

"Techno-Commercial Proposal" For Human Resources Management System Software

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RevisionHistory

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1. Executive Summary

RailTel, a "Mini Ratna (Category-I)" Central Public Sector Enterprise is an ICT provider and one of the largest neutral telecom infrastructure providers in the country owning a Pan-India optic fiber network. The OFC network covers important towns & cities of the country and several rural areas. RailTel was incorporated on September 26, 2000 with the aim of modernizing the existing telecom system for train control, operation, and safety and to generate additional revenues by creating nationwide broadband and multimedia network, laying optical fiber cable using the right of way along railway tracks. Presently, the optic fiber network of RailTel covers over 61000+ route kilometers and covers 6108+ railway stations across India. Our citywide access across the country is 21000+ kms. RailTel's various operations are certified for Tier-III (Design & Facility), ISO 27001:2013 Certified for Information Security Management System, ISO 20000:2018 Certified for Service Management System, ISO 9001:2015 Certified for Quality Management System, ISO 27017:2015 Certified for Cloud Security, ISO 27018:2019 Certified for Data Privacy in Cloud Service, ISO 27033 Certified for Network Security, CMMI Maturity Level-4 Certified for Process Improvement.

RailTel has a strategic relationship with the Indian Railways and it undertakes a wide variety of projects including provision of mission critical connectivity services like IP based video surveillance system at stations, 'e-Office' services and implementing short haul connectivity between stations and long-haul connectivity to support various organizations within the Indian Railways. RailTel also provides various passenger services including content on demand services and Wi-Fi across major railway stations in India. RailTel believes that their experience and expertise in handling and undertaking telecom and ICT projects, has led them to be selected for implementation of various mission-mode projects for the Government of India including rolling out the National Knowledge Network, BharatNet (formerly, the National Optical Fiber Network) and USOF funded optical fiber-based connectivity project in North East India.

RailTel has invited its Business Associate (BA) for Design, Development and Deployment of Human Resource Management Enterprise Resource Planning Software with the following brief scope:

The scope involves Design, Development, Testing and Deployment of Human Resource Management System Software for one of the RCILs and the scope of work includes making the Aeriesware functional with the relevant data in the place. This is for 800 and 30 concurrent users of the applications. Functional details of the scope of work are explained in the section "Scope of Work".

2. About Aeries

2.1. Our Offerings

- ❖ Software Development
- ❖ Software Maintenance and Enhancements
- ❖ Quality Assurance Testing Assurances
- ❖ Website Development

2.2. Why Aeries?

Aeries is a full-service IT global outsourcing company. In the 21st century outsourcing is evolving to be a strategic business solution for most companies, not just a cost-saving short-term tactical plan. The current competitive global economy requires all organizations to focus on what differentiates them in the marketplace and most of those core competencies must be protected and expanded to guarantee future success. Outsourcing to Aeries allows access to resources that will be aligned with in-house resources to develop a successful business strategy with state-of-the-art IT solutions.

Aeries's relationship with clients is based on a philosophy of shared values and goals. Flexible business models encourage relationships that can grow and last. Excellence through quality is not just a motto – it is the foundation on which Aeries is built.

Many Aeries clients evolve to become strategic partners and repeat business represents approximately 76% of company revenue. Many organizations have similar strong relationships with other outsourcing partners and successful business relationships flourish. However, most companies are concerned about risk management in this ever-changing global environment and Aeries would like to partner with organizations and become the solution to risk-free IT outsourcing. One chance is all that is needed to prove that Aeries can deliver innovative IT solutions.

2.3. Contact Details

URL	ceo@aeriesit.com
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Contact Persons:	Chaitanya Lahari
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3. Our Understanding of the Requirements

The dynamic and user-friendly Human Resource Management software will revolutionize the functioning of employee-company relations by reducing the manual form of employee data entry with the click of a button. What is more interesting is that now, with this unique software, various critical modules such as employee information, leave and attendance management (along with night shifts if any), and payroll can be managed in no time. Additional benefits include PF/ESI transactions, appraisals, the medical section, benefits administration, and more. Once fully integrated, this software will save valuable time and enhance daily operations at the workplace.

Sl.No.	Module
1	Employee Information
2	Organisation Structure
3	Leave Management
4	Time and Attendance
5	Payroll 1. Employee Master 2. Attendance 3. Personal Details
6	Employee Lifecycle Management
7	Recruitment
8	Benefits Administration
9	Performance Management
10	Disciplinary
11	Report Navigator
12	Self Service HR
13	Analytical Tools
14	Assets Provided to Employees
15	Annual Property Returns
16	Medical History
17	Online Application for Certificates
18	Other Payments
19	LTC/Hometown
20	Policies

4. Proposed Solution

Aeries on understanding the requirements as stated in the shared document of RCIL and with Aeries' vast experience in delivering Enterprise-wide custom applications on automation of various organizations such as Government/Semi-Government/Universities etc., proposes a Web based application using Portal architecture that shall be on open source, deployable on Centralized servers, highly scalable and secured for the HR Management of RCIL.

