

**Tender document for Commercial web portal of Indian Railways
Centre For Railway Information Systems, New Delhi**

CRIS

**Centre for Railway Information Systems
Chanakyapuri, New Delhi.-110021
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Sealed tenders are invited by Managing Director, Centre for Railway Information Systems (CRIS), Chanakyapuri, New Delhi-110021 for the following work:

S. No.	Tender nomenclature
1	Tender document for Commercial web portal of Indian Railways Centre for Railway information systems, New Delhi

Tender No: 2008/CRIS/306 dtd. 15-2-2008
Place of dropping tenders : CRIS, Chanakyapuri, New Delhi
Mode of tendering : Open (Advertised) tender
Type of tender : Two bid packet .

S. No	Key Activities	Date
1	Last Date for collection of Request For Proposal (RFP)	17-3-08
2	Pre- Bid Conference (at CRIS Conference Room from 11:00 AM-17:00 PM)	3-3-08 and 4-3-08
3	Last date for Submission of Written Questions by bidders	7-3-08
4	Issue of corrigendum, if any	11-3-08
5	Due Date for Submission of bids	18-03-08 (15:00 hr)
6	Opening of Pre-Qualification Bid	18-03-08 (15:30 hr)
7	Evaluation of Pre-Qualification Bid	27-03-08
8	Date of opening the Technical Proposals	1-04-08
9	Bidder Presentations (at CRIS Conference Room from 11:00 AM-17:00 PM)	03-04-08 to 07-04-08
9	Technical evaluation	08-04-08 to 21-04-08
10	Date of opening the Commercial bid	05-05-08
11	Contract Finalization and Award	23-05-08

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Earnest money:

Rs. Two Lakhs.

Cost of Tender Document:

Rs. 1000.00(Rs. One thousand only)

The tender forms, conditions of contract including specifications and other information can be purchased from **Chief Purchase Manager (Extn. 317)** during working hours on any working day upto one day before the date of submission of tender above on payment of Non refundable cost of tender document as mentioned above. The cost of tender document should be remitted by Demand/Draft only in favour of CRIS payable at Delhi. Tender document can also be downloaded from CRIS Website www.cris.org.in . However, at the time of submission of Bid, the requisite Non refundable cost of tender document must be submitted along with Bid, failing which tender will be summarily rejected.

Chief Purchase Manager

**Tender
FOR
COMMERCIAL
WEB-PORTAL
OF
Indian Railways**

Version 4.0 dated 14/02/2008

**CENTRE FOR RAILWAY INFORMATION SYSTEMS
Chanakypuri, New Delhi – 110 021.**

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1 Executive Summary

Indian Railways plans to auction vacant berths and empty freight rakes through a commercial web portal. It is also envisaged to provide passenger complaint logging application, along with retiring room and cloak room booking applications. There is a requirement of consolidation of 32 Indian Railway web sites, with search and remote content management facilities. The following are the new custom applications desired in the commercial portal:

- Journey planning
- E-ticketing, frequent traveler and e-auctioning of passenger reservation tickets
- E-auction of Empty rakes in reverse routes
- Retiring and cloak room booking
- Update/track/trace passenger complaints

This tender is to develop the commercial portal with all the above features, commissioning and 3 years comprehensive onsite maintenance of the solution.

The Copyrights and Intellectual Property Rights of all deliverables at various stages would that be of CRIS. The bidder shall not be authorized to disclose and use whole or any part of the deliverable without prior written approval of CRIS.

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1.1 Introduction to Center for Railway Information Systems (CRIS)

Centre for Railway Information Systems (CRIS), Chanakyapuri, New Delhi is entrusted with executing this Indian Railways Portal. It is an organization under Ministry of Railways, and is entrusted with the IT activities on behalf of Indian Railways.

1.2 Commercial portal solution objectives:

Setting up internet cum intranet portal on turnkey basis with development of various new applications and interfacing with existing applications. Security should be one of the important features for the planned portal. Only authorized users should be able to login and access the designated section/subsection of the portal based on their profile. All the users will access the applications only after user authentication and authorization.

The users of this Portal will be internet based customers and intranet based Indian Railways staff. All the websites and various services will be accessed from internet and intranet. However, Indian Railways staff will have access to specialized services like internal circulars, approval and notification emails both from intranet as well as internet. The access to all the services will be on Role Based Access Control (RBAC) mechanism.

The proposed portal will be high available, scalable, flexible, reliable and compliant to industry Standard specifications.

The Bidder shall supply the necessary hardware and software, and provide 3 year 24X7 support on the same.

The Bidder shall provide 3 year 24X7 support on the Portal applications.

The Bidder shall maintain a Customer Care Centre for 3 years.

CRIS Contact points:

Please contact the following person for RFP related queries.

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Manager/Purchase

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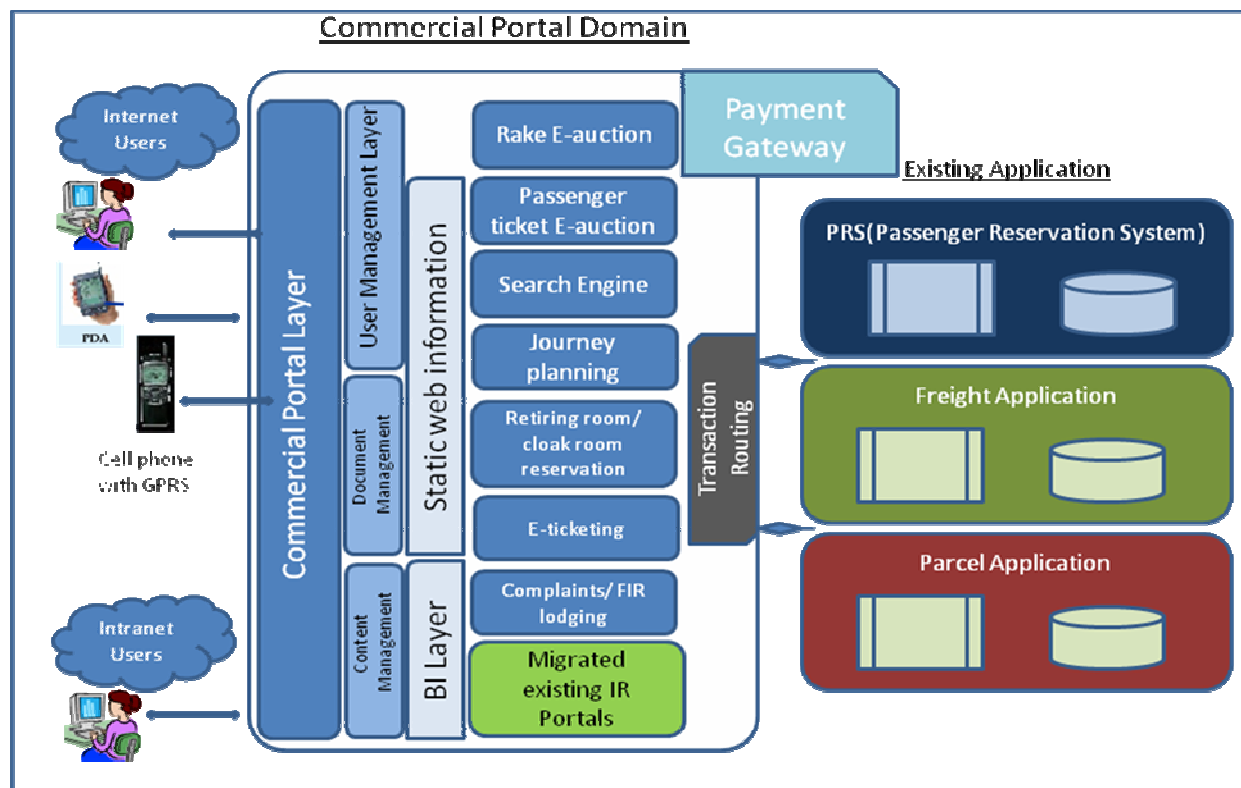
2 Functional requirements and specifications

2.1 Functional Architecture

The following figure depicts the overall functional architecture. It contains the major function points:

- The portal presentation layer
- User management layer where users are able to login in the portal and can see the history of their bids/ reservation of berths, retiring rooms / complaints raised/ other reports applicable
- Content management layer for IR users
- Document management layer for IR users
- Links to existing application of FOIS (Freight Operations Information System), PRS (Passenger Reservation System) and Parcel Management System applications for Auctions, Reservations and other executions
- Search engine
- Bidding engine for e-auction of Reserved passenger Berths and Seats
- Bidding engine for e-auction of Empty Freight wagon rakes

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2.2 Functional overview:

The commercial portal serves as the single stop gateway for all Indian Railways customers looking

a) To carry out the following tasks:

- Journey planning
- E-ticketing and cancellation
- E-auction of Reserved Passenger Berths and Seats
- E-auction of empty rakes in freight business
- Retiring room booking
- Lodging and tracking complaints.

b) For the following information:

- Information regarding passenger amenities at various stations

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- All passenger related travel information including tariff information for passenger, freight and parcel
- Judgments of past claim cases
- Rules and regulations regarding passenger travel, parcel business and freight transport
- Search information in the portal for above by using keywords
- Information on Existing Zonal Railways and Train Enquiry Websites that are to be migrated to this commercial portal

It will also serve as the one stop portal for the Indian Railway intranet users for:

- Booking of Retiring Rooms and Cloak Rooms
- Lodging FIRs by GRPFs at all stations against complaints lodged
- Search information in the portal for above using keywords
- Document and content management
- Approval workflows, alerts and notifications
- MIS reports

Each of the above modules is described below in brief followed by detailed functional specifications.

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2.2.1 Passenger Business:

2.2.1.1 Journey Planning:

This is an enquiry system where a passenger can plan his journey before booking his/her tickets. This system should have fields to select trains, stations, class, dates along with price and availability information. A major additional functionality that is to be provided over and above existing in sites like www.ircrc.co.in or www.indianrail.gov.in are visibility of alternate routes and alternate trains with one or more changeovers.

2.2.1.2 E-ticketing and cancellation:

The e-ticketing (print your own ticket) functionality would be similar to the existing in www.ircrc.co.in with additional functionality of booking for trains with alternate routes/ trains with one or more changeovers directly from Journey planner with facilities of payment gateways for the customers to pay through various e-payment modes. I-ticketing (printed tickets) functionality would not be incorporated in this solution. Cancellation of e-tickets facility should be provided with requisite pre defined rules in place. History of booked/ cancelled tickets needs to be maintained for each authorized user. Selected IR administrators should be able to track and trace booking/ cancellations and refunds. Booking will be based on photo identity card details.

2.2.1.3 E-auction of Passenger tickets:

For some routes/trains combinations, few berths would be reserved for auction in the upper classes of travel. An open auction should be facilitated which would be opened for few hours before the train departure. Credit card registrations and enablement of payment gateways would be some of the additional functionalities desired out of the system. Auction tickets can be cancelled with higher penalties compared to normal penalties. Selected IR administrators can modify auction parameters like Routes/trains/dates, Reserve price, Time window etc.

2.2.1.4 Retiring Room booking:

Customers can see the availability and book/ cancel retiring rooms online using this portal. For booking retiring rooms, one has to have a valid ticket with PNR no. The retiring room availability can be seen by IR administrators at respective stations also.

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2.2.1.5 Lodging and tracking complaints:

Customers should be able to lodge/track complaints online under pre-defined categories like theft, misdemeanor etc through online form based entry screens. RPF/GRPF users should be able to generate FIRs against the complaints (in case required) and respond to the complaints. The solution should be integrated through mail server and every response should be sent to the customer email id in the database. Also a robust approval workflow engine should be in place with alerts and notifications for proper automated routing of complaints and resolution. An automated workflow system based on hierarchies, authorizations, automated escalations and other business rules. Complaints is the first functionality in it, but the system should be scalable to include other functionalities in future, such as, internal task assignment, all communications etc.

2.2.1.6 Accessing Static information about Passenger business:

Updated information about Tariff, Routes, Rules and Regulations in Passenger business should be made available to the customers in the commercial portal. This information can be uploaded by IR administrators through 'browse/upload' field in a form. A proper content management solution should be inbuilt with requisite role based access to IR administrators for updating information.

2.2.2 Parcel Business:

2.2.2.1 Rules Related to Parcel business:

All the rules and regulations regarding parcel booking/ cancellation, parcel traffic, commercial rules, and tariff information are given in static web pages which are updated regularly by content management authorities. This information can be uploaded by IR administrators through 'browse/upload' field in a form. A proper content management solution should be inbuilt with requisite role based access to IR administrators for updating information.

2.2.3 Freight Business:

2.2.3.1 E-auction of empty rakes in freight:

The rakes which transport goods in one direction for a customer may have to return empty to the origin or nearby points after unloading. Indian Railways have seen a potential in some of the routes where the empty rakes in reverse routes can be booked for one-off/ periodic orders at discounted rates and hence can be opened for auction. A forward English type

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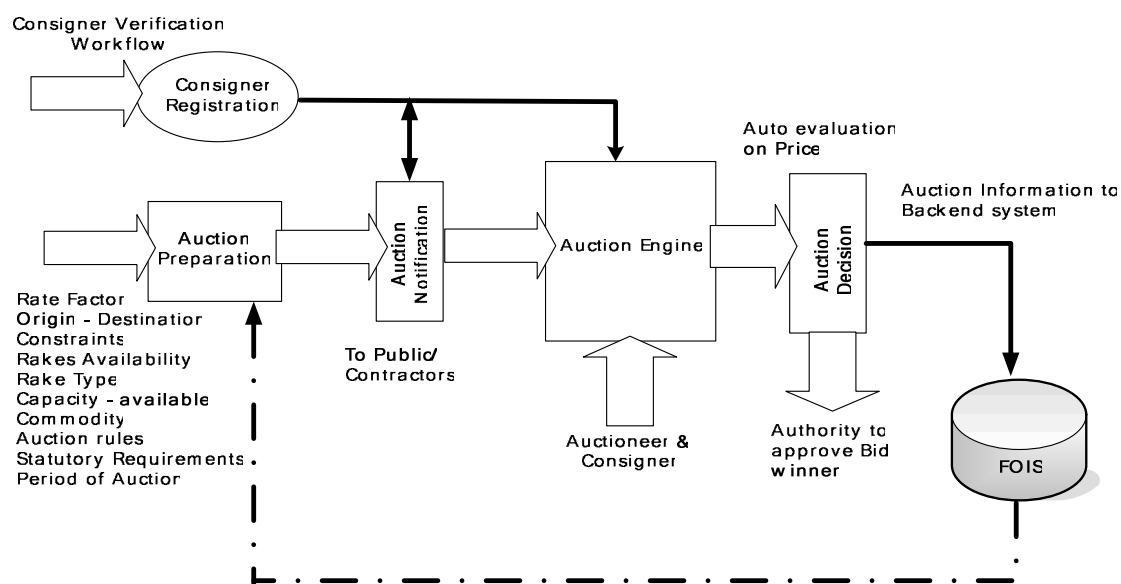
open auction should be facilitated which would be opened from time to time for selected route/ rake / dates / auction period which can be decided by IR authorities. This should be integrated with FOIS for getting data like Rake id, Route id, Rake details, Origin-Destination, Constraints etc. The winning bidder would be reserved for the rake/route/ dates which would be again sent to FOIS for visibility at the loading points about the reservations. The high level auction parameters like:

- Single bid for one rake load for one date or multiple dates of loading
- Bid for point to point or can bid for nearby station loads as well (for e.g. Delhi – Raniganj route auction, bidder can bid for rake load for pre-defined nearby stations like Agra/ Ghaziabad etc)
- Full rake/ Half rakes

These features can be configured by IR authorities in the auction preparation stages.

The engine should however have the capacity to incorporate features like half rake auctions, half distance auctions, multiple rake single auction etc.

A schematic diagram is shown below for functional details:



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2.2.3.2 Station siding profile

Station Siding profile information is already available in the FOIS database. The commercial portal should display this information through web enabled services.

2.2.3.3 Commodity class

Commodity class information provides information about, commodity name, class applicable, numeric code etc., what all charges applicable along with freight, distances for a pair of station, traffic restrictions imposed by Division/ Railway/ Board. This information is already available in FOIS and needs to be displayed in the portal through web enabled services.

2.2.3.4 Track and Trace facilities

This is already developed in FOIS application. The commercial portal will display this as web enabled services. It provides information of customer's consignment. E.g. Where presently consignment is and when will it reach to destination.

2.2.3.5 Rules related to Freight business:

These are static information hosted by the portal which has visibility of commercial rules/ circulars related to freight, rates and tariff details, stations open for steel traffic etc. This information can be uploaded by IR administrators through 'browse/upload' field in a form. A proper content management solution should be inbuilt with requisite role based access to IR administrators for updating information.

2.2.4 Migration of existing IR websites

As mentioned in the 'Sizing' section, the existing IR websites need to be migrated in a single instance and should be accessed through the commercial portal. These contain zonal railway information, new railways initiatives and dynamic train enquiries. All the portal contents should be rationalized for reducing redundancy of information and improving navigation. The migrated websites should be bilingual (Hindi and English)

2.2.5 Search Engine

All static information/ customer records in the commercial portal should be made searchable through a robust search engine. Search content should be filtered based on the access type and role. The search can be done using keywords, date ranges, author etc enabling full document search and not just file names.

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2.2.6 Document Management

The commercial portal should have a robust document management system. This feature should provide methods and tools for capturing, storing, organizing, analyzing, creating and synthesizing information and expertise; and making available this knowledge within and across communities.

2.2.7 Content Management

Designated IR administrators should have content management feature. The static contents which are hosted out of commercial portal should be up-to-date with version control. Regular backup of the contents need to be taken with the updated information available to users. Key features of this module would be:

Should provide centrally controlled auditing, expiration & retention policies

Should support archival, retention and regulatory compliance

Only the content which is hosted in the commercial portal needs to be maintained

2.2.8 MIS reporting

Role based IR administrators would be given access to tools to generate various types of reports on e-ticketing and e-auctioning ticket and customer profiles, retiring room and cloak room booking analysis, Journey planning profiles, search analytics, portal access profiles, user profiles and complaints tracking analysis.

All the functionalities of the commercial portal should be accessible through Internet using desktops/laptops, browser enabled Smartphones, Palmtops and Mobile GPRS. All the applications, dynamic and static web pages that are hosted in the commercial portal should be bilingual (English and Hindi and or Native language).

2.2.9 Setting up of moderated discussion forums, wikis and blogs

The bidder shall set up Role based administered discussion forums, wikis and blogs on the portal.

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2.3 Functional Specifications:

Bidders are required to specify the availability of the specified functionalities in their Application. Please refer to each of the Functional Requirement Specifications specified below and state if your Application meets the requirement. If a required functionality is available in the packaged solution proposed in your Bid and can be implemented with simple configurations, then it is stated "fully satisfies". If a requirement is partially available or if the requirement could be implemented using an alternative approach or through customization then it is stated "partially satisfies". In case of partially satisfied requirements, the Company should have included comments explaining the functionality available. If a required functionality is not available, then it is stated "Does not satisfy". The term "fully satisfies" is represented in the FRS statement with "Full", "partially satisfies" with "Part" and "Does not satisfy" with "NA". For all the three conditions – Full, Part and NA – wherever required, comments are included to provide further insights on the statement.

