE PROJECT AT KOLKATA DOCK SYSTEM(KDS), KOLKATA PORT TRUST (KoPT)

- 1.1 General features of KDS-KoPT:** KDS-KoPT is a premier dock system of Kolkata Port in eastern India under the administrative control of the Ministry of Shipping, Government of India, commanding approx. 4576 acres of land and handling vessels and cargo to cater to the demand of a vast hinterland. KDS-KoPT primarily carries out vessel and cargo operation and handles around 15 million tonnes of cargo (which primarily includes container, break bulk cargo, etc.) and around 1450 vessels annually. Under KDS-KoPT there are two impounded dock systems viz. Kidderpore Dock (KPD) and Netaji Subhash Dock (NSD) with 21 Multipurpose Berths, 5 Dedicated Berths for Containers, 1 Dedicated Berth at NSD for Liquid Bulk and 1 Passenger Terminal. In addition, there are 6 riverine Oil Jetties at Budge Budge. Cargo is also handled at various anchorages at deep-drafted locations viz. Sandheads, Sagar, Diamond Harbour, etc.
- 1.2 Use of ICT at KDS-KoPT:** Presently, KDS-KoPT uses various Information & Communication Technology (ICT) enabled solutions to handle its day-to-day management and operational activities. An established optic fiber network covering all major locations / buildings act as the backbone for information flow (KDS-NET). The proposed solution shall have to be seamlessly integrated with the existing ICT environment at KDS-KoPT.
- 1.3 Physical security at KDS-KoPT:** The physical security of KDS-KoPT is the responsibility of the Central Industrial Security Force (CISF) & Port Security Organization (PSO).
- 1.4 Existing Permit System at KDS-KoPT:** The Docks are a prohibited area with certain areas restricted under ISPS Plan and physical access into this area is administered through issuance of Dock Entry Permits falling under various categories. Presently, at KDS-KoPT, permits are generated using integrated application software deployed at seven (7) Permit Generating Counters in different offices of KDS which includes Budge Budge also. Photo enabled permits are generated through this system and printed. Verification is carried out by CISF/PSO personnel at designated gates of KDS-KoPT.
- 1.5 Operational timing:** KDS-KoPT is a 24x7 port. The prospective bidder must take the same into consideration during participation.
- 1.6 Environment:** KDS-KoPT handles container and all types of cargo round the year. The prospective bidder must take the same into consideration during participation.
- 1.7 Historical Information:** As per Annexure IX.

COMMERCIAL TERMS & CONDITIONS:**2. ELIGIBILITY CRITERIA:**

- 2.1** Intending tenderer /bidder, either as a Single Entity or as Consortium, is eligible to participate in the tender. The term 'tenderer / bidder' used in this document would apply to either a Single Entity or a group of entities, i.e. a Consortium. A Consortium shall be eligible for consideration subject to the conditions set out in this tender document.

Note:

Notwithstanding anything to the contrary contained in this tender document, in the event of any member of any Consortium suffering from a Conflict of Interest, the offer of such consortium shall be treated as disqualified. However, in the event of similar situation arising / detected after placement of Work Order, the same shall have to be addressed and resolved by the Consortium, failing which, the contract, if entered into, shall be terminated. In this regard, it must be borne in mind that suppression of such Conflict of Interest, if detected later, shall not absolve the Consortium of its responsibility and appropriate action shall be initiated in terms of the provision of the tender.

- 2.1.1** If the 'Successful tenderer / bidder' is a 'Consortium', it shall be required to form an appropriate 'Special Purpose Vehicle' or SPV, incorporated under the Indian Companies Act 1956, to execute the Contract Agreement and execute the contract. It shall, in addition to forming the SPV, comply with the following additional requirements:

- i) All joint venture agreements/ consortium agreements, technical collaboration agreements shall ensure that all parties of the joint venture/consortium are individually and jointly responsible for the tender conditions and such agreements are legally valid.
- ii) Joint venture/consortium should be in the nature of legally acceptable agreements and such agreements should be notarized.
- iii) Such joint venture/consortium agreement should contain explicitly the scope and responsibilities of all the partners in the joint venture/consortium in terms of financial and technical commitments/contribution. The JV/consortium should be equally, severally and jointly responsible.
- iv) One of the members of the consortium shall be authorized as being in charge (lead member), and this authorization shall be evidenced by a power of attorney duly signed by the authorized signatories of the consortium Members as per the format enclosed in the tender document as Annexure- XIII. All Consortium members shall execute the Power of Attorney. If the Consortium members are companies, definite resolution of the Directors and delegation to the said signatory are also to be attached with the Power of Attorney.
- v) The validity of the joint venture/consortium agreement entered upon on the award of Letter of Acceptance (LOA) by the port should continue for the entire period of contract as specified in the tender. All such agreements shall be irrevocable for the above period.

- vi) Firms with at least 26% equity holding each shall be allowed to jointly meet the eligibility criteria.
- vii) If the bidder is a consortium the average annual financial turnover of the individual members forming the consortium shall be submitted as per Annexure XVIII.
- viii) It is clarified that an unsuccessful bidder or JV/Consortium shall not be permitted to join a successful JV/Consortium whose bid is accepted at a later date.
- ix) In case of a Consortium, the combined Technical and Financial Capability of those members who have and shall have an equity share of at least 26% (twenty six per cent) each in the Special Purpose Vehicle (SPV) as explained in this tender document, should satisfy the above conditions of eligibility, provided that each such member shall, for a period of 2 (two) years from the date of commercial operation of the contract, hold equity share capital not less than 26% (twenty six per cent) of the subscribed and paid up equity of the SPV.
- x) Members of the Consortium shall nominate one member as the 'Lead Member' who shall have an equity share holding of at least 26% of the paid up and subscribed equity of the SPV. The nomination (s) shall be supported by a Power of Attorney, as per the format at Annexure – XIII, signed by all the other members of the Consortium.
- xi) The Tender shall contain the information required for each member of the Consortium as per Annexure – XI.
- xii) The Tenderer shall submit a brief description of the roles and responsibilities of individual members of the Consortium.
- xiii) An individual (single entity) Tenderer/bidder participating in the instant tender shall not be a member of any other Consortium participating in the instant tender; further, a member of a particular Consortium shall neither submit any tender individually nor shall be a member of any other Consortium participating in the instant tender.
- xiv) Maximum number of partners in the Consortium shall be four.
- xv) Approval for change in the composition of a Consortium shall be at the sole discretion of KDS, KoPT and must be approved by KDS, KoPT in writing.
- Xvi) Participation of 100% subsidiary company -- The issue of participation of 100% subsidiary of a foreign firm was discussed and it was clarified that the subsidiary firm may be allowed to get the credit of performance of the parent firm, subject to obtaining of an irrevocable undertaking in respect of which Indian Law Courts in Kolkata would have exclusive jurisdiction and a bank guarantee encashable in Kolkata and equivalent to 10% of the estimated project cost (and valid for the entire contract period of 10 years) from the foreign firm, taking full responsibility to discharge the functions and complete / continue the work to the entire satisfaction of KoPT, as per Tender Conditions, in case of failure or delay in execution of the job on the part of the subsidiary firm.

2.2 The bidder (whether a single entity or a consortium) shall submit evidence that the bidder has successfully executed similar work
(Order letter and successful execution certificate to be provided) as per the following:

(1) At least 3 similar Works each worth not less than INR 12.00 Cr. (Twelve Crores) over a period of last 7 years ending on 31.12.2015 or

(2) At least 2 similar Works each worth not less than INR 15.00 Cr. (Fifteen Crores) over a period of last 7 years ending on 31.12.2015 or

(3) At least 1 similar Work worth not less than INR 24.00 Cr. (Twenty Four Crores) over a period of last 7 years ending on 31.12.2015.

NOTE: Similar work shall mean having experience in:

- a) ERP/Access Control/Biometric/Visitor Management System / Personalization Hardware & Software/Time and Attendance / Access Control Readers / Long range Readers /Smart Card Printers OR
- b) Supply of Smart Cards / RFID Tags / Computers /Printers/ Servers will also be considered as part of similar works if the order is accompanied with any of above mentioned components OR
- c) Companies who have successfully executed e-governance projects under Aadhar/RSBYJ/Driving License/Financial Inclusion etc. are also eligible to bid.

2.3 The bidder (whether a single entity or a consortium) shall submit audited balance sheet and Profit & Loss account for the last 3 (three) financial years (for each member in case of a Consortium). Average annual financial turnover during the above mentioned period must be at least INR 9.00 Crores (Rupees Nine Crores only). If due date (scheduled opening date of tender) falling within three months (April to June) of the closing of the latest financial year, the latest financial year may be ignored and financial turnover of the three years, year previous to the latest financial year may be considered.

2.4 The bidder shall submit certified copy of valid Service Tax Registration Number / Code Number (for each member in case of a Consortium).

2.5 The bidder shall submit Self certified copy of PAN (for each member in case of a Consortium).

2.6 Details of registration under ESI Act : All intending tenderer (for each member in case of a Consortium) at the time of tender shall disclose all necessary documents as to whether they are covered under ESI Act or not. In case they are covered under ESI Act, they have to furnish the details of registration, failing which their tender would be liable to be cancelled. In case they are not covered under ESI Act or exempted, they would furnish necessary documents along with an affidavit (for each member in case of a Consortium) affirmed before a First Class Judicial Magistrate on Non-Judicial Stamp Paper worth Rs.10/- to the effect as per enclosed Pro-forma.(Annexure–XIV). They must additionally indemnify KoPT against all damages and accident

occurring to his labour in a Non-Judicial Stamp Paper worth Rs.50. The same should be submitted along with Techno-commercial Bid as per enclosed Pro-forma (Annexure-XV).

- 2.7** Details of registration under EPF Act : All intending tenderers (for each member in case of a Consortium) shall have to furnish the details of EPF Registration, failing which their tender/offer would be liable to be cancelled.
- 2.8** The bidder shall submit certified copy of up-to-date Profession Tax Payment Challan (PTPC) (for each member in case of a Consortium), if applicable. If this is not applicable, the bidder should submit a declaration in this regard.
- 2.9** The bidder shall submit certified copy of the valid 'trade license'.

Annexure - IV

3. SCOPE OF WORK:

3.1 Objective of the project: With the primary objective of bolstering security and addressing traffic congestion, the Competent Authority of KDS-KoPT has decided to deploy an ICT enabled Port Access Control and Tracking System (PACTS) including Tracking, which includes **supply, installation, integration, testing, customizing, configuring, commissioning, manning, operating & maintaining an RFID based solution**. The proposed system shall, as an end result, ensure security requirement of KDS-KoPT, ease congestion at gates and other locations and provide textual, statistical, graphical & spatial information empowering the port authorities / CISF to manage the flow of people and vehicles and act on alarms etc. Harnessing ICT to facilitate electronic governance is an objective of this project. The proposed system must result in implementation and commissioning of an online fully automated system which will -

- Significantly enhance security at all the gates of the port
- Automate & speed up movement & activity within the port
- Generate visibility of activities within and around port area
- Control and limit access to authorized time & zones
- Track every movement of man & vehicle across the port
- Trace each movement and alert on anonymous pattern of activity
- Record all movements of individuals & vehicles to create verifiable historical audit trail
- Prevent revenue leakage and any malpractices at the gates
- Meet ISPS Code compliance requirement

3.2 Technology independent solution: The requirement of KDS-KoPT can be met by the prospective bidder by choosing any type of RFID enabled solution i.e. KDS-KoPT intends to highlight that the solution solicited from prospective bidders can be of any technology but shall have to meet the requirement of KDS-KoPT based on the information contained in this document.

3.3 Estimated change: The type of RFID Dock Entry Permits generated shall be in line with the type of cargo handled by the Port. For the purpose of estimation, information history may be referred and an annual change of 5% be considered across the board. The estimate is indicative only and KDS-KoPT does not guarantee any fixed volume of work.

3.4 Facilitation by KDS-KoPT: For successful commissioning of the project, KDS-KoPT shall **ONLY** provide office space and electrical power on chargeable basis as per availability (if required). Charges for space shall be paid as per Schedule of Rents of KDS, KoPT which is available in KoPT Website and electricity consumption charges at actuals. Providing adequate power backups to ensure uninterrupted power supply to the PACTS shall remain the sole responsibility of the intending bidder. **Existing KDS-Net backbone (OFC) may be used by the vendor as per the SLA (Annexure-XIX) and Non-Disclosure Agreement (Annexure-XX) and these should be considered while quoting percentage of sharing of basic amount with KoPT.**

3.5 Duration of project: Duration of the project shall be 10 years from the date of successful implementation and acceptance of this project.

3.6 Location of permit generation and RFID tagging / de-tagging:

RFID tag for man & vehicle would be issued at various permit offices namely Central Permit Office at Subhash Bhawan, KPD Permit Office at 3 KPD Gate and Budge Budge Permit Office. Rewriting in RFID Tag for the Vehicle with Containers and Drivers would be done at Permit Office.

A separate counter should be operated at PSO office by the vendor for issuance of Free Permits for:

- (i) Employees (Regular employees and contractual persons engaged directly by KoPT),
- (ii) Man and light vehicles / two wheelers (as approved by KoPT authority).
- (iii) One-time visitors or entrants on non-cargo related visits

The intending bidder must ensure adequate number of counters at the centralized permit offices as well as each of the locations mentioned above for congestion-free uninterrupted operations / issuance of RFID based permits. Removal of RFID tags (if the solution so requires) must take place at individual gates, before allowing any such vehicle / equipment to pass out.

Issuance of Permanent RFID tags: Permanent RFID based Permits would be issued to all employees of KoPT and would be valid for a period of five years. However, RFID based Permits to be issued to the Contractual employees of KoPT would be valid for a period of maximum one year. Biennial permits to be issued to the Port Users would be valid for a period of two years.

RFID based permits to be issued to man and vehicles on daily basis valid for twelve hours, should allow multiple entry/exit within the validity period.

Free RFID based Permits: (a) To be issued to all regular KoPT employees and contractual persons engaged directly by KoPT and (b) To all light vehicles (Two/Four wheelers – Approx.

450 per day) for personal use by KoPT employees and Port Users with a validity of maximum one year. (c) To one-time visitors as per recommendation and approval of PSO authority.

3.7 Movement plan / zoning vis-à-vis categories of vehicles / equipment: Two categories of container / cargo carrying vehicles and mechanical equipments work at KDS-KoPT –

The zoning plan shall be developed by the successful bidder in consultation with KDS-KoPT and the said logic shall form the basis of the track & trace function as well as logging of information along with backup and retrieval of the same as and when desired by KDS-KoPT.

The drawing of coverage area intended along with nomenclature of zones is enclosed as Annexure VIII for reference.

3.8 Ambit of objects to be tagged: Mainly Personnel and vehicles shall have to be tagged with RFID enabled permit. The prospective bidder must note that the project under consideration shall be utilized for access control as well as track & trace of moving objects.

3.9 Composite operations: Issuance of RFID tags must be a single-window operation enabling the users to transact at one place only. The successful bidder shall have to undertake the function of issuance of RFID based Dock Entry Permits complying with the requirement of the International Ship and Port Facility Security Code (ISPS code). The successful bidder will have to provide the entire manpower for running the RFID based permit system. The bidder must provide a manning scale for all counters and back office that they propose to put in place for running the entire operation.

3.10 Exception handling: The bidder shall have to address the issue of vehicle / equipment breakdown inside dock en route to the permitted yard / zone, breakdown while coming from pre-hold area to dock, breach of permitted route and alteration of traffic flow to accommodate repairing of road / blockade of road for some other purpose etc. In a nutshell, the software for track & trace, which would be commissioned, must be capable of addressing all events / exceptions from the central monitoring station on-the-fly based on the movement plan of KDS-KoPT. Such plan would be dynamic in nature.

3.11 Allied work: All civil, mechanical and electrical works (e.g. provisioning and erection of required structures, fixtures, modification/ remodeling of gates if any) required for successful commissioning as well as maintenance of the solution shall be the exclusive responsibility of the successful bidder during the tenure of the contract.

3.12 Training: The successful bidder shall have to train personnel of KDS-KoPT initially after commissioning the system and once each year during the contract period as refresher training. Such training shall include operational and system administration aspects to be carried out by the port. It is highlighted that operation of counters resulting in issuance of permits and RFID tagging shall be the exclusive responsibility of the manpower of the successful bidder.

3.13 Licensing: KDS-KoPT shall neither be responsible nor pay for any system or application software licenses. It is reiterated that no payment for any system or application software or for any component shall be made by KDS-KoPT.

3.14 Ownership: All deliverables like network (except KDS-NET), hardware / equipments, system software, PACTS application software, manpower, vehicles, spares, labour etc. for the project shall be owned and run by the bidder primarily during the contract period of ten years. After expiry of the contract, KDS, KoPT shall own all equipments / installations (network, hardware / equipments, system software, PACTS application software etc. excluding manpower, vehicles, labour) without any extra cost. The same must be taken into consideration while participating in the subject tender.

However no claim for absorption of Vendor's personnel in KoPT's service will be entertained during and after expiry of the contract.

3.15 Free upgrade of proposed solution: The successful bidder must ensure upgrading the system software as well as proposed PACTS solution commissioned for a period of 10 years from the date of successful commissioning. This shall be in accordance with any business logic change of KDS-KoPT as well as law of the land. For this purpose, no additional payment shall be made by KDS-KoPT.

3.16 Security & authentication: The successful bidder shall be responsible for security of the entire PACTS solution as well as role based authentication for users of KDS-KoPT using the commissioned system. The commissioned system must allow audit of captured data using software, which the bidder must be competent to deliver as required by KDS-KoPT from time to time.

3.17 Viewing & controlling over World Wide Web: The successful bidder shall be responsible for making the system available over the World Wide Web for use by stakeholders 24 X 7. For this purpose, all equipment, manpower, domain registration, bandwidth etc. shall be the responsibility of the bidder.

3.18 Tariff for RFID based Permits: Tariff for RFID based Permits will be the proposed SOR (Scale of Rates) basic rate as mentioned in Table-A below plus applicable taxes. Such rates plus taxes shall be collected from the users at the time of issuance of RFID based Permit by the bidder. Bidder should consider the proposed SOR (Scale of Rates) basic rates as mentioned in Table-A below and categories for various types of permits and quantity of yearly Permits issued while deriving the proposed revenue share rate.

The tenderer should note that Permits will be issued only to individuals and not to any groups.

In addition, the bidder should note that they will be allowed to use the existing KDS-Net OFC backbone for necessary communication. This must be taken into consideration while quoting the proposed revenue percentage sharing with KoPT.

Bidder should note that the said proposed SOR (Scale of Rates) basic rates will be fixed for the selected firm during the entire contract period of ten years.

However, Scale of Rates might be changed by TAMP during the contract period. The resultant differential basic amount plus applicable taxes for the subject change will be KoPT's right and the firm should be responsible for depositing the amount in KoPT's account, no claim for additional amount will be entertained during and after expiry of the contract, by the firm.

Table-A

<u>Statement of different types of Permits issued during the year 2015</u>					
Sl No	Type of Permit	Frequency	Basic rate as per proposed SOR	No. of Permits	Remarks
1	Daily Man Permit	Daily	8.50	1837039	
2	Daily Vehicle Permit (Lorry)	Daily	42.53	75100	
3	Daily Vehicle Permit (Trailer)	Daily	102.06	242273	
4	Daily Mobile Crane	Daily	170.10	4812	
5	Daily Reach Stacker	Daily	170.10	8	
6	Daily Top Lifter	Daily	170.10	0	
7	Daily Dumper	Daily	170.10	383	
8	Daily Pay Loader	Daily	170.10	1303	
9	Daily Forklift	Daily	102.06	570	
10	Daily Permit for Ship Personnel	Daily	19.44	0	
11	Daily Permit for using Truck Terminal	Daily	100.00	0	
12	Daily Free Man Permit	Daily	0	215746	
13	Monthly Man Permit	Monthly	229.50	0	
14	Quarterly Man Permit (3 Months)	Quarterly	690.25	7276	
15	Biennial Man Permit	Biennial	3672.00	290	
16	Annual Vehicle Permit (Trailer)	Annual	11022.48	581	
17	Annual Vehicle Permit (Lorry)	Annual	4593.24	47	

18	Annual Mobile Crane	Annual	18370.80	0	
19	Annual Reach Stacker	Annual	18370.80	121	
20	Annual Top Lifter	Annual	18370.80	0	
21	Annual Dumper	Annual	18370.80	0	
22	Annual Pay Loader	Annual	18370.80	0	
23	Annual Forklift	Annual	11022.48	19	
24	Annual Vehicle Permit (CART)	Annual	4461.68	9	
25	Daily Free Vehicle Permits	Daily		3863	
26	Temporary free Permits	Quarterly		2114	

3.19 Transportation: Transportation of equipment and manpower for the project shall have to be arranged by the successful bidder during the entire period. However, free permits will be provided/issued to the employees of the successful vendor to carry out day to day activities including maintenance and other allied works related to the KoPT project.

3.20 IT Infrastructure: The successful bidder shall have to establish their own reliable and fail-safe IT infrastructure. Necessary end-point connectivity (using KDS-Net as backbone) between the gates and various zones of KDS-KoPT shall have to be established using OFC/Wireless by the successful bidder, which must include active and passive components. It shall be the exclusive responsibility of the successful bidder to ensure that the RFID network (connectivity between the gates, and various zones of KDS-KoPT) remains connected to the KDS-Net continuously i.e. 24 X 7 X 365.

3.21 Coverage area: The proposed RFID based solution (PACTS) should be implemented at KDS Dock area. The proposed RFID based solution must ensure incorporation of Permit information within the RFID tokens / tags prior to tagging such that authentication, logging of data and track & trace facility is available for tagged objects within the proposed coverage area. Entry/Exit of all vehicles, employees of KoPT and Port Users would be verified using RFID based reader by installing flap-barrier, boom barrier and LED Display, etc, at all the gates of NSD and KPD. The tenderer should note that:

- (i) Gate Automation System will be implemented at the gates of both NS Dock (7 gates) and KP Dock (6 gates)
- (ii) Vehicle Tracking System to be implemented inside NS Dock area only.
- (iii) RFID based permits to be issued to all regular employees of KDS, KoPT, contractual persons engaged directly by KoPT, Port users and all others as mentioned in the tender document.