The following subsections shall explain in detail the various components of the proposed solution.

4.1. Scope of Work

Sl.No.	Module	Technical Specifications
1	Employee Information	1. Add Employee 2. Employee List 3. Edit Employee Details
2	Organisation Structure	1. Add Hierarchy 2. Direct/Indirect Reporting Managers
3	Leave Management	1. Apply Leave 2. Leave Approval 3. Leave Adjustment 4. Leave Approval Forwarding to Final Authority
4	Time and Attendance	1. Biometric Based Check In/Check Out 2. Online Portal Based Check In/Out
5	Payroll 1. Employee Master 2. Attendance 3. Personal Details	1. Automatic Salary Calculation 2. Salary Sheet Generation 3. Pay Slip Generation
6	PF Trust Management	1. Member's Ledger 2. Refund & Loan Journal 3. Reports
7	Employee Lifecycle Management	1. Employee Benefits History 2. Employee File 3. Disciplinary Actions
8	Recruitment	1. Online Application Submitting Portal 2. Application Tracking
9	Benefits Administration	1. Update Employee Benefits
10	Performance Management	1. Define KRAs 2. Update Scores 3. Generate Performance Reports
11	Disciplinary	1. Update Employee File 2. Issue Warning Slip

12	ReportNavigator	1.AllReports
13	SelfService HR	1. CheckAttendance 2. DownloadPay slip 3. ViewBenefits
14	AnalyticalTools	1. AttendanceDashboard 2. FinancialDashboard
15	AssetsProvidedtoEmployees	1. AssetsTracking 2. BarcodeGeneration 3. AssetAssignment
16	AnnualPropertyReturns	1.Asset Returns
17	MedicalHistory	1.UpdateMedicalHistory
18	OnlineApplicationforCertificates	1. CertificateRequest 2. CertificateuploadbyHR 3. CertificateDownload
19	OtherPayments	1.OtherPayments EntryOption
20	LTC/Hometown	1. UploadRequest 2. RequestApproval
21	Policies	1.ViewPolicyDocuments

ProjectDeliverable	PrimaryAuthor	Reviewers&Approvers
BusinessRequirements	ProjectLead	RCIL
SolutionDesignDocument	BusinessAnalyst /TechnicalArchitect	RCIL
ProgrammingStandards	TechnicalTeam	RCIL
SprintandUATReleasePlans	ProjectLead	RCIL
UnitTesting	Quality Analyst- Testers	RCIL
SystemDeployment Document	Sr.Programmers	RCIL
MSIRelease	ProjectLead	RCIL

Note:

1. Any addition to the above listed scope of work will be treated as Change Requests (CRs). These CRs shall be taken up with additional effort and cost.
2. Any activity related to entry & storage of Kannada data compliant with Unicode standards is not in the scope of this tender and hence it shall be taken up as **changerequest** with **additionaleffort,time&cost**.

4.1.1. Training of RCIL end-users and IT Team

Capacity building is one of the most important activities as far as the success of any software implementation is concerned. AEREIS shall impart the following trainings;

- Trainer's Training Programme for RCIL end-users (10 nos.) on the Human Resources Management System Software.
- Trainer's Training Programme for RCIL IT Team (2 nos.) on System & Database administration activities with respect to the proposed solution.

A detailed Training Methodology has been given under the section "Training Methodology" of this proposal.

4.1.2. Software Support for a period of 2 years

As per the requirement of the RCIL, Aereis shall provide two (2) years support for the HRMS solution to RCIL.

- Support executive – For supporting the staff of RCIL in day-to-day operations and usage of the HRMS solution.
- Support team (1 – Project Manager; 1 – Sr. Programmer) – For making necessary changes to the source code to incorporate the change requests.

A detailed description on AEREIS's Support methodology has been provided under the section "Support Methodology" of this proposal.

4.2. Proposed Development & Implementation Methodology

Aereis's development and implementation methodology is based on the Rational Unified Process (RUP).

Aereis's approach to software development is based on globally accepted methodologies & standards in the industry today with utmost reliability and effectiveness. RUP™ is a configurable software development process that is based on many years of experience in using object-oriented technology to develop mission-critical software in a variety of industries.

Using RUP™, we focus on ensuring timely delivery of quality software solutions to our clients. RUP™ guides our project teams in managing iterative development in a controlled fashion while balancing business requirements, time-to-market and project risks. RUP™ unifies the entire software development team and enhances team communication by providing each team member with one approach to

develop software with an on-line knowledge base that can be customized to the specific needs of the project.