*Bidders are required to enclose a separate document comparing their application with the requirements specified below in a manner described above. The statement titled "Functional Requirements Statement" shall be prepared. The format is given in **Annexure 1**. The statements should be read as preceded by "The system should":*

2.3.1 Passenger business

Sl. No.	Business area	Functional requirements specifications
1	Passenger Business	
1.1	Journey Planner	The customers can do journey planning before booking tickets/ simple enquiry. The journey planner should have the following features: - Mandatory filtration fields like One way/Return/From/To/ Class/ Quota of travel and optional fields like time of journey/ duration of journey - The output table should show a list of options for

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Sl. No.	Business area	Functional requirements specifications
		the journey. Users should be able to plan with more than one train if direct train is not available between the two stations with some pre-defined criterion (for e.g. In case reservations in the direct trains are not available at a particular chosen date, the indirect routes with combination of two or more trains (in case the duration of journey is same or less than direct) can be displayed) - Customers should be in a position to sort the output table showing the journey options by train no., date, distance, availability etc. - Should give the user facility to include/exclude selected columns like Price/Availability, Class etc. Journey planner should be accessible through both internet and intranet. No login is necessary to plan the journey but to book tickets from Journey planner, one has to login and follow steps mentioned in Item 1.2. The data for the journey planner would be maintained in the portal database. CRIS would provide the necessary train data in Flat file, CSV file or other mutually agreeable format for integrating PRS with the solution servers and updating the portal database
1.2	E-ticketing with agent booking facility	E-tickets of Passenger Reservation It will be parallel to www.irctc.co.in booking portal with all the features it has. Front end application needs to be developed for e-tickets i.e. “print your tickets” based on Government issued Photo ID-cards, individual account

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Sl. No.	Business area	Functional requirements specifications
		management, reconciliation management with banks and payment gateways. Facility for providing Travel Agent bookings too need to be provided. Module for travel agent management needs to be developed. Proposed Booking process: 1. Once the user has created login and entered profile, booking of tickets can be started. Site needs to have features for Change Password, Forgot password, and view transaction history also. One can go from Journey planner also, but the system should ask the customer to login if he/she has not done so. After logging in, the journey planner page with selected plan should be returned. 2. User enters 'from' station name and 'to' station name, date of Journey, Class into the Internet-booking system. This data is passed on as a query by system to the PRS system. PRS system displays all the trains available matching the input criteria. User can now select and get availability and fare for these trains. He can now select a train and proceed for booking the ticket. User enters the passenger details in the Internet system and asks for a booking to be done a. The information is passed on to the PRS system. The fare details are taken in by the Internet system and the fare is separately calculated at the Internet end. b. On Approval from user, a call to Payment Gateway is sent to deduct the amount from

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Sl. No.	Business area	Functional requirements specifications
		the user's Credit Card account. PG returns an authorization code. If failed, the user goes to Step c, else Step d c. The Failure response is returned to the user saying Payment failed. d. A call is made to PRS system to book the ticket. If PRS system successfully books the ticket, user goes to Step f else Step e. e. Transaction Id is returned to the user and he is informed that system will reconcile the payment made in some time. Step is complete here. f. On successful transactions, the PRS returns a PNR number. The PNR number and the ticket details are presented to the user. The user should be able to print and also retrieve in future g. All forms of e-payments like credit card, net payment, debit cards, cash cards should be available CRIS already maintains the main PRS application CONCERT. For ticketing, it should directly fetch data from and update in PRS database using HP-RTR based APIs. These APIs are available in "C". Java APIs can be provided.
1.3	Frequent traveler programme	Frequent traveler program needs to be incorporated for all E-ticketing passengers. Each e-ticket booked will carry some 'Railway points' based on distance and class of journey which can be redeemed for future booking

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Sl. No.	Business area	Functional requirements specifications
		with a pre-defined Railway point ~ rupee values. Points can be won only for full fare and specific classes of travel. The parameters like Railway pts: Rupee conversion, classes eligible, seasonality constraints should be customizable by IR administrators.
1.4	E-cancellation of Confirmed/RAC/Waitlisted passengers	Only E-Tickets before journey time can be cancelled through the system. For Cancellation of E-Tickets steps are as follows: - User logs in to the system. - User Searches for the ticket based on the PNR Number and Click “Cancel Ticket” button to cancel the tickets. The request goes to PRS system for cancellation. If successful, PRS returns the amount to be refunded to user’s account. And the user is given a message that amount would be refunded in some time. - The amount is refunded back through Cancellation process. A scheduler should run in the backend and contacts payment gateway to refund the money to the users - Errors are handled through an admin interface where IR administrators can see data for any tickets for which payment could not be refunded. CRIS already maintains the main PRS application CONCERT. For ticketing, it should directly fetch data from and update in PRS database using HP-RTR based APIs. These APIs are available in “C”. Java APIs can be provided.

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Sl. No.	Business area	Functional requirements specifications
1.5	E-auction of Passenger tickets	A fixed number of berths (to be decided by Railways), for each class in a given train will be kept aside to be sold through the auction process. These berths can either be defined as separate quota or can be blocked by bidding engine (kept aside) to be available for bidding purpose. These berths will not be available for General bookings - The bidding process begin/ end time should be configurable by IR administrator. It would generally end 2 days before the journey date - Only e-tickets can be won through auction. - Open auction - Auction Train/Date/Route/ Class (TDRC) can be modified by IR administrator - Maximum no. of seats to be auctioned is visible to the customer for the same TDRC - The auction and the normal e-ticketing should be made available in the same portal with the customer having option to go for normal full fare booking or auctions - The Minimum Bid Amount applicable for the current day: Minimum Bid Amount is the minimum of last quoted “M” highest bid amounts, where “M” is the number of berths internally allotted to be offered for bidding. On the opening date of the bid, it will be same as the Starting Bid Price. The Starting Bid Price will be automatically generated by the developed software such that, it takes into account the passenger demand for that TDRC - If they bid for multiple ticket in one auction, in case of partial winning within the bid open hours,

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Sl. No.	Business area	Functional requirements specifications
		the customer should be able to selectively change their bids - Automatic credit card payment would happen once the bid is winning bid after closure of the bid process. Customers have to register their credit card details before participating - Cancellation is possible but with more penalty than the full fare ticket cancellations (penalty can be modified by IR users) - Bid winners will then be assigned PNRs and ticket to be sent to their email ids as well as kept in ticket detail history within their logins The engine should be designed so that it is scalable and the same engine can be used for designing any other auctions like Rake auctions, Parcel SLR space auctions
1.6	Retiring room booking	This is a reservation application where - Customers can login and reserve available retiring rooms at any station remotely through internet. Customers should be able to see the availability before booking - PNR validations have to be done before reservations, while reserving status should be shown whether it is available along with tariff and facilities. For PNR validations, one needs to check PNR database in PRS - It should be linked to a payment gateway so that the customers can pay through various e-payment modes. - While reserving the system should check whether

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Sl. No.	Business area	Functional requirements specifications
		the particular station falls in the route of start-destination station of the PNR (the API can be given by IR). - The retiring room/ cloak room authorities at any station should be able to login to book directly and also see the availability / booked status for particular date ranges with validations - Cancellation/ modification facilities to be given to customers/ respective IR users - Master logins at a divisional levels where one can book without PNR - From functionality point of view ; ‘Hotel room reservation’ type software needs to be built with an additional feature of room rendered unavailable for maintenance API for checking whether the Station falls in the route of start-destination station of the PNR. The master data from PRS should be updated in the database on a daily basis through scheduled program This application should be available over internet and intranet (intranet users require role based logins)
1.7	Cloak room availability and booking	Through this application within the commercial portal, the customers should be able to see the cloak room availability. The IR designated administrators should be able to book cloak rooms at respective stations. This application should be available over internet and intranet (intranet users require role based logins)
1.8	Registration and tracking of passenger complaints	In this section, the customers should be able to register complaints and receive response against their complaints. Types of complaints:

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Sl. No.	Business area	Functional requirements specifications
		- Lodging complaint for theft/ dacoity/ loss of belongings and injuries with mandatory fields like Station, PNR no, Train no, berth nos. through portal - FIR no. generation and attachment to this complaint by RPF or GRPF personnel based on the complaint logged in or sent by email/fax/ hard copy (provision to attach scan copy to a complaint response in case it is sent as said above) Once a response/ FIR is generated to a complaint, provision to print the response, email going to the customer with the details of FIR including (if any) scanned copy of the complaint - General complaint with civic hygiene etc at particular station (mandatory field like station name, date and time). Categories like personnel misbehavior/ railway porter fares/ retiring room cleanliness/ platform cleanliness - General complaint with civic hygiene etc in the particular train (mandatory field like train no., date and time) - Train schedule related complaints - Train personnel misbehavior / Train AC/Electrical equipments not working/ Laundry improper/ Berth condition The FIR/ Complaints lodging should have a workflow for its staged approval and allocation processes. A complaint raised through the portal should be assigned to a designated authority based on workflow for getting alerts and notifications. It will

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Sl. No.	Business area	Functional requirements specifications
		have multi-level approval processes (max 4-5 stages) with proper escalation and reminder services. The same workflow engine should be used for catalogue management as well. An automated workflow system based on hierarchies, authorizations, automated escalations and other business rules. Complaints is the first functionality in it, but the system should be scalable to include other functionality in future, such as, internal task assignment, all communications etc. An administrator will be assigned to categorize the complaints with severity level which will be pre-defined. The categories would be like civil/ mechanical/ electrical/ personal/ discipline. The assignments to be done at four basic levels of units: - Railway Board - Zonal head quarters - Divisional level - Station level Once it is assigned, the responsible person (who can be at Station/ division or head quarter level) will be intimated through auto email. The responsible authority should be able to track, trace, analyze and respond to the complaints and close it. For every respond, an email should go to the customer with the complaint trail Categories estimation: 5-10 categories of complaints. Each complaint has on an average 5 mandatory fields to

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Sl. No.	Business area	Functional requirements specifications
		be entered with a simple text box message size of 1000 words max Currently no. of stations in a zone on an average are 200 No. of zones are 17 Roughly 15-20 custom reports on complaint analysis to be provided to selected user logins Access to this module should be Role based login restricted access. RPF/GRPF personnel logins can create and attach FIRs. IR administrative users can categorize complaints, assign/modify severity, re-route complaints, generate reports/ track/trace/analyze and respond to complaints. A robust scalable workflow needs to be implemented for automated routing etc.
1.9	Graphical User Interface design of www.indianrail.gov.in site	The GUI re-design of the website has to be done with the following objectives in mind: - Customer navigation should be smoother - No. of steps to search for any information should be minimal The following things are to be done: - Look and feel of the site including and not bounding to the color schemes, display tables - User navigation/ quick links - Journey planner as discussed above - The changes to be done with existing information only, no new information (apart from the revised journey planner) has to be given - User needs to restrict the changes to portal re-design and not to add/delete information / features - Integration for journey planner is listed above in Item 1.1, for the rest of the information it should

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Sl. No.	Business area	Functional requirements specifications
		be fetched directly from the portal database The design of the front end is to be done by the vendor in collaboration with CRIS
1.10	Information regarding amenities available at various stations	Customers over the internet should be able to get information about the following at any searched station/ station code: - Taxi stand ph nos. - Nearby tourist places description with distance and mode of transport. - Important hotels nearby with phone nos. and URLs if available - Important Station railway official's name, design, phone nos. - Facilities available in the station like (Restaurants/ Internet/ STD booths) Static web page size: There are approximately 200 stations to be built in. Each station average 2-3 pages (A4) information. Content will be in hard copies. Bilingual: mostly English and Hindi. Roughly 5 pictures per station rest is text. This feature should be available over Internet as well as Intranet and open information (without login restrictions)
1.11	All passengers travel information	Central rules and procedures for: - Booking for reserved and unreserved berths - Cancellation - Booking modification - Refund - Application Templates (Booking, concession forms for student/ PH/ Disease specific) Static web content size: 100 Pages each language (mostly

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Sl. No.	Business area	Functional requirements specifications
		text). English and Hindi This feature should be available over Internet as well as Intranet and open information (without login restrictions)
1.12	Tariff Information about passenger, retiring rooms and cloakrooms	It is required to display the information in English & Hindi Language. The content would be provided by CRIS in softcopies. Content may be in hardcopies too. Bidder has to do entire content feeding. Static web content size: 10 pages (A4), mostly hardcopies. Meta tagging needs to be done to facilitate searching. This feature should be available over Internet as well as Intranet and open information (without login restrictions)
1.13	Judgment of claim cases given by Railways Claims Tribunals, High Courts etc	This module should have the following features: - Possibility to do data entry for the judgment of claim cases with the following fields of information: case id, date, case content, category, judgment remarks, judgment date by IR authorized role based administrators - A search engine for searching the cases with keywords should be provided like search with keywords, from/to dates, categories, name by customers on the internet Static web content size: 10 pages (A4), mostly hardcopies. Meta tagging needs to be done to facilitate searching This feature should be available over Internet as open information (without login restrictions) and over Intranet for case uploads through role based logins
1.14	Commercial Rules/Circulars related to Passengers	This is a static webpage feature. It is required to display the information in English & Hindi Language. Content may be in hardcopies too. Bidder has to do entire content

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Sl. No.	Business area	Functional requirements specifications
		feeding. Static web content size: 10 pages (A4), mostly hardcopies. Meta tagging needs to be done to facilitate searching This feature should be available over Internet as well as Intranet and open information (without login restrictions)
1.15	Rules regarding Rail Travel Service Agents (RTSAs)	This is a static webpage feature. It is required to display the information in English & Hindi Language. Content may be in hardcopies too. Bidder has to do entire content feeding. Static web content size: 10 pages (A4), mostly hardcopies. Meta tagging needs to be done to facilitate searching This feature should be available over Internet as well as Intranet and open information (without login restrictions)
1.16	Tatkal Scheme information of reservations and Scheme of Upgradation of accommodation	This is a static webpage feature. It is required to display the information in English & Hindi Language. Content may be in hardcopies too. Bidder has to do entire content feeding. Static web content size: 10 pages (A4), mostly hardcopies. Meta tagging needs to be done to facilitate searching This feature should be available over Internet as well as Intranet and open information (without login restrictions)

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2.3.2 Parcel Business

Sl. No.	Business area	Functional requirements specifications
2	Parcel Business	
2.1	E-auction of SLR space	This is already available in another application. The Bidder has to provide a link to the site. This feature will not be hosted in this solution
2.2	All rules, procedures & forms related to parcel traffic	This is a static webpage feature. It is required to display the information in English & Hindi Language. Content may be in hardcopies too. Bidder has to do entire content feeding. Static web content size: 10 pages (A4), mostly hardcopies. Meta tagging needs to be done to facilitate searching This feature should be available over Internet as well as Intranet and open information (without login restrictions)
2.3	Tariff information about parcels	This is a static webpage feature. It is required to display the information in English & Hindi Language. Content may be in hardcopies too. Bidder has to do entire content feeding. Static web content size: 10 pages (A4), mostly hardcopies. Meta tagging needs to be done to facilitate searching This feature should be available over Internet as well as Intranet and open information (without login restrictions)
2.4	Luggage booking and delivery rules & procedures	This is a static webpage feature. It is required to display the information in English & Hindi Language. Content may be in hardcopies too. Bidder has to do entire content feeding. Static web content size: 10 pages (A4), mostly hardcopies. Meta tagging needs to be done to facilitate searching This feature should be available over Internet as well as Intranet and open information (without login restrictions)
2.5	Pets booking and carriage rules &	This is a static webpage feature. It is required to display the information in English & Hindi Language. Content may be in

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Sl. No.	Business area	Functional requirements specifications
	procedures	hardcopies too. Bidder has to do entire content feeding. Static web content size: 10 pages (A4), mostly hardcopies. Meta tagging needs to be done to facilitate searching This feature should be available over Internet as well as Intranet and open information (without login restrictions)
2.6	Commercial Rules/Circulars related to Parcel	This is a static webpage feature. It is required to display the information in English & Hindi Language. Content may be in hardcopies too. Bidder has to do entire content feeding. Static web content size: 10 pages (A4), mostly hardcopies. Meta tagging needs to be done to facilitate searching This feature should be available over Internet as well as Intranet and open information (without login restrictions)
2.7	Links to other interim developed applications in Parcel business	The commercial portal should provide links to applications that are under developments and (or) planned for development in the interim. All these applications to be developed other than listed above would be hosted out of parcel application and not in Commercial portal. The portal needs to provide an access to the destination web page.

2.3.3 Freight Business

Sl. No.	Business area	Functional requirements specifications
3	Freight business	
3.1	E-auction of empty	This application is required to be developed by the bidder. The

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Sl. No.	Business area	Functional requirements specifications
	rakes	same auction engine for passenger ticket auctions to be used for e-auction of empty rakes. Each rake load is assigned a unique id. Similarly empty rakes to be loaded through auction reservations would be assigned a unique id which would then be opened for auction. A forward English type auction with reserve price can be opened for particular rake id with details given like Origin-destination, rake type, compatible products that can be carried for the rake type etc. All auction parameters like reserve price, what to auction, date, period etc can be customized by designated IR authorities. The customers can access the auction feature by registering to the commercial portal first. They need to register with their credit card details so that margin money can be deposited before they can participate in the auction. Automatic credit card payment would happen once the bid is the winning bid after closure of the bid process. Cancellation is possible but with more penalty than the full fare ticket cancellations (penalty can be modified by IR users) Bid winners will then be assigned the rake details which is to be sent to their email ids (integrating with SMTP server) as well as kept in ticket detail history within their logins. FOIS database also needs to be updated with the same details so that the customer can go to the respective loading point and load the same. The high level auction parameters like: - Single bid for one rake load for one date or multiple dates of loading - Bid for point to point or can bid for nearby station loads as well (for e.g. Delhi – Raniganj route auction, bidder can bid for rake load for

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Sl. No.	Business area	Functional requirements specifications
		pre-defined nearby stations like Agra/ Ghaziabad etc) - Full rake/ Half rakes should be customizable by the IR authorities during auction preparation stages. All the other parameters like dates, rake type, route, auction period, reserve price can also be configured by IR authorities.
3.2	Station/Siding Profile & Commodity class	This information should be visible on the portal. This is already there in existing FOIS application which needs to be accessed from this portal. This information will be made available through web service. Following are to be made available in commodity class: (i) List of commodity (ii) Freight charges (iii) Distances Table (iv) Restriction Bulletin Based on the data available the Bidder needs to display the web enabled services for Siding profile (Information about, whether station has half/full rake handling facility or whether that terminal open for inward or outward booking) and commodity class information (provides Information about, commodity name, class applicable, numeric code etc., what all charges applicable along with freight, Provide distances for a pair of station, Whatever traffic restrictions imposed by Division/ Railway/ Board are to be shown). The web services would be of two kinds: dynamic web pages and xml reports which would be developed by CRIS, the Bidder only need to display them through the portal. This feature should be available over Internet as well as Intranet

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Sl. No.	Business area	Functional requirements specifications
		and open information (without login restrictions)
3.3	Availability of Stock (inward)	Similar to above requirement in Item 3.2, it is already there in FOIS application. This information will be made available through web service. The Bidder needs to display the web pages/ xml reports which will be developed by CRIS in FOIS This feature should be available over Internet as well as Intranet and open information (without login restrictions)
3.4	Track and Trace facility	Similar to above requirement, it is already there in FOIS application. It provides information of customer's consignment. E.g. Where presently consignment is? When will it reach to destination? The Bidder needs to display the web pages/ xml reports which will be developed by CRIS in FOIS. This information will be made available through web service. This feature should be available over Internet as well as Intranet and open information (without login restrictions)
3.5	Rates information for two/multi-points rakes	This application provides information about two point rakes like Rates, what are the possible combination of sidings from where clubbing is permitted for train load benefits The Bidder needs to display the web pages which will be developed by CRIS in FOIS. This information will be made available through web service. This feature should be available over Internet as well as Intranet and without login restrictions.
3.6	Goods sheds/siding open for steel	This application provides information about stations open for steel traffic along with crane handling facility.

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Sl. No.	Business area	Functional requirements specifications
	traffic, crane Consignments	The Bidder needs to display the web pages/ xml reports which will be developed by CRIS in FOIS. This information will be made available through web service. This feature should be available over Internet as well as Intranet and open information (without login restrictions)
	Commercial Rules/Circulars related to Freight	The Bidder needs to display the web pages which will be developed by CRIS in FOIS. This information will be made available through web service. This feature should be available over Internet as well as Intranet and open information (without login restrictions)

2.3.4 Migration of existing IR websites

Sl. No.	Business area	Functional requirements specifications
	Migration of existing IR websites	There are more than 32 existing websites which provide various information regarding train enquiry, zonal railway website information, IR factories and special schemes. The details of the websites are given in the Sizing section. The websites are hosted in different instances with disparate databases. There is similar information available in some of these websites residing in different instances and thus increasing redundancy. The following things have to be performed while

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		migrating: - Study of the contents and technology of existing IR websites - Deciding on migrating technology platform - Data rationalization/ consolidation - Migration - o Create templates - o Personalization of websites to meet individual owner needs - Enabling of multilingual capabilities in migrated websites As a result of the migration: - Existing websites may reduce in number because of rationalization of information - The migrated websites would be hosted out of the commercial portal instance - Front end and back end technology may differ from the present architecture - GUI Re-designing of the portals for rationalization of information The website migration would be done in the first phase as a pilot (please see ‘Implementation approach’ section for details). - Ten sites (based on technology similarity) migration - Another ten based on dynamic contents - Other static websites
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2.3.5 General Portal functionalities

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Sl. No.	Business area	Functional requirements specifications
5.0	General Portal functionalities	The following are the other functional specifications of commercial portal other than the above listed
5.1	Search functionality	Search engine is to be provided, so that the internet and intranet users can search documents based on keywords. The search should not be restricted to meta tags but should be able to search also full text to search document names and document contents for the keywords that the user enters. Following are the key features for the search: - Search will be limited to documents hosted/ uploaded/ maintained in the portal and no external search for other applications - The documents to be categorized (see document management section), hence the search results needs to be role based login specific (search should be made within the documents that are categorized viewable by particular user profile) For a more specific search, users should be able to use the Advanced Search option to find search criteria in specific document properties, such as author, document attributes, categories, document age. It should be able to search within PDF, MS-Word, RTF, HTML, EXCEL and other standard document formats.
5.2	Document Management	A state of the art document management system should be put in place. This should provide methods and tools for capturing, storing, organizing, analyzing, creating and synthesizing information and expertise; and making available this knowledge within and across communities. The techniques for gathering distributed document information, indexing, text search, categorization, classification, clustering and labeling of clusters (taxonomy) etc. shall be used to all the experiences, knowledge gathered through databases e-mails, presentations etc.