3.22 Broad areas to be covered: The proposed RFID System will be an integrated intelligent system comprising the following sub-systems –

- A. RFID based photo permits to Port users, workers, drivers, khalasis/helpers, Vehicles, Employees, Ship's Crew, Foreigners with Immigration clearance, Visitors etc.
- B. Automated entry/exit of vehicles with gate barriers
- C. Automated entry/exit of individuals with flap-barriers
- D. LED visuals of users & vehicles for CISF & Gate Security
- E. Automatic Vehicle Identification with RFID tags on vehicle windshield
- F. Automatic License Plate Capturing System and Recording
- G. Permit holders' photo capturing & recording for each entry & exit
- H. Online web based Permit Issue Request System
- I. Simplified Approval System with Email, SMS/Mobile alerts to Scrutinizer
- J. Provision for online payment gateway
- K. OTP based authentication.
- L. RFID based Internal Tracking of Equipment, Vehicle & Visitors within the Port premises.
- M. Handheld Terminal for Mobile Spot Checking as well as speedy movement at the gates
- N. Live Control Room for Round-the-clock Monitoring
- O. Distributed Architecture
- P. High Availability Master Database
- Q. Archival & Retrieval System
- R. Backup & DR
- S. Integration APIs
- T. RFID Tags based Vehicle Tracking in near real-time mode within Port premises
- U. Offline image processing and anomaly alerts with matching and comprehensive results
- V. Provision for GPS based Internal Vehicle and Equipment Tracking System in future
- W. Integration with Sarathi database, Vahan database and POMS of KDS/KoPT
- X. Installation of required IT infrastructure (hardware/software/networking of end points, etc)

3.23 Guiding information regarding clause 3.22

- A. RFID based photo enabled Permits to Port users, workers, drivers, khalasis/helpers, employees, visitors (guests, passengers, etc.)
 - 1. RFID Permits will be issued to workers, drivers, khalasis/helpers, vehicles, equipment, and each and every Port users.
 - 2. Port cannot be accessed without an RFID pass
 - 3. Each RFID Permits will be unique identified with Chip Serial Number CSN

4. The data in the RFID card will be encrypted
 5. The RFID Permit will determine the time limit and the area that the permit holder can access
 6. In the case of port users other than employees, the photo and the name should be clearly visible
 7. In the case of Employees, photo and all the information that is currently visible on the ID card must also be retained and should be clearly visible.
- B. Automated entry/exit of vehicles with Gate Barriers
1. Vehicles with authorized Permits will be allowed speedy entry by automatic opening of the gate barrier when the vehicle card is flashed on the RFID reader
 2. The Gate barrier will open within 6 seconds from closed state
 3. The Gate barrier will also have sensors to ensure that it does not fall on standing vehicle
- C. Automated entry/exit of individuals with flap-barrier
1. Authorized Permits holders are allowed access into the Port gates through flap-barrier.
 2. On successful authentication of the RFID Permit, the flap-barrier will retrieve instantaneously
 3. The flap-barriers will restrict multiple person entry on a single Permit
- D. LED visuals of users & vehicles for CISF & Gate Security
1. CISF personnel standing at the gate will see authorized person & vehicle image on the LED display screen
 2. If an expired permit or a blocked permit flashed on the RFID Access Control readers then the LED display will immediately indicate it to the CISF security
- E. Automatic Vehicle Identification with RFID tags on vehicle windshield
1. All temporary & permanent vehicles using the Port will be given an RFID windshield tag
 2. Vehicle & owner identification details will be recorded in the RFID tag
 3. As the vehicles enter/exit the movement details of the vehicle will be recorded for security purposes
- F. Automatic License Plate Capturing System and Recording
1. As the vehicle arrives at the gate and driver flashes the RFID permits, the license plate will be captured and recorded
 2. License plate capturing system works in conjunction with AVI and Vehicle pass to ensure that the vehicle is authenticate
 3. Alert will be raised when the License Plate Captured is different from the one recorded in AVI or RFID Permit
- G. Permit holder photo capturing and recording for each entry & exit
1. For each entry and exit into and out of the Port Gates, the time as well as photo image of the RFID Permit holder will be captured

2. The captured image will be stored along with the timestamp, gate & lane entry information
 3. Any attempt by unauthenticated attempts will also be recorded with photo image
- H. Online web based Permit Issue Request System
1. Permit Issue request can be placed by registered firms from the comfort of their office
 2. Using OTP based authentication, they will be able to login to the system and place a request.
 3. On approval by the concerned port authority, a Permit Generation Number will be provided for collection of Permit from Permit issue counter
- I. Simplified Approval System with Email, SMS/Mobile alerts to Scrutinizer or Port Authority
1. Permit Issue request placed online by registered companies can be accessed by the Port Authority through KDS intranet
 2. The request placed by companies will also have option of alert by email, SMS/mobile alert
 3. As per the Port policy, the system can also be configured to set the policy framework for Permit issuance as per the ISPS plan.
- J. Provision for online payment gateway
1. Online payment gateway option will be provided for Port users to make payment directly to the Port for Permit issue and other related activities
 2. The Port users should be able to make the payment from any bank of their convenience
 3. Net banking, Debit card, Credit card, etc will be made available
- K. OTP based authentication / Class III digital signature based authentication
1. The access to Port Access Control System will be highly secured with OTP / Class III digital signature based authentication.
 2. CFS/ICDs, Authorized Permit Issue Centers, Registered Companies, etc. will access the system using OTP / Class III digital signature based authentication
 3. Access of the system from inside the Port network will not require OTP / Class III digital signature based authentication
- L. RFID based Internal Tracking of Equipment, Trailers & Cargo Vehicles within the Port premises
1. RFID Transceivers will be placed at various locations to capture internal movement of trailers, & cargo vehicles
 2. Location of Equipment & Vehicles can be accessed online
 3. Alert will be generated for unauthorized activities such as over stay, restricted zone access, untimely actions, etc.
 4. For the Vehicle tracking inside NS Dock area, if any firm wishes to provide GPS based tracking, the same may be provided. However, gate automation should be done based on RFID system. In the case of GPS based tracking, all incidental charges like Service provider charge or any other recurring charges should be borne by the firm.

- M. Handheld Terminal (HHT) for Mobile Spot Checking as well as speedy movement at the gates
1. CISF and Port Authorized personnel will be provided with HHT terminal which will be connected via WiFi / GSM to Port Access Control Database
 2. Spot checks can be carried out by reading the RFID Permit of users and RFID tags on vehicle
 3. In case of congestion at the gates, HHT can double up as authentication device for faster movement of traffic
- N. Live Control Room for Round-the-clock Monitoring
1. Control room will be established to monitor the gates 24/7
 2. Visual view of traffic position at the gates will be displayed
 3. Unauthorized access or anomalous movement will be highlighted
 4. Dashboard display of various parameters with real-time updates
- O. Distributed Architecture
1. The system will be highly distributed for better performance and decentralized activities
 2. The high level of Gate Automation demands that each gate be installed with a local server with an instance of data replication
 3. The server at each gate will be connected to a Central Server in the control room
 4. The Central Server should be of high-end to stand online requests from CFS/ICDs, e-Governance Centers, Authorized Centers, etc.
- P. High Availability Master Database
1. The Master database with information on all users, vehicles, policies, etc. will be high availability with active fail over mode
 2. Master Database should be robust to support large scale online requests
 3. Mirroring of Master Database will be implemented
 4. Replication of Master tables will be available at the Gates & Permit Issue Sections
- Q. Archival & Retrieval System
1. The transaction data generated by the actions such as RFID pass issue, gate authentication, image capturing, vehicle identification, etc. will be available in the active database for a specific period
 2. The data will then be rolled over to active archival system which will have capacity to hold 5 years' data
 3. The archival data should be in multiple copies with adequate backups
 4. Archival data should be actively searchable and available for retrieval anytime
- R. Backup & Disaster Recovery
1. Port Access Control Software will have real time fail over as well as DR server
 2. DR Server will be physically located separate from Central Server

3. DR Server will have instance of Master Data that is not any older than 2 hours from the live data server
- S. Integration APIs
1. Multi-level APIs will be provided by PACTS supplier for integration with other systems.
 2. Standard Text, XML and Web Services will be available
 3. Data format and communication protocol will be open for future integrations
- T. RFID Tag based Equipment & Asset Tracking within Port premises
1. RFID Tag which provide long range readability will be used to tag Equipment and Assets within Port premises
 2. The RFID tag will provide location information of assets & equipment on real-time basis
 3. The same RFID Infrastructure including UHF Transceivers and HF Controllers & Readers will be able to read the RFID tag.
- U. Offline image processing and anomaly alerts with matching and comprehensive results
1. Offline comparison of man, material and vehicle images captured by cameras
 2. Alerts when images are not consistent
 3. Comparative results and anomaly reports
- V. RFID based Internal Vehicle and Equipment Tracking System
1. Real time information of internal tracking of vehicles and equipment within the port should be available
 2. Ability to form rules based on location should be provided
 3. Graphical User Interface or Dash board to be provided to see the location of the internal vehicle
- W. Integration with Sarathi database, Vahan database and POMS of KDS/KoPT
1. Proposed system should have provision to work in integration with Sarathi, Vahan database and POMS of KDS/KoPT
 2. All records in Vahan such as vehicle registration, tax, permits, etc. could be integrated with the proposed system
 3. All records in Sarathi such as Driving license, cleaner license, fees, etc. could be integrated with the proposed system
- X. For implementation of Gate Automation System, the tenderer should note that at each gate 'booths' would require to be constructed by the selected vendor. Each 'booth' will consist of the following items :
- a. Gate server with Monitor (minimum 22") and UPS with 30 min. Battery backup at booth.
 - b. LED display unit of 32" at Gate
 - c. Camera for capturing of photo/image for both front and rear number plates of vehicles, container no., seal no., drivers' image, top view of vehicles, etc.
 - d. Boom barriers for each lane
 - e. Flap barriers for entry of pedestrians

- f. Adequate no. of RFID reader

3.24 Application Software for Dock Entry Permit (DEP):

Design, implement, commission and maintain web-based application software for automating the business processes associated with physical access control to Port premises.

The application software to have capabilities such as:

- a. Multiuser multitasking to allow for independent activities and monitoring to occur simultaneously at different workstations.
- b. Support OTP / Class III digital signature based authentication and enrolment;
 - Permit verification
 - Expiration date check, Blacklisting and its management
 - Digital photo display/check
 - Validate signatures of authorizer / recommender etc.
- c. Graphical user interface to show pull-down menus and a menu tree format that complies with interface guidelines of Microsoft Windows operating system.
- d. Real time monitoring and tracking of entry / exit of personnel and vehicles to/from Port.
- e. System license shall be for the entire system and shall include capability for future additions that are within the indicated system size limits specified in this Section.
- f. System shall have open architecture that allows importing and exporting of data and interfacing with other systems.
- g. Accountability of system components - audit trail.
- h. System administration of the Application including Access controls for access to various modules
- i. Operator login and access shall be utilized via integrated smart card reader and password protection.
- j. Interactive Reporting: It should be equipped with suitable MIS for enabling Port Management to get business information as well as monitor the system. The application software to be customized to include all business rules applicable to issue of Permit in Port.
- k. Information Transfer: Transfer transaction information on daily, monthly and yearly basis to port information system in mutually agreed format.
- l. Stakeholder should be able to submit requisition for Permits by login into the proposed portal (to be developed by prospective bidder). The system should allow only authorized port users after OTP / Class III digital signature based authentication.
- m. Information & software interface with third parties, if required.
- n. Server reconciled with the payment collected.
- o. Provision to enroll user's biometrics, identification details and photograph, etc. to be captured and stored in PACTS database for future retrieval.

p. Verification of Driver's image would be done visually offline

3.25 Supply, installation, integration, testing, customizing, configuring, commissioning, operating & maintaining the Port Access Control System including Tracking in a manner such that the commissioned solution must run uninterrupted 24 X 7 at KDS-KoPT and offer centralized pooling of data in a comprehensive database capable of generating reports and remain interoperable with similar local and national systems using integration API.

3.26 Technical Specification: The successful bidder shall strictly follow the minimum guiding technical specification or better for all hardware / equipments and software as per Annexure XXI.

3.27 Service Level Requirement (SLR) and Service Level Agreement (SLA):

A. The successful bidder shall ensure uptime availability of PACTS System at least 99.99%. All computations will be on monthly basis. The downtime will be calculated as given below

Permissible downtime in a month = $24 \times 30 \times 1/100 = 7.2$ Hrs Uptime is defined as follows:

Uptime = $\{1 - [(\text{System downtime}) / (\text{Total Time} - \text{Scheduled Downtime})]\}$ Total Time shall be measured on 24*7 basis

B. Scheduled Downtime:

Scheduled downtime is defined as the period of time when system will remain unavailable for conducting necessary preventive maintenance, urgent repairs etc. This is the Maximum duration, which the contractor can take with the prior written permission of KDS, KoPT for scheduled downtime purposes.

The maximum scheduled downtime for any site would be 10 hrs in every calendar month.

The successful bidder shall be required to execute a "Service Level Agreement (SLA)", signed jointly with KDS, KoPT under official seals within a period of 30 days from issuance of Order Letter. The Parameters of the Service Level Agreement (SLA) shall be as per Annexure XIX.

4. PRE-BID CONFERENCE:

(a) A Pre-Bid Conference shall be held on **June 3, 2016 at 11 AM** at the Office of the Joint Director (P&R); KOLKATA DOCK SYSTEM, Kolkata Port Trust at P&R Division, 15, Strand Road, Kolkata 700001, West Bengal, India. Interested Bidders may participate, if they so desire.

(b) The intending bidders are advised to formulate their queries relating to any aspect mentioned in the tender document or any clarification required and forward the same in writing well in advance to the Office of Joint Director (P&R) ; KOLKATA DOCK SYSTEM,

Kolkata Port Trust at P&R Division, 15 Strand Road, Kolkata 700001, West Bengal, India, so that the same may be discussed / clarified in the Pre-Bid Conference. During the Pre-Bid Conference, the queries received in advance would be clarified first followed by those raised during the meeting.

(c) KDS, KoPT will furnish response to all such queries including the description of the queries (without identifying the sources raising such queries) in MSTC Website as well as the official website of KoPT including modifications / amendments, if any, to the terms and conditions of the original tender, scope of the project etc. which the intending bidder is to note for submitting their tender. The amendments / modifications / clarifications shall be hosted in the form of an "Addendum" which shall become an integral part of the tender document for all purposes and shall be binding on the bidder.

(d) Attending the Pre-Bid Conference will be helpful for the intending bidder but is not mandatory.

5. Inspection of Site:

The Bidder shall be deemed to have inspected the entire project site prior to submitting their bid. Inspection of the project site will be arranged after the Pre-Bid Conference. Interested bidders may participate, if they so desire.

6. Validity of Offer:

The tender shall remain open for acceptance for a period of 120 days from the date of opening of the same. If before expiry of this validity period, the Bidder amends his quoted rates or tender, making them unacceptable to the Trustees and / or withdraws his tender, the Earnest Money deposited shall be liable to forfeiture at the option of the Trustees / sanctioning Authority.

7. Earnest Money Deposit (EMD) :

- (a) Bid / Tender submitted without Earnest Money shall be rejected outright without any reference to the Bidder whatsoever.
- (b) The amount of Earnest Money will be refunded (subject to provisions of forfeiture of Earnest Money deposit, as indicated in this tender document) to the Bidders without interest after the selection of Successful Bidder.
- (c) The Earnest Money shall be forfeited if the Bidder submits any forged document(s).
- (d) The Earnest Money will also be forfeited as per the other provisions, specifically mentioned in this Tender Document.

- (e) Earnest Money will be exempted for Micro and Small Enterprises (MSE) with NSIC registered organizations in case of single point registration covering all components of the said tender.

8. Price Bid:

Rate to be quoted online as per Annexure-VII.

Please note that KoPT does not provide any concessional Sales Tax Form. Sales Tax/ VAT or any other taxes like service tax / cess, etc., that will be payable on the earnings of the vendor should be deposited to the appropriate authority by the vendor and KoPT will not have any liabilities towards payment of such taxes during the entire contract period.

9. Evaluation of Techno Commercial Bid:

(a) The techno-commercial offers of the bidders found responsive will be evaluated as per eligibility criteria and tender terms and conditions as laid down in this tender document.

(b) KDS, KoPT reserves the right to get the financial capability of the bidder verified from the Annual Accounts of the bidder (to be submitted along with Techno- Commercial Bid) and in case of any discrepancy found, findings, as will be ascertained by KDS, KoPT, shall prevail for the purpose of evaluation.

(c) Mere submission of offer / participation shall not mean that it will be automatically considered qualified and entertained. Such qualification will be done at the time of evaluation of offers.

10. Evaluation of Price Bid:

The evaluation of the Price Bids will only be made for the techno-commercially qualified bidders. Price Bid opening time and date shall be intimated separately to the techno-commercially qualified bidders.

For the purpose of evaluation, clause 3.18 may be referred to.

SI No	Type of Permit	Frequency	No. of Permits (during the year)	Basic rate as per proposed SOR	Remarks
1	Daily Man Permit	Daily	1837039	8.50	
2	Daily Vehicle Permit (Lorry)	Daily	75100	42.53	
3	Daily Vehicle Permit (Trailer)	Daily	242273	102.06	

4	Daily Mobile Crane	Daily	4812	170.10	
5	Daily Reach Stacker	Daily	8	170.10	
6	Daily Top Lifter	Daily	0	170.10	
7	Daily Dumper	Daily	383	170.10	
8	Daily Pay Loader	Daily	1303	170.10	
9	Daily Forklift	Daily	570	102.06	
10	Daily Permit for Ship Personnel	Daily	0	19.44	
11	Daily Permit for using Truck Terminal	Daily	0	100.00	
12	Daily Free Man Permit	Daily	215746	0	
13	Monthly Man Permit	Monthly	0	229.50	
14	Quarterly Man Permit (3 Months)	Quarterly	7276	690.25	
15	Biennial Man Permit	Biennial	290	3672.00	
16	Annual Vehicle Permit (Trailer)	Annual	581	11022.48	
17	Annual Vehicle Permit (Lorry)	Annual	47	4593.24	
18	Annual Mobile Crane	Annual	0	18370.80	
19	Annual Reach Stacker	Annual	121	18370.80	
20	Annual Top Lifter	Annual	0	18370.80	
21	Annual Dumper	Annual	0	18370.80	
22	Annual Pay Loader	Annual	0	18370.80	
23	Annual Forklift	Annual	19	11022.48	
24	Annual Vehicle Permit (CART)	Annual	9	4461.68	
25	Daily Free Vehicle Permits	Daily	3863		
26	Temporary free Permits	Quarterly	2114		

NOTE: Values above are as per indicative requirement of RFID Tag given in the Price Bid as per Annexure-VII

- 11. Payment to vendor for rendering services:** The vendor should be allowed to issue various permits at a rate as mentioned in the proposed SOR basic rate (as per table mentioned under clause 10 above). **The contract will be awarded to the bidder who will offer highest/maximum percentage of basic charges to KoPT.** The successful vendor will be

responsible to collect the basic charges along with applicable taxes, etc and issue permits on behalf of KoPT after due approval of KoPT's competent authority and will deposit the entire collected amount to the KoPT's designated Bank Account by next working day. Amount should be deposited by the vendor to KoPT's designated Bank Account day-wise in such a manner that the bank transaction-Id, deposit date along with sum deposited should be reflected in PACTS. This would be required for reconciliation at KoPT's end. The percentage of basic charges payable to the vendor will be released on submission of invoice by the vendor on monthly basis. However, the tax component will not be considered for evaluation of the basic charge sharing, instead entire tax component should be transferred separately to KoPT's Account.

- 12. Acts, Laws and Statues etc. :** The successful vendor shall comply with the requirements of all the Acts, Laws, Statues, Bylaws, Rules and Regulations and any such other applicable Central / State Acts from time to time for the purpose of fulfilling all the obligations of the contract as may be deemed necessary in this regard.

13. Acceptance of Order Letter:

After finalization of the tender, KDS, KoPT shall issue Order Letter to the successful bidder. The successful bidder, on receipt of the same, shall remit requisite Performance Guarantee as per Annexure XVII within a period of 30 days from the date of issuance of Order Letter, failing which the Order Letter will become liable for cancellation with forfeiture of Earnest Money. Pending execution of Contract Agreement, the Order Letter and its acceptance by the successful bidder will be construed as an Agreement between KDS, KoPT and the successful bidder for fulfilling the scope of work and obligation of the contract by the successful bidder.

14. Execution of the Order in Totality:

- (a) The contract shall commence from the date of issuance of Order Letter.
- (b) All activities as per "Scope of Work" shall have to be completed within 90 days from the date of issuance of Order Letter.
- (c) The contract shall remain valid for a period of 10 Years, as per "Scope of Work", from the date of "successful execution of the order in totality".

15. Successful Bidder to Indemnify:

The successful bidder shall indemnify and keep indemnified KDS, KoPT and its every member, officer and staff against all actions, proceedings, claims, costs and expenses whatsoever in respect of or arising out of any action, failure or default by the successful bidder in due performance of his/their obligation under this contract. The successful bidder shall be required to submit Indemnity Bond as per Annexure XV.

The successful bidder shall indemnify KDS, KoPT from the possible future demand of workers / employees engaged by them under this contract, for absorption in KDS, KoPT. It will be the responsibility of the successful bidder to find a solution for such demand if it arises.

16. Performance Guarantee / Security Deposit:

The successful bidder, at own expense, shall have to provide to KDS, KoPT an unconditional and irrevocable Bank Guarantee as per Annexure XVI within 30 days from the date of Order Letter, in favour of "Kolkata Port Trust, Kolkata Dock System", as Performance Guarantee. The Performance Guarantee shall be for a sum of Rs. 3.00 crores (Rupees three crores only). The Performance Guarantee, shall be valid for the entire period of contract period i.e. 10 (Ten) years.

