



कोचिन पत्तन प्राधिकरण
Cochin Port Authority

COCHIN PORT AUTHORITY
5th Floor, Administrative Building
Willingdon Island, Cochin – 682009.

E –TICKETING SOLUTION
FOR DEPARTMENT OF PORT SHIPPING AND AVIATION,
ADMINISTRATION OF UNION TERRITORY OF LAKSHADWEEP

COCHIN PORT AUTHORITY

Office of the Sr. Dy. Director(EDP)
5th floor, Administrative Building,
Willingdon Island, Cochin-682009

No. FIN/EDP/Cloud Infrastructure/2023

Dated : 19/09/2023

NOTICE INVITING BUDGETRY QUOTE

Budgetary Quotations are invited by COCHIN PORT AUTHORITY from reputed firms in india for implementing e-ticketing solution for the Union Territory of Lakshadweep Administration (UTLA) through system integration.

SCOPE OF WORK

The Scope of work covers (i) Supply/development, Customization and implementation of an e- ticketing solution (ii) Cloud hosting (iii) Integration with other application (iv) providing suitable IT infrastructure and hand held devices (v) Training and documentation (vi) Maintenance of the entire project for 5 years.

The System Integrator (SI) needs to provide

- i. Supply/Development, Customization and implementation of e-ticketing solution with the following modules / features / facilities
 - Application Administration Module
 - User Registration Module
 - Ticket Reservation Purchase Module
 - Ship Visit Purchase Module
 - Ticket Checkers Module
 - Cargo Reservation Purchase Module
 - Cargo Tracking module
 - Dashboard and Reports
 - Integration with Other applications like e-Invoicing, Internal Finance module
 - Mobile App

The detailed requirement of the e-ticketing solution is given in Annexure I

- ii. VMs in Cloud (IaaS model) with OS and Databases for the deployment of application in three landscape viz., Development, Quality & Production environment and its licenses /subscriptions for the entire period of the contract. (Specifications of the VMs core/RAM/ HDD , OS, Database needs to be provided with the Budgetary offer)

- iii. Hardware firewalls with subscriptions during the entire contract period including management and necessary upgradation as part of cyber security.
- iv. Registration of domain and SSL certification
- v. Redundant MPLS connectivity to the Administrative Office of Lakshadweep, W/Island, Cochin
- vi. IT Audit by engaging a third party and its compliance till the entire period of the contract.
- vii. Integration with UPI, Payment Gateway, SMS, OTP, WhatsApp, eMail, Digilocker, Digi Yatra, QR Code scanner. All statutory requirements need to be met by the SI for the UTLA.

Around 1500 concurrent users are expected to access the application during peak hours. The warranty from the date of Go-live for one year with hand holding to the users and Maintenance is for five years.

All prospective bidders are requested to submit the budgetary quote in the BQ format (pdf & Excel) (Annexure II) by way of mail to below address on or before 20.09.2023 1700 Hrs.

Encl/Annexure :

- (i) Annexure I
- (ii) Annexure II BQ format

Sd/-
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Finance Department

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ANNEXURE I

e-TICKETING SOLUTION IN DETAIL

1. GENERAL REQUIREMENTS

- 1.1.The application should be simple in design and must be accessible to a person with basic knowledge of electronic devices such as mobile phones, tablets, computers etc. The user interface must be designed with a view that this application is going to be used by common man and therefore the use of language, design of icons, placement of the same should be easily identifiable to common man.
- 1.2.The application must not consume much space in the mobile devices and should be functional at minimum connectivity.
- 1.3.Along with web portal, a mobile application of the same also needs to be developed.
- 1.4.Application should be compatible with the IOS and Android Operating systems.
- 1.5.Multi language integration – English, Malayalam and Mahal
- 1.6.Any person shall register themselves in the E- ticketing solution. Along with normal registration process for obtaining login credentials, a quick login option shall also be available to the users so that they can login to the application only after entering name, Aadhaar number, mobile number in the respective fields. In such cases an OTP received to the mobile number entered in the application should allow the user to login. The detailed credentials of such users need to be obtained from the person through constant reminders. In the case of normal user registration process, information such as name, address, Adhaar number, mobile number, email id (if available), preferred payment mode needs to be obtained from the users at the time of user registration.
- 1.7.The registered user of the application shall access the Ticketing Module and Cargo Module to procure Passenger and Cargo Tickets along with general features designed for the users of this application.
- 1.8.The user interface for the sale of tickets through ticket counters operated by DPSA also needs to be simple in design and should be capable of fetching information at the background.