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Sl. No.	Business area	Functional requirements specifications
		Salient features of Document Management system are: - The proposed system shall provide authentication and authorization features to protect access to the project information. When a user uploads a document of any type, he needs to enter category it belongs to and to what kind of users it is accessible (there will be typically 15-20 categories of internet and intranet users). The search engine should search within documents which are viewable in the category of users it belongs to - Storage of scanned documents indexed by their attributes for proper searching - Facility to check out documents based on privileges on user logins - Approved workflow for document uploads. The workflow would be for some specific type of document. Some documents can be uploaded straight away without approval - Approved workflow to be integrated with SMTP server for alert and notification emails - The reviewers should be able to view and modify the documents and then approve - There will be at max 4-5 stages of approval (including peer review stages) - Selected admin users should be able to view the document approval stage/status - Facility to track who has a particular document and for what purpose - Facility to update the status of a document as verified,

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Sl. No.	Business area	Functional requirements specifications
		queries awaited etc - Facility to refer to a check-list while verifying documents. - Facility to attach a particular document for passing along the work-flow. - Facility to generate reports showing the check-out history of a document. - Facility to generate reports of documents temporarily checked out but not returned There will be about 15-20 categories of users for this portal. Document management System will be used only by the intranet users.
5.3	Content Management	Bidder shall set up authenticated remote content management facility for the commercial portal and also 32 Railway web sites (Maximum 100 concurrent authors), so that their content may be modified remotely in a secure manner and ensure content management through authentication and preservation of history. The content management should have following features :- - Should provide centrally controlled auditing, expiration & retention policies - Should support archival, retention and regulatory compliance - Only the content which is hosted in the commercial portal needs to be maintained - No integration requirements with other applications - Intranet – role based restricted access - Regular backup to be taken as per standard practices - Should provide capability to recover a document even after it has been deleted by the user through a recycle bin kind of functionality

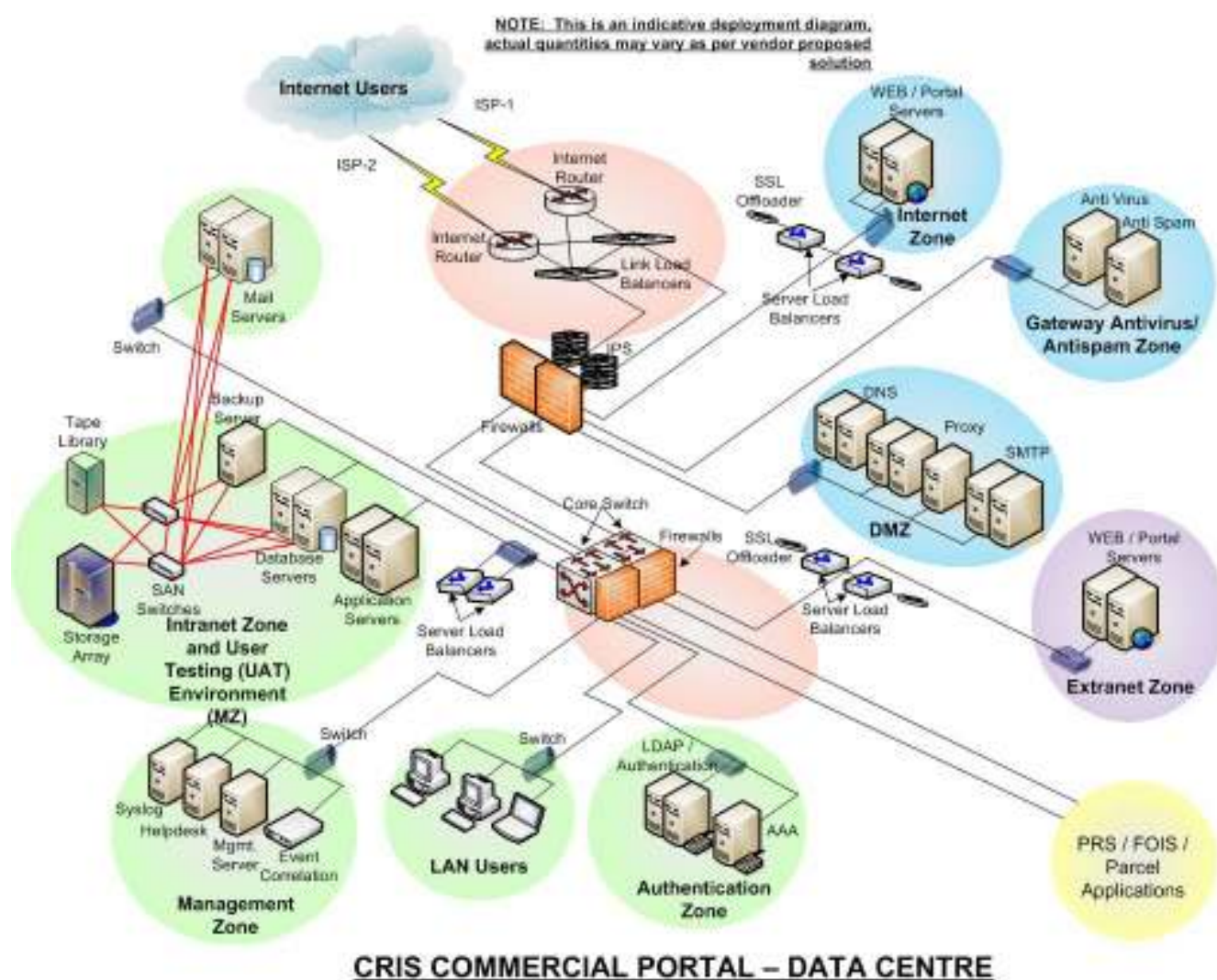
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Sl. No.	Business area	Functional requirements specifications
5.4	Advertisement campaign management software	All the portal advertisements are managed and hosted by third party agents. We need to have spaces for advertisement publications by embedding their source codes into our pages. The management/ modifications of the advertisements are then done by the third party vendors. 5-10% of the web page space would be reserved for the advertisements. Bidder needs to incorporate this while designing the portal. Bidder is required to provide full advertisement campaign management software capabilities for pre-set expiry, launching and billing of advertisements.
5.5	Access through Smart Phone Mobile with browser enabled interface	The entire commercial portal content/ functionality and features should be available through browser enabled smart phones like Symbian, Windows Mobile/Pocket PC, Motorola smart phones, iPAQs etc. for INTERNET USERS. Intranet users with role based features need not be given access through mobile devices. Currently ticket reservations through www.irctc.co.in can be done through mobile. Details for reference can be seen at http://www.irctcmobile.co.in/dlw
5.6	System administration	There will be different categories of users. Several features as mentioned above are having role based restricted access. The user management would be done in the commercial portal server. All the features in the commercial portal which are login restricted should have single sign on. The details on size of customer base and concurrent logins size is listed in 'Sizing' section
5.7	MIS reports	A tool to help generate MIS reports should be provided to designated IR Intranet users. Indicative areas where the Bidder needs to provide ad-hoc query for report generations:

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Sl. No.	Business area	Functional requirements specifications
		- Passenger ticketing Bidding related MIS reports (no. of users/ type of bidding/ reserve price trend/ winning bid trend/ TDRC profiles) - Rake auction related MIS reports (no. of users/ rake types/ reserve price trend/ winning bid trend) - E-ticketing related (no. of users/ class of booking/ user profiles/ TDRC profiles) - Journey planning (journey planning to ticketing conversions/ frequency/ popular routes) - Cloak room/ retiring room booking MIS - Search profiling and search result MIS - Complaints tracking MIS - Overall User profiling MIS - Portal access MIS reports (access IP profiling/ which Browser used frequently to access/ What Mobile devices used to access which modules) - Capability to run/generate ad-hoc reports on all commercial portal components/applications data - All data types available on the commercial Portal must be made available in a transportable format (comma separated fields) Atleast 5 reports in each of these areas are expected to be developed as a part of MIS reporting

3 Technical Requirements



3.1 Technical Architecture

Overall technical architecture is shown. It is indicative and alternate architecture can be provided by Bidder explaining the functionality of each of the technical blocks and how is it helping to achieve the functional specifications.

The following components of the technical solution illustrated in the figure will be provided by CRIS:

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a. Internet Bandwidth

b. Security components

i. Firewalls

ii. IPS

iii. Routers

iv. Network / Server Load Balancers (L4-L7 Switches)

c. Networking components

i. All LAN/WAN components & cabling

Vendor does not have to provide any of the above components.

Note :- It is the responsibility of the vendor to provide the above requirements to CRIS such that the SLAs are complied with to 100 percent. However, it is not the responsibility of CRIS to meet the end user SLAs. The above mentioned components' operations/management/monitoring/upgrade will be done by CRIS only.

The commercial Portal is an Internet based platform, where the services and business application accessed via

1. **Internet** – Here the access to the Commercial portal is via the public network which is the internet and access is restricted to a few applications. In this domain Internet users access B2C types of applications, namely the e-ticketing etc.
2. **Extranet** - An extranet is a domain where Railways' suppliers, vendors, partners, customers or other businesses can access the Commercial Portal in a secure manner. In this domain pre-approved set of other companies perform Business-to-Business (B2B) transactions in isolation from all other Internet users.
3. **Intranet** – This is where the access to the Commercial portal is via the internal Railways network and users are already authenticated and associated to certain business. In this domain Railways officials are the typical users accessing business applications.

Note: Bidder has to provide the actual environment, as well as the UAT (User Acceptance Testing) environment, with all necessary hardware and software licenses. UAT environment will be required for the complete solution components.

Bidder has to size the hardware and software, for the initial deployment, and has to provide additional hardware, software, storage, customer care, network equipments etc. required to meet the mentioned growth rate in the sizing details for the next 3 years. The anticipated hardware , other equipments, customer care and software will be delivered to meet the SLA

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requirements mentioned in the RFP. All items need to be quoted in the rate schedule for the commercial bid.

The Commercial Portal must be architected such that it meets following technical parameters

1. **Scalability and Performance** - One of the fundamental requirements of Commercial Portal solution architecture to be provided by the vendor is its ability to scale up as and when the new business applications and services are added without compromising the performance of the overall solution. The architecture should be proven to be highly scalable and capable of delivering high-performance as and when the transaction volumes increase. It is required that the application and deployment architecture should provide for Scale-Up and Scale out on the Application, Web Servers, Database Servers, Application Integration Servers, and all other solution components. Following outlines the scalability requirements of the solution both in terms of technical and commercial:
 - a. Scalability in terms of the volumes of transactions handled. This translates to the facility to enhance the hardware, software and network capacities to maintain the performance levels in tune with the SLA metrics.
 - b. Scalability in terms of additions of new services and business applications. This translates to seamless and effortless integration with the backend application such that new services can be added with relative ease and maintaining the common look and feel and functionality at the front-end in the Commercial portal solution.
 - c. Scalability in terms of addition of new channels of delivery. The services are expected to be provided to the business users using only Web Interface, Commercial Portal solution should be designed to provide services through other delivery channels like the mobile phones, PDAs and other devices.
2. **Availability** - Solution should be designed to remove all single points of failure. The solution should provide the ability to recover from failures, thus protecting against many multiple component failures
3. **Manageability** – All the components of commercial portal must be capable of being managed from a remote management station. The following are the technical requirements
Shall provide web based reporting of current and historical system performance parameters. Performance parameters to be tracked include resource utilization (CPU, Memory, Hard Disk, I/O, and Processes), uptime, throughput, device alerts/failure etc.
 - a. SLA Monitoring feature shall provide for measuring the SLA parameters including the following:
 - I. Response times of Commercial Portal
 - II. Transaction handling capacity of application server in terms of number of concurrent sessions

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III. Connects and Uptime of services and business applications

To achieve the above mentioned architecture the Commercial portal needs to be architected in an N-Tiered fashion. The following is a brief technical requirement of the various layers and associated technology.

Client Tier

The client tier shall run in a browser and uses HTML for presentation. The client communicates with the web server tier using HTTP or HTTPS.

Web Server Tier

The web server manages static images and pages and passes client requests from the browsers to the application server tier using HTTP.

Application Server Tier

The application servers are multi-threaded applications with two main areas of logical functionality:

Handling client requests and generating HTML as a response, and
Managing and supplying object data, including database interaction.

Database Tier

The Commercial Portal application suite shall use standard relational database platform for object persistence - all business object data shall be stored in the database.

3.2 CRIS supplied infrastructure

- Office Space for 35 persons.
- Data Centre Facilities – Power & Cooling.
- Telephone Lines for customer care.
- **Internet Bandwidth**

- **Security components**
 - **Firewalls**
 - **IPS**
 - **Routers**
 - **Network / Server Load Balancers (L4-L7 Switches)**

- **Networking components**
 - **All LAN/WAN components & cabling**

Apart from the system hardware and software, all other equipment for maintenance of the IR portal like and not limited to PCs, scanners, printers, call centre equipment etc. are required to be provided by the bidder.

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3.3 Commercial Portal Infrastructure specifications

The below mentioned requirements are minimal specifications and indicative. It is the vendor's responsibility to design, architect and commission the required infrastructure for the Commercial Portal to fully comply with the Technical and Operational SLA defined in this RFP..

Bidder has to provide the actual environment, as well as the UAT (User Acceptance Testing) environment, with all necessary hardware and software licenses. UAT environment will be required for the complete solution components.

Blades Enclosure(s) - Minimum technical requirements – All items are to be provided in max. 36U Racks. All server and hardware need to be provided with IP-KVM for remote management.

Form Factor	Up-to 10 U Form factor per enclosure with all redundancy features (Hard Drives, Power, and Cable Management). The requisite number of Enclosures to be configured to populate the Required Servers and additional units, if any.
Redundancy	Mechanical Devices such as Hard Disks, Fans and Power Units should be completely Hot Swappable and Redundant to ensure High Availability.
Blade Management	System Management Port to allow simultaneous management access of multiple Blade Servers in the Chassis. GUI, console-based deployment server to set up multiple OS and application configurations and Drag-and-drop servers into configurations
Network Switches	Redundant Gigabit Switches configured in every chassis to cater to 4 Ethernet Ports per Server, with at-least 4 uplink ports per switch.
Fiber Channel Switches	4 Gbps Fiber Channel Switches or pass-through-mechanism to be provided to cater to 2 FC ports per Server in the Chassis with at least 4 uplink ports
Power	Guaranteeing complete availability even on failure of any 2 power units across the enclosure. Sufficient Power to run a fully loaded enclosure.
KVM/CD/USB/Floppy	To be enabled Virtually over IP for Remote Access or Provided Locally.

2-socket blade servers - The requisite number of servers to be configured as per sizing and solution being proposed. Each blade server must fulfill minimum technical requirements as below.

CPU	2 X Dual / Quad Core CPUs or higher with latest and highest performance series of CPUs available at the time of bidding
Memory	8 GB Scalable to 32 GB – DDR-II 667 MHz or equivalent Fully Buffered MHz DIMMs. Free memory DIMM slots must be available after initial deployment for future expansion.
Hard Disk	2 X 72GB Hot-Plug SAS Disk Drives in RAID-1 configuration
Network	At-least 4 Gigabit Ethernet Ports configured with TCP/IP Offload engine enabled – 2 for public network and 2 for private network
Fiber Channel	At-Least 2 Fiber Channel Ports @ 4Gbps, to provide connectivity to SAN (required for hosting Virtual Machine Files, and seamless Migration to other servers using virtualization solution)
Management	Dedicated Baseboard Management Controller for system management

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	functionality on every Server providing Remote access to BIOS Access Levels. License for Remote OS and Application Deployment for all the servers
Virtualization	Integrated Virtualization Software, allowing for hosting multiple Virtual Machines (VMs) on the Server. The virtualization Software should be directly hosted on the Hardware, and allow for migration of VMs from one physical server to another physical server.
OS and other software	Unix/Windows 2003 enterprise edition / RHEL 4 or RHEL 5 / SUSE SLES 10 or higher supported as per solution requirements with all required software for NIC failover, FC port failover, Disk Mirroring, Compilers etc

4-socket blade servers - The requisite number of servers to be configured as per sizing and solution being proposed. Each blade server must fulfill minimum technical requirements as below.

CPU	4 X Dual / Quad Core CPUs or higher with latest and highest performance series of CPUs available at the time of bidding
Memory	16 GB Scalable to 64 GB – DDRII 667 MHz or equivalent Fully Buffered MHz DIMMs. Free memory DIMM slots must be available after initial deployment for future expansion..
Hard Disk	2 X 72 GB Hot-Plug SAS Disk Drives in RAID-1
Network	At-least 4 Gigabit Ethernet Ports configured with TCP/IP Offload engine enabled – 2 for public network and 2 for private network
Fiber Channel	At-Least 2 Fiber Channel Ports @ 4Gbps, to provide connectivity to SAN (required for hosting Virtual Machine Files, and seamless Migration to other servers using virtualization solution)
Management	Dedicated Baseboard Management Controller for system management functionality on every Server providing Remote access to BIOS Access Levels. License for Remote OS and Application Deployment for all the servers
Virtualization	Integrated Virtualization Software License, allowing for hosting multiple Virtual Machines on the Server. The virtualization Software should be directly hosted on the Hardware, and allow for migration of VMs from one physical server to another.
OS and other software	Windows 2003 enterprise edition / RHEL 4 or RHEL 5 / SUSE SLES 10 or higher supported as per solution requirements with all required software for NIC failover, FC port failover, Disk Mirroring, Compilers etc

Database Blade Servers - The requisite number of servers to be configured as per sizing and solution being proposed. Each blade server must fulfill minimum technical requirements as below.

The below mentioned requirements are minimal specifications and indicative only. It's the vendor's responsibility to design, architect and commission the required infrastructure for the Commercial Portal to fully comply with the Technical and Operational SLA

CPU	4 X Dual/Quad Core EPIC/RISC CPUs or higher with minimum 1.4Ghz speed and 12MB L1+L2+L3 cache per CPU.
Memory	32 GB Scalable to 64 GB – DDRII or equivalent or higher. Minimum 16 DIMM slots must be provided in the server
Hard Disk	4 X 146GB Hot-Plug SAS Disk Drives
Network	At-least 4 Gigabit Ethernet Ports configured – 2 for public network and 2 for private network

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Fiber Channel	At-Least 2 Fiber Channel Ports @ 4Gbps or higher, to provide connectivity to SAN (required for Oracle RAC configuration in active-active load balancing configuration)
Management	Dedicated Baseboard Management Controller for system management functionality on every Server providing Remote access to BIOS Access Levels. Remote console feature using lights-out feature via dedicated port(s)
OS and Clustering	OS with – Unlimited user license, Gbit port Teaming software & license, Native OS based or commercial FC port failover & load balancing feature, Cluster Manager software with GUI based access GUI or Web based server Mgmt feature Clustering software Internal OS Disk Mirroring software EAL-4 level compliance for security Dev Tool Kit, Debugger, & performance analyzer software & license for all DB servers Clustering software and Compilers must be from the OS or Server OEM for seamless integration and single point of ownership.

3.3.1 SAN STORAGE

Alternatively Bidders can propose a new SAN solution with following minimum specifications or more if required:

Parameter	Functionality
Operating System & Clustering Support	1. The storage array should support industry-leading Operating System platforms including: Windows 2000 (Advanced Server), <i>Windows Server 2003 (Enterprise Edition)</i> , OpenVMS cluster on Alpha as well as Itanium, Sun Solaris, HP-UX, IBM-AIX and Enterprise Linux. Offered Storage Shall support all above operating systems in Clustering also.
Capacity & Scalability	1. The Storage Array shall be offered with 10TB raw Capacity using 15K RPM dual ported FC drives. 2. Storage shall be scalable to minimum of 200 drives.
Array Controllers	1. The storage array should support dual, redundant, hot-pluggable, active-active RISC/ASIC chip based array controllers
Host Ports & Back-end Ports	Offered Storage shall have minimum of 8 host ports for connectivity to servers & minimum of 8 device ports for Disk shelf connectivity.
No Single point of Failure	Offered Storage Array shall be configurable in a No Single Point of configuration including Array Controller card, Backplane, Cache memory, FAN, Power supply etc.

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Disk Drive Support	Offered Storage Array shall support dual-ported 146/300GB hot-pluggable FC hard drives along with ATA (500GB/1TB) drives in the same drive shelf.
Cache	1. Offered Storage Array shall be offered with mini of 8GB cache in two controllers.
Data Protection	1. Incase of Power failure, Storage array shall be able to hold data in the cache for at-least 96 hours of time or de-staged to a specified disk area.
Global Hot Spare	1. Offered Storage Array shall support Global hot Spare capacity with at least 2 Global hot spare drive capacity configured for every 50 drives.
Performance	1. Offered Storage subsystem shall support more than 1,40,000 IOPS. 2. Shall support more than 1200MB/sec sequential throughput. 3. Vendor shall also offer the performance management software for Storage Array
Business Copy or Point-in-Time (PiT) Volumes	1. Shall support Normal Snapshot, Capacity free snapshot without locking the disk space, & Full physical copy (Clone). 2. Shall quote for 5TB of license for PiT software
Storage Array Configuration & Mgmt Software	1. Vendor shall provide Storage Array configuration and Management software and dedicated hardware console for the same. Vendor shall offer the enterprise version of the software if there are multiple versions for the software available.
Remote Replication	1. Storage shall support both Synchronous and Asynchronous replication at controller level without any OS level software or license.
Extra SAN switch ports and licenses	There should be additional vacant SAN switch ports and licenses besides the requirements of the server requirements as specified in the Portal H/W, to accommodate 6-8 additional Alpha (DS20E, DS25E) and Itanium (rx2620) Open VMS servers, which already exist.