The Performance Guarantee shall be held by the "Engineer of the Contract" as security for the performance of the successful bidder's obligation under the contract. The Performance Guarantee shall be refunded after successful completion of the entire period of contract plus three months subject to recovery of damage and / or loss incurred, if any, by KDS, KoPT due to default on the part of the successful bidder.

17. Compensation:

Provision of Clause No. 8 of General Conditions of Contract (Annexure – V) to be followed.

18. Force Majeure:

The term "FORCE MAJEURE" as employed herein shall mean acts of God, Earthquake, War, Revolt, Riot, Fire, Flood, Sabotage, Hurricane / Cyclone and Strike, excluding strikes by the employees of the successful bidder. In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under the Contract, the relative obligation of the party affected by such Force Majeure shall, upon notification to the other party, be suspended for the period during which Force Majeure event last. Upon occurrence of such cause and upon its termination, the party alleging that it has been rendered unable as aforesaid, shall notify the other party in writing immediately but not later than 7 (seven) days after the alleged beginning thereof, giving full particulars and satisfactory evidence in support of its claim. If the period of Force Majeure continues or is in the reasonable judgment of the parties likely to continue beyond a period of 90 days, the parties may mutually decide to terminate the contract or continue the contract on mutually agreed revised terms.

19. Dispute / Amicable Settlement:

In the event of any dispute, question or difference arising during the contractual period or during any other time, as to any matter connected with or arising out of the contract, the decision of the Chairman, KoPT shall be final and binding upon all parties.

20. Loss of RFID Cards/ Tags:

KDS, KoPT authority shall implement appropriate rule/ guideline for lost RFID cards & tags either due to non-returning or due to misplacement.

21. Procedure for submission of invoice by the vendor: At present, issuance of permits to various port users (including man, vehicle, equipment etc.) is the responsibility of Traffic Dept. In the proposed RFID based Permit System, the vendor will issue permits to various port users after due approval of the concerned official of Traffic Department. Invoices to be raised by the vendor (for disbursement of their eligible percentage share of basic charge amount) would require to be submitted to Traffic Dept. for necessary certification from their end to allow release of payment to the vendor by Finance Dept.

22. Penalty : @Rs. 1000/- per hour or part thereof for non-functioning/non-operation of any one gate or counter or RFID reader or boom barrier and @Rs. 8000/- per hour or part thereof for entire PACTS system under following condition after exceeding the prescribed breakdown hours :

- a) Non functioning of Vehicle Entry/Exit Gate
- b) Non functioning of flap barrier for pedestrian Entry/Exit
- c) Non functioning of permit issuance counter
- d) Non functioning of RFID reader

23. The successful vendor should provide a web-based software module in PACTS for recording of non-working hours /activities / gates / permit counters etc., by the user department.

24. Sharing of KoPT Network : As mentioned in the subject document, the successful vendor would require to complete required works involved in creating the KoPT network compatible to use for the RFID system like splicing of fibre etc. without hampering KoPT normal operation / work.

GENERAL CONDITIONS OF CONTRACT

'General Conditions of Contract, Forms and Agreements' as sanctioned by the Board of Trustees of KoPT for the Port of Kolkata is hosted at www.kolkataporttrust.gov.in. (<http://www.kolkataporttrust.gov.in/showfile.php?layout=1&lang=1&lid=1342>). Only those Clauses, Forms or Formats, which are not covered elsewhere in this Tender Document, shall be applicable. Also, for the sake of interpretation of the contents of the Annexures, the terms contained in the main tender document (other than Annexures) including the 'General Conditions of Contract, Forms and Agreements' shall prevail.

DOCUMENTS TO BE UPLOADED**(Documents to be downloaded, filled up, signed, scanned and uploaded)**

Following documents for meeting the pre-qualification criteria should be uploaded by the Bidder along with offer otherwise their offer may be rejected: -

1. Evidence that the bidder(whether a single entity or a consortium) has successfully executed similar work (order letter and successful execution certificate to be provided) as per the following: (a) At least 3 similar Works each worth not less than INR 12.00 Cr. (Twelve Crores) over a period of last 7 years ending on 31.12.2015 or (b) At least 2 similar Works each worth not less than INR 15.00 Cr. (Fifteen Crores) over a period of last 7 years ending on 31.12.2015 or (c) At least 1 similar Work worth not less than INR 24.00 Cr. (Twenty Four Crores) over a period of last 7 years ending on 31.12.2015.
2. Audited balance sheet and Profit & Loss account for the last 3 (three) financial years (for each member in case of a Consortium). Average annual financial turnover during the above mentioned period must be at least INR 9.00 Crores (Rupees Nine Crores only).
3. The bidder shall submit certified copy of valid Service Tax Registration Number / Code Number (for each member in case of a Consortium).
4. The bidder shall submit Self certified copy of PAN (for each member in case of a Consortium).
5. The bidder shall submit certified copy of 'Employees State Insurance (ESI) Registration Certificate' (for each member in case of a Consortium) OR an Affidavit as per Annexure – XIV (for each member in case of a Consortium) affirmed before a First Class Judicial Magistrate and Indemnity Bond as per Annexure – XV in case the Bidder is not covered under ESI Act or exempted from it.
6. The bidder shall submit certified copy of 'Provident Fund Registration Certificate' (for each member in case of a Consortium).
7 The bidder shall submit certified copy of up-to-date Profession Tax Payment Challan (PTPC) (for each member in case of a Consortium), if applicable. If this is not applicable, the bidder should submit a declaration in this regard.
8. Power of Attorney as per Annexure – XII or XIII (in case of a Consortium).
9. Profile of Bidder as Annexure – XI
10. Declaration by the bidder as per Annexure – X
11. Copy of valid NSIC Certificate for MSEs alongwith DIC's (DISTRICT INDUSTRIES CENTRE) Certificate for Micro & Small Enterprises (MSEs) registered with NSIC (under single point registration scheme)
12. The bidder shall have to submit information regarding make, model and compliance (Yes/No) in respect of minimum guiding specification as per Tender Document.
13. The bidder shall have to submit Joint Bidding Agreement as per Annexure – XVII (in case of a Consortium).
14. The bidder shall have to submit details of Financial Capability as per Annexure – XVIII.

SCHEDULE OF RATES

Statement of different types of Permits issued during the year 2015						
SI No	Type of Permit	Frequency	Existing Basic rate as per SOR	Basic rate as per proposed SOR	No. of Permits	Remarks
1	Daily Man Permit	Daily	6.48	8.50	1837039	
2	Daily Vehicle Permit (Lorry)	Daily	32.4	42.53	75100	
3	Daily Vehicle Permit (Trailer)	Daily	77.76	102.06	242273	
4	Daily Mobile Crane	Daily	129.6	170.10	4812	
5	Daily Reach Stacker	Daily	129.6	170.10	8	
6	Daily Top Lifter	Daily	129.6	170.10	0	
7	Daily Dumper	Daily	129.6	170.10	383	
8	Daily Pay Loader	Daily	129.6	170.10	1303	
9	Daily Forklift	Daily	129.6	102.06	570	
10	Daily Permit for Ship Personnel	Daily	12.96	19.44	0	
11	Daily Permit for using Truck Terminal	Daily	19.44	100.00	0	
12	Daily Free Man Permit	Daily	0	0	215746	
13	Monthly Man Permit	Monthly	174.96	229.50	0	
14	Quarterly Man Permit (3 Months)	Quarterly	486	690.25	7276	
15	Biennial Man Permit	Biennial	2799.36	3672.00	290	
16	Annual Vehicle Permit (Trailer)	Annual	6998.4	11022.48	581	
17	Annual Vehicle Permit (Lorry)	Annual	2492	4593.24	47	
18	Annual Mobile Crane	Annual	11664	18370.80	0	
19	Annual Reach Stacker	Annual	11664	18370.80	121	
20	Annual Top Lifter	Annual	11664	18370.80	0	
21	Annual Dumper	Annual	11664	18370.80	0	
22	Annual Pay Loader	Annual	11664	18370.80	0	
23	Annual Forklift	Annual	6998.4	11022.48	19	
24	Annual Vehicle Permit (CART)	Annual	1425.6	4461.68	9	
25	Daily Free Vehicle Permits	Daily			3863	

26	Temporary free Permits	Quarterly			2114	
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Type of RFID Tag	Approximate Permanent RFID Tag required	
Employees of KDS-KoPT (Validity five years)	4000	
Contractual / Temporary Employees (Validity one year)	1200	

PRICE BID

[BIDDER NOT TO QUOTE HERE, THEY SHOULD QUOTE ONLY ONLINE]

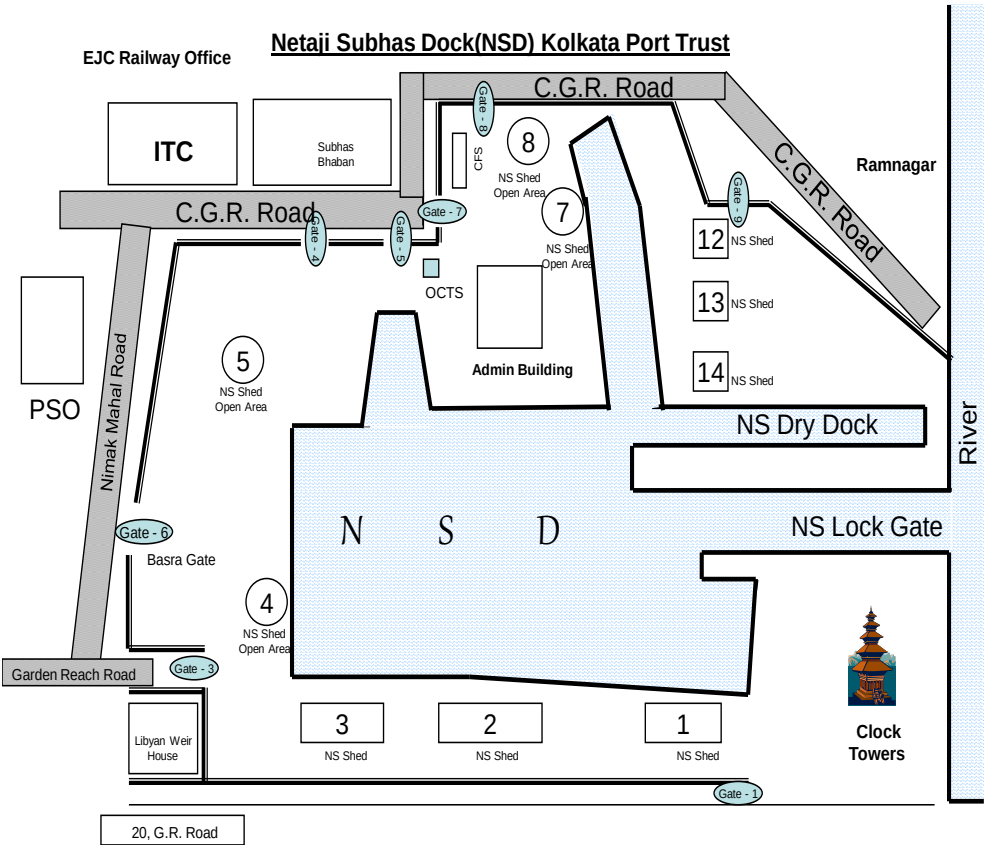
Price Bid Format:

<u>Price bid components</u>	<u>In Rs.</u>
Total Project cost (in detail – Capex & Opex)	
Percentage of sharing of basic charges on proposed basic rate** (Considering the no. of various types of permits issued at KDS during a year and the proposed Scale of Rates (SOR), the minimum percentage of share of basic charges should not be less than 20% of the basic amount.)	

**Excluding of tax component as applicable.

The tenderer should note that for the share of basic charges, the selected vendor should submit invoices to KoPT for reimbursement and the same will include the share of basic charges (i.e. % of amount payable) plus service tax.

Drawing of Coverage Area and Nomenclature of Zones



Historical information

Statement of different types of Permits issued during the last three years (2013, 2014, 2015)						
SI No	Type of Permit	Frequency	No. of Permits Issued in 2013	No. of Permits Issued in 2014	No. of Permits Issued in 2015	Remarks
1	Daily Man Permit	Daily	1658703	1670429	1837039	
2	Daily Vehicle Permit (Lorry)	Daily	53981	55101	75100	
3	Daily Vehicle Permit (Trailer)	Daily	230395	231068	242273	
4	Daily Mobile Crane	Daily	4689	4753	4812	
5	Daily Reach Stacker	Daily	7	8	8	
6	Daily Top Lifter	Daily	0	0	0	
7	Daily Dumper	Daily	346	378	383	
8	Daily Pay Loader	Daily	1256	1289	1303	
9	Daily Forklift	Daily	548	565	570	
10	Daily Permit for Ship Personnel	Daily	0	0	0	
11	Daily Permit for using Truck Terminal	Daily	0	0	0	
12	Daily Free Man Permit	Daily	248435	254634	215746	
13	Monthly Man Permit	Monthly	0	0	0	
14	Quarterly Man Permit (3 Months)	Quarterly	7374	7216	7276	
15	Biennial Man Permit	Biennial	403	357	290	
16	Annual Vehicle Permit (Trailer)	Annual	628	546	581	
17	Annual Vehicle Permit (Lorry)	Annual	54	51	47	
18	Annual Mobile Crane	Annual	0	0	0	
19	Annual Reach Stacker	Annual	99	75	121	
20	Annual Top Lifter	Annual	0	0	0	
21	Annual Dumper	Annual	0	0	0	
22	Annual Pay Loader	Annual	0	0	0	
23	Annual Forklift	Annual	40	35	19	
24	Annual Vehicle Permit (CART)	Annual	10	3	9	
25	Daily Free Vehicle Permits	Daily	4920	5896	3863	
26	Temporary free Permits	Quarterly	2307	2231	2114	

DECLARATION BY THE BIDDER

1. I / We have carefully examined and fully understood the General Instructions to Bidders, the Commercial terms and Conditions of the Contract, KoPT, KDS' General Conditions of Contract, Scope of Work, Compensation, Period of Contract etc. and all other related documents and clauses in connection with this tender.
2. I / We accept all the terms & conditions of the Tender Document (No. Plg/165/Rfid/2016/10951).
3. I / We have deposited requisite Earnest Money for the tender.
4. I / We have submitted copies of the required documents as mentioned at Annexure - VI of the Tender Document.
5. I/We declare that I/We have not been banned or delisted by any Government or Quasi-Government Agency or PSU in India.
6. I/We shall make available to Kolkata Port Trust (hereinafter referred to as KoPT) any additional information it may find necessary or require to supplement or authenticate the Tender
7. I/we acknowledge the right of KoPT to reject our tender without assigning any reason or otherwise and hereby waive our right to challenge the same on any account whatsoever.
8. I/we also certify the following:
 - a. I/we / any of the consortium members (as the case may be) have not been debarred by the Central/State Govt. or any entity controlled by them or any other legal authority for participating in any tender / contract / agreement of whatever kind
 - b. I/we certify that in the last three years, I/We/any of the consortium members or our / their associates have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award, nor been expelled from any project or contract by any public authority/entity nor have had any contract terminated by any public authority / entity for breach on our part.
9. I/we declare that:
 - a) I/we have examined and have no reservations to the Tender Document, including the Addenda issued by KoPT thereon.
 - b) I/we hereby certify that we have taken steps to ensure that no person acting for us or on

our behalf will engage in any corrupt, fraudulent or coercive practices to influence the evaluation process of the tender.

10. I/we understand that KoPT reserves the right to accept or reject any tender and to annul the tendering process and reject all tenders at any time without any liability or any obligation for such acceptance, rejection or annulment without assigning any reason thereof.

11. _____(Name of Tenderer) hereby undertakes that I/we will abide by the decision of KoPT in the matter of examination, evaluation and selection of successful tenderer and shall refrain from challenging or questioning any decision taken by KoPT in this regard.

12. My /Our local office and Registered office (if any) addresses and contact details are –

Address	Telephone	Fax	E-Mail Address

Thanking you,

Yours faithfully,

Signature of Power of Attorney Holder(s).....

Name:

Designation:

Date :

Seal

Witness:-

Sl. No.	Name	Address	Signature
1			
2			

FORMAT OF PROFILE OF THE BIDDER

1.
 - (a) Name
 - (b) Country of incorporation
 - (c) Address of the corporate headquarters and its branch office(s), if any in India.
 - (d) Date of incorporation and commencement of business.

2. Brief description of the Company including details of its main lines of business and proposed role and responsibilities in connection with implementation of the tender.

3. Details of individual(s) of the tenderer / bidder (Lead Member in case of Consortium) who will serve as the point of contact/ communication with KoPT.
 - (a) Name :
 - (b) Designation :
 - (c) Company :
 - (d) Address :
 - (e) Telephone Number :
(Land & Mobile)
 - (f) E-Mail Address :
 - (g) Fax Number :

4. Details of Authorized Signatory of the Tenderer:
 - Name :
 - Designation :
 - Company :
 - Address :
 - Telephone No. :
(Land & Mobile)
 - Fax No. :
 - Email Address :

5. In case of a Consortium:

- a. The information above (1-4) should be provided for all the members of the consortium.
- b. information regarding role of each member should be provided as per table below:

Sl. No.	Name of Member	Role
1.		
2.		
3.		
4.		

Signature of Power of Attorney Holders

Name:

Designation:

Date :

Seal

Format For Power Of Attorney For Signing Of Tender

(To be executed before Notary Public on a Non-Judicial Stamp Paper of at least Rs 10/-)

Dated: _____

POWER OF ATTORNEY

To whomsoever it may concern

Mr. _____ [Name of the Person], residing at _____ [Address of the person], acting as _____ [Designation of the person and name of the firm], and whose signature is attested below, is hereby authorized on behalf of _____ [Name of the Tenderer] to sign the tender [(Tender No.and (Tender subject- ".....")]] and submit the same and is hereby further authorized to provide relevant information/ document and respond to the enquiry's etc. as may be required by Kolkata Port Trust (KoPT) in respect of the tender.

And I/ we hereby agree that all acts, deeds and things lawfully done by our said attorney shall be construed as acts, deeds and things done by us and I/ we undertake to ratify and confirm all and whatsoever that my / our said attorney shall lawfully do or cause to be done for me / us by virtue of the power hereby given.

(Attested signature of Mr. _____)

For _____ (Name of the Tenderer)

Signature of Witness

Name & Address of Witness

(Signature with Office Seal)

Date :-

Name :-

Place:

Designation :-

Format For Power Of Attorney For Lead Member Of Consortium

(To be executed before Notary Public on a Non-Judicial Stamp Paper of at least Rs 10/-)

POWER OF ATTORNEY

Whereas KOLKATA DOCK SYSTEM, Kolkata Port Trust ("the Authority") has invited tenders from interested parties for "....." (Tender No.).

Whereas,,, And (collectively the "Consortium") being members of the Consortium are interested in bidding for the Tender in accordance with the terms and conditions of the Tender Document and other connected documents in respect of the said tender, and

Whereas, it is necessary under the Tender Document for the members of the Consortium to designate one of them as the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Tender and its execution.

NOW THEREFORE KNOW ALL MEN BY THESE PRESENTS

We, M/s. having our registered office at, M/s..... having our registered office at, M/s. having our registered office at, and M/s. having our registered office at, [the respective names and addresses of the registered office] (hereinafter collectively referred to as the "Principals") do hereby designate, nominate, constitute, appoint and authorize M/s. having its registered office at, being one of the members of the Consortium, as the Lead Member and true and lawful attorney of the Consortium (hereinafter referred to as the "Attorney"). We hereby irrevocably authorize the Attorney to conduct all business for and on behalf of the Consortium and any one of us during the bidding process and, in the event the Consortium is awarded the Contract, during the execution of the contract, and in this regard, to do on our behalf and on behalf of the Consortium, all or any of such acts, deeds or things as are necessary or required or incidental to the pre-qualification of the Consortium and submission of its bid(s) for the tender, including but not limited to signing and submission of all applications, bids and other documents and writings, participate in Pre Bid and other conferences/meetings, respond to queries, submit information/ documents, sign and execute contracts and undertakings consequent to acceptance of bid(s) of the Consortium and generally to represent the Consortium in all its dealings with the Authority, and/or any other Government Agency or any person, in all matters in connection with or relating to or arising out of the Consortium's bid(s) for the tender and/or upon award thereof till the Agreement is entered into with the Authority.

AND hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us / Consortium.

IN WITNESS HEREOF WE HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS DAY OF20**

For

.....

(Name & Title)

For

.....

(Name & Title)

For

.....

(Name & Title)

Witnesses:

1.

2.

.....

(To be executed by all the members of the Consortium)

Affidavit Format in case the Bidder is not covered under ESI Act or exempted

On 10/- (Rupees Ten) Non-judicial Stamp Paper

BEFORE THE 1ST CLASS JUDICIAL MAGISTRATE AT

Affidavit

I _____ son of _____ aged about _____ years, by faith _____ by occupation _____ residing at _____, do hereby solemnly affirm and declare as follows:

1. THAT I am the Proprietor/Partner/Director _____ having office at _____ and carrying on business on the same name and style.

(In case the above Deponent is an enlisted Successful vendor at Kolkata Port Trust, the same should be mentioned in the affidavit).

2. THAT my aforesaid Firm is exempted from Employees' State Insurance (E.S.I.) Act and the said Firm has no valid E.S.I. Registration.

3. THAT the present affidavit is to be filed before the Kolkata Port Trust as per the clause no. _____ of the Tender vide Tender no. _____ issued by the Kolkata Port Trust in respect of the work (the work is to be mentioned).

THAT the statements made above are all true to the best of my knowledge and belief.

Deponent

Identified by:

FORMAT OF INDEMNITY BOND

On 100/- (Rupees Hundred) Non-judicial Stamp Paper

Indemnity Bond

BY THIS BOND I, Shri/Smt. -----, son/daughter of Shri/Smt. -----
-----, residing at -----
-----, by occupation -----, the Partner/Proprietor/Director of the Firm -----
-----, having it's office at-----, am a tenderer under
Kolkata Port Trust (A Statutory Body under the MPT Act, 1993).