- 1.9. The application must have a strong payment gateway to handle payments through the application. The application must handle any escalation in demand for tickets at any point of time. There must not be gateway crashes at any point in time and the server integration must be real time as far as possible. If due to poor connectivity the integration of the server did not take place in real-time, the integration must occur without delay when the connection re-establishes.
- 1.10. The application needs to be integrated with QR Code scanning devices. These devices need to be deployed on board every passenger vessel (12 numbers at least, 6 for regular use and 6 as back up). These devices shall be connected to the application for real time integration of data.
- 1.11. Similar devices also need to be placed on shores as well (at least 10 numbers, 5 for use and 5 for back up).
- 1.12. A similar number of Bar Code reading devices also need to be deployed for reading the Cargo tags (if bar codes are to be used for the said purpose).
- 1.13. The above devices deployed on shore and onboard must be integrated with the application. If due to poor connectivity the integration of the server did not take place in real-time, the integration must occur without delay when the connection re-establishes.
- 1.14. Seamless Whatsapp, email and SMS integration so that the external communication from the application can be made at real time with great efficiency.
- 1.15. The application shall provide for a facility through which a user can state the requirement for a travel from one location to another on a particular date. This will help the authorities to understand the realistic passenger demand between one point to another on a particular date and it will also aid the scheduling module to make efficient voyage plans.
- 1.16. UPI, Debit/Credit Card, Paytm, Google Pay, Phone Pay integration to ensure seamless and effortless payments.
- 1.17. The application must have a provision for API integration of financial and other data to various accounting application/tools. The application shall also export the data into multiple formats such as Excel, Word, PDF etc for external integration and usage. Through Whatsapp, email and SMS integration, the application should allow transfer of data.

- 1.18. The application shall allow multiple logins in the modules and the rights of each category of user need to be regulated with the list of rights decided as per the approval of the Competent Authority.
- 1.19. Digital wallet to store various E- Documents such as tickets and Cards etc.
- 1.1. The application must be backed with an analytical tool or engine so that it can process information/data and propose optimized solutions.
- 1.20. Use of Machine Learning applications to learn the process and patterns in the background and make it more efficient over time.
- 1.21. Strong MIS provision to pull off seamless reports for authorities.
- 1.22. User information bank for providing information service to users such as tracking the travel history of the user as well as transportation of cargo history.
- 1.23. User grievances/suggestions forum.
- 1.24. FAQ provision
- 1.25. The real time status of a particular vessel during a particular voyage.
- 1.26. User Guide

2. ADMINISTRATION MODULE

- 2.1. Provision for multiple login rights to various levels of administration and administrative users located at various locations.
- 2.2. Provision for uploading the approved schedules in the application through multiple input modes, Excel format, in put screens etc.
- 2.3. Provision for blocking of seats for various purposes and release of the same to appropriate persons in accordance with the policy of Administration.
- 2.4. Provision publication of various tariffs for passenger tickets and Ship visit tickets.
- 2.5. Provision for Self learning capacity of the application from the past data uploaded in the application regarding Passenger and Cargo movement in the shipping sector of UT of Lakshadweep for providing analysis based system generated generating ship schedule suggestions by the application. The system should also use the data fed into the system through various modules for providing optimum ship voyage.
- 2.6. The above provision must enable the application to generate ship schedules for various vessels on the basis of past data and present passenger demands etc as stated above. The system generated ship schedules must also need to be

optimized on the basis of parameters such as month of the schedule, special requirements, fuel efficiency of the vessel etc.