3.3.2 Tape Library

Parameter	Functionality
Architecture	1. Offered Tape Library shall be Modular design to allow configuration, add capacity and increase performance as per backup window requirements.
Capacity & Scalability	1. Shall support Native data capacity of 28TB (uncompressed) expandable to 198TB in native mode. 2. Shall be offered with minimum of Two LTO-4 or more tape drives scalable to eight tape drives in every offered module.
Tape Drive	1. Offered drive should be hot swappable and with native FC connectivity
Partitioning	1. Tape Library shall support Partitioning for the mixed media usage as a native feature to tape library and shall be done without using any external device.
Management	1. Tape Library shall provide web based secure remote based management so that Tape Drives and robots can be assigned to clients on requests / Demand.
Cartridge Slots	1. Tape Library shall be offered with Minimum of 70 slots and shall be scalable to 500 slots inclusive of mail slots.
Other Features	1. Tape Library shall have GUI Touch Panel 2. Shall be rack mountable. 3. Shall provide Redundant Power supply and cooling FANs. 4. There should be additional vacant ports and licenses besides the requirements of the server requirements as specified in the Portal H/W, to accommodate 6-8 additional Alpha (DS20E, DS25E) and Itanium (rx2620)

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	Open VMS servers, which already exist. 5. 100 blank LTO4 media
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3.3.3 Enterprise Class Backup Software

Parameter	Functionality
Operating System & Clustering Support	1. The proposed Backup Solution should be available on various OS platforms such as Windows and UNIX platforms and be capable of supporting SAN based backup / restore from various platforms including TRU64 UNIX, HP-UX, Linux, Open VMS, NetWare and Windows. It shall be supplied with requisite licenses as per attached server summary 2. Proposed backup solution shall be offered with Cluster license of server
User Interface	1. Proposed backup solution shall have same GUI across heterogeneous platform to ensure easy administration.
High Availability Features	1. The proposed Backup Solution should support tape Mirroring of same job running concurrently with primary backup.
Licensing	1. Backup solution shall be configured in such a fashion that no extra license for Client and media servers is required while moving from LAN to SAN based backup. 2. The proposed backup solution shall be offered with unlimited client and Media (Both Cluster and standalone) or at least 50 Client and Media license (Both Cluster and standalone) for SAN based backup and LAN based backup. 3. The solution shall provide with the unlimited or at-least 50 licenses for Bare Metal restore for windows servers.
Database Support	1. The proposed Backup Solution has certified “Hot-Online” backup solution for different type of Databases such as Oracle, DB2, MS SQL, Sybase etc. and shall be supplied with requisite licenses as per Solution for all the DB servers
Restore	1. Backup Software is able to rebuild the Backup Database/Catalog from tapes in the event of catalog loss/corruption.

3.4 Commercial Portal Technical requirements

No	Feature	Requirement
1	Commercial Portal Solution	Provides the web interface of the multiple functional entities of Indian Railways solution and exposes the functionality of the business solution like e-ticketing etc. to the business users through Internet
2	Content Management	Provides the content creation, management and version control capabilities for the content hosted in Commercial portal. At

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No	Feature	Requirement
	System	least 100 concurrent user licenses.
3	User Registration & Access Control Management System	Provides user management services and service enrolment features to enable business user to register with the portal and to enroll for the services provided in the portal.
3	Portal Security	Provide security features like User authentication, authorization, role based access; rules based access, ACLs etc and should be able to work with user information repositories including standard relational databases and identity management systems (LDAP).
4	Portal Presentation	i. Provide consistent look & feel to the users and the standards shall be defined for content, structure and presentation of the portal.
		ii. These standards should be applied and followed throughout the portal.
5	Metadata Directory	i. Shall provide Metadata directories or indexes for data and about the data available in the proposed solution (e.g.) portal user information, etc.
		ii. The search engine should be integrated with the metadata directory or any other data sources created for the content in the proposed solution, which enables efficient retrieval of the information within the portal and the database based on the access to the user.
6	Caching	Provide caching at multiple levels including page/sections in the page, which improves the performance of the portal, in terms of the speed at which content is delivered to users, by caching frequently accessed information.
7	Content Management	Provide import/export tools as well as APIs so as to easily manage content and documents during staging, back-up, offline usage and for deployment.

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No	Feature	Requirement
8	Portal Usage MIS	i. Provide interface that manages and creates reports on solution usage and the analysis of user or system behavior. Metrics that are logged shall pertain to portal user network demographics as well as click-through behavior. Web analytics is required.
		ii. Enable these metrics to be analyzed in order to derive user trends.
		iii. Shall provide trend analysis facility to record usage behavior patterns providing forward-looking predictions of department user/supplier interests in the solution.
9	Interfacing to Other systems	i. Include a standards (preferably web services) based connector for easy integration with the legacy systems.
10	User Interface and Usability	i. Operate over the Internet and through a web browser.
		ii. The System must not require the installation of Software on User's personal computers other than software normally associated with web browser operation.
		i. All functional areas must employ a consistent look and feel across all functions.
11	Other Features	Must be able to consume the web services from other G2B/Government content sources/portals and vice-versa Shall support hosting of multi-lingual data/forms
12	Content Management	Content management framework should manage the process of content creation, revision and approval through a combination of work flow and version control technologies.
		Shall support WebDAV so as to allow content creation and management using compliant tools like a browser, Microsoft Office, Adobe, Macromedia Dreamweaver etc. It should provide a WebDAV client side API to enhance the client application

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No	Feature	Requirement
		side functionality to tightly integrate with the specialized content management capabilities of the portal solution (e.g. assign categories to documents, associates custom metadata with content, create content using custom templates called Document Types as defined in the portal etc.).
		Shall support market leading database solution as the content repository. The content management solution should be able to get the content from multiple market leading databases or database engines at the backend.
		Contributor, managerial rights and privileges must be managed according to the predefined roles for security and to ensure that participants are undertaking suitable and appropriate tasks.
		Content must be tagged with the Metadata to enable it to be retrieved more easily.
		Content repositories must be managed, through versioning and version control, to ensure integrity and authority of the core content.
		Access management and privileges for content management should be secured and advanced authentication technologies such as SSO shall be used for controlling access to the Commercial Portal content management.
13	Single Sign On (SSO)	SSO services provided by Commercial Portal should enable the business user to authenticate him/her self with the Commercial portal only once and should be allowed to transact with the back end departments seamlessly eliminating the need for reauthentication. Unique and secure identification of the business user is of utmost concern in providing online Railway services. SSO is restricted to the applications being developed on the IR portal and does not include integration

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No	Feature	Requirement
		with outside applications.
14	Mail Gateway	Necessary for Portal administration, and tasks related to customer complaints etc.
15	HP Reliable Transaction Router	This middleware Front end licenses will be required for interfacing with PRS application.

3.5 Integration Requirements

Sl.no.	Integration Requirements
1	CRIS has a EAI infrastructure based on TIBCO already in place. The bidder is required to integrate with the same. The solution/interface needs to be integrated with the back end Railways business Systems like PRS, FOIS etc. for effective transfer/retrieval of information to and from the backend applications
2	Commercial Portal should enable application level integration of the backend applications for relevant information/document exchange across Railway businesses
3	Should support both Synchronous and Asynchronous communication (message exchange) with the backend business applications
4	Interface to the backend applications should be based on open standards such as XML, SOAP etc.
5	Should handle event services that control workflow between the portal presentation layer and the back end Business applications.
6	Should provide reliable and secured communication between the portal and the backend applications
7	Should provide activity/event logging that is archival and accessible for analysis/monitoring.
8	The solution should support bi-directional data exchange with connected systems and not

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Sl.no.	Integration Requirements
	just unidirectional query capability.
9	The solution should be capable of web services process orchestration and should support straight through as well as long running business processes.
10	The solution should have a highly intuitive graphical development and deployment environment capable of the following:
11	Enterprise connection wizards to connect to back-end systems (e.g. Telnet systems, databases, web based apps etc.) in a highly visual intuitive manner.
12	Visual drag and drop tools for data mapping and transformation which speeds up development by minimizing hand coding in XML
13	Self documenting program flow and end-to-end animation to enable nonprogrammers to step through the sequences and actions
14	Process designer and process modeling engine which allow business analysts to quickly assemble complex information flows.
15	Wizards for UDDI publishing and discovery of web services
16	Auto generation of SOAP and WSDL interfaces etc.
17	Use of Reliable transaction Route (RTR) to integrate with Passenger Reservation System (PRS)

3.6 User Registration & Access Control Management Requirements

No.	Feature	Requirement
1	User Registration Services	i. Should enable department users and suppliers to register with the solution using both the User Id/Password and Digital Certificates as required for the services catered through the solution. The solution shall facilitate usage of digital certificates issued by authorized PKI vendors adhering to IT Act 2000 and approved by CCA.
		ii. Should provide detailed instructions for obtaining and usage of Digital Certificates on portal

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No.	Feature	Requirement
		iii. Should enable registration of users with multiple levels of access and authorization privileges
2	User Authentication Services	i. Support authentication mechanisms including User Id/Password and digital Certificates issued by CA's approved by CCA.
		ii. Be able to integrate with leading PKI vendors adhering to the IT ACT 2000 and approved by CCA.
		iii. Once authenticated, users should be allowed to access the services for which he/she has enrolled and for which access has been provided.
3	User Management, Auditing & Reporting	i. Provide the Security & User administration interface for system administrator to enable management of access rights and privileges of users.
		ii. User Administration activities should be carried over a secured and encrypted connection.
		iii. The Passwords and other confidential information related to the users should be stored and transmitted in a secured and encrypted manner.
		iv. Password Management services must enforce password restrictions, which include the criteria and limitations that can be placed on passwords to increase security. It should provide features such as periodic forced changes, not reusable, hard to guess, mixed characters, etc.
		v. Successful/unsuccessful user login requests should be logged for investigative purposes in case of a security breach.
4	Audit Logs	i. The auditing and logging should allow secure logging of events in the system.
		ii. The solution should allow a choice of the persistent storage for the logs (e.g. RDBMS, flat file).
		iii. The solution should be capable of secure, tamper proof auditing and logging features.

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3.6.1 PKI Services Requirements

No.	Feature	Requirement
1	Acceptance of Digital Signature Certificates (DSC)	i. The solution should support Digital Certificates issued by licensed CA's in India as approved by CCA.
		ii. Client Digital Certificates based authentication should be used for access to the services as mandated by Indian Railways
		iii. The digital signatures used in proposed solution must be compliant to RSA standards as required by IT-Act 2000 and shall adhere to any further amendments issued by Government of India in this regard.
2	DSC Validation	i. Automatic validation of Digital Certificates used for Authentication and Digital Signatures is required.
		ii. The validation must include check for acceptance criteria (Issuer, Class, and Policy Identifiers), validity period, and current CRL based revocation checking.
3	DSC Compliance	i. Digital signing and encryption of attachments (documents) compliant to PKCS (Public Key Cryptography Standards) is required.
		ii. XML Digital Signatures compliant to W3C XML-Signature syntax and processing (http://www.w3.org/TR/xmlsig-core/) are required for transactions.

3.7 Database System Requirements

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No.	Feature	Requirement
1	Relational database Requirement	The services for which vendor is developing the Commercial Solution, a relational database solution should also be deployed for storing the service related information & records.
2	Support Clustering	Support clustering features exploiting rapidly emerging disk storage and interconnect technologies
3	Access Control	Allow for server-enforced, fine-grained access controls and also for row level security (in conjunction with application contexts)
4	Data Encryption	Encryption capabilities while transferring data over networks, and ability to encrypt data stored in the database at the column level
5	PKI Support	Support PKI based authentication for administrative access to the server
6	Multi-lingual Support	Database must be capable of storing Unicode data formats, for multi-lingual language support.
7	Auditing	Comprehensive auditing for inserts/ deletes/ updates / selects to quickly spot and respond to security breaches.
8	Comprehensive Storage	The database solution deployed for the solution should also address the storage requirements of other services such as content, transaction and activity logging, etc.

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3.7.1 Interface with Payment Gateway

No.	Feature	Requirement
1	Payment Gateway Interface	i. Provide the interface and access to external payment gateway services providers and should be integrated with the Commercial Portal solution
		ii. The payments engine shall use a 3 rd party payment service provider.
		iii. The Payments Engine should also support paperless Direct Debit set-up and draw down
		iv. Connection to the Portal can provide the following additional functionality: (i) Immediate departmental notification of payments received; (ii) The Payments Engine API should provide for a real-time response of success or failure with an authorization code.
		Facilitate payment through credit card, debit cards and direct debit facilities.
2	Payment Instruments	Provide complete audit functionality for tracking and monitoring/reconciling the financial transactions taking place through the Commercial solution.
3	Support Audit of Transactions	Use standard protocols such as HTTP, Secure Socket Layer (SSL) etc for supporting & securing the transactions taking place through the payment gateway.
5	Payment types	Support Debit cards, charge cards, credit cards etc.

3.8 Commercial Portal Security Requirements

3.8.1 Security Policy & Procedures

The vendor is required to comply with the Security Policies of CRIS. The vendor is required to develop and document the Security Procedures for the Commercial Portal solution provided. These Policies and Procedures encompass the following areas:

1. Antivirus Security
2. Password Security
3. Physical Security
4. Logical Access Security
5. Business Unit Security
6. Operating System Security
7. Change Management
8. Patch Management
9. Network Connectivity & Network Management
10. Backups
11. Security Training
12. Data Classification
13. Security Incident Management
14. Roles & Responsibilities
15. Asset Security
16. Application Security
17. Acquisition, Development & Management of Software
18. Internet Usage
19. Encryption
20. Third Party Operations
21. Information System Audit

3.8.2 Security Certification

The vendor is required to undergo BS7799 Security Certification for the provided solution prior to Acceptance the solution. The Certification Auditor will be appointed by CRIS.

3.8.3 Security Audits

The vendor is required to have the solution provided audited with respect **to BS7799 standards** every six months. A satisfactory audit certificate is required to be produced along with the latest Invoice raised by the vendor.

3.8.4 Security function specification

No.	Feature	Requirement
1	Directory mapping	The solution should provide the ability to map together two sources of user information. For instance, LDAP is very good at storing largely static data about users, however if there is some data about users that is highly dynamic, it can be more

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No.	Feature	Requirement
		efficient to store such information in an RDBMS, and retain the static data in LDAP. The solution should provide a method for linking the two. For example a users ID and contact details are largely static, whereas transactional information relating to the user (i.e. service registration details) are liable to frequent changes.
2	Delegated/decentralized administration	The solution must enhance the overall management of security, by providing Authorization Officers of an Organization an easy way to manage users and their corresponding profile information; while also maintaining the ability to manage at the application level. The centralized control should allow for the web-based maintenance of organizational level controls such as user management, role management and overall administration control.
3	Browser based password change service for users with enhanced password management	Features such as minimum password length, minimum number of numeric characters, forced password change with optional grace logins, non-dictionary words, password history etc.
5	Site, page and content control	The security solution must be able to support a variety of ways to restrict access for specific users to only certain resources at the site, page and control levels of the commercial Portal.
6	Ability to personalize content by user / group	The Commercial portal solution should offer content personalization functionality. The solution should take the user id provided during authentication and then depending on the resource being accessed, return to the content generation module, or some other dynamic page generator for Portal,

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No.	Feature	Requirement
		data about the user, such as user id, organization name, role/privileges etc. This increases security at both the page and content level while reducing coding costs, without this feature, a separate page must be coded for each view that is different by user /group.
7	Scalable and portable solution	The security solution must provide scalable access services for the Commercial Portal solution, including scalability in terms of number of users, user groups, resources, and access control policies. In addition, it must be scalable to legacy and future applications / resources that are attached to the portal. The ability to transport this solution for all future web-enabled services with minimal effort reduces future implementation costs and ensures a structured / proven security environment.
8	Open and extensible security platform	The solution must provide a robust and customizable security solution that meets the application requirements of Portal. It is hard to anticipate all present and future requirements. An open, extensible architecture and documented application programming interfaces (APIs) enable site developers to customize an access control system to their specific requirements. A platform that will grow with additional application deployment and scales as user traffic grows, while providing the highest level of reliability is required.
9	Secure storage of critical items	The security solution must provide for the ability to securely store critical data within the LDAP or other user directory structure or any user related databases/documents so that database administrators or any unauthorized users do not have access to such items as passwords and other critical documents.
10	Detailed session	The security solution must provide for session settings such as

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No.	Feature	Requirement
	management abilities	timeouts, concurrent sessions and other session control settings
11	Password management functions	The solution must have the ability to perform password management functions including: controlled password expirations, minimum password lengths, and enforcement of alphanumeric password standards, password history logging, and user lockout from failed login attempts.
12	Web Access Filtering	The security solution must examine all traffic to all services/pages being protected by the solution. All access attempts to the portal or directly to any resource managed/protected by the portal should be intercepted and examined for authentication and authorization requirements.
13	Security Monitoring	The security solution must be capable of comprehensive logging of the traffic through the network and applications under its Control. It should be capable of logging unauthorized access attempts in to the network and the Railways internal resources, and attempts to login that fail. It should also be capable of notifying appropriate parties including the organization users/department users/ security administrators etc of suspicious activity.
14	Configuration Management	The security solution should provide a way of controlling changes to configuration, if a major change to configuration is made then a way of recording this change must be provided with the possibility of rolling back through previous configurations in the case of problems.
		The Commercial portal environment, including the documents uploaded by the users, needs to be adequately protected against viruses.
15	Other Security Services	All the systems in Portal solution network should run most up-to-date anti-virus software to avoid malicious programs to

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No.	Feature	Requirement
		cause damage to the systems
		Any access to the Commercial solution database should only be via application/portal authorization
		Any administrative access to database should only be via application authorization which should follow authentication of personnel by a suitable mechanism such as use of biometric technology
		The technology solution should comply with BS7799 standards and the solution provider has to get the certificate of the same within 3 months. Subsequently periodic surveillance audits must be carried out

3.9 SLA Monitoring tool

The SLA monitoring tool should be capable of providing all the SLA reports and monitoring, as required in the RFP. It should be capable of providing SLA measurement for all the components being delivered by the bidder including Payment Gateway times as well as be able to isolate the measurements for the CRIS provided backend applications for PRS, FOIS and Parcel.

3.10 Anti virus and Anti- Spam gateway appliance/server in HA

- Should protect desktops, laptops and servers from viruses, Trojans, worms, hackers, spy ware, ad ware and mixed threat attacks
- The installed anti virus should act as antivirus gateway, to protect all the documents embedded into the portal.
- Should have support for the following operating system platforms: Windows 95/95OSR2/98/98SE/Me, Windows NT/2000, Windows XP/Vista/Server 2003/Linux
- Should have a centralized management console to deploy, manage and monitor all anti-virus clients and other functionality such as anti-spyware, desktop firewall
- Should have the capability of being able to deploy AV clients through domain login script, management console, network share and 3rd party remote installation tools

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- Should have the feature to disable user initiated uninstall and unload through password protected client.
- Should have the capability to perform heuristic scanning and compressed file scanning
- Should provide scheduled, on-access/ real time and in memory scanning to identify, proactively block, and safely eliminate potentially unwanted programs
- Should enable automatic deployment of security policies, pattern files, and software updates to clients and servers via the centralized management console even in the absence of a Microsoft Windows Domain architecture
- Should be able to perform real-time monitoring of servers and clients; delivers event notification and reporting, remote administration, lockdown of client security settings, and tailored policy for individual

4 Commercial Portal Monitoring, Management & Load Testing

4.1 End User Management

- Provide real-time visibility into application performance and availability from the end user's perspective.
- Help align IT with end-user business processes.
- Use active business process emulation, to supply real-time visibility into the user quality of experience (QoE).
- Assess business impact when problems occur to prioritize IT's response
- Triage and isolate problems by integration with EMS tools
- Detect end-user business-process issues before customers are impacted
- Reduce the business impact of end-user outages and performance issues
- Re-use/leverage business process scripts developed for load testing
- Drill down to network, server, application tier, business tier and database tier for isolating performance issues.
- Diagnostics of composite applications through transaction tracing

4.2 Service Level Management

- Define realistic, quantifiable availability and performance objectives that reflect business goals
- Measure performance and availability as experienced by end users
- Maintain a hierarchical catalog of business services mapped to customer service-level agreements (SLA) and to underlying applications and infrastructure
- Isolate and resolve performance problems before service-level objectives are breached

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- Role-based and user-based dash boarding that displays service health and status information to all consumers and providers of business services and application functions
- Real-time alerts and/or events on SLA breaches.
- Facilitate creation of agreed-upon definition of outages.
- Flexible handling of planned downtimes for correct reflection on SLA measurements.

4.3 Servicedesk for Helpdesk Management

- Servicedesk shall be installed on LINUX/Windows, the Solution should be a comprehensive and fully integrated IT service management software suite that enables organization IT to improve service levels, balance resources and control costs.
- With embedded ITIL-based best practices, Service management Solution should allow organization to quickly deploy consistent, integrated work processes across every part of your organization IT organization.
- From the moment a call comes into the service desk, through incident, problem, change and release management, every service management process should be automated and optimized.
- The suite should provide request, contract, catalog and service level management modules for comprehensive service management.
- The solution should provide configuration management capabilities that establish an ITILbased configuration management database (CMDB).
- Enabling a wide range of out-of-the-box processes for service support and service delivery.
- Service management Solution should be a web-based technology foundation and service oriented architecture.
- Service management Solution must be certified like by Pink Elephant's Enhanced PinkVerify status, to provide ITIL processes.
- All service requests shall be channeled through Service Desk, whether they are initiated by a phone call, an e-mail message or the self service interface, enabling IT to centralize, assign tasks, manage and resolve issues efficiently.
- Service Desk shall manage call information and automates service desk processes. It shall provide service agent tools to document, capture and update information about a customer's reported issue, and then leverage knowledge management tools to increase first-call resolution.
- It shall allow the solution to be captured and re-used when issues recur, and report on overall service desk performance.
- Incident Management shall include powerful out-of-the-box categorization, as well as routing and escalation workflows that can be triggered based on criteria such as SLA, impact, urgency, CI, location or customer.