2. WHEREAS , the said Kolkata Port Trust had asked every Tenderer, who is not covered under Employees' State Insurance (E.S.I.) Act exempted to furnish an Indemnity Bond in favour of Kolkata Port trust against all damages and accidents to the labourer of the Tenderer/ Successful vendor.

3. NOW THIS BOND OF INDEMNITY WITNESSETH THAT the Tenderer/Successful vendor named herein above shall indemnify the Kolkata Port Trust against all damages and accidents occurring to the labourers of the Tenderer/Successful vendor as demanded by the Kolkata Port Trust and which shall be legal and /or claimed by the Kolkata Port Trust during the execution of the work stated in the Tender No. ----- dated-----.

4. AND the Successful vendor hereunder agrees to indemnify and all times keep indemnified the Kolkata Port Trust and its administrator and representatives and also all such possible claim or demand for damages and accidents.

IN WITNESS WHEREOF I, -----, the Partner/Proprietor/Director of the Firm -----
-----, hereto set and seal this the ----- day of-----
-----.

SIGNATURE OF INDEMNIFIER

Signature of Witness 1

SIGNATURE OF SURETY

Name & Address of Witness 1

1. NAME & ADDRESS OF SURETY

Signature of Witness 2

SIGNATURE OF SURETY

Name & Address of Witness 2

2. NAME & ADDRESS OF SURETY

Annexure –XVI

Draft Proforma of Bank Guarantee (Performance Bond) in lieu of cash Security Deposit, to be issued by the Calcutta / KOLKATA Branch, as the case may be, of any nationalised Bank of India on Non-Judicial Stamp Paper worth Rs. 50/- or as decided by the Engineer / Legal Adviser of the Trustees.

To
The Board of Trustees
for the Port of Calcutta,

BANK GUARANTEE NO DATE

Name of Issuing Bank

Name of Branch

Address

In consideration of the Board of Trustees of the Port of Calcutta, a body corporate-duly constituted under the Major Port Trusts Act, 1963 (Act 38 of 1963), having agreed to exempt Shri / Messrs, a Proprietary / Partnership / Limited / Registered Company, having its Registered Office at (hereinafter referred to as "The Contractor") from cash payment of Security Deposit / payment of Security Deposit through deduction from the Contractors' bills under the terms and conditions of a contract made between the Trustees and the Contractor for (write the name of the work as per Work Order) in terms of the Work Order No. dated (hereinafter referred to as "the said contract"), for the due fulfilment by the contractor of all the terms and conditions contained in the said contract, on submission of a Bank Guarantee for Rs. (Rupees), we, Branch, Calcutta / KOLKATA, do, on the advice of the contractor, hereby undertake to indemnify and keep indemnified the Trustees to the extent of the said sum of Rs. (Rupees We, Branch, Calcutta / KOLKATA, further agree that if a written demand is made by the Trustees through any of its officials for honouring the Bank Guarantee constituted by these presents, We, Branch, Calcutta / KOLKATA, shall have no right to decline to cash the same for any reason whatsoever and shall cash the same and pay the sum so demanded to the Trustees within a week from the date of such demand by an A/c Payee Banker's Cheque drawn in favour of "Calcutta Port Trust", without any demur. Even if there be any dispute between the contractor and the Trustees, this would be no ground for us, (Name of the Bank), Branch, Calcutta / KOLKATA, to decline to honour the Bank Guarantee in the manner aforesaid. The very fact that We, Branch, Calcutta / KOLKATA, decline or fail or neglect to honour the Bank Guarantee in the manner aforesaid shall constitute sufficient reason for the Trustees to enforce the Bank Guarantee unconditionally without any reference, whatsoever, to the contractor.

2. We, Branch, Calcutta / KOLKATA, further agree that a mere demand by the Trustees at anytime and in the manner aforesaid, is sufficient for us, Branch,

Calcutta / KOLKATA, to pay the amount covered by this Bank Guarantee in full and in the manner aforesaid and within the time aforesaid without reference to the contractor and no protest by the contractor, made either directly or indirectly or through Court, can be valid ground for us, Branch, Calcutta / KOLKATA, to decline or fail or neglect to make payment to the Trustees in the manner and within the time aforesaid.

3. We, Branch, Calcutta / KOLKATA, further agree that the Bank Guarantee herein contained shall remain in full force and effect, during the period that is taken for the due performance of the said contract by the contractor and that it shall continue to be enforceable till all the dues of the Trustees under and / or by virtue of the terms and conditions of the said contract have been fully paid and its claim satisfied and/or discharged in full and/or till the Trustees certify that the terms and conditions of the said contract have been fully and properly observed/ fulfilled by the contractor and accordingly, the Trustees have discharged the Bank Guarantee, subject however, that this guarantee shall remain valid upto and inclusive of day of 20 and subject all so that the provision that the Trustees shall have no right to demand payment against this guarantee after the expiry of 6 (six) calendar months from the expiry of the aforesaid validity period upto or any extension thereof made by us Branch, Calcutta / KOLKATA, in further extending the said validity period of this Bank Guarantee on Non-Judicial Stamp Paper of appropriate value, as required/determined by the Trustees, only on a written request by the Trustees to the contractor for such extension of validity of this Bank Guarantee.

4. We, Branch, Calcutta / KOLKATA, further agree that, without our consent and without affecting in any manner our obligations hereunder, the Trustees shall have the fullest liberty to vary from time to time any of the terms and conditions of the said contract to extend the time for full performance of the said contract including fulfilling all obligations under the said contract or to extend the time for full performance of the said contract including fulfilling all obligations under the said contract by the contractor or to postpone for any time or from time to time any of the powers exercisable by the Trustees against the contractor and to forebear or enforce any of terms and conditions relating to the said contract and We, Branch, Calcutta / KOLKATA, shall not be relieved from our liability by reason of any such variation or extension being granted to the contractor or for any fore-bearance, act or commission on the part of the Trustees or any indulgence by the Trustees to the contractor or by any such matter or thing of whatsoever nature, which under the law relating to sureties would, but for this provision, have effect of so relieving us, Branch, Calcutta / KOLKATA.

5. We, Branch, Calcutta / KOLKATA, lastly undertake not to revoke this Bank Guarantee during its currency except with the previous consent of the Trustees in writing.

SIGNATURE

NAME

DESIGNATION

(Duly constituted attorney for and on behalf of)

BANK

BRANCH

CALCUTTA / KOLKATA

(OFFICIAL SEAL OF THE BANK)

Joint Bidding Agreement

(To be executed on Non-Judicial Stamp Paper of at least Rs. 60/-)

THIS JOINT BIDDING AGREEMENT is entered into on this the day of 20...

AMONGST

1. {..... Limited, a company incorporated under the Companies Act, 1956} and having its registered office at (hereinafter referred to as the "**First Part**" which expression shall, unless repugnant to the context include its successors and permitted assigns)

AND

2. {..... Limited, a company incorporated under the Companies Act, 1956} and having its registered office at (hereinafter referred to as the "**Second Part**" which expression shall, unless repugnant to the context include its successors and permitted assigns)

AND

3. {..... Limited, a company incorporated under the Companies Act, 1956 and having its registered office at (hereinafter referred to as the "**Third Part**" which expression shall, unless repugnant to the context include its successors and permitted assigns)}

AND

4. {..... Limited, a company incorporated under the Companies Act, 1956 and having its registered office at (hereinafter referred to as the "**Fourth Part**" which expression shall, unless repugnant to the context include its successors and permitted assigns)}

The above mentioned parties of the FIRST, SECOND, {THIRD and FOURTH} PART are collectively referred to as the "**Parties**" and each is individually referred to as a "**Party**"

WHEREAS,

- (A) [KOLKATA PORT TRUST, established under the Major Port Trusts Act-1963 and having Principal Office at 15, Strand Road, Kolkata-700001 (hereinafter referred to as the "**KoPT**" which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns) has invited offers by its Request through NIT No. dated(the "**TENDER DOCUMENT**") for selection of successful tenderer for the contract as proposed in the said tender document.
- (B) The Parties are interested in jointly bidding for the Project as members of a Consortium and in accordance with the terms and conditions of the tender document and other documents in respect of the work, and

- (C) It is a necessary condition under the tender document that the members of the Consortium shall enter into a Joint Bidding Agreement and furnish a copy thereof with the Offer.

NOW IT IS HEREBY AGREED as follows:

1. Definitions and Interpretations

In this Agreement, the capitalised terms shall, unless the context otherwise requires, have the meaning ascribed thereto under the tender document.

2. Consortium

- 2.1 The Parties do hereby irrevocably constitute a consortium (the "**Consortium**") for the purposes of jointly participating in the Tendering Process for the Work.
- 2.2 The Parties hereby undertake to participate in the Tendering Process only through this Consortium and not individually and/ or through any other consortium constituted for this work, either directly or indirectly or through any of their Associates.

3. Covenants

The Parties hereby undertake that in the event the Consortium is declared the successful tenderer and awarded the contract, it shall incorporate a special purpose vehicle (the "**SPV**") under the Indian Companies Act 1956 for entering into an Agreement with the KoPT and for performing all its obligations as the successful tenderer in terms of the Agreement for the Project.

4. Role of the Parties

The Parties hereby undertake to perform the roles and responsibilities as described below:

- (a) Party of the First Part shall be the Lead member of the Consortium and shall have the power of attorney from all Parties for conducting all business for and on behalf of the Consortium during the tendering process and till all the obligations of the SPV shall become effective;
- (b) Party of the Second Part shall be {the Technical Member of the Consortium ;}
- {(c) Party of the Third Part shall be the Financial Member of the Consortium; and}
- {(d) Party of the Fourth Part shall be the Operation and Maintenance Member/ Other Member of the Consortium.}

[Note: Status of the members in (b), (c) and (d) are only illustrative. More/less parties may form the Consortium and changes may be made accordingly to the JBA]

5. Joint and Several Liability

The Parties do hereby undertake to be jointly and severally responsible for all obligations and liabilities relating to the work and in accordance with the terms of the tender document till completion of the contract.

6. Shareholding in the SPV

6.1 The Parties agree that the proportion of shareholding among the Parties in the SPV shall be as follows:

First Party:

Second Party:

{Third Party:}

{Fourth Party:}

6.2 The Parties undertake that a minimum of 26% (twenty six per cent) of the subscribed and paid up equity share capital of the SPV shall, at all times till completion of two years from the date of commencement of the contract, be held by the Parties of the First, {Second and Third} Part whose experience and net-worth have been reckoned for the purposes of pre-qualification in terms of the tender document.

6.3 The Parties undertake that they shall collectively hold at least 51% (fifty one per cent) of the subscribed and paid up equity share capital of the SPV at all times till completion of two years from the date of commencement of the contract.

6.4 The Parties undertake that they shall comply with all the requirements as stipulated in the tender document vide N.I.T. No. dated

7. Representation of the Parties

Each Party represents to the other Parties as of the date of this Agreement that:

- (a) Such Party is duly organised, validly existing and in good standing under the laws of its incorporation and has all requisite power to enter into this Agreement with KoPT;
- (b) The execution, delivery and performance by such Party of this Agreement has been authorised by all necessary and appropriate corporate or governmental action and a copy of the extract of the charter documents and board resolution/ power of attorney in favour of the person executing this Agreement for the delegation of power and KoPT to execute this Agreement on behalf of the Consortium Member is annexed to this Agreement, and will not, to the best of its knowledge:
 - (i) Require any consent or approval not already obtained;
 - (ii) Violate any Applicable Law presently in effect and having applicability to it;
 - (iii) Violate the memorandum and articles of association, by-laws or other applicable organisational documents thereof;
 - (iv) Violate any clearance, permit, concession, grant, licence or other governmental authorisation, approval, judgement, order or decree or any mortgage agreement, indenture or any other instrument to which such Party is a party or by which such Party or any of its properties or assets are bound or that is otherwise applicable to such Party; or
 - (v) Create or impose any liens, mortgages, pledges, claims, security interests, charges or Encumbrances or obligations to create a lien, charge, pledge, security interest, encumbrances or mortgage in or on the property of such Party, except for encumbrances that would not, individually or in the aggregate, have a material adverse effect on the financial condition or prospects or business of such Party so as to prevent such Party from fulfilling its obligations under this Agreement;
- (c) this Agreement is the legal and binding obligation of such Party, enforceable in accordance with its terms against it; and
- (d) there is no litigation pending or, to the best of such Party's knowledge, threatened to which it or any of its Affiliates is a party that presently affects or which would have a material adverse effect on the financial condition or prospects or business of such Party in the fulfillment of its obligations under this Agreement.

8. Termination

This Agreement shall be effective from the date hereof and shall continue in full force and effect until the Financial Close of the contract is achieved under and in accordance with the terms of the tender, in case the contract is awarded to the Consortium. However, in case the Consortium is either not pre-qualified for the work or does not get selected for award of the contract, the Agreement will stand terminated in case the Tenderer is not pre-qualified or upon return of the Earnest Money by the KoPT to the Bidder, as the case may be.

9. Miscellaneous

9.1 This Joint Bidding Agreement shall be governed by laws of India.

9.2 The Parties acknowledge and accept that this Agreement shall not be amended by the Parties without the prior written consent of the KoPT.

IN WITNESS WHEREOF THE PARTIES ABOVE NAMED HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED, SEALED AND DELIVERED

For and on behalf of

LEAD MEMBER by:

(Signature)
(Name)
(Designation)
(Address)

SIGNED, SEALED AND DELIVERED

For and on behalf of

SECOND PART by

(Signature)
(Name)
(Designation)
(Address)

SIGNED, SEALED AND DELIVERED

For and on behalf of

THIRD PART by:

(Signature)
(Name)
(Designation)
(Address)

SIGNED, SEALED AND DELIVERED

For and on behalf of

FOURTH PART by

(Signature)
(Name)
(Designation)
(Address)

In the presence of:

1.

2.

Notes:

1. The mode of the execution of the Joint Bidding Agreement should be in accordance with the procedure, if any, laid down by the Applicable Law and the charter documents of the executants (s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.
2. Each Joint Bidding Agreement should attach a copy of the extract of the charter documents and documents such as resolution / power of attorney in favour of the person executing this Agreement for the delegation of power and KoPT to execute this Agreement on behalf of the Consortium Member.
3. For a Joint Bidding Agreement executed and issued overseas, the document shall be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney has been executed.

Annexure – XVIII**Details of Financial Capability of the Tenderer**

(In Rs. Crore)

Applicant Type	Annual Financial Turn Over
	Average on last 3 years
Single entity Tenderer	
Consortium Member 1	
Consortium Member 2	
Consortium Member 3	
Consortium Member 4	

Instructions:

1. The Single Entity Tenderer/ each members of Consortium should submit its details in the appropriate column.
2. To be certified according to provision of the Tender Document.

Signature of Power of Attorney Holder(s).....**Name:****Designation:****Date :****Seal****CERTIFIED BY****Name of Chartered Accountant Firm****Registration No. & other details****Name of the Signatory****Signature****Designation****Date**

SERVICE LEVEL AGREEMENT**Confidentiality Statement**

This document contains confidential and proprietary information of the KoPT and the Service Provider, which must be kept confidential. Duplication or use other than for evaluation purposes in connection with negotiating and implementing a definitive written agreement for the provision of application maintenance outsourcing services is strictly prohibited. This document must be returned to the KoPT in the event such an agreement is not enacted.

- This service level agreement is effective as of the date of the signatures below. The KoPT and the service provider shall review at least quarterly to determine if any modifications or amendments are needed to reflect the KoPT's support requirements and service provider's services.
- The purpose of this service level agreement is to document the service delivery of the service provider to the KoPT. The service provider shall deliver the services set forth in this document.
- The service provider will provide the following services to KoPT:

Service	Description	Examples
User Support	Receive, document, and prioritize issue permits to all Port users and help KoPT staff in the use of applications or services whenever required.	• Provide help desk support • Answer queries about applications. • Receive and document bug reports. • Collect and document requests for changes. • Share status of requests.
Problem Correction	Bring an application/Device back to its original functionality before the problem arose. This may include a permanent fix or a temporary work around until a permanent fix is found.	• Fix bugs. • Retrieve functionality after abnormal program terminations. • Complete root cause analysis.
Application Enhancement	Modify the functionality of an existing application.	• Apply new functionality. • Fullfil regulatory requirements. • Enhance run-time efficiency. • Modify applications based on new releases of hardware or software.
Process and Application Improvement	Plan for better use of applications to meet business strategy and goals. This is a proactive attempt by the service provider to improve applications and processes, based on the service provider's increased application and business knowledge over time.	• Help KoPT to make strategic decisions that meet business goals. • Provide functional, architectural and process improvements as required for betterment of support and maintenance of the system areas in scope.

1. Reporting

The following processes will be used in order to manage the application maintenance outsourcing agreement:

1.1 Weekly Status Report

The service provider to provide KoPT with a weekly status report that gives an overall summary of the following:

- Project health
- On-going activities
- Completed tasks i.e. no. of permits issued (category wise)
- Reports as and when required by the user

1.2 Quarterly Review Meeting

A quarterly review meeting will include the following:

- The SLA will be reviewed with the Service provider and an amendment addendum will be created if required
- Tracking unresolved issues if any which impact the SLA
- Updating maintenance project progress and resolving critical issues
- Capturing agreements and disagreements and items needing escalation
- Review document prepared by service provider will include overall project status, issues list, metrics reporting, items that need adjustment within SLA (e.g. scope, metrics, etc.)
- SLA changes will be tracked by version number and date

1.3 Reporting Service Levels

Type	Measurement
Weekly Status Report	Delivered at not less than seven calendar day intervals
Monthly Status Report	Delivered at monthly intervals and not less than two business days before scheduled review meeting
Quarterly Status Report	Delivered at quarterly intervals and not less than five business days before scheduled review meeting

2. User Support and Problem Correction

The following procedures will be used to respond to problems that are received by the help desk. A problem is defined as an unplanned system event which adversely affects application processing or application deliverables.

2.1 Prioritization Approach

Service requests for problems received by the help desk will be given a Severity Code from 1 – 4 based on how important responding to the problem is to the primary business of KoPT as a whole, as well as the availability of workarounds.

Severity Code	Definition
1	A problem has made a critical application function unusable or unavailable and no workaround exists.
2	A problem has made a critical application function unusable or unavailable but a workaround exists. or A problem has made an important application function unusable or unavailable and no workaround exists.
3	A problem has diminished critical or important application functionality or performance but the functionality still performs as specified in the user documentation.
4	A problem has diminished supportive application functionality or performance.

2.2 Application Function Type

The table below provides a brief definition of critical, important, and supportive application functions.

Application Function Type	Description
Critical	These application functions are critical to ensuring business profitability or KoPT reputation. Extended failure will impact profit or damage KoPT reputation.
Important	These application functions are important to business productivity
Supportive	These applications support productivity, but are not essential to business effectiveness.

3. Application Enhancement

Application enhancement projects involve functional enhancements made to a properly working application to accommodate new or changed user requirements. Examples include increasing an application's performance, enhancing a user interface, or optimizing code.

Application enhancements can be requested by KoPT or proposed by service provider. The KoPT will prioritize the order in which enhancements are performed.

4. Process and Application Improvement

The service provider will help the KoPT to improve its business processes over time, in line with the KOPT's business goals and strategy. As service provider gains increased application and business knowledge, it is expected that service provider will help the KoPT to plan the better use of applications to meet business goals.

5. Signatures

The service provider and the KoPT agree to the service levels and terms outlined in this agreement.

For the service provider	For KoPT
Name: _____	Name: _____
Signature: _____	Signature: _____
Title: _____	Title: _____
Date: _____	Date: _____

6. APPENDIX A – Application Functions

6.1 Critical Application Functions

The critical application functions included in this agreement at the time of writing this document are listed below. In the future, new applications can be added by planning for appropriate knowledge transfer.

Application	Critical Functions

6.2 Important Application Functions

The important application functions included in this agreement at the time of writing this document are listed below. In the future, new applications can be added by planning for appropriate knowledge transfer.

Application	Important Functions

6.3 Supportive Application Functions

The supportive application functions included in this agreement at the time of writing this document are listed below. In the future, new applications can be added by planning for appropriate knowledge transfer.

Application	Supportive Functions

NON-DISCLOSURE AGREEMENT

This Agreement is made and entered into as of the last date signed below (the "Effective Date") by and between Kolkata Port Trust, a body under Ministry of Shipping, GOI having its principal place of business at 15, Strand Road ("KOPT") and _____, a _____ corporation whose principal mailing address is _____ (the "Second Party").