- 2.7. The application shall have the provision to reduce the human intervention in the process to the bare minimum. However, the application must also provide for an option to modify the system proposed voyage schedule for authorized officers. Whenever such modification is made by the authorized officer(s) are modifying the schedule they system must allow them to do so only after recording the detailed reasons for the same.
- 2.8. The module shall also fetch data from other modules and the system shall make use of the said data for making optimum voyage schedule suggestions.
- 2.9. The module shall have the provision to seek approval for the voyage schedule from the Competent Authority.
- 2.10. The number/percentage of tickets through online mode and off line mode shall be decided by the concerned officials/authorities. The number of quota tickets need to be kept with the authorities shall also be decided by the concerned authorities.
- 2.11. Once the said approval is received, the concerned official shall publish the approved schedule and number of tickets released in the online and offline mode after deducting the quota tickets in the Ticketing Schedule. The said information shall also be published to all the registered numbers in the ticketing module through whatsapp, email and SMS integration.
- 2.12. The concerned official shall have the right to cancel a published schedule at any point of time with the approval of the Competent Authority. At such cancellation takes place the concerned official must state the reason for the cancellation as far as possible. The information regarding the cancellation shall be published through multi-mode communication to public through whatsapp, email and SMS integration to the application.
- 2.13. The application must have the provision to upload the cargo slots available of each ship and tariff on the same.
- 2.14. The concerned official also publishes the cargo slot availability to various locations on various ships sailing on various dates through Cargo module. The information regarding the cancellation shall be published in the ticketing

module as well as through multi-mode communication to public through whatsapp, email and SMS integration to the application.

- 2.15. The application must have strong analytical engine to analyses passenger and cargo movements on vessels and provision to generate seamless detailed analytical reports on the subject matter.
- 2.16. The application must have smooth and easy to use interface considering non-technical users from the administration side.
- 2.17. The application must have comprehensive info graphic dash boards with macro to micro display information with accessibility restrictions in accordance with the levels in the administrative set up.
- 2.18. This module must have multilevel integration across the modules and capable to produce detailed analytical reports.

3. USER REGISTRATION MODULE

- 3.1. Provision for registration of user with details such as name, Date of Birth, Gender, Email, Adhaar Number, Mobile Number, Pincode, Island (if an islander), Category (individual/agent), Whether Student or Not, Address, Occupation etc with provision to addition or deletion of fields.
- 3.2. For Entry permit holders (Non islanders), at the time of reservation/purchase of the ticket the fact whether they are islander or entry permit holder needs to be stated. The ticket shall have reference of the same. Once the Permit holder receives entry permit, such person need to attach the same in the application. The system shall fetch the information from the Entry Permit such as Entry Permit Number, name, address, source destination/ islands permitted to visit, duration of permit etc.
- 3.3. Provision for registration of commercial user for reservation and purchase of Cargo Tickets with details such as name, Date of Birth, Gender, Email, Adhaar Number, Mobile Number, Pincode, Island (if an islander), Category (individual/agent), Address, Type of business, License Number etc with provision to addition or deletion of fields.
- 3.4. Provision for entering Bank Details for online banking, UPI details, Credit Card and Debit card integration.
- 3.5. Provision for single registration per Adhaar number and mobile number.

- 3.6. Provision for Digital Locker /DigiYatra application integration or similar provision in the application.
- 3.7. Provision to create different groups of co-passengers such as Family, Friends etc for quick purchase of tickets.
- 3.8. Provision for future backward and forward integration of various other processes such as online Entry Permits, Tourism related reservations etc.

4. TICKET RESERVATION PURCHASE MODULE

- 4.1. Once the ship voyage schedule is published the registered user can procure the tickets online.
- 4.2. A strong Captcha is to be implemented at log in, ship search page and pay out page.
- 4.3. Expeditious form filling time for reservation and procurement with graphic information assistance to user.
- 4.4. The expeditious completion of payments with multi model payment integration such as online banking, UPI, Credit and Debit Card payment.
- 4.5. The module shall provide provision for selection of seats, cabins and berths etc.
- 4.6. The graphical display of seats and the cabins must be available for the passengers for selection. This graphical information must show reserved and non-reserved seats, sold and available seats etc.
- 4.7. Once confirmed tickets are procured the option for generating boarding passes shall open for the said tickets.
- 4.8. Tickets can be either stored in the Digital locker or transferred to mobile numbers and email ids in PDF format.
- 4.9. Provision for Digital Locker /DigiYatra application integration for auto generation of Boarding Pass QR in DigiYatra application or similar provision in the application.
- 4.10. Once the ticket is procured, intimation regarding the procurement of ticket shall go to the passenger as well apart from the user who procured the ticket. The communication to the passenger shall include a link to directly access the application and obtain ticket and boarding pass from the application.
- 4.11. The application shall provide the provision to reschedule a ticket to another day for a travel from the same source and destination.