4.4 Commercial Load testing software

- Emulates hundreds or thousands of concurrent users to apply production workloads to almost any client platform or environment.
- Stresses an application from end to end—applying consistent, measurable and repeatable loads—then uses the data to identify scalability issues that can affect real users in production.
- Captures end-user response times for key business processes and transactions to determine whether CRIS can meet service-level agreements (SLA).
- Analysis engine provides a single view of end-user, system-level and code-level performance data.

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- Supports performance testing for a wide range of application environments and protocols, including web, service-oriented architecture (SOA) and web services, Ajax, RDP, database, legacy, Citrix, Java™/ .NET and all major ERP and CRM applications, including PeopleSoft, Oracle®, SAP and Siebel.
- Provides Non-intrusive monitors tailored for various operating systems, applications and databases.
- Provides diagnostics for J2EE/ .NET
- Script-creation simplified to record and replay with minimal coding effort.
- Integrates with the leading J2EE / Microsoft® Visual Studio and Microsoft .NET environments.
- Decreases the risk of deploying systems that do not meet performance requirements
- Reduces hardware and software costs by accurately predicting system capacity
- Provide intelligent service-level management before services go live
- Shortens test cycles to accelerate delivery of high-quality applications
- Pinpoints end-user, system-level and code-level bottlenecks rapidly and with ease
- Reduces the cost of defects by testing early in the development cycle

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5 Sizing Considerations:

Sl no	Parameter	Size
1	Total number of potential registered users	Initially 1 crore registered users (Additional Growth Rate - 40% in first year, 25-30% in second year, 10% in subsequent years Data Growth rate : 20% in first year, 10% in subsequent years)
2	Total number of potential users (casual browsers)	Initially 10 lakhs per day. Additional Growth rate : 40% in first year, 25-30% in second year, 10% in subsequent years)
3	Number of Journey planner sessions	Initially 2000 Concurrent sessions (Additional growth of 50% in first year, 25-30% in second year, 10% in subsequent years Data: 20% in first year, 10% in subsequent years)
4	Number of e-ticketing and e-auctions	Initially 20,000 per day with max. 200 concurrent sessions of e-ticketing and e-auction transactions (Additional growth of 60% in first year, 40% in second year, 10% in subsequent years Data: 40% in first year, 20% in subsequent years)
5	Number of Intranet Users	Initially 2000 registered users. 500-750 concurrent logged in sessions at peak hours (8am to 6 pm) Additional Growth Rate - 40% in first year, 25-30% in second year, 10% in subsequent years Data Growth rate : 20% in first year, 10% in subsequent years
6	Number of Internet Users (Public)	Initially 1 crore registered users 1 lakhs (per day) of the registered users will be logged in

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Sl no	Parameter	Size
7	How many registered users will be active users on a typical day	5000 (Concurrent users at peak hours) Peak hours: 8 am to 6 pm Additional Growth Rate - 40% in first year, 25-30% in second year, 10% in subsequent years
8	Search operations as a percentage of total system use:	25 – 30%
9	Reserve capacity of the entire commercial portal	30%
10	Data store	Portal storage: 3 TB (including user profiles) Database storage: 2 TB
12	Web page Static content : Dynamic content	Static content 50% : Dynamic content 50%
13	Content management users	100 IR administrators
14	Annual Rate of growth	User traffic: growth of 40% in first year, 25-30% in second year, 10% in subsequent years Data: 20% in first year, 10% in subsequent years
15	Portal response time	Static pages: < 1 seconds Dynamic pages: < 2 seconds (fetched from portal database) Business applications: (e-ticketing, auction, retiring room bookings etc): < 4 seconds Also, please refer section 'SLA' for details
16	Portal availability	Please refer section 'SLA' for details
17	Solution scalability	- The bidding engine should accommodate future plug-ins of parcel SLR and rake auctions - It should be able to accommodate growth of traffic and data content

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Sl no	Parameter	Size
		Please refer to the 'Scalability' section in 'Technical Requirements' section

6 Existing IR Web-Sites details

S. No	NAME OF ORGANIZATION	URL OF WEB SITE	TECHNOLOGY	APPLICATION
A	Indian Railways			
1	Indian Railways	http://www.indianrailways.gov.in	Java Script, HTML	Only Links
B	Zonal Railways site			
1	Central Railway	http://www.centralrailwayonline.com/index.html	JSP,HTML,CSS	Central Railway
2	East Central Railway	http://ecr.indianrail.gov.in	ASP, Java Script, HTML, Script, CSS	STORES ,Tender
3	East Coast Railway	http://eastcoastrailway.gov.in	PHP	East Coast Railway
4	Eastern Railway	http://www.easternrailway.gov.in/	ASP.NET,HTML,CS S	Store, Bill Tracking
5	North Central Railway	http://www.ncr.railnet.gov.in	ASP,C#,ASP. NetHTML, Java Script	Bill ,Store
6	North East Frontier Railway	http://www.nfr.railnet.gov.in	ASP, HTML, Java Script	North East Frontier Railway
7	North Eastern Railway	http://www.ner.railnet.gov.in	ASP.NET,HTML,CS S	North Eastern Railway
8	North Western Railway	http://www.northwesternrailway.gov.in/	ASP,HTML, Java Script	North Western Railway
9	Northern Railways	http://www.nr.indianrail.gov.in	ASP.Net, SQL Server	http://www.nr.indianrail.gov.in
10	South Central Railway	http://www.scrailway.gov.in/	PHP,HTML,CSS	http://www.scrailway.gov.in/
11	South East Central Railway	http://www.secr.gov.in/	ASP	http://www.secr.gov.in/
12	South Eastern Railway	http://www.serailway.gov.in	ASP, HTML, CSS, Java Script	Store
13	South Western Railway	http://www.southwesternrailway.in/	PHP,	Tender, Store
14	Southern Railway	http://www.southernrailway.org.in	PHP,MYSQL	Southern Railway
15	West Central Railway	http://www.westcentralrailway.com	ASP,HTML,CSS	West Central Railway
16	Western Railway	http://www.wr.indianrail.gov.in	ASP3.0, MS Access	Western Railway

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C	Production Units			
1	Central Organisation for Railway Electrification	http://core.railnet.gov.in	ASP, HTML, Java Script	Bill, Tender
2	Chitranjan Locomotive Works	http://www.clwindia.com/	CSS, PHP, HTML, Photo Shop	Store, Bill Tracking
3	Diesel Loco Modernisation Work Patiala	http://dmw.indianrail.gov.in	C#, ASP.NET, Java Script	Tender, Store
4	Diesel Locomotive Works	http://www.diesellocoworks.com/	ASP, HTML	STORE, TENDER
5	Integral Coach Factory	http://icf.gov.in	HTML, CSS, Java Script	Tender, Store
6	N.R. Carriage Wagon Workshop	http://nrcnwko.gov.in	HTML, CSS, Java Script	No
7	Rail Coach Factory	http://www.rcfkapurthala.com/html/index.asp	ASP, HTML, CSS	BILL, TENDER
8	Rail Wheel Factory	http://rwfindia.gov.in	C#, ASP.NET, Java Script	Store
D	Railway Training Institutes			
1	Indian Railway institute of signal and Telecom	http://www.iriset.ac.in/	HTML	No
2	Institute of Mech. and Elec Engg	http://irimee.ac.in	Java Script, CSS, HTML	Tender
3	Institute Of Rail Transport	http://www.irt-india.com/	HTML	No
4	Railway Staff College Baroda	http://www.rscbrc.ac.in/	HTML	No
5	Research Design Standard Organisation	http://www.rdso.gov.in	HTML, CSS	Tender, Store
E	Others			
1	National Rail Museum	http://www.nationalrailmuseum.org	ASP, HTML, CSS, Photo Shop	Bill Tracking
2	Darjeeling Himalayan Railway	http://dhr.in	HTML, CSS, Java Script	NO

7 Bidder Scope of Work

1. Supply, installation and commissioning of all required hardware for steady functioning of the Commercial Portal and to comply with the technical and Operation SLA
2. Supply installation and commissioning of all required software (Commercially off-the shelves COTS) for steady functioning of the Commercial Portal and to comply with the technical and Operational SLA.
3. Migration of 32 existing web sites to the commercial portal and commissioning these web-sites
4. Develop and commission the bespoke applications as defined by the functional specifications in section
5. Web enable and commission existing application on to the commercial Portal as defined in RFP.
6. Provide helpdesk services to support the operations of the Commercial Portal for a period of three (3) years.
7. Provide training services as defined in RFP.
8. The vendor must comply with the deployment SLA
9. Provide Support services to meet the required operational SLA's for a period of 3 years
 - a. Application Management services
 - b. Maintenance Support service of all the infrastructure, Portal applications and COTS software required to run the Commercial Portal
10. Comply with the technical SLA during acceptance of the Commercial Portal
11. Comply with the Operational SLA for period of three years from the date of acceptance of the Commercial portal.
12. The operations and management of internet gateway (Firewall, IPS, Routers , Modems switches, Load Balancers, SSL offloaders , B/W Compressor, Link Load Balancer etc.) shall be done by CRIS from day 1 of commissioning of the commercial portal.

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13. Bidder shall hand over the system passwords of all other hardware and root/system administrator passwords of the operating system, database, app servers and all other software to CRIS from day 1 of commissioning of the commercial portal.
14. Bidder shall provide additional hardware, software, customer care and others items required for this IR portal, to meet the additional growth rate as mentioned in the sizing details, and also to satisfy the SLA.
15. If Bidder needs to upgrade / augment/ require any of the components provided by CRIS, an advance notice of at least 90 days needs to be given.

8 IR user acceptance testing

8.1 Acceptance Criteria and Certification

The primary goal of Acceptance Testing & Certification is to ensure that the project meets requirements, standards, specifications and performance prescribed by the RFP and shall include the following acceptance tests which shall be conducted by the nominated agency:

8.1.1 Performance

Performance is a key requirement for the Project. The deployed solution is supposed to be a highly scalable solution, which is designed in a scale up/out model at each layer. This will provide the model for future growth. This test process will include the following activities.

- i. Determination of performance metrics
- ii. Designing performance tests
- iii. Development of workload
- iv. Performance testing and sizing study
- v. Identification of bottlenecks and providing solutions.
- vi. Determining final performance figures.
- vii. Communication of final results to all stakeholders

Final output of this process would be a sizing guide for the solution tested. The sizing guide will document the details of the performance tests, test data, bottlenecks identified, alternate solutions provided, and the final performance data. This document will provide the scalability data of the solution for various loads. This will become the authentic guide for future scale up/out plans of the Project.

8.1.2 Availability

The solution should be designed to remove all single points of failure. The solution should provide the ability to recover from failures, thus protecting against many multiple component failures. This test process will include the following activities.

- a. Designing tests for high availability testing
- b. Execution of high-availability tests
- c. Assessment of transaction/data losses in relation to Disaster Recovery system
- d. Communication of final results to all stakeholders

High Available clustering at all Web, Application and DB server levels will be targeted at 99.9 % availability.

8.1.3 Security

Security certification process will include

- a. Audit of Network, Server and Application security mechanisms.
- b. Assessment of authentication mechanism provided in the application /components /modules
- c. Assessment of data encryption mechanism.
- d. Assessment of data access privileges, retention periods and archival mechanisms.

Final output of this process would be a comprehensive audit report including all the Network, Server and Application security features incorporated Commercial portal.

8.2 Hardware and system software testing:

8.2.1 Initial acceptance testing:

Physical verification of equipment as per the supply contract.

Physical inspection of the equipment for any physical damage.

"Power on self test" for all equipments to ascertain that no equipment is dead on arrival

Physical verification of software media, Licenses and documentation for warranty support

All these testing would be done for hardware and software supplied for Development, Test and Production instances.

Detailed indicative technical specifications are given separately in Specifications for servers given separately in the tender. The Bidder must submit an item wise compliance of these technical specifications duly vetted by OEM

Preliminary test certificate to be signed jointly by CRIS and the vendor for all the equipments

8.2.2 Hardware and software installation testing:

The detailed implementation plan for the supplied software and hardware to be provided by the vendor and agreed by CRIS before installation.

Delivery schedules and detailed test plan for the supplied hardware and software to be given by the vendor including but not limiting to Cluster set up test/ failover test, storage test, networking test etc. This plan has to be agreed by CRIS before installation is done. The detailed testing is to be done on the production environment set up and not for the development and test instance box. Some of the necessary items to be checked are:

Installation of supplied hardware and software with cluster setup

Running of standard diagnostic programs.

Integration of servers with existing SAN storage creation of LUNs and Mount points

Installation test certificate to be signed jointly by CRIS and the vendor.

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Apart from the above, the vendor needs to submit a detailed Installation Report clearly indicating the installation of H/W, S/W cluster configuration of servers, Network, O/S parameters Disks Layouts, RAID Configuration, Detailed Connectivity Diagram, details of all supplied software installation with key parameters etc. Without submission of detailed installation document, it shall be considered as incomplete.

8.3 Application acceptance testing (UAT):

The application will be tested with reference technical SLAs mentioned in the 'SLA' section.

Detailed test plan and use cases for each module and functionality to be prepared and submitted to CRIS

The use cases should focus on Functionality, load, stability and should cover all the possible business scenarios

Test plan and Use case documents should be submitted for each phase in case the solution has a phased go-live approach

These documents should be jointly agreed by CRIS and vendor before the acceptance testing

There will be two rounds of UAT for each phase of go-live. The first UAT will be comprehensive and would be done typically done for 1 week. The second UAT (typically 3-5 days) will be done primarily to test the defect fixed (if any) that is found in first round of UAT. In case there are no defects, the second UAT would be omitted.

Solution acceptance test certificate would be issued by CRIS before we go for Integration performance testing

Carrying out load testing through Mercury/Rational tools like Load Runner, Rational Robot, and Performance tools to ensure compliance to the sizing criterion, quoted in the tender

The Bidder will get the Portal audited for detailed security penetration, through third party STQC, Standardization Testing and Quality Certification, a division of Department of Information Technology, India, submit its audit report, act on its recommendations to remove

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all lacunae before handing over to CRIS (can be any other standard third party auditor, details needs to be provided)

8.4 Final integration performance testing:

The final acceptance testing will be done post implementation of the hardware and software and the commercial portal solution in the production box. Following points are important to note:

The testing would be done for 1 week limiting to the solution performance in terms of response time, uptime, load and security. The detailed performance test plan has to be submitted by the vendor atleast 1 month before the scheduled testing start date and has to be agreed by CRIS. The performance test plan should be in line with the sizing considerations given in the appropriate section of the tender

This testing would be started only after successful completion of User acceptance testing on detailed test/ use cases for the commercial portal that has to be submitted by Vendor (please see the Project management life cycle section for details)

Final acceptance test certificate to be signed jointly by CRIS and the vendor.

The date of issue of Final acceptance test certificate shall be termed as date of acceptance.

Post this integration performance testing, the solution can go-live. In case the go-live is in phases, all of the above would be done for each phase pre-go-live

9 Trainings

The Bidder needs to conduct several trainings for Indian railways for a smooth transition.

The Bidder should be providing the trainings in the following areas:

Development Tools training (including security tools)

Starter training (include bilingual development capability for portal management)

Administration (database, portal, and other infrastructure)

Performance enhancements, trouble shooting and fine tuning

Application training

Complete training needs to be carried out twice in first year and once each in second and third year. The first training batch will be trained immediate post go-live within warranty support phase, the second batch should be trained post six month of go-live. Third set of training will be in second year and fourth set of training in third year.

Solution walk-through with code /programs walk-through

Team development training

Package configuration for development/ administration (if any)

Use cases

Logical data modeling

Business User training

Categories of business users

Content management users

Workflow approvers/ originators

Document management users

Application users (retiring/ cloak room/ compliant registration/ FIR/e-auction)

Training to be given on navigation/ all business scenarios

Trainee participation:

Training	No. of participants
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Development tools training: Starter training	15
Tools/Appliance/Infrastructure training: Administration	15
Development tools training: Performance enhancements/ tuning training	15
Application training: Solution walk-through	15
Application training: Team development	15
Application training: Package config. if (any)	15
Application training: Use cases and Logical data modeling	15
Business User training	20

10 Application Development and Training Documents:

Following documents are needed to be submitted

- Vision Document or its equivalent counterpart document
- Glossary Document or its equivalent counterpart document
- Requirement Management Plan or its equivalent counterpart document
- Supplementary Specification Document or its equivalent counterpart document
- Use Case & Use Case Specification Document or its equivalent counterpart document
- Software Requirement Specifications (Including Software Architecture) or its equivalent counterpart document which encompasses all the technical specifications/ codes/ programs
- Software Development Plan or its equivalent counterpart document
- Software Test Plan or its equivalent counterpart document

Files Should be accompanied by the :-

- Use Case and Actors
- Class Diagrams,
- Object Sequence Diagram / Activity Diagrams
- Deployment Diagrams
- State Chart Diagrams if Required.
- SSAD (Structured System Analysis and Design) document
- Executable Code or its equivalent counterpart document
- Traceability Matrix (Should be Traced from Requirements ,Design, Code and Testing) or its equivalent counterpart document

Online tutorial for self-help for IR customers/ retiring room-cloak room terminal users/ other intranet users (Both static (text based) and dynamic flash based guide demo)

User guide documents (for business user training)

All documents to be given in CDs (including HTML/ MS Office Documents/ Flash/interactive documents)

11 Operations/ Services Requirements

Once the solution is developed, there are lots of requirements to be fulfilled pre and post go-live. At each stage of acceptance and ongoing maintenance/ support, service level agreements will be defined which is to be agreed both by Bidder and CRIS.

To ensure that all the stakeholders discharge their roles and responsibilities in an agreed manner to achieve the common goal, a set of Service Level Metric's are defined for the solution. These technical, functional and operational requirements are specified in the RFP document to enable all the vendors to understand the dimensions of the project on a level playing field and propose appropriate solutions and proposals. *In case of an ambiguity or conflict, the relevant component of the SLA will be used as the touchstone and will prevail.*

11.1 SLA (Service level agreement)

The SLAs for each delivered application will start, after 1 month warranty.

To ensure that all the stakeholders discharge their roles and responsibilities in an agreed manner to achieve the common goal, a set of Service Level Metric's are defined for the solution. These technical, functional and operational requirements are specified in the RFP document to enable all the intending bidders to understand the dimensions of the commercial portal project on a level playing field and propose appropriate solutions and proposals.

There are three kinds of SLA the vendor must adhere to

- **Technical SLA** – SLA applicable and must be complied by demonstration at the time of acceptance of the Commercial Portal.
- **Operational SLA** – SLA applicable after the acceptance of the Commercial Portal and the entire support period of the commercial Portal.
- **Deployment SLA** - SLA is applicable to the following scope
 1. Supply, installation and commissioning of all required hardware for steady functioning of the Commercial Portal and to comply with the technical and Operation SLA

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2. Supply installation and commissioning of all required software (Commercially off-the shelves COTS) for steady functioning of the Commercial Portal and to comply with the technical and Operational SLA
3. Migration of 32 existing web sites to the commercial portal and commissioning these web-sites
4. Develop and commission the bespoke applications as defined by the functional specifications in section
5. Web enable and commission existing application on to the commercial Portal as defined in Section ""

The Deployment SLA is applicable from the date of signing the contact to the successful acceptance of the above scope by CRIS. The Duration, measurement basis and penalty is defined below.

SIn o.	Deployment SLA component	Baseline * (T)	Low Performance	Penalty applicable	Value of Penalty
1a	Delivery of all required hardware + software	T+8 weeks	=T+10 weeks	> T + 10weeks	.5% of cost of supply of effected hardware and software cost, penalty applied for every week of delay and maximum penalty applied is 5% of the total hardware and software cost
1b	Initial installation and configuration of all supplied hardware and software Commercial Portal	T+10 weeks	=T+13 weeks	> T + 13 weeks	

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3	e-ticketing	T+ 16 weeks	>T+16 weeks <T+18 weeks	> T + 18 weeks	1% of cost of development and commission of application cost for every week of delay. This penalty is capped at 5% of the total bespoke application development
4	e-auction of vacant berths and seats	T + 18 weeks	>T+18 weeks <T+20 weeks	> T + 20 weeks	
5	e-auction of Freight, integration of FOIS applications	T +24			
6	Journey Planner	T+20 weeks	>T+20 weeks <T+21 weeks	> T + 21 weeks	
7	Retiring and Clock room booking	T+24 weeks	>T+24 weeks <T+26 weeks	> T + 26 weeks	
8	Initial Acceptance of e-ticketing, e-auction, journey planner, retiring and clock room applications	(T+ 16) - (T+ 24)weeks	>T+24 weeks <T+26 weeks	> T + 26 weeks	
9	Migration of 32 existing web sites to the commercial portal and commissioning these web-sites and acceptance + Content management software	T + 26 weeks	>T+26 weeks <T+28 weeks	> T + 28 weeks	

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10	PARCEL business	T+26 weeks	>T+26 weeks <T+28 weeks	> T + 28 weeks	
11	Setting up of Search, Workflow and Document management system	T+26 weeks	>T+26 weeks <T+28 weeks	> T + 28 weeks	
12	Registration and tracking of passenger complaints	T+ 16 weeks	>T+16 weeks <T+18 weeks	> T + 18 weeks	

* Baseline **(T)** starts from the date of signing the contract between vendor and CRIS for the Commercial Portal Project.

Indicative SLA metrics are given for each phases of acceptance.