WHEREAS KoPT and the Second Party (the "Parties") have an interest in participating in discussions wherein either Party might share information with the other that the disclosing Party considers to be proprietary and confidential to itself ("Confidential Information"); and

WHEREAS the Parties agree that Confidential Information of a Party might include, but not be limited to that Party's: (1) business plans, methods, and practices; (2) personnel, customers, and suppliers; (3) inventions, processes, methods, products, patent applications, and other proprietary rights; or (4) specifications, drawings, sketches, models, samples, tools, computer programs, technical information, or other related information;

NOW, THEREFORE, the Parties agree as follows:

1. Either Party may disclose Confidential Information to the other Party in confidence provided that the disclosing Party identifies such information as proprietary and confidential either by marking it, in the case of written materials, or, in the case of information that is disclosed orally or written materials that are not marked, by notifying the other Party of the proprietary and confidential nature of the information, such notification to be done orally, by e-mail or written correspondence, or via other means of communication as might be appropriate.
2. When informed of the proprietary and confidential nature of Confidential Information that has been disclosed by the other Party, the receiving Party ("Recipient") shall, for a period of ten (10) years from the date of disclosure, refrain from disclosing such Confidential Information to any contractor or other third party without prior, written approval from the disclosing Party and shall protect such Confidential Information from inadvertent disclosure to a third party using the same care and diligence that the Recipient uses to protect its own proprietary and confidential information, but in no case less than reasonable care. The Recipient shall ensure that each of its employees, officers, directors, or agents who has access to Confidential Information disclosed under this Agreement is informed of its proprietary and confidential nature and is required to abide by the terms of this Agreement. The Recipient of Confidential Information disclosed under this Agreement shall promptly notify the disclosing Party of any disclosure of such Confidential Information in violation of this Agreement or of any subpoena or other legal process requiring production or disclosure of said Confidential Information.
3. All Confidential Information disclosed under this Agreement shall be and remain the property of the disclosing Party and nothing contained in this Agreement shall be construed as granting or conferring any rights to such Confidential Information on the other Party. The Recipient shall honor any request from the disclosing Party to promptly return or destroy all copies of Confidential Information disclosed under this Agreement and all notes related to such Confidential Information. The Parties agree that the disclosing Party will suffer irreparable injury if its Confidential Information is made public, released to a third party, or otherwise disclosed in breach of this Agreement and that the disclosing Party shall be entitled to obtain injunctive relief against a threatened breach or continuation of any such breach and, in the event of such breach, an award of actual and exemplary damages from any court of competent jurisdiction.
4. The terms of this Agreement shall not be construed to limit either Party's right to develop independently or acquire products without use of the other Party's Confidential Information. The disclosing party acknowledges that the Recipient may currently or in the future be developing information internally, or receiving information from other parties, that is similar to the Confidential

5. Notwithstanding the above, the Parties agree that information shall not be deemed Confidential Information and the Recipient shall have no obligation to hold in confidence such information, where such information:

6. Nothing in this Agreement shall be construed to constitute an agency, partnership, joint venture, or other similar relationship between the Parties.

8. This Agreement contains the entire agreement between the Parties and in no way creates an obligation for either Party to disclose information to the other Party or to enter into any other agreement.

IN WITNESS WHEREOF:

Company

Date _____

Printed Name

Title

Annexure – XXI

Implementation of RFID at Kolkata Dock System, KoPT Tender document

SPECIMEN EMD (Bank Guarantee Format)

(The Bank shall fill in this Bank Guarantee form in accordance with the instructions indicated to be executed on Rs 100/- non-judicial stamp paper)

(Bank's Name and Address of Issuing Branch or Office)

Beneficiary : _____ **(Name and Address of Employer/Board)**

Date : _____

Tender Guarantee No: _____

We have informed that (name of the Tenderer) (hereinafter called “the Tenderer”) has submitted to you its Tender dated (hereinafter called “the Tender”) for the execution of {name of the contract} under Invitation for Tenders No.(number). Furthermore, we understand that, according to your conditions Tenders must be supported by an Earnest Money Deposit (EMD).

At the request of the Tenderer, we (name of Bank) irrevocably undertake to pay you any sum or sums not exceeding in total an amount of (amount in figures) (amount in words) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Tenderer is in breach of its obligation(s) under the Tender conditions, because the Tenderer:

- (a) Has withdrawn its Tender during the period of Tender validity specified by the Tenderer in the Form of Tender; or
- (b) Having been notified of the acceptance of its Tender by the Employer / Board during the period of Tender Validity, (i) fails or refuses to execute the form of Agreement, if required or (ii) fails or refuses to furnish the performance guarantee, in accordance with the instructions to Tenderers.

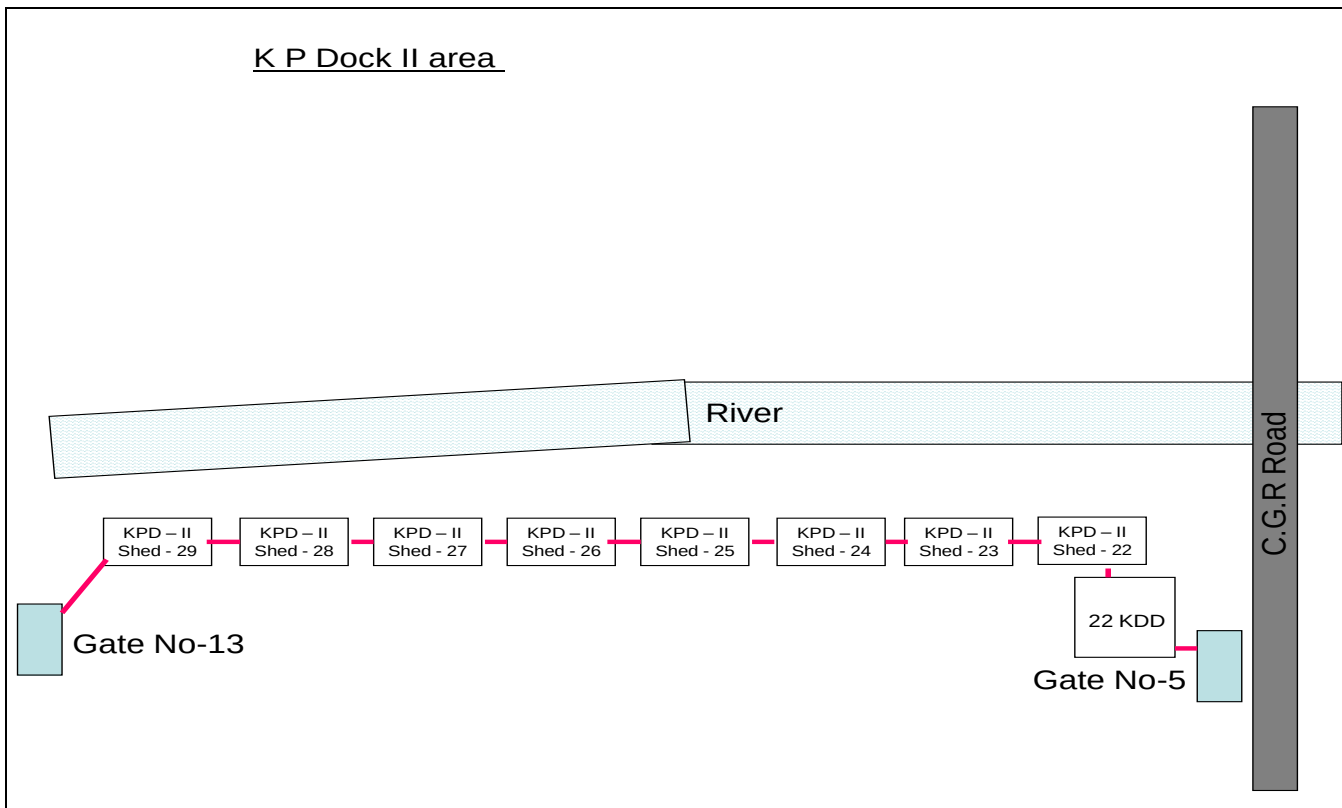
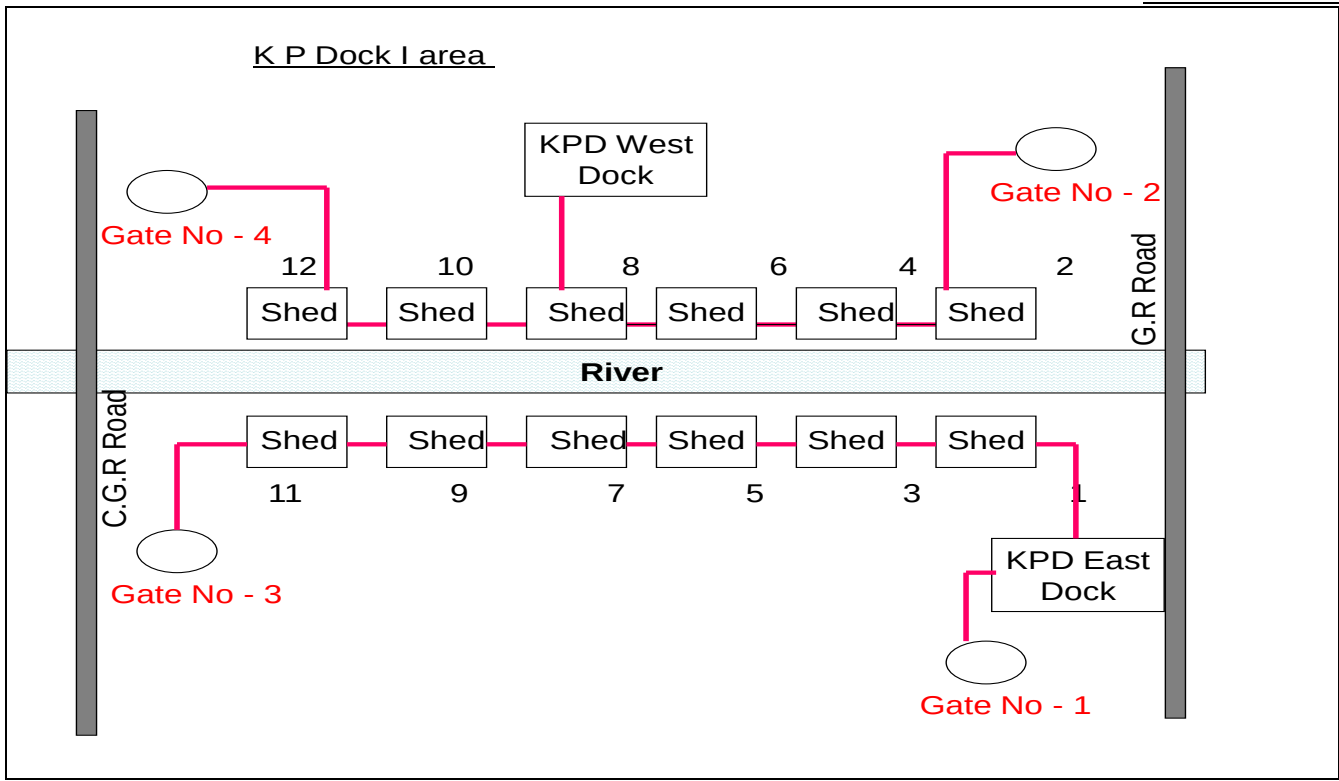
This guarantee will expire unless otherwise extended or informed by the Employer/ Board:

- (a) If the Tenderer is the successful Tenderer, upon our receipt of copies of the contract signed by the Tenderer and the performance guarantee issued to you upon the instructions of the Tenderer; or
- (b) If the Tenderer is not the successful Tenderer, upon the earlier of
 - (i) Our receipt of a copy of your notification to the Tenderer of the name of successful Tenderer; or
 - (ii) Twenty eight days after the expiration of the Tenderer’s Tender validity or any extended period thereof;

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

[Signature (s)]

[|Authorisation letter from the issuing bank that the signatory of this BG is authorized to do so should also be enclosed]



ENTRY FORMALITIES AT ENTRY GATE FOR:

1. PORT USER & GENERAL PUBLIC:

- ON FOOT (BY PEDESTERIAN)
- BICYCLES
- MOTOR BYKES
- CARS / PERSONAL VEHICLES

BASED ON MAN PERMIT ONLY WHICH ARE CHECKED BY CISF.

FOR EXPORT LEG:

2. ENTRY OF EXPORT LOAD LORRIES / TRAILERS WITH DRIVERS & KHALASHIS:

BASED ON:

- MAN PERMIT FOR DRIVERS/KHALASHIS
- LORRY/TRAILER PERMIT FOR LOADED LORRIES/TRAILERS
- VALID EGP (ENTRY GATE PASS) FOR LOADED LORRIES/TRAILERS WITH LOADED CONTAINER WHICH IS GENERATED BY GATE WARDER AT ENTRY GATE AFTER VERIFYING COMMERCIAL DOCUMENTATION; MAN PERMIT & VEHICLE PERMIT & CONTAINER.
- ACTUAL ENTRY (EGP) UPDATION IN POMS IS DONE BY CISF AFTER VERIFYING MAN PERMIT FOR DRIVER/KHALASHI, LORRY/TRAILER NUMBER AND PERMIT, CONTAINER NUMBER.
- XGP (EXIT GATE PASS) FOR EXIT OF EMPTY LORRY/TRAILER IS GENERATED BY GATE WARDER AT EXIT GATE IN POMS.
- XGP UPDATION (ACTUAL EXIT GATE PASS) IN POMS IS DONE BY CISF AFTER VERIFYING MAN PERMIT FOR DRIVER/KHALASHI, LORRY/TRAILER NUMBER AND PERMIT, XGP NUMBER.

3. ENTRY OF EXPORT LORRIES / TRAILERS WITH EMPTY CONTAINERS:

BASED ON:

- THE SAME PROCEDURE WILL BE FOLLOWED AS ENTRY OF EXPORT LOAD.

FOR IMPORT LEG:

4. ENTRY OF IMPORT EMPTY LORRIES / TRAILERS WITH DRIVERS & KHALASHIS FOR LOADING OF IMPORT LOAD CONTAINERS & CARGO AT DOCK.

BASED ON:

- MAN PERMIT FOR DRIVERS/KHALASHIS
- LORRY/TRAILER PERMIT FOR EMPTY LORRIES/TRAILERS
- VALID EGP (ENTRY GATE PASS) & WGP (WEB GATE PASS) FOR EMPTY LORRY/TRAILER WHICH IS GENERATED BY GATE WARDER AT ENTRY GATE & CFS OPERATOR AT THEIR OFFICE RESPECTIVELY AFTER VERIFYING COMMERCIAL DOCUMENTATION; MAN PERMIT & VEHICLE PERMIT & CONTAINER/CARGO.
- ACTUAL ENTRY (EGP) UPDATION IN POMS IS DONE BY CISF AFTER VERIFYING MAN PERMIT FOR DRIVER/KHALASHI, LORRY/TRAILER NUMBER AND PERMIT.
- XGP (EXIT GATE PASS) FOR EXIT OF LOAD LORRY/TRAILER IS GENERATED BY GATE WARDER AT EXIT GATE IN POMS.
- XGP UPDATION (ACTUAL EXIT GATE PASS) IN POMS IS DONE BY CISF AFTER VERIFYING MAN PERMIT FOR DRIVER/KHALASHI, LORRY/TRAILER NUMBER AND PERMIT, CONTAINER/CARGO.

Technical Specifications**Software Specifications**

Sl. No.	Module	Features
	RFID smartcard based Port Access management System should be a comprehensively ISPS compliant system	The system should be off-the-shelf (OTS) and ready to implement in Ports. ISPS Compliance certified by registered nodal certification agency is mandatory.
	Software should be suitable for heavy duty / high volume Permit / Pass issue.	OEM to have experience of supplying at least 15 lakh RFID tags using the same platform in the last 5 years to any number of clients in any industry.
(A)	Port Officer Authorization Module	
1		Provision to admin access into the complete system by a Port Authority
2		Provision to Audit every pass issued
3		Provision to restrict pass issue permission by Port Supervisor/Scrutinizer
4		Provision to restrict number of passes per Company by a Port Authority
5		Direct access to all software & database by authorized Port Authority
6		Provision to limited access to Port Supervisor/Scrutinizers at the Gates
7		Provision to scan activity of pass issue by each operator

		at any counter
8		Provision to get summary report of all activities by operators on shift wise, daily, weekly, & monthly basis
9		Provision to log all activities of logged in operators issuing the passes
(B)	Sponsoring Company Registration has	
1		Provision to define company type
2		Provision to register a company under one company type
3		Provision to define category and it rules

Sr. No.	Module	Features
4		Provision to register one or more category under one Company
5		Provision to define validity based on the license date, bank guarantee date, and documents expiry date and categories validity period.
6		Provision to define companies without any basic validity
7		Provision for Pre-renewal
8		Provision for renewal after expiry of registration
9		Provision for extension of validity for Company-Category and Category on the basis of validity Provision for parameterized, Dynamic definition Provision to declare defaulter and or blacklist a category

		and or a company immediately or with future date with a period with additional option of auto restore yes / no.
10		Provision to declare defaulter and or blacklist all the permits under the category and or Company automatically due to default/blacklist of Company or category
11		Provision to restore the Company and or Category separately or together along with their Permits
12		Provision to cancel the Company/Company- Category as per rules
13		Provision to define Maximum Validity period for the type of permit of any Category in Category Master
14		Provision for not allowing cancellation without cancelling all permits under it or if the company is defaulted or blacklisted
15		Provision for forcible Cancellation of a Company
16		Provision to cancel all the permits under it automatically
17		Provision to declare quota for various types of Permits and provision to increase/decrease quota permanently, daily or for a specific period.
18		Provision to maintain the list of authorized signatories under company-category with Photo and Signature
19		Provision to maintain the list of Director/Partners/Proprietors with their photo ad signature
20		Provision to define the Issuing Authority for different

Sr. No.	Module	Features
		types of Permits.
21		Class III Digital Signature / OTP based Authentication
(C)	Authenticated User Enrolment and Issuance of permits has	
		Provision to enroll User – Employee biometrics / identification details, photograph.
1		Provision to attach Scanned documents.
2		Provision to generate uniqueness for every User
3		Provision to retrieve information based on Biometrics, User Identification details
4		Provision to verify User credentials like biometrics etc before issuing the Permit
5		Provision to issue User permit till the Company-Category's Validity date, Document Validity date, Maximum validity period
6		Provision to Generate, Print Permit on Smart Card, Water proof sticker, Paper
7		Provision to link Smart card / RFID tag/ paper pass with Users credentials
8		Provision to renew / issue duplicate permits
9		Provision to blacklist or restore a user permit
10		Provision to record IN / OUT movement of User / vehicle / Employee
11		Provision to issue permits for different span of time like daily, weekly, Monthly, Quarterly, yearly

12		Provision to issue permits to a group or to every member of group individually
13		Provision to limit access of pass holder to specific areas
14		Provision to declare defaulter and or blacklist a user
15		Provision to restore defaulter and or blacklisted user
16		Provision to display Users Photograph on the LCD when moving in or out of the gate
17		Provision to push data of defaulters and or blacklisted user on all the readers
18		Thus controlling access of black listed persons

Sr. No.	Module	Features
19		For out entry Turnstile to be operated on deposit of Daily smart cards
20		Provision for various parameterized reports. User can generate their own MIS
21		Provision for customizable forms for storing user data along with photo identification, finger prints
22		Maintaining unique data of Users from which passes is to be generated quickly
(D)	Authenticated Vehicle Enrolment and issuance of Vehicle Permit features	
1		Provision to enroll Vehicle

2		Provision to Link passengers with Vehicle
3		Provision to generate Vehicle permits for different time period like Quarterly / yearly, Daily
4		Provision to renew / issue Duplicate Vehicle permit
5		Provision to change the Owner of the Vehicle
6		Track the IN /OUT movement of Vehicle at gate through RFID tag
7		Provision to limit access of vehicle to specific areas
8		Maintaining unique data of Vehicle from which passes is to be generated quickly
9		RFID based Internal Tracking of Equipment, Vehicle, & Visitors within the Port premises.
(E)	Cash Collection and Remittance features	
1		Provision to Define various permits
2		Provision to enter tariff for each definition of Permit.
3		Provision to Change Tariff for each Definition of Permit and should be applicable for a specific period
4		Provision to Collect Cash as per the rules defined
5		Provision for remittances made
6		Provision to collect deposit in advance against each company
7		Provision to collect cash against each permit as per the rules defined by making necessary withdrawal entry (Credit/Debit)
8		Provision for online payment to Port Account Directly

9		Conveniently available Pass Collection Counters including third party such as (ICDs, CFS, eGovernance Centers, Authorized Centers, etc.)
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Sr. No.	Module	Features
(F)	Blacklisting & Policy Enforcement Module	
1		Provision to blacklist user, vehicle, company
2		Provision to auto-block pass issue to blacklisted entities
3		Provision to raise alert for blacklisted related requests
4		Provision to report suspicious or anomalous activities with severity levels
5		Provision to create rules defining Port Gate Entry Policy
6		Provision to enforce Gate Entry Policy such entry restricted from a specific gates, etc.
7		Provision to restrict individuals & vehicles to specific areas or zones
8		Provision of rules to generate alerts by email, SMS, or Phone Call
(G)	User Module Features:	
1		Hierarchy of the users maintained
2		Levels of the users and rights given to the levels could be changed through system

3		Maker Checker facility for the user creation
4		Log of creation of User, User Validity, password Validity, and Password Policy maintained
5		Copy / Paste not allowed in the login / Password Fields
6		Validation in such a way that no compromise by SQL Injection Techniques Password encrypted
7		Last login Date/time stored in the system and displayed on the screen to the user
8		Enforcement of the initial default password and forcing the user to change password after certain No. of days parameterized.
9		After certain no. of attempts the user gets locked and the no. of attempts parameterized
10		Disabling the user automatically after certain period parameterized if the login is not at all used
11		Facility to disable the user manually
12		History of login details to the user of their own login & of all users for administrator / Super User login
(H)	RFID Card Management Module	
1		Advance enrolment of the port sponsor companies, users, vehicles, etc.