- 4.12. Once a ticket is purchased in the name of a passenger, in order to purchase another tickets to same source and destination, either the earliest tickets needs to be used for travel, or it needs to be cancelled or it needs to be rescheduled or it needs to be modified into the name of another passenger.
- 4.13. The registered user shall be able to track his travel history through user information bank.
- 4.14. The registered user shall also be able to generate a Travel Card for himself and other persons. This card will be a Debit Card with QR Code and unique number. This card can either be stored in the digital form at Digital wallet facility in the app or transferred to mobile numbers and email ids in PDF format. The Card can be used for procuring the tickets.
- 4.15. If the user could only be able to procure waiting list ticket, the provision for real time monitoring of the status of the said ticket to be provided. Once the ticket is confirmed, the user shall be able to get a confirmed ticket and boarding pass. A wide communication system with whatsapp/email and SMS integration must ensure that real time updation of the same are received to the concerned passenger and the user who have procured the ticket.
- 4.16. The application must have a system of optimizing the demand for confirmation of waiting list tickets based on number of waiting lists in each source in a particular voyage. This optimization must take place considering the on-board vacancy in a particular category of seats from a particular source and destination. For Example: If there is a declared voyage of a vessel to A and B islands from C point, if from Point C to A have 10 waiting list tickets waiting for confirmation and from point C to B have 5 waiting list tickets waiting for confirmation. If there is a cancellation of 3 tickets from point C, then the confirmation of tickets should be at the ratio of 2:1, i.e, two waiting list from point D to A should be confirmed and 1 ticket from D to B should be confirmed.
- 4.17. In the event of cancellation of the ship schedule by the authorities the amount of the ticket shall be credited to the source of payment of the user within 24 hrs of cancellation.
- 4.18. If a ticket is purchased using a particular Adhaar number for a particular voyage or to a particular source-destination, the system should send intimation

to the registered mobile numbers of the users who procured the said tickets, the passenger. An intimation regarding the details of user who procured the said tickets, Passenger details for whom such tickets are purchased, Adhaar number etc need to be sent to concerned officials of DPSA and the said official shall make an investigation on the same and confirm that there is no case of procurement of bulk tickets and reselling of the same is taking place in this particular matter.

- 4.19. If a passenger would like to modify a ticket in the name of some other passenger, a request in this regard to be made to DPSA through an online application which need to be filled with the fields such as name, Adhaar number, mobile number, source and destination, and reason for modification in the name of other passenger. If the authority feels that the request is genuine, the same may be approved. If the authority feels that the request is made to carry out the business of bulk purchase of ticket and reselling it the same may be rejected. A system generated report on such requests shall be sent to authorities after conclusion of every voyage of a ship.
- 4.20. In case of Emergency Quota or any other special Quota tickets, a provision for making application to concerned authorities for a person need to be provided in this module. Through this provision the application make select a particular quota option from drop down menu and fill up the required credentials and upload required documents in the said forum. Once such application is made by an applicant, the application along with attached documents shall be available in the authority dash board for review and consideration. Once the authority concerned is satisfied with such application, the approval may be accorded for the same. Once such approval is accorded, a PNR number to be sent to the concerned applicant through whatsapp, email and SMS integration. The applicant shall sue such PNR to procure the said ticket with in the time period for such purchase through online mode or through ticket counters.
- 4.21. The module shall also handle the offline ticket sales through counters operated by DPSA in islands (if necessary, in mainland as well). The data from these counter ticket sales shall be updated in the system real time. A comprehensive report on the sales of tickets by each official who carried out the ticket sale

shall be sent to higher officials with every detail of the ticket sales at the end of each ticket sale.

4.22. At the time of check in, when Entry Permit passenger (non-islander) scan the boarding pass the above credentials will be displayed. In case, the entry permit is expired or the passenger is traveling to an island that is not mentioned in the entry permit the system will reject the entry to the ship.

5. SHIP VISIT PASS PURCHASE MODULE

5.1. The application must have the provision to procure Ship visit Pass through this module.

5.2. It can be either stored in the Digital locker or transferred to mobile numbers and email ids in PDF format.

5.3. The pass to have QR Code feature like a boarding pass to enable QR scanning at multiple points

6. TICKET CHECKERS MODULE

6.1. This is a module for verification of various tickets, prevention of impersonation and excess passengers on board vessels. Therefore the module must provide the strong technology support to prevent the same.