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11.1.1 Technical SLA

The solution would be tested during the User acceptance testing phase with reference to the Technical SLAs mentioned below

Service Metrics Parameters	Metric	Basis of measurement	Response time/ remarks
Capacity of the commercial portal	Equivalent of capacity to handle 5000 Business transactions* per hour	Simulated the stated loads and testing the system performance using load-testing tools	
Concurrent connects to Commercial portal	5000		E-ticketing, e-auction, journey planner- < 4 secs Intranet user reports applications, retiring and cloak room booking, Complaints tracking- < 2 secs Static web pages of migrated portals, rules and regulations hosted in commercial portal instance < 1 secs

*A Business Transaction represents a Business process, which have multiple transactions. For example an e-ticketing transaction incorporates the following sub-transactions

- a)Journey planner
- b) Seat availability
- c) fare enquiries
- d) E-Payment through Payment Gateway
- e)Booking of seat
- f)Confirmation of the reservation.

Details of the type of business transactions will be defined by CRIS and given to the vendor at the time of the load-testing exercise.

Note: The response time for the various applications will be valid only for the components being developed and maintained by the bidder. The SLA monitoring tool should be able to provide measurements for the bidder provided solution and infrastructure including E-Payment Gateway, as well as CRIS backend applications.

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11.1.2 Operational SLAs

The calls would be defined in the following categories:

Severity level: The severity level of a service call is defined by the extent of impact the problem has on the overall commercial portal solution performance

S1- Very high severity: Business can't Work - Issue in which significant portion of AL's business is non-operational and for which there is no work around

S2- High Severity: Application is not down but there is a serious problem affecting user's productivity. Work around if provided is awkward and inefficient

S3- Medium Severity: Application is not down but there is an issue affecting small number of users or customers. Acceptable work around is available

S4- Low Severity: Functionality enhancement and/or support for modifications or maintenance of source code, training documentation or user documentation.

Priority level: The priority level of a service call is defined by the priority in which the calls would be handled in case of queuing.

P1- High Priority: Total failure of critical systems, services, applications or underlying hardware
Hosting center failure Network failure External attack on network Immediate investigation and status reports

P2- Medium Priority: Partial failure of critical systems, services, applications or underlying hardware
failure in standard operating procedures Non-critical hardware defect, Operating system failure of backup system Hourly reporting of investigations

P3- Low Priority: Total or partial failure of non-critical services or applications, standard operational
Standard operating procedures Routine password changes Errors in hosted content Updating hosted content Report of initial investigations within four hours

Indicative SLAs for Helpdesk/ Maintenance support calls:

Support calls to the helpdesk should be answered in **5 rings**.

Severity/ Priority	
S1/P1	4 hours
S2/P2	8 hours
S3/P3	1 day
S4/P4	3 days

- Time by which the calls have to be resolved

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11.1.3 SLAs for Commercial Portal operations:

Application dimension	Uptime	Response time
E-ticketing, e-auction, journey planner	99.9%	< 4 secs
Intranet user reports applications, retiring and cloak room booking, Complaints tracking	99.5%	< 2 secs
Static web pages of migrated portals, rules and regulations hosted in commercial portal instance	99%	< 1 sec

Note: The response time for the various applications will be valid only for the components being developed and maintained by the bidder. The SLA monitoring tool should be able to provide measurements for the bidder provided solution and infrastructure including E-Payment Gateway, as well as CRIS backend applications.

11.1.4 Basis of measurement

Service Metrics parameters	Baseline metrics	Basis of measurement	Remarks
Portal uptime	E-ticketing, e-auction, journey planner- 99.9% Intranet user reports applications, retiring and cloak room booking, Complaints tracking- 99.5% Static web pages of migrated portals, rules and regulations hosted in commercial portal instance- 99%	Measured over a leased circuit or equivalent at 64kbps bandwidth	To facilitate quick page loading over low bandwidth connections
Portal response time	E-ticketing, e-auction, journey planner- < 4 sec Intranet user reports	Audit by IR administrators	Sample and random audits would be done by designated authority

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applications, retiring and from CRIS using
cloak room booking, broadband as well as
Complaints tracking- < 2secs dial up connections
Static web pages of migrated
portals, rules and regulations
hosted in commercial portal
instance- <1 secs

Helpdesk response time Calls to be picked up within Telephone and e-
five rings mail
logs maintained
Alternatively by the
Call abandon rate<5% of the Help Desk
quarterly call volume service

Support call resolve SLAs Please see SLA matrix above MIS reports Monthly average values
would be taken for
measuring against
baseline

Commercial Portal Load Testing Conduct load testing on the Reports
Portal every 6 months

11.1.5 Penalty

Commercial Portal Performance	Low Performance	Penalty Applicable	Value of Penalty⁺⁺
E-ticketing, e-auction, journey planner	<99.9%>=98%	< 98%	INR 500,000 every hour ⁺
Intranet user reports applications, retiring and cloak room booking, Complaints tracking	<99.5% >=97%	<97%	INR 200,000 every hour ⁺
Static web pages of migrated portals, rules	<99% >=97%	<97%	INR 100,000

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and regulations hosted in commercial portal instance			every hour ⁺
Response Time*			
E-ticketing, e-auction, journey planner	>4sec < 8 sec	>8sec	INR 500,000 every hour ⁺
Intranet user reports applications, retiring and cloak room booking, Complaints tracking	>2 sec < 4 sec	>4sec	INR 200,000 every hour ⁺
Static web pages of migrated portals, rules and regulations hosted in commercial portal instance	>1sec < 4 sec	>4sec	INR 100,000 every hour ⁺
Helpdesk Response Time	Call pickup with 5 rings	Call pickup more than 5 rings	INR 50,000 - < 95% of the calls received measured on quarterly.
Application resolution time*	P1 > 60mins < 120Mins	> 120Mins	INR 75,000 every 2 hours
	P2 > 120 mins < 240mins	> 240 Mins	INR 50,000 every 4 hours
	P3 > 360 mins < 480 Mins	> 480 mins	INR 25,000 every 8 hour
+ All Penalties applicable from the PBG defined in section 16.16.4 of this RFP • All Penalties capped at 5% of the total value of the quarterly services payment. • * Response may be telephonic or remote * Excluding backend processing, E-Payment Gateway and backend network latency time. The SLA monitoring tool must provide response times for all the sub transactions of the business transactions.			

11.2 Operational Requirements for Commercial Portal

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This section sets out the operational requirements of the Commercial Portal Project including project management requirements, acceptance testing & certification, Commercial Portal solution maintenance & support, man power deployment and MIS reporting requirements etc. A model Service Level Agreement (SLA) is provided in this section of this document, which shall be used for measuring and monitoring the quality of the services provided by the Commercial Portal **Service Provider (SP)**.

Following is the summary of Commercial Portal solution operational requirements which are elaborated in the following sections.

11.2.1 Summary of Operational Requirements of Commercial Portal

Summary of Operational Requirements of Commercial Portal Project
SP shall <u>implement and manage the Commercial Portal solution in accordance with the service level metrics</u> defined for the project.
SP shall coordinate and provide complete support to the CRIS on the nominated agency in conducting the solution <u>acceptance testing, certification and audits</u> .
The vendor <u>shall provide operational support and maintenance services for a period of 3 Years from the "Go-Live*" date</u> for overall system stabilization, software and IT infrastructure solution maintenance, system administration, security administration, database administration, network administration and end-user problem resolution. The operational support will have to ensure that the Commercial Portal solution is functioning as intended and attending to all problems associated in operation of the application system.
<u>For each application/module installed, the SP is required to train the CRIS staff, (both technical and end-user staff) and contractors, nominated by CRIS, Commercial Portal</u> to enable them to effectively operate the system. And SP shall also be <u>responsible for re-training</u> the users of the system whenever changes are made in the software.
Preparation of documents including <u>User Manuals, Operational Manual, Maintenance Manuals</u> , etc. as per acceptable standards.
The vendor shall provide Help desk services on a 24 * 7 basis to assist government users and contractors in using the Commercial Portal system.

*“Go-live” is the date on which the Commercial Portal solution is completely operational as per the requirements provided in this RFP and all the acceptance tests are successfully concluded as per the satisfaction of CRIS.

11.3 Requirement to comply with SLA

To ensure that all the stakeholders discharge their roles and responsibilities in an agreed manner to achieve the common goal, a set of Service Level Metric's are defined for Commercial Portal solution. These technical, functional and operational requirements are specified in the RFP document to enable all the vendors to understand the dimensions of the Commercial Portal project on a level playing field and propose appropriate solutions and proposals. ***In case of an ambiguity or conflict, the relevant component of the SLA will be used as the touchstone and will prevail.*** Refer to this section for the Service Level Metrics expected to be maintained and achieved by the SP for Commercial Portal Solution.

11.4 Support of Hardware and System software

11.4.1 Hardware support

All supplied hardware including servers, consoles, racks, KVMs, tape library should be supplied with 3 years on OEM terms. During warranty period vendor has to provide updates and patches.

11.4.2 System Software support

All supplied software should be supplied with applicable OEM warranties with a minimum of 3years. During warranty period vendor has to provide updates and patches.

Bidder is required to furnish OEM backend support authorization letter with the bid for all quoted hardware and software items. Bidder is required to furnish Documentary OEM letter for availability of support, spares and software upgrades and patches for next 5 years for all hardware and software

11.5 Scope of the on-Site AMC support for supplied hardware & system software

The vendor shall maintain the system in good working order. The service shall consist of preventive and corrective maintenance

Bidder is required to deploy maintenance engg. in 3 shifts on (24X7) basis for maintenance of supplied hardware & software

Vendor will maintain their own inventory of spares so as to give the fast and efficient service, Carryout all necessary repairs and replacements of parts without any additional cost

All the patches installation and firmware upgrade as released by OEM will be responsibility of vendor. A monthly Report on Performance is to be submitted to CRIS for necessary rectification in the performance in line with Application and User Requirements

A Regular Preventive Maintenance Schedule Once in a Quarter for Servers will have to be maintained in consultation with CRIS

In case of any S1/P1 Problem resolution, a detailed analysis of failure should be conducted by vendor in consultation with OEM if required to avoid any similar failures in future. A detailed report will have to be submitted to CRIS within One week

For the purposes of calculating the down time, the starting time would be the lodging of the complaint.

Annual Technical Support (ATS) will start from the date of acceptance of the installation. ATS should cover:

24 by 7 escalation support from OEM for all software products on OEM letter head to be provided through Phone, Email or Onsite visit depending on the criticality and nature of the Problem. The support has to be ensured by the successful Bidder

Free Upgrades and Updates as and when released by OEM.

All the patches installation and upgrades are to be carried out by OEM as per the recommendations and releases done by the OEM.

12 Helpdesk and Onsite 3 years maintenance support

A 24x7 telephonic help desk needs to be maintained by the Bidder organization during the maintenance period so that the users can log calls. This facility would be limited to Intranet users only (IR users). The helpdesk would do L1 call registrations and also categorize and route the calls based on priority and severity.

- All infrastructures required for running the Help desk shall be provided by the bidder excluding Space, Light, air conditioning and telephony set up (EPBX) with necessary functionalities.
- The Call center should be using standard call tracking/ assigning software. This should enable:
 - Call logging/ categorization/status assigning
 - Call closing with traceability
 - Call re-opening and issue trails
 - Call reporting by agent/ by severity/ priority/ dates/ SLAs

12.1 Detail requirements:

Help Desk

All interactions with users will be assigned a ticket number and the number will be made available to the user along with the identification of the agent without the client having to make a request in this regard, at the beginning of the interaction.

All interactions will be noted on system. The transactions shall also be monitored – both on line and off line - on a statistically appropriate sampling basis to assess service level as well as delivery effectiveness and for providing training/ feedback to agents.

All complaints/ grievances of commercial portal user will be recorded and followed up for resolution if necessary in coordination with departments. User will be kept informed of the progress of resolution and the final resolution.

Senior members of the help desk team shall contact the commercial portal user on need basis.

Solicit user satisfaction level from the commercial portal user in call.

Customer related queries. The help desk has to resolve all the payment related issues/complaints with Payment Gateways.

Conduct the user satisfaction surveys

The help desk shall be available 24-hours per day, seven days a week.

The service shall be accessible in Hindi and English

12.2 Commercial Portal Application Maintenance support

The Bidder needs to support the Commercial portal solution as a warranty support after go-live and then for a period of 3 years post warranty support.

12.3 Post go-live warranty support:

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The solution will go live in phases (please see the project management approach section for details). For each go-live, the Bidder development team has to provide 1 month 24X7 application warranty support for defect fixing. Appropriate SLAs and call priority levels will be defined for this phase.

12.4 Application support:

3 years 24X7 onsite maintenance for defect fix/ minor and major enhancements should be provided by the Bidder post warranty phase. The maintenance team should be properly managed by a designated project manager. The team should contain technical leads along with the support software engineers.

The support team should support all L1, L2, L3 type of calls. Each call will be assigned a severity (S1 to S4) depending on the no. of users affected and criticality of the defect on the portal functioning by CRIS after the call is registered in L1. Appropriate SLAs are defined for each of the calls based on Severity and Priority matrix (please see previous section 'SLA' for details).

13 Project Management

Following are the requirements from a Project manager during the development of the commercial portal.

Summary of Project Management Requirements

Create an organized set of activities for the project

Establish and measure resource assignments and responsibilities

Construct a project plan schedule including milestones

Measure project deadlines, budget figures, and performance objectives

Help communicate the project plan to stakeholders with meaningful reports

Help to detect problems and inconsistencies in the plan

During the project implementation the BIDDER shall submit to the Project Director, CRIS the following reports:

- (i)** Results accomplished during the period;
- (ii)** Corrective actions to be taken to ensure adherence to the roll-out plan;
- (iii)** Proposed revision to the roll-out plan provided such revision is necessitated by reasons beyond the control of the Partner;
- (iv)** Other issues and outstanding problems, and actions proposed to be taken;

Submit progress reports on a fortnight basis

Project quality assurance reports

14 Implementation approach of Commercial Portal

The implementation of the commercial portal solution would be done in three phases. The first phase would be a pilot focusing on existing IR websites migration along with one business application (e-ticketing and e-auction) of passenger segment. The second phase would focus on the Freight and parcel functionalities and the third phase we would have the

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Bidding engine for e-ticketing along with some static web page content migrations. **The delivery has to meet the deployment SLA table.** The details are given below

Phase	Key Activities	Description
Phase 1	Business applications (passenger) and portal functionalities	- Bidding engine for ticketing and rake auctions - Cloak room/ retiring room bookings/ complaints registration and tracking functionalities - Static web pages for rules and regulations - Content management - Document management - Search functionalities - GUI redesign of www.indianrail.gov.in
	Acceptance	Acceptance testing and certification as per procedures listed in 'Testing' sections
Phase II	Migration	Migration of Existing portals in phases - Ten Critical sites (based on technology similarity) migration - Another ten based on dynamic contents - Other static websites - System administration
	Acceptance	Acceptance testing and certification as per procedures listed in 'Testing' sections
	Business applications and portal redesign	- In this phase we will develop Journey planning, e-ticketing of Passenger business and development of Freight and Parcel business applications.
	Acceptance	Acceptance testing and certification as per procedures listed in 'Testing' sections

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15 List of Documents along with the Bid – check list

The vendors have to submit the following documents for tender (please note that these documents are other than the Training manual documents already mentioned in the 'Training' Section.

S.No.	Document description	Submitted – Yes/No
1	Bidding company's existence document	
2	Bidding company's international and national experience document	
3	Bidding company's SEI CMM level 5 certificate copy	
4	Bidding company's last three audited annual turnover results.	
5	Bidding company's previous Portal Project documents in the format as given in section 1.1	
6	Bidding company's manpower strength documents and manpower profile.	
7	Detailed Bio-data of all the proposed team members, who will execute this project.	
8.	OEM letter for authorization for servers	
9.	OEM letter for authorization for item wise Software	
10	Item wise technical compliance for software & hardware by OEM	
11	Documentary OEM letter for availability of support, spares and software upgrades and patches for next 5 years for all hardware and software	
12	Item-wise BOM vetted by OEM	
13	Item-wise BOM vetted by Bidder	
14	Any other documents as per terms.	
15	Detailed Power ratings of the servers, tape library,	

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	along with the required no. of power points, A/C requirements and network I/Os for all items.	
16	Softcopies of all tender documents in MS Word doc/Excel sheets in CD shall be submitted.	
17	Item wise escalation matrix of OEM for each hardware & software item with full contact details	
18	Escalation matrix of Bidder with full contact details	
19	Item wise technical compliance for software & hardware by Bidder	
20	Item wise rates for each hardware like servers, tape backup and software like operating system, portal server, Database, Management server, Unit client cost for mails, antivirus, anti-spam . Prices should not be combined with any item and given.	
21	Item wise ATS breakup for every software item, to be quoted per year and not lump sum.	
22	Item wise AMC cost per year.	
23	Details of OEM training centre and training course content details.	

16 Request for Proposal Process

16.1 Copy Rights/ IPR and Non-disclosure clause

The Copyrights and Intellectual Property Rights of all custom developed applications and documents at various stages for the IR portal would that be of CRIS. The bidder shall not be authorized to disclose and use whole or any part of the deliverable without prior written approval of CRIS.

Cost of the Tender Documents

The Tender document is available for sale against payment of Rs. 15,000 (Rupees Fifteen thousand only) by demand draft drawn in favor of "CRIS" payable at Delhi. Only one hard copy of this tender document will be furnished to each bidder. In addition, an electronic version of this tender document will be made available to each bidder on the CRIS web site. The bidders can obtain the tender document at the address mentioned following section. The Tender Document is not transferable to any other bidder.

16.2 List of Documents Comprising the RFP

The bidders are expected to examine all instructions, forms, terms, RFP Commercial Portal-web Portal project requirements and other information in the RFP documents. Failure to furnish all information required by the RFP documents or submission of a proposal not substantially responsive to the RFP documents in every respect will be at the Bidder's risk and may result in rejection of its Proposal and forfeiture of the Bid EMD.

16.3 Acknowledgement of Receipt

It is required by the prospective bidder to acknowledge receipt of this RFP by sending following information to the CRIS at the address mentioned by e-mail or Fax.

CRIS	Company Information
The Chief Purchase Manager, CRIS,Chankyapuri New Delhi – 110021 Phone: Telefax: E-mail:	Company Name Address Primary Contact: Name Address E-mail Address Telephone Number Secondary Contact: Name

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	Address E-mail Address Telephone Number
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16.4 Key Activities and Tentative Dates

The schedule of activities for the purpose of the RFP is outlined below:

S. No	Key Activities	Date
1	Publication of Request For Proposal (RFP)	15-2-08
2	Last Date for collection of Request For Proposal (RFP)	17-3-08
3	Pre- Bid Conference (at CRIS Conference Room from 11:00 AM-17:00 PM)	3-3-08 and 4-3-08
4	Last date for Submission of Written Questions by bidders	7-3-08
5	Issue of corrigendum, if any	11-3-08
6	Due Date for Submission of bids	18-03-08 (15:00 hr)
7	Opening of Pre-Qualification Bid	18-03-08 (15:30 hr)
8	Evaluation of Pre-Qualification Bid	27-03-08
9	Date of opening the Technical Proposals	1-04-08
10	Bidder Presentations (at CRIS Conference Room from 11:00 AM-17:00 PM)	03-04-08 to 07-04-08
11	Technical evaluation	08-04-08 to 21-04-08
12	Date of opening the Commercial bid	05-05-08
13	Contract Finalization and Award	23-05-08

16.5 Pre-Bid Conference

The CRIS will host a Pre-Bid Conference, as per the schedule . The date, time and place of the conference will be announced as soon as possible to all bidders through e-mail. The purpose of the conference is to provide bidders with information regarding the RFP and the Commercial Portal solution requirements, and to provide each bidder with an opportunity to seek clarifications regarding any aspect of the RFP and the Project. The bidders are requested to submit any questions in writing to

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CRIS not later than one week before the pre-bid conference. The CRIS reserves the right to hold multiple pre-proposal conferences relating to the Bid Management.

16.6 Bidder Inquiries and CRIS Responses

All enquiries / clarifications from the bidders, related to this RFP must be directed in writing exclusively to the contact person notified by CRIS. The preferred mode of delivering written questions to the aforementioned contact person would be through mail or email. Telephone calls will not be accepted. In no event will the CRIS be responsible for ensuring that bidders' inquiries have been received by the CRIS.

After distribution of the RFP, the contact person notified by CRIS will begin accepting written questions from the bidders. The CRIS will endeavor to provide a full, complete, accurate, and timely response to all questions. However, the CRIS makes no representation or warranty as to the completeness or accuracy of any response, nor does the CRIS undertake to answer all the queries that have been posed by the bidders. The responses to the queries from all bidders will be distributed to all. No request for clarification from any bidder shall be entertained after 15:00 Hrs as per the schedule.

16.7 Supplemental Information to the Request for proposals

If CRIS deems it appropriate to revise any part of this RFP or to issue additional data to clarify an interpretation of provisions of this RFP, it may issue supplements to this RFP. Any such supplement shall be deemed to be incorporated by this reference into this RFP.

16.8 Proposal Preparation Costs

The bidder is responsible for all costs incurred in connection with participation in this process, including, but not limited to, costs incurred in conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation of proposal, in providing any additional information required by CRIS to facilitate the evaluation process, and in negotiating a definitive Service Agreement or all such activities related to the bid process. This RFP does not commit the CRIS to award a contract or to engage in negotiations. Further, no reimbursable cost may be incurred in anticipation of award.