Sr. No.	Module	Features
2		Pre-personalization and Personalization of cards
3		Printing of cards & stickers
4		Management of Temporary users

5		Provision to Issue Passes from authorized locations outside the Port
6		Remote disabling of cards
7		Alerting on expired card usage attempts Security & data encryption in card or server end
(I)	Comprehensive MIS Reports & Integration Module	
1		Provision for Dashboard to view the current status of traffic at the Port
2		Tracking of each and every individual, vehicle, visitor across Port area
3		Category based reporting of traffic inside as well as at the gates
4		Classification of Users by pass type, usage activities, access zones
5		Classification of Vehicles by pass type, usage activities, access zones
6		Report on Vehicles associated by Drivers & Cleaners
7		Report of pass issued in by day, week, month, year, as well as by gates.
8		Graphical view of all the reports summary
9		Detailed report pass issue activities by Gate, by Period, by Operator

10		Summarized report of pass issue activities by Gate, by Period, by Operator
11		Reports providing anomalous activities at the gate
12		Report providing time spent by each and every man & vehicle
13		Report providing areas visited by individuals & vehicles
14		Report detailing overstay by individuals & vehicles
15		Report detailing additional movement by Individuals &

Sr. No.	Module	Features
		Vehicles beyond a defined threshold
16		Report classifying internal and external vehicle movements
17		Report on pass payment collections and reconciliation
18		Provision to check complete details of vehicle or individual on handheld System
19		Provision to transfer data to Port servers on real-time or scheduled basis
J	Gate Interface Module	
		Gate Barrier Interface Module

1		Flap & Turnstile Interface Module
2		License Plate Capture Camera Integration Module
3		Display Unit Controller
4		AVI Interface Module
5		User Photo Capture Interface Module
6		Container Reader & 3D Capture Interface Modules
7		Handheld Terminal for Mobile Spot Checking as well as speedy movement at the gates
K	Control Room & 24/7 Monitoring	
1		Summarized dashboard
2		Real-time Data updates and Visuals
3		Anomaly & Policy Break Reporting
L	Backup, Archival & Retrieval Management	□ Backup server for record keeping □ Regular synchronization with front-end server □ Historical data keeping for audit trail □ Fallback server □ Doubles up as load balancing server □ Distributed Architecture □ High Availability Master Database □ Archival & Retrieval System

Sr. No.	Module	Features
		□ Backup & DR
M	Policy Framework & Rules Engine	Configurable policy framework and rules engine Simplified Approval System with Email, SMS/

		Mobile alerts to Scrutinizer
N	Integration APIs	☐ 3 level comprehensive APIs to connect to various existing & future integrations ☐ XML & Web service based open interfaces
0	Equipment & Asset Tracking Module	☐ Provision to get real-time visibility of assets & equipment in the port premises under surveillance ☐ Provision to identify asset or equipment on a 2D or 3D layout ☐ Provision to track assets & equipment over longer distances ☐ Provision to track multiple assets with conflict resolution ☐ Provision to search all, one, or many assets on a single screen ☐ Provision to search by individual attribute or entire set of attribute ☐ Provision to save search results on a CSV, Excel,
		PDF, Print, or Copy ☐ Multi-paging of results ☐ Dashboard of summary of assets & equipment and their status ☐ Provision to add, delete, edit assets & equipment ☐ Provision to add unlimited features to an asset or equipment ☐ Provision for bulk import & export ☐ Provision to assign assets to department, person, role, etc. ☐ Provision for individual user to login and check the status of the assets assigned to them ☐ Provision to request for asset assignment, return, repair, etc. ☐ Provision of Comprehensive asset & equipment lifecycle management

P	Image Processing	☐ Offline comparison of man, material images captured by cameras ☐ Alerts when images are not consistent ☐ Comparative results and anomaly reports
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Access Controller Specifications

Sr. No	Particular
1	The networked gate controller shall provide access control processing, host functionality and power for a single gate, including reader, lock, gate status, request-to-exit device and auxiliary sounder.
2	The networked gate controller shall accept Wiegand output card readers and card formats up to 128 bits in length.
3	The networked gate controller shall provide a complete, fully featured access control hardware and firmware infrastructure for host-based access control software applications.
4	Receives and processes real-time commands from the host software application while reporting all activity to host configurable across a minimum of 255 activity priorities.
5	The networked gate controller shall communicate with hosted access control software using TCP/IP protocol over Ethernet or Internet.
6	Supports Power Over Ethernet (PoE) enabling cost-effective installation utilizing existing network infrastructures.
7	The networked gate controller shall be capable of deploying AES 256 with symmetrical key encryption for all communications between the controller and host(s) system(s).
8	The networked gate controller shall be capable of supporting custom encryption ciphers implemented using libtomcrypt open source cryptography mechanisms for all communications between the controller and host(s) system(s).
9	The networked gate controller shall support 802.1X authentication.
10	The networked gate controller shall provide full distributed processing of all access control functions. The unit shall provide fully functional off line operation when not actively communicating with the host access control software application; performing all access decisions and event logging. Upon connection with the host access control software application, the networked gate controller or networked controller/reader shall upload all buffered off-line transactions (minimum of 99,999) to the host software.
11	The networked controller shall be capable of supporting cardholder databases of

	125,000 cardholders (without database changeover) and 62,500 cardholders (with database changeover).
12	The networked gate controller shall incorporate a 32-bit 200 MHz ARM9 processor running the Linux operating system

13	The networked gate controller shall not be a proprietary product of the manufacturer of the host access control software application, and must have the ability to migrate to an alternative manufacturer's host access control software application by remote reconfiguration or firmware upgrade and without intervention from the original controller manufacturer. A dual partitioning file system enables online firmware downloads.
14	The networked gate controller shall provide diagnostics and configuration operations through connection to a local laptop computer. Installation webpages shall be interfaced using HTTPS and provide abilities to set product security including encryption keys.
15	Flexible Input / Output Linking engine that enables the status of any input to be linked to any output. In addition, any predefined group of outputs can reflect the status of the input in one of the following ways: a. Track with the input status. b. Reverse track. c. Latch. d. Reverse latch. e. Latch for a configurable time period.
16	Utilizes on-board jumpers to select 12 or 24 VDC power to locks and AUX output when powering device over PoE or 24 VDC.
17	The networked gate controller shall provide on-board Flash memory to allow program updates to be downloaded directly via the network. The networked gate controller or network controller/reader shall provide the following minimum memory: a. 128 MB on-board Flash memory b. 64 MB RAM
18	The networked controller input/outputs shall be expandable to a total of 16 inputs and 6 outputs utilizing modular plug-in IO interface devices all operating on a Hi-O CAN bus backbone
19	The networked controller controls a single access and up-to 2 readers for in/out reading. Readers can be either a Hi-O compliant (attached directly to Hi-O CAN bus backbone) reader or Wiegand attached via a Hi-O compliant Wiegand interface module.
20	Provides three implementations of anti-passback and area control, including timed, hard and soft control.
21	Provides locally controlled multi-man feature that includes schedule dependent access for a definable number of groups and multi-man sequences tied in with anti-passback.

	Alarms are triggered when sequencing fails.
22	Supports host lookup on card numbers in cases where cardholder capacity is reached or in high security threat level scenarios where host controls limited access.
23	The networked gate controller shall provide the following certifications: a. UL294 Listed Access Control Unit b. UL1076 Recognized Proprietary Burglar Component c. CSA 205 d. FCC Class A e. ICES-003 Class A f. CE Mark: ENEN 301 489-3, EN 55022, EN 50130-4, IEC 60950-1 g. C-Tick AS/NZS CISPR22 h. KCC i. EMC Directive 2004/108/EC j. LVD 2006/95/EC
24	The networked gate controller shall meet the following physical specifications: a. Dimensions: 6.1" W x 4.8" H x 1.5" D (154.9 mm x 121.9 mm x 36.3 mm) b. Weight: 11.3 oz (320 g) c. Cover Material: UL94 Polycarbonate d. Power Requirements DC Input (MAX): 1. Using PoE input power is 14.4W 2. Using +12VDC AUX input power is 18W 3. Using +24VDC AUX input power is 36W e. Temperature: 32° to 122° F (0° to 50° C) f. Humidity: 5% to 95% relative, non-condensing g. Visual Indicators on Ethernet connector:

1.	Network Activity LEDs
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	h. Communication ports and connectors: 1. RJ-45 connector for Ethernet TCP/IP (10/100baseT) 2. Wiegand/Clock-and-Data reader data port 3. Total system power output (MAX) a. PoE input power: 9.6W b. 12VDC input power: 14.4W c. 24VDC input power: 28.8W 4. Gate position input with programmable End of Line supervisory capability up to 6K Ohm. 5.1 Request to exit (REX) input with programmable End of Line supervisory capability up to 6K Ohm. 5.2 Non-latching configurable gate lock output relay a. Unpowered (Dry) contact rated 2A @ 30VDC b. Powered (Wet) contact rated for up to: i. PoE input power: 6.9W (12VDC) or 8.6W (24VDC) ii. 12VDC input power: 8.4W (12VDC) iii. 24VDC input power: 8.4W (12VDC) or 16.8W (24VDC) iv. Note: The overall system power cannot be exceeded. 7. Non-latching alarm annunciation output relay a. Unpowered (Dry) contact rated 2A @ 30VDC b. Powered (Wet) contact rated for up: i. PoE input power: 6.9W (12VDC) or 8.6W (24VDC) ii. 12VDC input power: 8.4W (12VDC) iii. 24VDC input power: 8.4W (12VDC) or 16.8W (24VDC) iv. Note: The overall system power cannot be exceeded. 8. 12VDC, 24VDC or PoE Power input

	9. Tamper input (Can have a built-in additional external tamper) 10. AC Power Fail input (Can be configured for general purpose use) 11. Battery fail input (Can be configured for general purpose use) i. Cable Distances: 1. TCP/IP: 328 feet (100m) using CAT 5 cable 2. Wiegand: 500 feet using 9-conductor stranded, overall shield 22 AWG cable (Alpha 1299C) 3. Input circuits: 500 feet using 2-conductor shielded 22AWG cable (Alpha 1292C) or 18AWG cable (Alpha 2421C) 4. Output circuits: 500 feet using 2-conductor 22AWG cable (Alpha 1172C) or 18AWG cable (Alpha 1897C)
25	The networked gate controller shall be warranted against defects in materials and workmanship for 18 months
26	Network discovery and update tools shall enable the discovery and queued update of multiple controllers on the network.

Contactless RFID Reader Specifications

Sr. No.	Particular
1	The contactless smart card reader(s) shall be designed to securely read, interpret, and authenticate access control data from 13.56 MHz contactless smart card credentials
2	Customized security protection through support of the device-independent portable credential methodology to provide enhanced security and performance features
3	Unique read selection that enables reading of the Secure Identity Object™ (SIO) and standard technologies
4	Participates in an advanced, bounded and trust-based security system
5	Guaranteed compatibility to read all data formats and ensuring card-to-reader interoperability in multi-location installations and multi-card and reader populations
6	Backwards compatibility with legacy 13.56 MHz contactless smart card access control formats (E.g. 26-bit, 32, 35-bit, 37-bit, 56-bit,etc). Compatibility across the product line shall be assured without the need of special programming
7	The contactless smart card reader shall be Secure Identity Object™ (SIO) enabled. The contactless smart card reader platform shall support the standards-based, device-independent Security Identity Object™ (SIO) portable credential methodology to ensure data authenticity and privacy. The SIO shall be able to reside on any number of identity devices, including iCLASS SE, MIFARE Classic SE, and MIFARE DESFire EV1 SE credentials
8	The contactless smart card reader shall be a certified end-point (TIP Node) within a Trusted Identity Platform™ (TIP) infrastructure. TIP shall provide a scalable, on-demand, secure identity delivery system that validates, registers and provides lifecycle management support for certified trusted end-point contactless smart card readers
9	The contactless smart card reader shall increase security by narrowing the possibility of unwanted configuration changes and denials of service. The contactless smart card reader shall utilize TIP-enabled secure configuration of contactless smart card readers with counters and uniquely diversified configuration cards
10	The contactless smart card reader shall utilize Secure Element Technology™ to protect keys and cryptographic functions to the international standard Evaluation Assurance Level (EAL) 5+.
11	The contactless smart card reader shall be configurable to utilize Velocity

	Checking to provide breach resistance against electronic attacks that invoke multiple improper authentication attempts
12	The contactless smart card reader shall be configurable to provide multiple hierarchical degrees of key compatibility for accessing the smart card access control data.
13	The contactless smart card reader shall simplify troubleshooting through Anti-passback Notification that the card has already been processed and it

	must be removed from reader field temporarily prior to processing again
14	The contactless smart card reader shall provide enhanced user feedback options through the use of clear and bright tri-colored LEDs configurable to support any three color combinations (RGB - Red, Green, and Blue).
15	The contactless smart card reader shall enable backwards compatibility with legacy 13.56 MHz access control formats (E.g. 26-bit, 32, 35-bit, 37-bit, 56-bit, and others).
16	The contactless smart card reader manufacturer shall provide global, off-the-shelf availability.
17	Contactless smart card reader shall allow the reader firmware to be upgraded in the field without the need to remove the reader from the wall through the use of factory-provided Programming Cards
18	Contactless smart card reader shall allow for secure installation practices through mounting methods utilizing tamper resistant screws
19	Contactless smart card reader shall provide the ability to transmit an alarm signal via and integrated optical tamper switch if an attempt is made to remove the reader from the wall. The tamper switch shall be programmable to provide a selectable action to provide a selectable action compatible with various tamper communication schemes provided by access control panel manufacturers. The selectable action shall include one of the following: 1. The reader open collector line changes from a high state (5V) to a low state(Ground). 2. During a tamper state, the “I’m Alive” message is inverted.
20	Contactless smart card reader shall provide ability of an on-line “I’m Alive” message so the reader’s functional health can be monitored at all times when paired with a compatible access control panel
21	The contactless smart card reader shall provide customizable reader behaviour options either from the factory, or defined in the field through the use of pre-configured command cards. Reader behaviour programming options shall include: 1. Audio/Visual Templates for card reads, and attack detection. 2. Velocity Check timing and thresholds 3. Optical tamper actions 4. RF scan delay 5. Hold Mode 6. Intelligent Power Management 7. Key diversifiers 8. Key rolling 9. CSN output configuration 10. Data Model prioritization 11. Default LED colour 12. Hold mode
22	Contactless smart card reader shall provide the following programmable audio/visual indication: 1. An audio beeper shall provide various tone sequences to signify: access granted, access denied, power up, and diagnostics.

	2. A high-intensity red/green/blue (RGB) light bar shall provide clear visual status. The light bar shall provide uniform distribution of light eliminating individual bright spots
23	Contactless smart card readers shall provide the following enhanced performance features a. The contactless smart card reader shall enable user prioritization of High-frequency/High-frequency credential reads. Technology prioritization shall synchronize a site's credential technology read priority to the access panel configuration while reducing unintended credential reads. b. The contactless smart card reader shall have the ability to provide consistent optimal read range by implementing an auto-tune function that adjusts for manufacturing tolerances to enhance consistency of performance from reader to reader. c. The contactless smart card reader shall be field programmable to provide secure upgrades for migration and extended lifecycle. d. The contactless smart card reader shall be designed as a system to provide optimal read range and read speed for increased access control throughput.
24	Contactless smart card reader shall provide enhanced environmental and sustainability features. a. The contactless smart card reader shall reduce power consumption by as much as 75% through the use of Intelligent Power Management (IPM) technology. b. The contactless smart card reader shall be manufactured with 10% recycled material to provide the potential of LEEDS building credits in new construction projects. c. Contactless smart card reader shall be fully compliant with Restriction of Hazardous Substances directive (RoHS) restricting the use of specific hazardous materials found in electrical and electronic products. The substances banned under RoHS are lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (CrVI), poly brominated biphenyls (PBB) and poly brominated diphenyl ethers (PBDE). d. Contactless smart card reader shall be manufacturers with 10.5% (Pigtail) and 11% (Terminal Strip).
25	Contactless smart card reader shall comply with the following 13.56MHz-related standards to ensure product compatibility and predictability of performance: a. ISO 15693 b. ISO 14443A c. ISO 14443B
26	Contactless smart card reader shall be suitable for global deployment by meeting worldwide radio and safety regulatory compliance including: a. UL294 (US) b. cUL (Canada)

- | |
|---|
| c. FCC Certification (US)
d. IC (Canada)
e. CE (EU)
f. C-tick (Australia, New Zealand) |
|---|

	g. SRRC (China) h. MIC (Korea) i. NCC (Taiwan) j. iDA (Singapore)
27	Contactless smart card reader shall provide the following typical contactless read ranges: a. 2.8" (7.1 cm) reading SIO on iCLASS SE Card b. 1.6" (4.1 cm) reading SIO on MIFARE DESFire EV1 SE Card c. 2.6" (6.6 cm) reading SIO on MIFARE Classic SE Card d. 1.5" (3.8 cm) reading SIO on iCLASS SE Tag or Fob e. 1.2" (3.0 cm) reading SIO on MIFARE Classic SE Tag or Fob
28	Operating voltage: 5 – 16 VDC, reverse voltage protected. Linear power supply recommended
29	Current requirements and power consumption: 1. 45 mA (Standard Power Mode) 2. 25 mA (Intelligent Power Management Mode) 3. 75 mA (Peak Current Draw) 4. 0.7 W (Standard Power Mode @ 16VDC) 5. 0.4 W (Intelligent Power Management Mode @ 16VDC)
30	Material: UL94 Polycarbonate
31	Operating temperature: -31 to 150 degrees F (-35 to 65 degrees C)
32	Operating humidity: 5% to 95% relative humidity non-condensing
33	Storage Temperature: -67 to 185 degrees F (-55 to 85 degrees C)
34	Weatherized design suitable to withstand harsh environments with a certified rating of IP55
35	The contactless smart card reader shall provide a lifetime warranty against defects in materials and workmanship

CONTACTLESS HIGH SECURITY RFID CARD Specifications

	CONTACTLESS HIGH SECURITY SMART CARD
1	The contactless smart card shall function as an access control card, used with access readers to gain entry to controlled portals and to hold identification information specific to the use.
2	The contactless smart card shall be a passive device, with an operating frequency of 13.56 MHz, and shall meet the following ISO/IEC standards: 7810, 7816 and contactless cards (14443 A). Generic command set should be based on ISO/IEC 7816-4.
3	The card shall be available as a single RFID solution designed for interoperability with 13.56 MHz readers or optionally in dual technology in conjunction with a 125 KHz proximity interface.
4	A presentation within the typical maximum read range of 3-4" to the access control reader shall result in an exact reading of the card.
5	The card shall offer a memory size of 8K-Bytes or 16K-Bytes for applications.
6	The contactless smart card shall meet the following physical characteristics: - Dimensions, per ISO/IEC 7810 (ID-1 format): 2.127" x 3.375" x 0.033" (5.40 cm x 8.57 cm x 0.084 cm). - Weight: 0.20 oz. (5.5 g). - Material and construction: Composite card materials. Card surface shall be glossy and of a material compatible with direct to card dye-sublimation or thermal transfer printing. Card construction shall meet durability requirements of ISO 7810. - The card shall be marked with an external ID number, either in inkjet or laser-etched numbering that may match the internal programmed ID number. - Optionally, the card may contain a magnetic stripe (with support for up to 3 tracks, Hi-Coercivity or Lo-Coercivity). - Optionally, the card may be printed with custom graphics, may be built to a custom thickness and may contain security and anti-counterfeiting features.
7	Contactless smart card shall meet the following environmental specifications: - Operating Temperature: -40oF to 158oF (-40oC to 70oC). - Operating Humidity: 5% to 95% relative humidity non- condensing.
8	The warranty of contactless smart cards shall be lifetime against defects on material.
9	All cryptographic algorithms, modes of operation, protocols and mechanisms used by the card shall be based on open standards (such as ISO/IEC, NIST, IEEE, EN, ETSI) and not subject to any patents or royalty payments.
10	The smart card shall support ISO/IEC 14443 specifications parts 1-4 (with communication type A) and exposes a random UID. It can be programmed with different card data formats (with variable length) including standards-based and secure Data Object credentials.
11	The card shall be available as a single RFID solution or dual technology in conjunction with a 125 KHz proximity interface.

12	The card shall be loaded with an application that leverages existing standards for maximum interoperability and heightened protection against attacks.
13	Programmable platform: The card shall use a microprocessor to support post-issuance update in the field and support retrieval of protected data formats. The card shall be ready to support future applications.
14	The card shall be programmable with one or more Secure Identity Objects (SIO) for each application.
15	The card shall support secure messaging compliant with ISO/IEC 7816-4:2005, Section 6 (Secure Messaging).
16	All contactless communications shall be secured by a secure messaging established after mutual authentication between the card and the off-card application. Each secure session relies on diversified AES keys that are setup at the start of each session. Keys are AES-128 bit. The secure messaging is based on European Standard EN14890-1 as well as ISO/IEC 7816-4.
17	For security risk remediation and protect efficiently against common attacks, the security level of the card including its cryptographic stack/key size shall be upgradable through an application update.
18	The card shall support efficient privacy protection to ensure that personally identifiable information or cards identifiers (such as contactless UID, key diversifier) are not accessible & cannot be retrieved by unauthorized parties. To prevent sequence replay or cloning, transmitted secrets or previously transmitted identifiers are not revealed in the clear to the off card application.
19	The card shall cover use cases combining physical and logical access supporting OTP – One Time Password – generation functionality based on OATH algorithm.
20	The card shall support multiple applications as part of the available memory. Each application can be loaded with different data set and memory size.
21	The card shall support adding or removing applications after the card has been issued, with full support for data integrity and consistency and confidentiality of any secrets such as authentication keys contained in the applications. The application management commands shall be based on ISO/IEC 7816-13:2007.
22	The card shall include multi-application support for on-card database application with a firewalled architecture (to ensure data separation between applications). To increase return on investment, the default application can be updated to support other services without card replacement.
23	The card application (command/response set) shall be based on ISO/ IEC 7816-4 (no proprietary command is accepted to ensure maximum interoperability).
24	The card memory shall guarantee a data retention of 20 years; Card data integrity and consistency shall be preserved at all time during the life span of the card.
25	Communication: The card shall be fully compliant with the ISO/IEC Standard "Identification cards / Contactless Integrated Circuit Cards / Proximity card" (ISO/IEC 14443 Parts 1 to 4). The compliance with the requirements of the ISO/IEC 14443 shall be tested against the standard test procedures as specified in ISO/IEC 10373-6:2011 including those specified in Annex G.
26	All commands and responses defined by the card shall be compliant with the syntax of command-response pairs as defined in ISO/IEC 7816-4:2005, Section 5.1 (Command-response pairs).