6.2. Login rights of this module shall be with an official deployed by DPSA at the Check in station. The official must not have the right to carry out modification in the passenger or ship visit ticket holders list.

6.3. Check in station the concerned official scans the boarding pass using the above-cited devices. The said process to verify the credentials in the boarding Pass and the Adhaar card. If the credentials' in the Travel Card with that of Boarding Pass, the passenger shall be allowed to Check-in. This module must have provision for these functions. The integration with Digital Locker and DigiYatra or similar provision is required to ensure seamless process stated above.

6.4. Provision for multi-point scanning of the boarding pass to ascertain identity of the passengers traveling on board and persons visiting the ship using ship visit tickets.

6.5. When the Passenger board the ship another scanning of boarding pass and Travel card shall take place. This time the said activity shall be performed by Policemen deployed on board.

- 6.6. The scanning of boarding passes and verification of Adhaar Credentials must take place when the passenger is disembarked as well. It is the duty of the officer on board ship to perform this task on the ship and the policemen at the shore need to perform similar activity carried out at the time of passenger check-in to ensure that the passenger is disembarked at the right station as per his ticket. If he has travelled beyond the location stated in the ticket a system generated legal notice to the concerned passenger with his name and other credentials stating the offence committed, amount of fine, source and location of travel to be sent through via system integrated communication mode such as SMS, whatsapp and email with a copy to a concerned official. Copy of the said notice in PDF shall also be available for download, the same can be sent to concerned passenger by registered post by the concerned official.
- 6.7. The module shall allow the user to procure Ship Visit Tickets as well to facilitate, monitor and regulate the visit of non-passengers to the ships. In the case of Ship Visit Tickets, the holder of ticket must undergo similar process as a passenger does. At the time of getting out from the ship the person should go through scanning of his Ship Visit ticket. When he reaches the shore, he must go through Passenger Check out process stated above. Once all the Ship Visit ticket reaches shore the Officer deployed by DPSA must send an email/message to the captain of the ship regarding the same. Entry of the same must be made in the system by the Officer deployed by DPSA. Captain of the ship must wait for the said confirmation to cast off the ship.
- 6.8. At the end of every berthing a system generated report containing the information such as: (1) total passenger boarded (2) total passengers disembarked (3) total Ship Visit Ticket holders visited the ship (4) unauthorized passengers (5) passengers travelled beyond the location stated in the tickets (6) time of commencement of boarding (7) time of ending of boarding.

7. CARGO RESERVATION/PURCHASE MODULE

- 7.1. When information on Cargo slot availability is published by the authorities, any registered user can procure Cargo tickets through this module. Such user needs to fill mandatory fields like : Name of the consignor, Adhaar number of the consignor, mobile number of the consignor, email id of the consignor,

Name of the consignee, Adhaar number of the consignee, mobile number of the consignee, email id of the consignee, source and destination, type of cargo, suggestion for cargo handling (Fragile, to be kept in refrigerator, Handle with care etc), approximate weight of the cargo, approximate value of the Cargo etc.

- 7.2. After procuring the said ticket, it can be either stored in the Digital locker or transferred to mobile numbers and email ids in PDF format.
- 7.3. Provision for future integration of Cargo insurances may be provided.
- 7.4. Once the Cargo ticket is procured, intimation regarding the procurement of ticket shall go to the consignee as well apart from the user who procured the ticket and consignor. The communication to the consignor and consignee shall include a link to directly access the application and obtain ticket and boarding pass from the application. If the user himself is the consignor he can select an option of 'self' in consignor column.
- 7.5. The Cargo ticket holder needs to deliver the cargo to a location specified by DPSA on the date and time stated in the Cargo ticket. At the time of delivery of the Cargo the concerned officials carry out scanning of the cargo and paste a QR or Bar Code on the Cargo. Then the same shall be scanned by the concerned officials using scanning devices.

8. CARGO TRACKING MODULE

- 8.1. Provision for scanning of Cargo scanning at multiple points to track cargo movements.
- 8.2. The information of cargo movements from point to point must be updated in the dashboard of the various people involved in the process, DPSA authorities, Cargo ticket holder, consignee, and consigner.