16.9 CRIS's Right to Terminate the Process

1. The CRIS may terminate the RFP process at any time and without assigning any reason. The CRIS makes no commitments, express or implied, that this process will result in a business transaction with anyone.
2. This RFP does not constitute an offer by the CRIS. The bidder's participation in this process may result in CRIS selecting the bidder to engage in further discussions and negotiations toward execution of a contract. The commencement of such negotiations does not, however, signify a commitment by CRIS to execute a contract or to continue negotiations. The CRIS may terminate negotiations at any time without assigning any reason.

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3. If a contract is awarded, the relationship of the bidder to the CRIS will be that of an independent contractor and nothing in this RFP or the resulting agreement shall be construed as creating any other relationship. The vendor may adopt such arrangements as it may desire with regard to the details of the services performed, provided that such services shall be consistent with the adequate accomplishment of said services and provided further that said services shall be performed in a manner calculated to attain the most satisfactory results for the e-Procurement Solution.

16.10 Bid Security and its Amount (EMD)

1. Bidders shall submit, along with their Bids, Bid security or EMD of Rs. 10 Lakhs (Rupees Ten lakhs only), in the form of a Demand Draft in favour of CRIS, New Delhi. EMD in any other form shall not be entertained. The DD shall be enclosed with the proposal letter as set forth in Annexure of the RFP.
2. The EMD would be refunded to all unsuccessful bidders within 30 days of award of the Project. The EMD of successful bidder would be adjusted towards partial fulfillment of the requirement of Performance Guarantee.
3. Bid without adequate bid security/ EMD will be liable for rejection without providing any opportunity to the bidder concerned.

16.11 Venue & Deadline for submission of proposals

Proposals must be received by the CRIS at the address specified below:

The Chief Purchase Manager

CRIS, Chanakyapuri

DELHI - 21

Last Date & Time of submission: date & time of submission

The CRIS may, in exceptional circumstances and at its discretion, extend the deadline for submission of proposals by issuing an Addendum or by intimating all bidders who have been provided the proposal documents, in writing or by facsimile, in which case all rights and obligations of the Commercial Portal project and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

16.12 Late bids

Bids received after the due date and the specified time for any reason whatsoever, shall not be entertained.

16.13 Bid Opening

Total transparency will be observed while opening of proposals. CRIS reserves the right at all times to postpone or cancel a scheduled Tender opening. The venue for the opening of proposals is given below:

The Chief Purchase Manager, CRIS

Chanakyapuri

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DELHI - 110021

Date and timing of opening the pre-qualification bid: As per schedule mentioned above

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

16.14 General Guidelines for tender opening

1. Bids will be in three parts (pre-qualification, technical and financial) as indicated in the RFP. There will be three bid-opening events (i) for the pre-qualifications (ii) for the Technical Bids and (iii) for the Commercial Bids.
2. CRIS will open the pre-qualification proposals and list them for further evaluation. The 'Technical Proposal' covers and 'Commercial Proposal' covers shall not be opened until the evaluation of the pre-qualification proposal is complete.
3. The technical proposals of only those bidders who qualify in the pre-qualification evaluation will be opened. After evaluation of technical proposals, the commercial proposals of only those bidders, who qualify in technical evaluation, will be opened.
4. The venue, date and timing for opening the Technical & Commercial proposals will be informed to the bidders at the appropriate time, with adequate notice.
5. All the proposals will be opened in presence of the bidder's representatives.

16.15 Proposal Instructions and Conditions

16.15.1 Proposal Instructions and Conditions

Proposals must be direct, concise, and complete. All information not directly relevant to this RFP should be omitted. The CRIS will evaluate bidder's proposal based upon its clarity and the directness of its response to the requirements of the project as outlined in this RFP. To assist in the preparation of proposal, the CRIS is making available an electronic version of this RFP. **Bidder too is required to submit all the submitted three part bid documents in MS-Word format on a CD.**

16.15.2 Documents comprising the bidders' proposal

No consortium bidding is allowed.

The proposal shall be prepared in a three-cover format (one each for pre-qualification, technical and commercial documents):

- a. Pre-qualification bid containing data to support the qualification of the Bidder to bid for the Commercial Portal project, as given in Section 17 of this RFP

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- b. Technical bid in the formats specified in Annexure I and Section 17.3 of this RFP
- c. Commercial bid in the formats specified in Annexure II of this RFP

The bidders shall introduce the proposal with a covering letter. Any additional information may as well be enclosed along with the covering letter. In addition to the information enclosed as part of the pre-qualification, technical and commercial bids, the bidder shall submit with its proposal, the following attachments:

- a. A certified true copy of the *inter-se* agreement between the Bidder and the other members of the sub-contractors, revealing the respective roles and responsibilities of all the members, in meeting the overall scope and requirements of the Commercial Portal
- b. EMD amount in the form of DD of Rs 10 lakhs as mentioned in this RFP.
- c. Bidders shall furnish the required information on their pre-qualifications, technical and commercial strengths in the enclosed formats only. Any deviations in format may make the tender liable for rejection.

16.15.3 Pre-qualification bid

The pre-qualification proposal will be used to evaluate if the bidder's technical skill base and financial capacity are consistent with the needs of the project and meets the pre-qualification criteria as mentioned in section 17 of this RFP.

16.15.4 Technical bid

A printed covering letter, on the bidding organization's letterhead with all required information and authorized representative's initials shall be submitted along with the proposal. Do not otherwise edit the content of the proposal cover letter. The technical proposal should contain a detailed description of how the bidder will provide the required services outlined in this RFP. It should articulate in detail, as to how the bidder's Technical Solution meets the requirements specified in the RFP. The technical proposal must not contain any pricing information. In submitting additional information, please mark it as supplemental to the required response.

A set of formats is included in the appendix to guide the bidders in preparing the technical proposal. The formats specify the technical bid information sought by the CRIS. In the formats, the bidders are asked to

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respond specifically to the requirements stated in Functional requirements and technical specifications – of this RFP. A list of formats in which the bidders shall provide their response is provided below:

Format	Title	
1	Plan for provision of the services	☐
2	Functional Requirements Specifications Statement – refer to section of this RFP	☐
3	Migration Strategy and Plan for migration of the existing Web sites to the Commercial Portal	☐
4	A one-page statement explaining Vendors ability to deploy the specified modules which are existing and require to be hosted on the commercial Portal	☐
5	A one-page statement explaining Vendors ability to deploy the specified modules which require bespoke application	☐
6	Commercial Portal solution design – Functional, Architecture with various technologies and software required to meet the technical requirement as specified and Helpdesk and Support requirements in sections	☐
7	Infrastructure requirements – to meeting the Commercial Portal deployment (includes, Servers, storage, Network, Security, backup, helpdesk and support components)	☐
8	Implementation methodology and project plan	☐
9	Project management organization	☐
10	Statement accepting the roles and responsibilities specified	☐
11	Bill of materials (with-out price quote)	☐
12	A statement undertaking total responsibility for defect-free operation of the commercial Portal system.	☐
13	A statement by the vendor explaining clearly the acceptance of the Commercial Portal will executed including the load-testing of the commercial portal by meeting the Technical SLA defined in section	
14	A statement by the vendor explaining clearly how the SLA's will delivered meet the required service levels. The SLA include Deployment and Operations defined in section	
15	Help Desk set and operations	
16	Training plan	☐
17	Detail list of Planned Resources deployment at each phases of the Commercial Portal Deployment	
18	Commercial Portal support plan after the contact duration	
19	Supplemental information if any	☐
20	Deviations and exclusions	
21	A statement on source code and IPR	

The formats are given mainly to guide the bidders in corresponding to the requirements stated in the RFP and to structure the responses received. An effort has been undertaken to give the bidders an opportunity to

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express new ideas and suggest alternatives within the formats. Additionally, the bidders may choose to include supplementary information as part of the technical bid response.

Performance Bank Guarantee (PBG)

The vendor is expected to provide a Performance Bank Guarantee (PBG) of value 10% of the total IR Portal price quoted in the commercial quote for a period of 1 year each, starting from the date of signing of the commercial portal project, renewed on yearly basis for a period of 3 years. This PBG will be applicable towards the Performance of Commercial Portal Performance Service level agreement defined in

16.15.5 Commercial Proposal

The commercial Proposal must be hard copy of the format specified in this RFP. Unless expressly indicated, bidder shall not include any technical information regarding the services in the commercial proposal. Additional information may be submitted to accompany the proposal. In submitting additional information, please mark it as supplemental to the required response. Prices shall be quoted entirely in Indian Rupees. All commercials for this RFP must include taxes.

The printed covering letter, set forth in annexure II, shall be signed by authorized signatories and a list of forms referred to in the letter shall be filled out and submitted as part of the commercial proposal.

16.15.6 Signature

All proposals must be signed with the bidder's name and by a representative of the bidder, who is authorized to commit the bidder to contractual obligations. All obligations committed by such signatories must be fulfilled.

16.15.7 Sealing and Marking of Proposals

- a) The bidders shall seal the pre-qualification proposal in an inner envelope marked "Pre-qualification proposal". The inner envelope shall be sealed in an outer envelope. Both inner and outer envelopes shall be addressed to the address specified in section 16.3 of this RFP.
- b) The bidder shall seal the technical proposal in an inner envelope marked "Technical Proposal". The inner envelope shall be sealed in an outer envelope. Both inner and outer envelopes shall be addressed to CRIS at the address specified in Section 16.3 of this RFP.
- c) The bidders shall seal the commercial proposal in an inner envelope marked "Commercial Proposal". The inner envelope shall be sealed in an outer envelope. Both inner and outer envelopes shall be addressed to CRIS at the address specified in Section 16.3 of this RFP. The inner envelope shall indicate the name and address of the bidder to enable the proposal to be returned unopened in case it is declared "late."

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16.15.8 Submission of Proposals

- a) THE BIDDER SHALL SUBMIT A SEALED COVER CONSISTING OF TWO (2) COPIES OF ALL THE BID DOCUMENTS. SEALED PROPOSALS MUST BE RECEIVED AT THE FRONT DESK OF THE CRIS's OFFICE AS PER THE KEY DATES TABLE IN 16.4, TO THE ATTENTION OF THE CPM/CRIS, Chanakyapuri, New Delhi – 110 021

Both of the copies of the bids (Original and Duplicate) must consist of the following:

- i) Pre-Qualification proposal, superscribing on the right hand side top of the cover as **Pre-qualification**
 - ii) Technical proposal, superscribing on the right hand side top of the cover as **Technical Bid**
 - iii) Commercial proposal superscribing on the right hand side top of the cover as **Commercial Bid**
- b) The CRIS will not accept delivery of proposal by fax or e-mail. Proposal received by facsimile shall be treated as defective, invalid and rejected.
- c) The bidder shall provide a softcopy of the proposal on CD-ROM. The CD shall contain only the pre-qualification and technical proposals.
- d) The original and copies of the bid, each consisting of the documents listed in instructions, shall be typed or written in indelible ink and shall be signed by the bidder or a person /persons duly authorized to bind the Bidder to the contract.
- e) All copies of the technical and commercial proposals must be submitted in a sealed package. The outside of the package must clearly indicate the name of the project ("Proposal for the Implementation of Commercial Portal for Indian Railway") the time and date for responding, the bidder's name and address, and the names of primary and secondary contact persons. Failure to adequately address the outside of a package could cause a proposal to be misdirected or received at the required destination after the deadline.

16.15.9 Period of Validity of Proposals

- a. The proposals shall be valid for a period of Six (6) months from the date of opening of the proposals. A proposal valid for a shorter period may be rejected as non-responsive. On completion of the validity period, unless the bidder withdraws his proposal in writing, it will be deemed to be valid until such time that the bidder formally (in writing) withdraws his proposal.
- b. In exceptional circumstances, at its discretion, CRIS may solicit the bidder's consent for an extension of the validity period. The request and the responses thereto shall be made in writing (or by fax or email).

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16.15.10 Late Proposals

Any proposal received at the CRIS's office designated in this RFP after the specified time for receipt of the same will not be considered unless it is received before award is made, and: (i) it was sent by mail and it is determined by CRIS that the late receipt was solely due to mishandling by CRIS after receipt at the CRIS; or (ii) it is the only proposal received.

16.15.11 Non-Conforming Proposals

Any proposal may be construed as a non-conforming proposal and ineligible for consideration if it does not comply with the requirements of this RFP. The failure to comply with the technical requirements, and acknowledgment of receipt of amendments, are common causes for holding proposals non-conforming. In addition, the CRIS will look with disfavor upon proposals that appear to be "canned" presentations of promotional materials that do not follow the format requested in this RFP or do not appear to address the particular requirements of the e-Procurement solution, and any such bidders may also be disqualified.

16.15.12 Overly Elaborate Proposals

Unnecessarily elaborate brochures or other promotional materials beyond those sufficient to present a complete and effective proposal are considered undesirable and may be construed as an indication of the bidder's lack of cost consciousness. The CRIS's interest is in the quality and responsiveness of the proposal.

16.15.13 Amendment of Request for Proposal

At any time prior to the deadline for submission of proposals, CRIS, for any reason, may modify the RFP by amendment notified in writing or by fax or email to all bidders who have received this RFP and such amendment shall be binding on them. CRIS, at its discretion, may extend the deadline for the submission of proposals.

16.15.14 Language of Proposals

The proposal and all correspondence and documents shall be written in English. All proposals and accompanying documentation will become the property of the CRIS and will not be returned. The hardcopy version will be considered as the official proposal.

16.15.15 Prices

- a. The bidder shall quote a fixed price for the entire project on a single responsibility basis. However, the successful bidder shall be held responsible for the overall solution provided during the period of contract. CRIS reserves the right to procure the components/services listed in this RFP. No adjustment of the contract price shall be made on account of any variations in costs of labor and materials or any other cost component affecting the total cost in fulfilling the obligations under the contract. The Contract price shall be the only payment, payable by CRIS to the successful bidder for

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completion of the contractual obligations by the successful bidder under the Contract, subject to the terms of payment specified in the contract. The price would be inclusive of all taxes, duties, and charges and levies as applicable.

- b. The prices, once offered, must remain fixed and must not be subject to escalation for any reason whatsoever within the period of project. A proposal submitted with an adjustable price quotation or conditional proposal may be rejected as non-responsive.

16.15.16 Correction of errors

- a. Bidders are advised to exercise adequate care in quoting the prices. No excuse for corrections in the quoted will be entertained after the quotations are opened. All corrections, if any, should be initialed by the person signing the proposal form before submission, failing which the figures for such items may not be considered.
- b. Arithmetic errors in proposals will be corrected as follows: in case of discrepancy between the amounts mentioned in figures and in words, the amount in words shall govern. The amount stated in the proposal form, adjusted in accordance with the above procedure, shall be considered as binding, unless it causes the overall proposal price to rise, in which case the proposal price shall govern.

16.15.17 Disqualification

- a. The proposal is liable to be disqualified in the following cases:
 - i. Proposal not submitted in accordance with this document.
 - ii. During validity of the proposal, or its extended period, if any, the bidder increases his quoted prices.
 - iii. The bidder qualifies the proposal with his own conditions.
 - iv. Proposal is received in incomplete form.
 - v. Proposal is received after due date and time.
 - vi. Proposal is not accompanied by all requisite documents
 - vii. Information submitted in technical proposal is found to be misrepresented, incorrect or false, accidentally, unwittingly or otherwise, at any time during the processing of the contract (no matter at what stage) or during the tenure of the contract including the extension period if any.
 - viii. Commercial proposal is enclosed with the same envelope as technical proposal.
 - ix. In case any one party submits multiple proposals or if common interests are found in two or more bidders, the bidders are likely to be disqualified, unless additional proposals/bidders are withdrawn upon notice immediately.

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- x. Bidder fails to deposit the Performance Bank Guarantee (PBG) or fails to enter into a contract within 15 working days of the date of notice of award of contract or within such extended period, as may be specified by CRIS.
- b. Bidders may specifically note that while evaluating the proposals, if it comes to CRIS's knowledge expressly or implied, that some bidders may have compounded in any manner whatsoever or otherwise joined to form an alliance resulting in delaying the processing of proposal then the bidders so involved are liable to be disqualified for this contract as well as for a further period of two years from participation in any of the tenders floated by CRIS. It is also clarified that if need arises CRIS would go in for appointment of outside party(s) to undertake the work under the captioned tender.
- c. In case the terms and conditions of the contract applicable to this invitation to tender are not acceptable to any bidder, he should clearly specify any deviation, in the format appended to this Tender Document as Annexure III.

16.15.18 Modification and Withdrawal of Proposals

No proposal may be withdrawn in the interval between the deadline for submission of proposals and the expiration of the validity period specified by the bidder on the proposal form.

16.15.19 Acknowledgement of Understanding of Terms

By submitting a proposal, each bidder shall be deemed to acknowledge that it has carefully read all sections of this RFP, including all forms, schedules and annexures hereto, and has fully informed itself as to all existing conditions and limitations.

16.15.20 Conditions

The following terms are applicable to this RFP and the bidder's proposal:

- i) This RFP does not commit the CRIS to enter into a service agreement or similar undertaking with the bidder or any other organization and the CRIS shall have the right to reject or accept any proposal or offer, or any part thereof (e.g., any component of any proposed solution) for any reason whatsoever. The CRIS reserves the right to enter into relationships with more than one bidder; can choose not to proceed with any bidder with respect to one or more categories of services/requirements outlined in this RFP; and can choose to suspend the project or to issue a new RFP for this project that would supersede and replace this one.
- ii) Each bidder shall make the following representations and warranty in its proposal cover letter, the falsity of which might result in rejection of its proposal: "The information contained in this proposal or

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any part thereof, including its exhibits, schedules, and other documents and instruments delivered or to be delivered to the CRIS, is true, accurate, and complete. This proposal includes all information necessary to ensure that the statements therein do not in whole or in part mislead the CRIS as to any material fact.”

- iii) The CRIS is not restricted in its rights to use or disclose any or all of the information contained in the proposal, and can do so without compensation to the bidder. The CRIS shall not be bound by any language in the proposal indicating the confidentiality of the proposal or any other restriction on its use or disclosure.
- iv) Any work product, whether acceptable or unacceptable, developed under a contract awarded as a result of this RFP shall be the sole property of the CRIS unless stated otherwise in the definitive service agreement.
- v) Timing and sequence of events resulting from this RFP shall ultimately be determined by the CRIS.
- vi) No oral conversations or agreements with any official, agent, or employee of the CRIS shall affect or modify any terms of this RFP, and any alleged oral agreement or arrangement made by a bidder with any department, agency, official or employee of the CRIS shall be superseded by the definitive service agreement that results from this RFP process. Oral communications by the CRIS to bidders shall not be considered binding on the CRIS, nor shall any written materials provided by any person other than CRIS.
- vii) Proposals are subject to rejection if they limit or modify any of the terms and conditions or specifications of this RFP.
- viii) By responding, the bidder shall be deemed to have represented and warranted: that its proposal is not made in connection with any competing bidder submitting a separate response to this RFP, and is in all respects fair and without collusion or fraud; that the bidder did not participate in the RFP development process and had no knowledge of the specific contents of the RFP prior to its issuance; and that no employee or official of the CRIS participated directly or indirectly in the bidder's proposal preparation.
- ix) Neither the bidder nor any of bidder's representatives shall have any claims whatsoever against the CRIS or any of its respective officials, agents, or employees arising out of or relating to this RFP or these procedures (other than those arising under a definitive service agreement with the bidder in accordance with the terms thereof).

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- x) Until contract award, bidders shall not, directly or indirectly, solicit any employee of the CRIS to leave the CRIS or any other officials involved in this RFP process in order to accept employment with the bidder, its affiliates, actual or prospective contractors, or any person acting in concert with the bidder, without prior written approval of the CRIS.

16.16 Proposal Evaluation Process

Proposals will be reviewed by a Committee of Officers (the “Committee”) appointed by the CRIS or its designated representative(s). The CRIS, or such other authority designated by the CRIS, as the case may be, is also referred to herein as the Committee of Officers (or “Committee”). The committee may be comprised of, or receive assistance from, several teams conducting parallel evaluations.

16.16.1 Initial Determination of Compliance with RFP Requirements

- a. The committee will perform an initial review of all proposals that are submitted on time. After initial review, the committee may recommend discontinuing the evaluation of any proposal, which it considers unacceptable prima facie for the following reasons:
 - The proposal is not a reasonable effort to respond to the requirements of the RFP;
or
 - The proposal contains technical deficiencies, such as not all the requirements of the solution are addressed and proposed solution is not in accordance with the requirements of the e-Procurement project.
- b. Organizations, whose proposals are no longer to be considered by the committee, shall be promptly notified by the CRIS. The notice shall contain a reasonably brief explanation of the reasons therefore and/or the CRIS reserves the right to reject proposal with out assigning any reason, what so ever. The committee can waive minor irregularities if, in its judgment, to do so would be in the best interest of the project.

16.16.2 Evaluation Procedure and Criteria

Evaluation of the bids will be done in three stages and at the end of every stage short listed bidders will be informed of the result to have a fair and healthy competition. The following is the procedure for evaluation.

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16.16.3 Evaluation of pre-qualification bids

- i. The documentation furnished by the bidder will be examined prima facie to see if the technical skill base and financial capacity and other bidder attributes claimed therein are consistent with the requirements of this project and meet the pre-qualification criteria as specified above in Section 16 of this RFP.
- ii. The evaluation committee may ask bidder(s) for additional information, visit to bidders site and/or arrange discussions with their professional, technical faculties to verify the claims made in bid documentation.
- iii. Any proposal not complying with the requirements of the pre-qualification criteria will not be processed further.