27	Data Organization
	The organization of all data on the card shall be based on ISO/IEC 7816-4:2005, Sections 5.2 (Data Objects) and 5.3 (Structures for applications and data). The encoding of data shall be BER TLV, compliant with ISO/IEC 7816-4:2005 Section 5.2.2 (BER-TLV data objects)
28	The card shall ensure that all operations available by the card command set can be interrupted at any time without any impact on the integrity and consistency of the card data. This mechanism must be fully implemented in the card and shall not require any special functionality from the reader or terminal.
29	Security architecture
	The card shall support authentication methods compliant with ISO/IEC 7816-4:2005, Section 7.5 (Basic Security Handling). The actual authentication protocol shall be one of the standard authentication protocols defined in ISO/IEC 24727-3:2008 Annex A. The card shall be fully compliant with ISO/IEC 11770-2.
30	The card shall fully align with NIST recommendations: Solution has to implement NIST approved mode of operations and cryptographic recommendations from NSA Suite B. Card key diversification shall rely on approved method from NIST SP800-108.
31	The card shall protect the privacy of the holder of the card. As minimum privacy measures, the card shall:
32	Not reveal any static value which is either unique for a single card or can be considered unique in a typical population of cards in a given system, without a prior authentication (proxy tracking)
33	Prevent any profiling of the card holder without the knowledge of secrets specific to a card
34	Prevent the ability to identify if two valid sessions are with the same card or not
35	Application management The selection of applications shall be based on a standards based name space, so that the application names can be globally unique and managed by multiple independent entities. The top of the name hierarchy shall be managed by an independent international standards body (such as ISO or ITU-T) and the name structure shall allow delegation of name management at multiple levels of hierarchy.

Automatic Gate/Boom Barrier specifications:

S.No.	Item	Description
1	Application	Outdoor
2	IP Rating	54
3	Housing	Barrier Housing Unit: Powder Coated Boom: Powder Coated White RAL 9010 with Red reflective strips.
4	Housing Dimension	Modular
5	Housing Material Of Construction	All Aluminum Housing with Base frame in SS-304 for high protection against corrosion.
6	Protection	All Housing and internal parts will be rust & corrosion free metals or alloys of high strength with suitable Epoxy coating as applicable.
7	Housing Dimension (W X D X H)	300mm X 245mm X 920mm
8	Boom Specifications	The Booms shall be extruded aluminum with octagonal profile (straight and articulated) 100mm. X 55mm. X 1.6 mm. shall be the structure of the profile. The Octagonal Profile shall offer stability against winds & better view when compared to Round & Rectangular profiles.
9	Intelligence	The barrier shall use a Blockable DC High Torque Drive in combination with CAN bus communication standard interfaced Controller. It shall offer LCD Display & Graphic User Interphase for easy control setting. Possibility for integration via standard user interphases. In built Loop Detectors
10	Motor	24 V DC Motor
11	Compliance & Safety	☐ Compliance to CE. Adherence to Safety Requirements of the ☐ EMC Directive 2004/108/EC, ☐ Low Voltage Directive 2006/95/EC and ☐ The basic requirements of the Machinery Directive 2006/42/EC
12	Power Supply	230+/- 10% VAC, 50 Hz.

13	Maximum Power Consumption	110 Watts during startup and 25 Watts at peak operation
14	Opening & Closing Time	4Secs. for 3.5 – 6 meter Boom Barrier, 1.3 Sec for upto 3.5 meter Boom Barrier
15	Safety	S/W for Detection of Presence of Vehicle in Loop with in-built loop detector or in the path of Infrared Safety Sensors available. Loops or Sensors to be used to prevent barriers from closing on the vehicle.
16	Duty Cycle	100%
17	Integration	Shall function in integration with Smart cards, proximity reader based access control systems etc

18	Performance Requirement	MCBF- 10 Million Cycles MTBF- 50,000 Hours MTTR- 30 Minutes
19	Certification	UL Listed

Flap Barrier Specifications:

S.No	Item	Description
1	Application	Indoor
2	Drive Technology	The Combination of a Brush-less DC Motor with in-built resolver shall make it a Drive with no wear & tear components. Additionally the absence of limit Switches & Slip Clutches shall provide trouble free operation w/o the need for constant maintenance.
3	Gate/Barrier Controller	Micro Processor Based Motor Controller shall have in-built Speed control and Dynamic Braking Features. Micro Processor Based Barrier Controller with Logic for Motor, Safety Sensors and Lane Indicators.
4	Throughput	25 to 30 persons per minute (excluding card validation time)
5	Operation	Bi-directional
6	Housing Dimension	Regular Lane : L 1300mm x W 250mm x H 1035mm Wide Lane : L 1300mm x W 280mm x H 1035mm with Telescopic Flap
7	Lane Width	Regular Lane : 520mm Wide Lane : 900mm
8	Flaps	Regular Lane: Soft Wing with metal reinforcement/Acrylic Flaps Wide Lane: Telescopic Soft Wing with metal reinforcement
9	Power Supply	230+/- 10% VAC, 50 Hz.
10	Finish	Mild Steel Powder Coated in Structured Finish / Stainless Steel finished to Grade 4 also known as Satin Finish.

11	Protection	All Housing and internal parts will be rust & corrosion free metals or alloys of high strength or with suitable epoxy coating
12	Power-Off / Emergency	Fail Safe Mode - Flaps shall Automatically Open during Power Failure. Also can be configured for Flaps to remain closed during power failure.
13	Safety	Soft flaps & the use of Brush-less DC motor for very quick reversibility and enhanced pedestrian safety
14	Duty Cycle	100%

15	Ingress Protection	IP 32
16	Braking	Dynamic Braking for smooth resting of flaps.
17	MCBF-Mean Cycle Between Failures	10 Million Cycles, Certification to be provided by the OEM
18	Integration	Shall function in integration with Smart cards, proximity reader based access control systems, Bio-metric systems etc.

License Plate Capturing Camera Specifications:

Sr. No.	Parameter	Particular
1	Pre-built ANPR/LPR system	ANPR camera, Controller, ANPR Software
2	Camera Resolution (H × V pixels)	1280 × 720
3	Sensor	Color, Progressive scan CCD 1/3"
4	Max frame rate (at full resolution)	30 frames/sec

5	Filter Switchable:	All pass / IR cut above 850 nm
6	Video output format	JPEG, MJPEG stream, H264
7	Exposure Control	Global shutter, software adjustable 1/100 s – 1/30000 s
8	Communication interface	100 Mbit/sec Ethernet
9	Communication protocol	ARP, ICMP, TCP/IP, DHCP, NTP, FTP, HTTP, SMTP, RTP
10	JPEG compression	Adjustable between 10 % – 80 %
11	Light sensor	Configurable day/night mode switching
12	Internal Processor	1.6 GHz Intel Atom + N2600
13	Internal memory	1 GB DDR3 + 32 GB flash storage
14	Lens type	5.2 – 58.8 mm with high precision motorized positioning
15	Iris, Focus, Zoom	Automatic motorized, programmable focus, iris, zoom
16	Recommended range for ANPR	3 m – 20 m (10 feet – 65 feet)
17	Illumination Type	High power IR LED, regulated
18	IR wavelength	850 nm
19	Intensity	3 preconfigured modes (low, medium, high)
20	Flash time	Software adjustable, up to 950 μ s

21	Input voltage	24 V – 28 V AC
22	Basic power consumption	14 W
23	Power consumption with heating	33 W
24	IP rating	IP 67
25	Housing, Shield Color	Aluminum, default color RAL 9007 / Optional custom
26	Startup temperature	Over -25°C (-13°F)
27	Operating temperature	-35 °C – 55 °C (-31 °F – 131 °F)*
28	I/O ports	Upto Isolated In/Out, RS232
29	Weight (without bracket)	5 kg (11 lbs)
30	Weight (bracket)	0.6 kg (1.32 lbs)
31	Software Operating system	Linux 64 bit
32	Software	Automatic recognition of vehicle license plates. A number plate recognition software for various intelligent traffic systems, security and any access control environments.
33	Neural network controller	Available Neural Controllers
34	Input	Still image from file or memory in any image format (BMP PNG JPEG JPEG2K RAW) Live analog video input (PAL or NTSC) Live digital camera input
35	Output	OCR data License plate number in ASCII/UNICODE text Position of the plate Confidence level in percentage Confidence levels for each characters List of further suggestions for each character Individual result for each plate on an image Color of plate (optional) Country ID (optional) Location of each plate on one image Trigger Can be integrated with any trigger device (recommended when recognizing from live image stream) Software motion detection module is included

LED Display Specifications:

Sr. No.	Parameter	Particular
1	Type	LED
2	Display Resolution	1366x768
3	Connectivity	1 x HDMI & 1 x USB
4	Screen Size	80 cm (32)
5	Refresh Rate	50Hz-100Hz

Smart Card Printer Specifications

Sr. No.	Parameter	Particular
1	Printing specifications	Single- or dual-sided printing
2	Standard features	100 card covered feeder (30 mil) • 45 card capacity output hopper (30 mil) • 16-character LCD operator control display • 300 dpi (11.8 dots/mm) print resolution
3	Communications Interfaces	USB V2.0
4	Optional Features	Built-in 10/100 Ethernet connectivity
5	Operating range	90-132VAC and 190-264VAC
6	Operating Temperature	60° F to 86° F (15° C to 30° C)
7	Storage Temperature	23° F to 131° F (-5° C to 55° C)

8	Auto-switching	single-phase AC power
9	Frequency range	47-63 Hz
10	Environmental Specifications	Printer should withstand high level of humidity and salty conditions
	Print speed	180 cards per hour

Label Printer Specifications

Sr. No.	Parameter	Particular
1	Speed (Mono/Colour)	Up to 24 ppm in A4 (25 ppm in Letter)
2	First Print Out Time (Mono/Colour)	Less than 17 sec (From Ready Mode)
3	Print Size	A4 / Letter / Legal / Oficio / Folio / JIS B5 / ISO B5 / Executive / A5 / Statement / A6 / Index Card Stock / Postcard / Envelope Monarch / Envelope No-10 / Envelope DL / Envelope C5 / Envelope C6 / Envelope No 9 / Custom
4	Print Type	Plain Paper / Thin Paper / Thick Paper / Cardstock / Thicker Paper / Hole Punched / Transparency / Pre-Printed / LetterHead / Recycled / Archive / Bond / Label / Envelope / Cotton / Coloured / Glossy
5	Memory / Storage	256 MB (Max 512 MB)
6	Monthly Duty Cycle	60,000 Images

7	Interface	High-Speed USB 2.0, Ethernet 10/100/1000 Base-TX High-Speed USB 2.0

Database Specifications:

Sr. No.	Particular	
1	Highly performance reliable database	
2	High availability with redundancy & clustering	
3	Should support existing system & IT security rules and processes	
4	Should also support OS security services	
5	Database replication & migration should be real-time without affecting the operations	
6	The database should be highly scalable and should sustain incremental & peak loads over the operation period	
7	Minimum 300 concurrent connections support	
8	Performance should not degrade with significant incremental data each day	
9	Should be able to support both Windows &	

Sr. No.	Particular	
	Linux	
10	Should support audit trail and policy compliance of sensitive data	
11	Should support periodic & occasion backup and restore without having to hold the operations	
12	Both incremental & full back up to be supported	
13	Should have inbuilt alert mechanism to warn potential issues	
14	Crash recover mechanisms to be supported.	
15	Should be able to distribute data onto physical storage devices for record keeping	
16	Should support offline db setup and quick search for record keeping	
17	Relational Database Management System	

Gate Server Specifications:

Sr. No.	Parameter	Particular
1	Description	Continuous Availability Server solution with built-in Hot pluggable redundant modular components - Single Socket 4 core or higher
2	Processor	Intel® Xeon® processor E5-2620v2, 2.1 GHz, 15 MB Cache (per processor), Intel Hyper-Threading technology. Processors should be hot pluggable and should have redundancy.

3	Memory	32 GB memory. Should be redundant, Hot Pluggable and expandable to 64 GB
4	Drive Bays	8 * 2.5" SAS Drive Bay Hot pluggable with complete redundancy
5	Hard drives	2 * 1.2 TB 10K RPM SAS Disks. Should be redundant and Should support 200GB SSD for future expansion.
6	Optical Drive	DVD-RW
7	Expansion slots	Built in 2 * PCI-Express - should be redundant, Hot Pluggable

Sr. No.	Parameter	Particular
8	Graphics	One VGA port
9	Network	Usable 2 X 10/100/1000 Ethernet Ports. Both ports should be redundant and hot
10	I/O ports & Connectors	Pluggable. 1 * Active Service Network Modem, 1 * 10/100 Management Port 4 USB Port, 2 * 9 Pin Serial port
11	Input device	USB or PS/2 keyboard and mouse
12	Power supply	Hot plug and redundant power supply (230V @50Hz) unit.
13	Power	230 V @ 50Hz, Indian power cords to be supplied
14	Operating system	Microsoft Windows 2008 or Latest, VMWare 5.x or latest (Should be able to install in the same machine

		quoted). Pre-installed from OEM.
15	Software	☐ System management software to monitor the system health at local console and over network. ☐ Fault Detection and Isolation. Software feature should include capability of Callhome and order for spares on-line ☐ The Software should offer Proactive availability management
16	Support Services	☐ Direct problem call logging with Manufacturer ☐ Less than 4 business hours 8/5, Hardware Support Response directly from Manufacturer ☐ Advance Part exchange ☐ 24/7 Proactive ASN System Monitoring support Services directly from Manufacturer
17	Mandatory Server Solution	☐ Full data redundancy to be provided using proven technology (For both Disk Data and memory data) ☐ The Server should have hardened drivers for OS and protect the system from transient

Sr. No.	Parameter	Particular
		errors ☐ The solution offered should have Zero fail over time ☐ The Server should have the capability to Remote Network Service and should be quoted with necessary Network modem ☐ The server should offer minimum 99.999% ☐ Should be able to able to install Microsoft Windows, Red Hat Linux, VMware on the same machine quoted / supplied ☐ Server should mandatorily be able to connect to all leading external Storage seamlessly like IBM, HP, EMC, Netapp, Hitachi
18	General	☐ Scope includes supply & installation ☐ Give compliance statement for the above specifications ☐ Bidder should attach the OEM technical literature of the proposed model ☐ The bid should explain in detail how the OEM's proposed system achieves uptime and how it prevents down time of the Server in-spite of a component failure ☐ The bid should explain in detail how the features mentioned above are made available in the proposed system ☐ Bidder should furnish all necessary part codes including Service components from OEM's (Part Codes should be from OEM)

Server Specifications

Sr. No.	Parameter	Particular
1	Description	Continuous Availability Server solution with built-in Hot pluggable redundant modular components –Dual core socket each with 8 core or higher
2	Processor	Intel® Xeon® processor E5-2620v2, 2.1 GHz, 15 MB Cache (per processor), Intel Hyper-Threading technology. Processors should be hot pluggable and should have redundancy.

3	Memory	128 GB memory. Should be redundant, Hot Pluggable and expandable to 256 GB or higher excluding

Sr. No.	Parameter	Particular
		redundancy
4	Drive Bays	8 * 2.5" SAS Drive Bay Hot pluggable with complete redundancy
5	Hard drives	2 * 1.2 TB 10K RPM SAS Disks. Should be redundant and Should support 200GB SSD for future expansion.
6	Optical Drive	DVD-RW
7	Expansion slots	Built in 2 * PCI-Express - should be redundant, Hot Pluggable
8	Graphics	One VGA port
9	Network	Usable 2 X 10/100/1000 Ethernet Ports. Both ports should be redundant and hot
10	I/O ports & Connectors	Pluggable. 1 * Active Service Network Modem, 1 * 10/100 Management Port 4 USB Port, 2 * 9 Pin Serial port
11	Input device	USB or PS/2 keyboard and mouse
12	Power supply	Hot plug and redundant power supply (230V @50Hz) unit.
13	Power	230 V @ 50Hz, Indian power cords to be supplied
14	Operating system	Microsoft Windows 2008 or Latest, VMWare 5.x or latest (Should be able to install in the same machine quoted). Pre-installed from OEM.
15	Software	☐ System management software to monitor the system health at local console and over network. ☐ Fault Detection and Isolation. Software feature should include capability of Call home and order for spares on-line ☐ The Software should offer Proactive availability management

16	Support Services	☐ Direct problem call logging with Manufacturer ☐ Less than 4 business hours 8/5, Hardware Support Response directly from Manufacturer ☐ Advance Part exchange ☐ 24/7 Proactive ASN System Monitoring support
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Sr. No.	Parameter	Particular
		Services directly from Manufacturer
17	Mandatory Server Solution	☐ Full data redundancy to be provided using proven technology (For both Disk Data and memory data) ☐ The Server should have hardened drivers for OS and protect the system from transient errors ☐ The solution offered should have Zero fail over time ☐ The Server should have the capability to Remote Network Service and should be quoted with necessary Network modem ☐ The server should offer minimum 99.999% ☐ Should be able to able to install Microsoft Windows, Red Hat Linux, VMware on the same machine quoted / supplied ☐ Server should mandatorily be able to connect to all leading external Storage seamlessly like IBM, HP, EMC, Netapp, Hitachi
18	General	☐ Scope includes supply & installation ☐ Give compliance statement for the above specifications ☐ Bidder should attach the OEM technical literature of the proposed model ☐ The bid should explain in detail how the OEM's proposed system achieves uptime and how it prevents down time of the ☐ Server in-spite of a component failure ☐ The bid should explain in detail how the features mentioned above are made available in the proposed system ☐ Bidder should furnish all necessary part codes including Service components from OEM's (Part Codes should be from OEM)

Digital web / camera Specifications

Sr. No.	Parameter	Particular
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1	Camera type	Camera shall be Fixed color IR Bullet IP Camera
2	Image sensors	1 / 2.8 “ mm CMOS
3	Resolution	2 Megapixel-60 fps in 1920 x 1080

Sr. No.	Parameter	Particular
4	Lens type	3-9mm power zoom lens,F1.2
5	Day/night	Day//Night Mechanical cut filter
6	Light	Light:0.05 lux color and 0 lux with IR
7	IR distance	Built-in IR Light up to 30m
8	Video compression	H.264 (High Profile supported) / MJPEG
9	WDR	100dB
10	Card slot	MicroSDup to 32 GB
11	Audio	2-way audio with microphone input
12	Alarm	Alarm Input and alarm output
13	Power	POE / 12 V DC
14	Mounting	Suitable for Pole and Wall mounting
15	Makes	Axis/Pelco/LG

Incident Capture Camera Specifications

Sr. No.	Parameter	Particular
1	Camera Type	Charge Coupled Device (CCD)
2	Capturing	Color camera Image & Video
3	Lens	Fixed focal or varifocal Auto iris lenses
4	Vision Capabilities	Day & Night Vision
5	Lux	Min. 1.8Lux (Image & Video)
6	Surge & lightning protection	Required
7	Image compensation capability to ignore stray lighting / vehicle lighting	Required
8	Snapshot Capturing	Required
9	Camera Mounting	Pole/Wall/etc.
10	Camera Location	Direct sunlight and stray lighting is negated
11	Camera Protection	Resistant to high

		winds/salty/moisture/dust. IP-65
12	Automatic adjustment of brightness	Required

Specifications of Industrial PC

1	Processor	Intel Core i5-3500 or Higher, 3.3 GHz, 6 MB L3 Cache
2	Graphics	Integrated HD Graphics
3	Memory	4 GB 1333 MHz DDR3 RAM with 16 GB Expandability.
4	Hard Disk Drive	1 TB 7200 rpm Serial ATA HDD.
5	Monitor	47 cm (18.5 inch) TFT/LED Digital Color Monitor TCO-05 Certified.
6	Keyboard	104 keys or better
7	Mouse	Optical Scroll Mouse
8	Ports	6 USB Ports (with at least 2 in front, minimum 2 USB 3.0), 1 Serial audio port for microphone and headphone in front.
9	DVD Drive	DVD R/W
	Networking Facility	10/100/1000 on board integrated Network Port

10		
11	Operating System	Windows 8 Professional (64 bit) preloaded with Certificate of Authenticity.
12	Warranty	Five years comprehensive onsite warranty

Digital Signature Specifications

Sr. No.	Parameter	Particular
1	Pen Tablet to capture signatures & drawings to insert into documents & applications	
2	USB interface	
3	Cordless digital Stylus pen with pen-tip and two barrel buttons	
4	Dimensions: 305.5mm X 268.4mm X 10.5mm	
5	Minimum Work Area: 8X6 inches	
6	OS compatibility	
7	Suitable for port weather conditions	

Label Specifications

Sr. No.	Parameter	Particular
1	Label	FASSON PP TOP WHITE C3-BG40WH

2	Dimensions:	Size of the card shall be equivalent to any credit card/Visa ISO- 7810 STANDARD (APPROX. 85 X 54 X 1.8 MM)
3	Print options	Barcode, Text, & Image printable

RFID Transceiver Specifications

Sr. No.	Parameter	Particular
1	Read Range	13 meters
2	Antenna	Integrated, Built-In
3	Protocol	ISO18000-6C, EPC UHF Class 1 Gen 2. with optional Dense Reader Mode (Class 3 Gen 2 compliant)
4	Frequency Range	865-867 MHz
5	Polarization	Circular Polarization Antenna, choice of LHCP or RHCP
6	S203 Axial Ratio	Less than 0.5 - 1.0 dB
7	External Control	2 x GPO and 2 x GPI
8	Supports True DRM	Required
9	Operating Temp:	-20°C to 60°C (-4°F to 131°F)
10	Storage Temp:	-40°C to 85°C (-40°F to 185°F)
11	Humidity:	98% Non-condensing
12	Environment Protection	IP68 with all Weather and MIL-STD-810 Ruggedized

13	Shock	MIL-STD-810F Method 516.5 Procedure V, 75g, 6ms, 2 shocks per axis
14	Vibration	MIL-STD-810F Method 514.5 Category 24
15	Mechanical Impact Resistance	Free falling ball impacting test at 1 meter in height with weight of ball at 500 grams loads
16	Connectivity	Ethernet

17	Power Supply	DC supply (12 V, 2.5 A), or use POE+ (IEEE802.3at)
18	Weight	Max. 2 Kg
19	Physical Characteristics (LxWxH)	Max. 300 x 300 x 75 mm

Handheld Transceiver Specifications

Sr. No.	Parameter	Particular
1	Read Range	8 meters
2	Read Rate	400 tags / second
3	Protocol	ISO18000-6C, EPC UHF Class 1 Gen 2 with optional Dense Reader Mode (Class 3 Gen 2 compliant)
4	Tag Information	All banks, any sizes; RSSI value
5	Frequency Range	865-867 MHz
6	Barcode Scanner	1D and 2D: Codabar, CodablockA and F, Code 11, Code 39, Code 93/93i, code 128/ISBT 128/UCC EAN 128/EAN.UCC composite, Industrial and Standard 2 of 5, Interleaved 2 of 5, Aztec, Data Matrix, (and all other Matrix type barcodes), MSI,

		PDF417/MicroPDF417, MacroPDF417 (unbuffered mode), Plessey, RSS, Telepen, TLC39, UPC/EAN/ISBN
7	Antenna Polarization	Option of vertically linear polarized, horizontally linear polarized or circular polarized
8	Operating Temp	-20°C to 50°C (-4°F to 122°F)
9	Storage Temp	-40°C to 75°C (-40°F to 167°F)
10	Humidity	5% to 95% Non-condensing
11	Ruggedized Designs	Drop test 1.5 meters on 6 sides; IP65
12	User Interface – Input	Full QWERTY keyboard, Touch Screen, Trigger Button
13	User Interface – Output	3.5” Transmissive LCD, 320 x 240 pixels, LED x 2, Buzzer
14	Connectivity	Inbuilt Wi-Fi (802.11 b/g), USB, GPRS, RTLS
15	External Memory	SD Card, Standard SD and SDHC
16	Processor	400 MHz
17	Memory	128 MByte Flash, 64 MByte RAM
18	Battery Life	1.5 hours turbo read, 20 hours standby, field replaceable battery
19	Weight	Maximum 1 Kg
20	Physical Characteristics (LxWxH)	Max. 197 x122 x 223 mm

Combo Gen2 UHF BAP + HF Tag

Sr. No.	Parameter	Particular
1	EPC Gen2 UHF BAP tag and HF	Combined in one single ID card

	tag	
2	Mode of Operation	Battery Assisted Passive
3	Direction	Omni-directional tags
4	Usage	Worn as a badge or carried in pockets, purses, briefcases, and billfolds.
5	Data Storage	Direct on Tag
6	Data Protection	Lockable data memory
7	Gen 2 UHF Read Range – Free Space	20 meters (60 feet)
8	Gen 2 UHF Read Range – Human Body	5 meters (16 feet)
9	HF Read Range	2.5
10	Standards	EPC BAP UHF: ISO 18000-6, EPC Class 3 Gen 2 HF: ISO 14443B, ISO 15693
11	UHF Memory	EPC BAP UHF: 96-bit EPC ID, 64-bit TID, 720-bit User Memory
12	HF Memory	2K-bit (256 Byte) / 16K-bit (2K Byte) / 32K-bit (4K Byte) user memory
13	Operating Temperature	-20°C to 60°C (-4°F to 140°F)
14	Operating Frequency	Global 860 to 960 MHz
15	Environment Protection	IP68
16	Dimensions	ID card standard size, 85 x 54 x 2.3 mm
17	Form factor	Direct printable card

Sr. No.	Parameter	Particular
18	Optional Features	Four color printing with optional hole punch.

Permanent Vehicle Tags

Sr. No	Parameter	Particular
1	Tag Design	Tamper-evident design as required by NHAI/MoRTH
2	Tag Certification	Automotive Research Association of India (ARAI)
3	Substrate	Translucent polyester with artwork and antenna printed on the same substrate. No multiple substrate layers glued together and no internal cuts.
4	Artwork	For windshield project's unique optional personalized graphic design printed with 3colors on the substrate.
5	Variable information	Variable information such as barcode or text is printed directly on the same substrate of the tag. Barcode can be of different formats.
6	Passive RFID Operation	RFID passive type
7	Flexibility	Flexible and Thin.
8	Protocol	ISO / IEC 18000-6C
9	Data	Up to 640 kbps data transfer rate. 32 Bit Access and 32 Bit Kill Passwords.
10	Sensibility	-14dBm in the UHF frequency band
11	Storage Temperature	-40°C to +100°C
12	ESD Voltage Immunity	+/- 3kV
13	Transferable	The tag should be nontransferable, ensuring that it cannot be removed and transferred to a different vehicle. The tag should stop working after it is removed from the vehicle and should leave evidence of detachment in both the tag and the windshield.
14	Security	The tag should include security micro text printing and the use of reflective pigments that change color under black light.
15	Data Protection	Password authentication to data.
16	Durability	Durability of at least five years from the delivery of materials and proper installation according to the installation instructions under normal environmental conditions.
17	IR and UV protection	Ultraviolet (UV) and infrared (IR) protection of the

		chip on both sides of the tag
18	Operating Frequency	865-867MHz
19	Memory	Minimum total memory chip 800-bits. Unique 64 bit

		Tag Identifier.
20	EEPROM	EEPROM write cycles to 100,000 cycles. EEPROM data retention of 5 years.
21	Operating Temperature	-40°C to +85°C
22	Relative Humidity	100% condensing

UHF Container Tag

Sr. No.	Parameter	Particular
1	Container Tag	Long read range & high durability
2	Frequency	Passive UHF
3	Metal Interference	Suitable on, off, or near metal surfaces
4	Design	Rugged for long term use in out gate& industrial environments
5	Form Factor	Small & Compact
6	Protocol	EPC Class 1 Gen2
7	Frequency Range	860-940 (MHz)
8	Read Range with a Fixed Reader	12 meters
9	Read Range with Handheld reader	4 meters
10	Material Compatibility	Optimized for Metal
11	IC Type (chip)	Impinj Monza 4QT or Alien Higgs 3
12	Memory	EPC - 96bit, User - 512bits, TID - 64bits
13	Encasement	ABS Rigid Plastic
14	Operating Temperature	-40 ° to +85 °C
15	Long term Max Temperature exposure - (days, weeks, years)	+85 °C
16	Short term Max Temperature exposure - (minutes, hours)	+105 °C
17	Halt Thermal Cycling (20 ° to +85 °C Exposure Time)	250 Cycles
18	IP Rating	IP68
19	Shock and Vibration	MIL STD 810-F
20	Impact	10kg from 1m
	Attachment	Mechanical (std),Adhesive/Magnetic,Cable Tie
21	Certifications	RoHS, CE, ATEX/IECEX, US&Canada (C1D1/D2)
22	Manufacturer Warranty	3 years
23	Size	Max. 110 x 25 x 12.85(mm)
24	Weight (g)	Max. 26

UPS Specifications

Sr. No.	Parameter	Particular
1	Design	Online UPS
2	Full Load Power Supply Time	Min. 4 Hrs
3	Operating at input voltages	210/380Volts $\pm 10\%$ and 50 Hz ± 2.5 Hz.
4	During intermittent interruption cycle	Continuously supplying power

RFID Reader and Writer Specifications

S.No	Parameter	Particulars
1	Reader	USB-5EC
2	Development Kit	USB-5EC-DEVKIT
3	RFID Protocol Support	EPCglobal Gen 2 (ISO 18000-6C) with Anti-Collision and DRM
4	Antenna	Internal linear polarized antenna with peak Gain 1 dBi from 860–960 MHz
5	RF Power Output	Separate read and write levels (into the antenna) are command-adjustable from 10 dBm to 23 dBm (200mW), +/- 1.0 dBm accuracy
6	Frequency	Pre-configured for the following regions: FCC 902-928 MHz (Americas) ETSI 865.6-867.6 MHz, 869.85 MHz (EU) KCC 917-920.8 MHz (Korea) TRAI 865-867 MHz (India) ACMA 920-926 MHz (Australia) SRRC-MII 920-925 MHz (P. R. China) 'Open' (Customizable) 860-960 MHz
7	Physical	USB mini-B connector, with 2 foot (61 cm) cable terminated in A-type plug
8	Signaling	Asynchronous serial interface with 3.3/5V logic levels; baud rates from 9600 to 921,600 bps
9	I/O	Two I/O command controlled LEDs and two I/O command queried switches
10	Protocol	Command-response protocol protected by length field and 16-bit CRC
11	Dimensions (not including stand)	97 mm L x 61 mm W x 25 mm H (3.8 in L x 2.4 in W x 1.0 in H)
12	Regulatory	FCC 47 CFR Ch.1 Part 15 Industrie Canada RSS-21 0 ETSI EN 302 208 v1.4.1
13	Safety	IEC 60950-1 (ed.2) US-17650-UL
14	DC Power Required	DC Voltage: 5 VDC (Powered by USB interface) DC Power: 2.7 W (540 mA) max Supplied interface cable terminates in two type-A plugs: one for power and signal, the second for additional power if needed
15	Idle Power Consumption	1.7 W max at idle (Power management modes can be used to reduce this to as little as 0.1 W)
16	Operating Temp.	Operating Temp. -20C to +60C

17	Storage Temp.	Storage Temp. -40C to +85C Architecture
18	User-accessible Flash	
	Memory	16 kB
19	Tag Buffer	200 Tags
20	Tag Read Rate	Up to 200 tags/second
21	Max Read Distance	Up to 3 ft (0.91 m) depending on tag sensitivity and orientation

Wired Networking Specifications

Sr. No.	Parameter	Particular
1	General	The switch should have 16 Gigabit Ports, and 4 Ports of GE for downlink and should be able to support 8 GE PoE/PoE+ Ports Each switch should have 4 combo (one SFP and one Copper ports with one port active at a time) uplink Gigabit ports in addition to downlink ports. Each switch should have Line Rate forwarding Rate for all ports The switch should have atleast 16000 Unicast MAC addresses and 1000 IGMP Multicast Groups Each switch should support atleast 1000 VLAN's and 4096 Vlan ID's Switch should have Redundant DC input voltage with operating range: nominal 9.6 to 60VDC Switch should have atleast 512MB DRAM and 128MB Flash Memory
2	Layer 2	The switch should support following Ethernet Standards : 802.3, 802.3x (flow control), 802.3ad (LACP), 802.1p, 802.1q The switch should support loop avoidance mechanism like 802.1d (spanning-tree), 802.1s (MSTP), 802.1w(RSTP), PVST or PVST+ The switch should support Unidirectional Link Detection Mechanism to detect the failures of uplink port. The switch should support Per port enabling/disabling of unknown unicast/ multicast flooding The switch should support Layer 2 Multicast Features like IGMPv1, v2 and v3 The switch should support REP or equivalent as ring convergence mechanism.
3	IPv6	The switch hardware should be capable of supporting IPv6 The switch should support following host based IPv6 features but not limited to IPv6 Addressing, IPv6 Option Processing,

		Fragmentation, ICMPv6 The switch should support IPv6 applications like Ping, Traceroute, VTY, SSH, TFTP, SNMP The switch should support HTTP and HTTP (s) over IPv6 The switch should support IPv6 Stateless Auto Config The switch should support IPv6 based Access Control Lists The switch should support SNMP over IPv6 and Syslog over IPv6
4	Security	The switch should have Port Security Mechanism with MAC Aging, Trunk Port Security and Port Security for Voice Vlan The switch should support 802.1x, 802.1x Guest Vlan, 802.1x Mac-Auth-Bypass Features The switch should support Secure Shell (SSH), TACAS+, RADIUS Server/Client The switch should support MAC Address Notification

Sr. No.	Parameter	Particular
		The switch should support BPDU Guard, Port Security. The switch should support DHCP Snooping, Dynamic ARP Inspection and IP Source Guard Mechanisms The switch should have Time Based ACL to control different policies at different times The switch should support Private VLAN's
5	QoS	The switch should support Ingress Policing and Ingress Rate Limiting of packets The Switch should support 802.1p Port Priority Mechanisms The switch should have Shaped Round Robin and Weighted Tail Drops mechanisms The switch should support DSCP Mapping and DSCP Filtering mechanisms. The switch should also support Auto Qos
6	Multicast	The switch should support IGMPv1 and IGMPv2 Filtering The switch should support IGMP v1,v2 and v3 Snooping The switch should have IGMP Snooping Timer and configurable IGMP Leave timer The switch should support Multicast Vlan Registration.
7	Utility	The switch should support for GOOSE Messaging The switch should support SCADA protocol Classification Support The switch should have Utility specific Smart Port across/Templates The switch should have MODBUS TCP/IP The switch should support Dying Gasp Message support for Loss of Power The switch should have On Board Failure Logging and Generic online Diagnostics The switch should support BFD
8	Industrial Ethernet	Switch should have Swappable Flash memory which is ideal for quick and easy switch replacement. The switch should support IEEE 1588 PTP v2 a precision timing protocol with nanosecond-level precision for high-performance applications The switch should support CIP interface and CIP Time Sync functionality The switch should support CIP Password Encryption as additional security measure The switch should support Profinetv2 and ODVA industrial Ethernet/IP The switch should have Industrial Automation Smart ports

		The switch should support Layer 2 NAT Functionality The switch should conform to various industrial standards like EN 61000-6-1 Light Industrial; EN 61000-6-2 Industrial; EN 61000-6-4 Industrial; EN 61326 Industrial Control ; EN 61131-2 Programmable Controllers The switch should support Parallel Redundancy Protocol
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Sr. No.	Parameter	Particular
9	Layer 3	The switch should support Static Routing The switch should support Inter Vlan Routing The switch should support Routing Protocols like RIPv1, RIPv2, OSPF, EIGRP, IS-IS and BGP 4 The switch should support Policy Based Routing The switch should support multicast features like PIM Sparse mode(PIM-SM), Dense Mode(PIM-DM), Sparse-Dense Mode The switch should support DHCP with DHCP option 82 for data insertion and pass through The switch should support HSRP or equivalent features The switch should support RIPv6, OSPFv3, EIGRP for IPv6, HSRPv6
10	Ruggedization	The switch should be IP30 The Switch should sustain the Operating Temperature from - 40degree Celsius upto 75 degrees Celsius using a Fan Based Enclosure Switch should conform to following Safety Standards like UL/CSA 60950-1; EN 60950-1; ANSI/ISA 12.12.01; CSA C22.2 No 213; IEC 60079-0, -15 IECEx test report; EN 60079-0, -15 ATEX certification (Class I Zone 2) The switch should be Shock Proof, Vibration Proof and Noise Immunity The switch should have Storage Temperature of -40 to 85 degree Celsius The switch should sustain Relative Humidity from 5% to 90% Non-Condensing The switch should comply to various Electromagnetic Emissions and Immunity standards not limited to the following : FCC 47 CFR Part 15 Class A; EN 55022A Class A ; VCCI Class A ; AS/NZS CISPR 22 Class A ; CISPR 11 Class A ; CISPR 22 Class A; ICES 003 Class A; CNS13438 Class A EN55024 ; CISPR 24; AS/NZS CISPR 24; KN24 ; EN 61000-4-2 Electro Static Discharge ; EN 61000-4-3 Radiated RF ; EN 61000-4-4 Electromagnetic Fast Transients; EN 61000-4-5 Surge; EN 61000-4-6 Conducted RF ; EN 61000-4-8 Power Frequency Magnetic Field ; EN 61000-4-9 Pulse Magnetic Field ; EN 61000-4-11 AC Power Voltage; EN 61000-4-18 Damped Oscillatory Wave; EN-61000-4-29 DC Voltage Dips
11	Managability	The switch should have CLI as well as Web Based GUI for management The switch should support Network Time Protocol The switch should support Configuration Rollback The switch should have USB console Port The switch should be DIN-RAIL Mountable Switch should have the option to apply a default global or interface-

		level macro with a recommended configuration, allowing the user to
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Sr. No.	Parameter	Particular
		easily set up the switch in a configuration optimized for the specific application Switch Should have atleast 2 Alarm Inputs which can be used to alert external systems, ,and , one alarm output relay

Wireless Networking Specifications

Sr. No.	Parameter	Particular
1	General	The switch should have 8 Fast Ethernet Ports and 2 Ports of 10/100/1000Mbps downlink port and 4 numbers of 10/100 PoE/PoE+ Ports Each switch should have 2 combo (one SFP and one Copper ports with one port active at a time) uplink Gigabit ports in addition to downlink ports. Switch should have forwarding rate of 6.5Mpps The switch should be modular in nature, and allow adding more ports in future The switch should have atleast 8000 Unicast MAC addresses and upto 1000 IGMP groups Each switch should support atleast 255/1000 VLAN's and 4096 Vlan ID's Switch should have atleast 128MB DRAM and 64 MB Flash Memory Switch should have Redundant DC input voltage
2	Layer 2	The switch should support following Ethernet Standards : 802.3, 802.3x (flow control), 802.3ad (LACP), 802.1p, 802.1q The switch should support loop avoidance mechanism like 802.1d (spanning-tree), 802.1s (MSTP), 802.1w(RSTP), PVST or PVST+ The switch should support Unidirectional Link Detection Mechanism to detect the failures of uplink port. The switch should support Per port enabling/disabling of unknown unicast/ multicast flooding The switch should support Layer 2 Multicast Features like IGMPv1, v2 and v3 The switch should support REP or equivalent as ring convergence mechanism.
3	IPv6	The switch hardware should be capable of supporting IPv6 The switch should support following host based IPv6 features but not limited to IPv6 Addressing, IPv6 Option Processing, Fragmentation, ICMPv6 The switch should support IPv6 applications like Ping, Traceroute,

		VTY, SSH, TFTP, SNMP The switch should support HTTP and HTTP (s) over IPv6 The switch should support IPv6 Stateless Auto Config
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Sr. No.	Parameter	Particular
		The switch should support IPv6 based Access Control Lists The switch should support SNMP over IPv6 and Syslog over IPv6
4	Security	The switch should have Port Security Mechanism with MAC Aging, Trunk Port Security and Port Security for Voice Vlans The switch should support 802.1x, 802.1x Guest Vlan, 802.1x Mac-Auth-Bypass Features The switch should support Secure Shell (SSH), TACAS+, RADIUS Server/Client The switch should support MAC Address Notification The switch should support BPDU Guard, Port Security. The switch should support DHCP Snooping, Dynamic ARP Inspection and IP Source Guard Mechanisms The switch should have Time Based ACL to control different policies at different times The switch should support Private VLAN's
5	QoS	The switch should support Ingress Policing and Ingress Rate Limiting of packets The Switch should support 802.1p Port Priority Mechanisms The switch should have Shaped Round Robin and Weighted Tail Drops mechanisms The switch should support DSCP Mapping and DSCP Filtering mechanisms. The switch should also support Auto Qos
6	Multicast	The switch should support IGMPv1 and IGMPv2 Filtering The switch should support IGMP v1,v2 and v3 Snooping The switch should have IGMP Snooping Timer and configurable IGMP Leave timer The switch should support Multicast Vlan Registration.
7	Industrial Ethernet	Switch should have Swappable Flash memory which is ideal for quick and easy switch replacement. The switch should support IEEE 1588 PTP v2 a precision timing protocol with nanosecond-level precision for high-performance applications The switch should support CIP interface and CIP Time Sync functionality The switch should support CIP Password Encryption as additional security measure The switch should support Profinetv2 and ODVA industrial Ethernet/IP The switch should have Industrial Automation Smartports The switch should have ABB Industrial IT certification The switch should support ODVA Industrial EtherNet/IP support

8	Layer 3	The switch should support Static Routing The switch should support Inter Vlan Routing The switch should support Routing Protocols like RIPv1, RIPv2, OSPF, EIGRP, IS-IS and BGP 4
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Sr. No.	Parameter	Particular
		The switch should support Policy Based Routing The switch should support multicast features like PIM The switch should support DHCP with DHCP option 82 for data insertion and pass through The switch should support HSRP or equivalent features The switch should support RIPng, OSPFv3, EIGRP for IPv6, HSRPv6
9	Ruggedization	The switch should be IP20/IP 30 (with accessory) The Switch should sustain the Operating Temperature from -40 degree Celsius upto 75 degrees Celsius using a Fan Based Enclosure Switch should conform to following Safety Standards like UL 60950-1; CSA C22.2 No. 60950-1 ; TUV/GS to EN 60950-1 The switch should be Shock and Vibration Proof The switch should have Storage Temperature of -40 to 85 degree Celsius The switch should sustain Relative Humidity from 5% to 95% Non-Condensing The switch should comply to various Electromagnetic Emissions and Immunity standards not limited to the following : FCC Part 15 Class A • EN 55022 • CISPR 22 • CISPR11 • VCCI Class A • AS/NZS 3548 Class A • CNS 13438 Class A • KN 22 Class A EN 55024 • AS/NZS CISPR 24 • KN 24 • IEC/EN 61000-4-2 (Electro Static Discharge) • IEC/EN 61000-4-3 (Radiated Immunity) • IEC/EN 61000-4-4 (Fast Transients) • IEC/EN 61000-4-5 (Surge) • IEC/EN 61000-4-6 (Conducted Immunity)• IEC/EN 61000-4-8 (Power Frequency Magnetic Field Immunity) • IEC/EN 61000-4-9 (Pulse Magnetic Field Immunity) • IEC/EN 61000-4-10 (Oscillatory Magnetic Field Immunity) • IEC/EN 61000-4-11 (AC power Voltage Immunity) • IEC/EN 61000-4-16 (Low Frequency Conducted CM Disturbances) • IEC/EN 61000-4-17 (Ripple on DC Input Power) • IEC/EN 61000-4-18 (Damped Oscillatory Wave) • IEC/EN 61000-4-29 (Voltage Dips Immunity, DC power) • IEEE C37.90 (Surge) • IEEE C37.90.1 (Fast Transients) • IEEE C37.90.2 (Radiated Immunity) • IEEE C37.90.3 (Electro Static Discharge) "• UL/CSA • CE (Europe)"
10	Manageability	The switch should have CLI as well as Web Based GUI for management The switch should support Network Time Protocol The switch should support Configuration Rollback The switch should have RJ 45 console Port The switch should be DIN-RAIL Mountable, Wall or 19" inch rack mountable Switch Should have Alarm Relay contacts which can be used to alert

		external systems Switch should have the option to apply a default global or interface-
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Sr. No.	Parameter	Particular
		level macro with a recommended configuration, allowing the user to easily set up the switch in a configuration optimized for the specific application