16.16.4 Evaluation of Technical bids

Defined in section 17.23

16.16.5 Evaluation of Commercial bids

Defined in section 17.32

16.17 Negotiations, Contract Finalization and Award

The committee shall reserve the right to negotiate with the bidder (s) whose proposal has been ranked first by the committee on the basis of best value to the e-Procurement project. If the CRIS is unable to finalize a service agreement with the bidder ranked first, the CRIS may proceed to the next ranked bidder, and so on until a contract is awarded. The CRIS reserves the right to present a contract to the bidder selected for negotiations. A contract will be awarded to the responsible, responsive bidder whose proposal conforms to the RFP and is, in the opinion of the CRIS, the most advantageous and represents the best value to the e-Procurement project, price and other factors considered. Evaluations will be based on the proposals, and any additional information requested by the CRIS.

CRIS reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected.

16.18 CRIS's Right to Accept Any Proposal or Reject Any or All Proposals

CRIS reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected.

17 Bidder Evaluation Criteria

17.1 Bidder pre-qualification

17.1.1 Existence

The Bidder should be a national level IT organization with national/ international experience and in operation for at least 3 years as on 31/03/2007.

Relevant documents to be submitted in hardcopy & softcopy formats.

17.1.2 Certifications

The Bidder should have been certified at SEI CMM level 5, as on the date of bidding.

Relevant documents to be submitted in hardcopy & softcopy formats.

17.1.3 Turnover

The bidding company should have a minimum turnover of Rs. 1000 crores per annum as per the last three audited annual results as of 31/03/2007.

Relevant documents to be submitted in hardcopy & softcopy formats.

17.1.4 Projects:

The Bidder should have had prior experience in providing IT solutions in India / abroad:-

17.1.5 Track record of project implementation:

SIs should meet following criteria:

- The SI should have successfully implemented at least 2 turnkey IT projects on the following technologies
 - Portal solution
 - Web based security solution like PKI
 - Development and customization of enterprise based application using web based technologies like J2EE/ .NET, and Web Services etc.
 - Application integration projects

Each of value minimum of 2 crores and must together sum up to an order value of 10 Crores if executed in India or 40 Crores executed outside India. A maximum of 6 purchase orders of above mentioned projects can be used to show the total sum of order value 10 Crores if executed India or 40 Crores executed outside

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India. The SI should submit details of all projects executed in India or abroad, along with full project details, customer contact details and customer satisfaction report. Only projects which have been fully executed need to be detailed, along with customer satisfaction report.

17.1.6 Helpdesk & Operation support capability:

- The helpdesk service provider should have tool based help desk management capability with prior exposure using Enterprise Management System and supporting more than 1000 users with single customer
- The helpdesk service provider should have remote management capabilities.
- Prior exposure in providing end user operational support to single customer for more than 100 physical locations.

Evaluation of Technical Bid

The evaluation of the Technical bids will be carried out in the following manner:

- The technical bids of only the pre-qualified Bidders will be opened for evaluation. The pre-qualification criterion papers need to be given in a separate sealed envelope along with the technical bid.
- The Bidders' technical solution proposed in the bid document is evaluated as per the requirements specified in the RFP and adopting the evaluation criteria spelt out in this document. The Bidders are required to submit all required documentation in support of the evaluation criteria specified (e.g. detailed project citations and completion certificates, client contact information for verification, profiles of project resources and all others) as required for technical evaluation.
- **Proposal Presentations:** The committee may invite each Bidder to make a presentation to CRIS at a date, time and venue decided by CRIS. The purpose of such presentations would be to allow the Bidders to present their proposed solutions to the committee and orchestrate the key points in their proposals
- Following will be the technical evaluation scheme:
 - Each Technical Bid will be assessed for technical score on a scale of 1 (minimum) to 100 (maximum) points
 - Only the Bidders, who score a total Technical score of 75 (Seventy Five) or more will qualify for the evaluation of their commercial bids. In addition, the Bidders

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are also required to score the minimum cut-off mark defined for each area as explained below

- o Following distribution of evaluation parameter, weightage and cut-off will be adopted for technical evaluation of bids. A detailed evaluation matrix has been provided in Volume II of the RFP

17.2 Evaluation of Commercial Bid

The Commercial Bids of only the technically qualified Bidders will be opened for evaluation.

The commercial evaluation shall be based in accordance with the following criteria.

- The bid with the lowest commercial quote will be declared the 'Best Value Bid'
- In the event two bids are 'tied', the bid securing the highest technical score will be adjudged "the Best Value Bid".

17.3 Technical Bid Evaluation

SN	Evaluation Criteria	Max Score	Min cut-off
1	Relevant Past experiences (minimum cutoff score 15)		
	A. Relevance to Commercial Portal, including aspects like	10	
	1. Project providing e-Services to citizens, with transaction		
	2. e-Commerce Portal with a multi-layer architecture comprising portal solutions for providing eServices to users including online business applications PKI/equivalent enablement, online payment facilities		
	3. Integration of multiple electronic payment transactions through payment gateway		
	4. Providing managed services covering full lifecycle compliant with ITIL/ ITSM or equivalent and certified for or compliant with ISO 20000 standards		
	5. Successfully executed and completed e-governance projects in India or abroad		

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	B. Size of the Project implemented w.r.t. 2 Projects executed in the past 2 years with total value of 10 crore or 40 crores (if abroad) respectively - Overall development and implementation effort in the various projects undertaken by the SI in India or abroad should exceed 10000 man-months in the last two years. A representative list of projects should be provided.	10	
	C. Performance deviation against agreed/planned metrics for the project encompassing construction, rollout & managed services in terms of: - Schedule variance - Effort variance - Post-delivery defect density	5	
2	Solution Proposed for IR Commercial Portal system (Min cut-off score 40)		
	Understanding of project requirements, w.r.t.: - Portal design & architecture - Integrated Enterprise Management System to capture - Solution that would help track compliance to SLA - Standards as required in RFP - Overall solution	15	
	Technologies proposed, w.r.t. - Development Platform - Commercial Portal Key business components like e-ticketing, journey planner - Security infrastructure and components - Commercial Portal Integration Solution - Commercial Portal technical Architecture - Architecture Scalability - Architecture Availability and reliability - Manageability	15	

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	Solution Design & Approach, for 1. Solution Architecture including Application & Integration 2. Architecture 3. Security Architecture 4. Data Centre Architecture 5. Architecture & Approach for addressing scalability, performance, availability and manageability 6. PKI-readiness of the application architecture 7. Adequate initial sizing and provision for scalability to cater to peak load as well as for future growth on the servers and networks Payment Gateway integration & other aspects of interfacing with banks 8. Adequate provision for load-balancing, clustering and failover at all required places in order to achieve required availability & reliability 9. Designed inbuilt Capability to inter-operate commercial portal with the systems of other Departments/ agencies 10. Approach for Requirements Validation, Software Development, Testing, implementation & Rollout plan, usage of tools etc. 11. IT Infrastructure Implementation, Operations & Service Level Management Plan 12. Approach & methodology for addressing the Training Requirements 13. Tools to be deployed for the for SLA and Operation management 14. Tools proposed and methodology to load testing and acceptance of the Commercial Portal	25	
	Project Plan 1. Whether the plan is comprehensive (covers all the aspects suitably) and realistic w.r.t. to different tasks 2. Whether overall plan is consistent with other aspects of the proposal & is sufficiently in line with schedule requirements	5	
3	Manpower Proposed for the Commercial Portal Project (Min cut-off score 5)	10	
	Prior exposure of handling large user base for more that 2 years (minimum of once customer > 1000 users base Location coverage (minimum two customer with operational support around 100 locations Remote management capability/Exposure in handling with appropriate EMS tools.		
	Level of skills & Relevance of experience of the individuals proposed for the Project 1. Experience of Project Management Team 2. Experience of the Design & Development Team 3. Experience of the Operations & Maintenance Team	5	

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	4. Experience of Technologies proposed Qualification & Certifications relevant to the role described 1. Professional Qualification of Proposed resources 2. Relevant certifications of proposed resources		
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18Payment Schedules

S.No	Activity	Payment Conditions
1.	Installation of system H/W & system S/W for Commercial Portal	80% on initial acceptance & 20% (of the cost of the hardware and software supply) on final acceptance after go-live of all phases against submission of a PBG for 20% for a period of 3 months beyond warranty period of 3 years for hardware.
2.	Portal Development:	30% of the development cost would be paid in advance against submission of a BG of equivalent amount valid for a period of one year and rest 70% would be paid after all phases go-live. No interim payments for development phases.
2.1	Completion & submission of SRS documents and Development of prototype of migration of static pages of IR websites, e-ticketing and e-auction application, retiring room & cloak room reservation application, registration of passenger complaints & FIR and their tracking, Judgment cases and other stated custom applications. Completion and acceptance by CRIS	
2.2	Development of the entire Portal application and necessary certification for the same by CRIS	
2.3	Portal Implementation and Training (with necessary CRIS's acceptance certification)	

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2.4	Exit Phase: (a). Handling over all the Portal Documents (B). Performance Testing/Auditing (c). User Acceptance Certification Confirmation of the validity of PWG Bond of 10% of the value of contract for a period up to 3 months beyond the last date of warranty period.	70% of Implementation charges
3.	Application Maintenance	Quarterly Payment on satisfactory performance
4.	3 years running of Customer Care	Quarterly Payment on satisfactory performance
5.	On-site maintenance of hardware & software through shift	Quarterly Payment on satisfactory performance

19 Roles and responsibilities

The following presents the roles and responsibilities along with the deliverables of the CRIS and the successful bidder during the envisaged phases comprising conceptualization, development, implementation/ support and exit phase.

Role of CRIS

1. CRIS shall provide Data centre space with adequate space, air conditioning, lighting, and electricity.
2. CRIS shall provide sitting place for 35 persons. However, bidder is required to ensure proper laptops with software tools and other requirements for their team members.
3. CRIS will provide telephone lines for customer care.
4. CRIS shall deploy project co-ordinator, to ensure:-
 - availability of all 32 web sites content.
 - meetings with appropriate persons to ensure SRS of the portal with all the custom applications for IR Portal.
 - conduct review meetings, on daily schedule to ensure project progress according to the targeted mile stones.
5. To take stock of the prototype design and suggest changes in iterative cycles.
6. To provide integration APIs/Services and modifications in back-end applications, which are required to be integrated with the Portal.
7. Review of the security measures and documents.
8. Conduct the security audit and ensure that action is taken by bidder to address all security concerns.
9. Review the load testing and performance testing reports to ensure adherence to tender sizing criterion.
10. Do the GAP analysis, to see whether all development items specified in tender have been completed.
11. Review completeness of SRS, Design, Coding, manuals documents, suggest changes to make it more complete and user friendly
12. Review delivery & installation of all supplied hardware & software.
13. Review application design & code training to CRIS engg. before exit phase.
14. Do the acceptance of the supplied system hardware, software and developed applications.
15. Do end user testing (UAT), to see that all requirements are being correctly met.
16. The operations and management of internet gateway (Firewall, IPS, Routers , Modems switches, Load Balancers, SSL offloaders , B/W Compressor, Link Load Balancer etc.) shall be done by CRIS from day 1 of commissioning of the commercial portal.
17. Bidder shall hand over the system passwords of all other hardware and root/system administrator passwords of the operating system, database, app servers and all other software to CRIS from day 1 of commissioning of the commercial portal.

Role of bidder

1. To provide the complete solution architecture for the portal.
2. After award of contract, the bidder needs to deploy a project team and a project manager to interact with CRIS.

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3. To do the system study for development of custom applications and to prepare the SRS.
 4. To develop and integrate the portal applications with backend applications as per the RFP.
 5. To deliver and install the hardware and software as per RFP.
 6. To develop the portal applications, and get the User Application Testing (UAT) done, along with CRIS team.
 7. To provide 3 year onsite Portal hardware and software maintenance, enhancements and modifications.
 8. To provide 3 year customer care for end users.
9. Bidder has to size the hardware and software, for the initial deployment, and has to provide additional hardware, software, storage, customer care, etc. required to meet the mentioned growth rate in the sizing details for the next 3 years. The anticipated hardware, other equipments, customer care and software will be delivered to meet the SLA requirements mentioned in the RFP. All items need to be quoted in the rate schedule for the commercial bid.

20 ANNEXURES

Annexure I: Response format to Functional and Technical Specification requirement

This has to be given in a separate document. In case the Bidder needs to depict diagrams and flowcharts in 'Approach' section it needs to be clearly labeled.

Sl. No	Business Area	Functional Specifications	Bidder's Response (Yes/ No)	Approach to Solution (if yes)

Sl. No	Minimal Technical Specs as asked in RFP	Bidder Technical specs	Bidder's Response (Yes/ No)	Approach to Solution

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Annexure II: Indicative Commercial quote template

NOTE: -

1. Rates have to be separately quoted against each item, failing to fulfill this; the tender will be summarily rejected. All rates are to be in figures as well as words.
2. At least 36 months comprehensive warranty. In view of this the extra warranty period (i.e. above 36 months) will not be included while evaluating the bid.
3. The rates should be inclusive of labour charges.
4. The support Charges for first, second & third year.

Bidder has to size the hardware and software, for the initial deployment, and has to provide additional hardware, software, storage, customer care, etc. required to meet the mentioned growth rate in the sizing details for the next 3 years. The anticipated hardware , other equipments, customer care and software will be delivered to meet the SLA requirements mentioned in the RFP. All items need to be quoted in the rate schedule for the commercial bid. All items need to be in HA configuration.

Indicative Commercial Portal Solution Components	Quantity	Unit Price	Taxes	Total Price	Support Charges for 1 Year	Support charges for 2nd Years	Support charges for 3rd Year
Initial Hardware items for Production and UAT(Testing) environment – Make, Model no., Item wise Specs w.r.t minimum specs mentioned in the RFP.							
1. Web/Portal Servers							
2. Application Servers							
3. Database Servers							
4. Content Management Server							
5. Workflow Server							
6. Anti-virus Gateway Appliance/Server in HA							
7. Anti-spam Gateway Appliance/Server in HA							
8. Mail Server							
9. DNS							
10. LDAP							
11. Proxy							
12. Management							

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Server				
13. SLA Monitoring Server				
14. Backup Server				
15. Syslog/ Accounting Server				
18. SAN with at least 10 TB storage				
19. Tape Library with 100 LTO4 media				
26. Racks				
27. IP KVMs				
Indicative Software line items – The licensing policy for each item needs to be clearly defined and item wise cost details be given				
1. Operating System				
2. Virtualization software				
3. Portal Server				
4. Application Server				
5. Mail				
6. Database				
7. Backup				
8. Management				
9. SLA monitoring tool				
10. Development tool				
11. Testing tool				
12. Syslog/ Accounting				
13. PKI				
14. Anti virus/spam				
15. Document Management				
16. Workflow				
17. Content Management Software				
18. Load Testing software				
Item wise Additional hardware, and software required for meeting growth rates in subsequent years as mentioned in sizing table. Vendor has to quote price for				

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additional upgrades in detail for second year. This will be considered in the commercial tender.				
Server				
storage				
Software licenses				
Item wise Additional hardware, and software required for meeting growth rates in subsequent years as mentioned in sizing table. Vendor has to quote price for additional upgrades in detail for third year. This will be considered in the commercial tender.				
Server				
storage				
Software licenses				
Indicative Portal Applications				
Website Migration of 32 Sites. The number of web-sites can vary by 10%				
Journey Planner				
e-ticketing				
e-auction of berths				
PRS Web site re-design				
FOIS empty rakes auction				
Frequent Traveller scheme				
Retiring room & Cloak room Booking				
Complaints and FIR				
FOIS related modules				
Parcel related modules				
Deployment Services (SI)				
Program Management				

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SLA management software				
24 * 7 Helpdesk services Customer Care				
Support Services on Commercial Portal Applications				
Support Services on Portal Infrastructure				
Complete training needs to be carried out twice in first year and once each in second and third year. The first training batch will be trained immediate post go-live within warranty support phase, the second batch should be trained post six month of go-live. Third set of training will be in second year and fourth set of training in third year. Please indicate item wise training costs.				
Software Tools training				
Infrastructure training				
COTS Administration training – Database/ Portal/CMS/ SLA monitoring tool/Workflow/Document Management System				
Custom Application Training				
Commercial Portal training for business users				
Change Management for additional development modules	Price/ day	Price/ man month	Price/ Man Year	
Solution Architect				
Senior Programmer				
Programmer				
Administrators				
Helpdesk personnel (L1)				
Support (L2) Personnel				

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Annexure III: Back to Back Support Agreement

**FORMAT OF COMMITMENT AUTHORISATION BETWEEN BIDDER AND
OEM TO BE SUBMITTED ALONGWITH BID**

The Authorization made this ____ day of ____ month ____ year by M/s._____
(OEM) to _____ (Bidder) for tender No. _____ for _____.

M/s. _____ (Bidder) intends to bid against the said tender and
desires to have maintenance related support of M/s. _____ (OEM)
And whereas(OEM) is capable and committed to provide the
services in line with their support offerings for successful execution of the
contract, if awarded to the bidder.

Now, it is hereby agreed to by and between the parties as follows:

- a. M/s. _____ (Bidder) will sign SLA based support from -----
(OEM) and provide CRIS details of SLA agreement for which should be in
line with Service Levels defined as part of tender. This agreement will
cover all the locations mentioned in the tender, will commence from the
date of signing of the contract with CRIS and will be for the full duration
of the contract.
- b. M/s. _____ (OEM) undertakes to provide proactive and reactive
support and expertise, expert manpower from OEM to support the bidder
to discharge its support obligations under all conditions.
- c. M/s.....(bidder) will submit the signed copy of support contract after the
bid is awarded to the same.

Authorized Signatory of OEM

Name:

Company seal:

Authorized signatory of Bidder

Name:

Company seal:

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**Annexure IV: PROFORMA OF BANK GUARANTEE FOR 10% OF
CONTRACT VALUE FOR
CONTRACT PERFORMANCE CUM WARRANTY GUARANTEE BOND**

Ref.....

Date

Bank Guarantee No.....

.....

To

Managing Director,
Centre for Railway Information Systems,
Chanakyapuri,
New Delhi – 110 021.

1. Against contract vide Advance Acceptance of the Tender
No..... datedcovering supply/
installation/commissioning of(hereinafter called the
'Contract'), entered into between the MD/CRIS (hereinafter called the CRIS)
and.....(hereinafter called the 'Contractor') this is to certify that at
the
require of the Contractor weBank Ltd., are
holding in
trust in favour of the MD/CRIS, the amount of(write the sum
here in words) to indemnify and keep indemnified the MD/CRIS against any loss or damage
that
may be caused or likely to be caused to or suffered by MD/CRIS by reason of any breach by
the
Contractor of any of the terms and conditions of the said contract and/or the performance
thereof whether any breach of any of the terms and conditions of the said contract and
or in the performance thereof has been committed by the Contractor and amount of loss or
damage that has been caused or suffered by MD/CRIS shall be final and binding on us and the
amount of the said loss or damage shall be paid by us forth with on demand and without demur

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to MD/CRIS.

2. We,Bank Ltd., further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for satisfactory performance and fulfillment in all respects of the said contract by the Contractor i.e. till(viz. the date upto 3 months after the last date of warranty on goods/services supplied under the contract) hereinafter called the “said date” and that if any claim accrues or arises against us,Bank Ltd., by virtue of this guarantee before the said date, the same shall be enforceable against usBank Ltd., notwithstanding the fact that the same is enforced within six months after the said date. Payment under this letter of guarantee shall be made promptly upon our receipt of notice to that effect from CRIS.

3. It is fully understood that this guarantee is effective from the date of the said contract and that we,.....Bank Ltd., undertake not to revoke this guarantee during its currency without the consent in writing of CRIS.

4. WeBank Ltd., further agree that the CRIS shall have the fullest liberty, without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said contract or to extend time of performance by the Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by CRIS against the said Contractor and to forbear or enforce any of the terms and conditions relating to the said contract and WeBank Ltd., shall not be released from our liability under this guarantee by reason of any such variation of extension being granted to the said Contractor or for any forbearance and or omission on the part of CRIS or any indulgence by CRIS to the said Contractor or by any other matter the effect of so releasing us from our liability under this guarantee.

5. WeBank Ltd., further agree that the guarantee

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herein contained shall not be affected by any change in the constitution of the
said Contractor.
excluding current year

Date.....

Place

Witness

Signature

Printed Name.....

.....

(Designation)

.....
(Bank's Common Seal)

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**Annexure V: PROFORMA FOR AUTHORITY FROM OEMs
(Original Equipment Manufacturers)**

**(To be submitted by bidder if they are authorized representatives
of an OEM)**

No..... dated

.....

To, The Managing Director,
CRIS, Chanakyapuri,
New Delhi, Pin- 110021

Dear Sir,

Sub:- CRIS, New Delhi's Tender No.....

We, an established
and reputable
manufacturer of
having factories at
..... and offices at do
herby authorize M/s

.....(Name and address of Agents) to
represent us, to bid,
negotiate and conclude the contract on our behalf with you against Tender
No.

Yours faithfully,

(Name)

for & on behalf of M/s

(Name of Manufactures)

Note: This letter of authority should be on the Letter-Head of the
manufacturing concern and should be signed by a person competent and
having the power of attorney to bind the manufacturer.