Using RUP™, we can ensure the effective and efficient allocation of resources, delivery of the right artifacts and the achievement of our ultimate goal, the timely delivery of quality software solutions to our clients. RUP™ is supported by tools, which automate large products of the process including visual modeling, requirements and change management as well as documentation and testing. At AEREIS, our processes bring into play industry best practices in capturing business requirements and establishing an architectural baseline early on, as well as in designing and testing the system driven by requirements and the architecture.

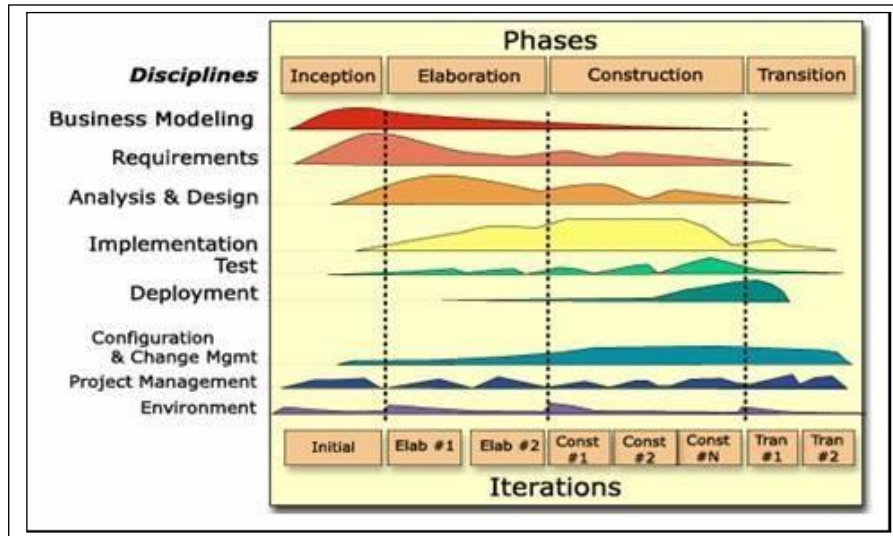
Implementation

Our process would follow the Rational Unified Process (RUP). We suggest the use of RUP for this project due to the following reasons

- RUP addresses the managerial & technical risks of the project
- Allow effective management of requirements
- Enables high quality output of all project deliverables
- Allows management of changes at every stage

RUP segments a typical development/development lifecycle into four phases:

- **Inception:** The major goal of the inception phase is to achieve concurrence among all stakeholders on the lifecycle objectives for the project. The inception phase is of significance primarily for new development efforts, in which there is significant business and requirement risks that must be addressed before the project can proceed.
- **Elaboration:** The goal of the elaboration phase is to baseline the architecture of the system to provide a stable basis for the bulk of the design and implementation effort in the construction phase.
- **Construction:** The goal of the construction phase is on clarifying the remaining requirements and completing the development of the system based upon the baseline architecture.
- **Transition:** The focus of the Transition Phase is to ensure that software is available for its end users.



The following would provide a detailed insight into our implementation process:

- **Phase1 (Inception)**

- Establish Customer/AEREIS project management process: Various processes (such as Project Status Reporting, Requirements Communications, change request Communication, Configuration Management etc.) related to implementation of the system will be established and agreed upon. All the project management health related parameters like schedule variance, effort variance etc. would also be identified at this stage. This will result in a Process Handbook and project management dashboard which will be signed-off by all concerned.

Output-**Process Handbook and Project Management Dashboard**

- Team Mobilization: All concerned parties (Aeries and RCIL) will identify and mobilize resources that will be required to carry out various identified activities. An Organizational Chart will be published as a result.

Output-**Organizational Chart**

- Establish Communication Protocols: Communication protocols will be established identifying Interested Parties, Information required, Mode of Communication, Frequency of communication etc. A Communication Protocol document will be prepared.

Output-**Communication Protocol**

- Develop macro and micro level plans for implementation: Project Plan will be prepared (and agreed upon), both at Micro and Macro level detailing all the activities (along with resources). A detailed Project Plan will result out of this activity. Any changes to this plan will have to go through a formal process of approval from all concerned (as identified in Organizational Chart and Communication Protocol).

Output-**Project Plan**

- Identify resources for Site/Requirements Study
 - Identify Requirements Manager: Requirements Manager will be the person responsible for all the requirements (or changes in requirements). He will also be responsible for coordinating requirements related activities between Aeries and RCIL.
 - Identify Coordinator(s) from RCIL: Resources will be identified from RCIL who will coordinate various requirements related activities.
- Establish Requirements Management Processes: A plan will be put together detailing the schedule and various activities to be carried out for requirements/gap identifications. This Requirements Management Plan will also describe the process that will be adopted for the activity and how requirements will be tracked through various stages of the project. This Plan will also talk about the Change Management Process in detail.

Output-Requirements Management Plan

- Who various constraints/limitations/situations will be analyzed and potential risks will be identified at various stages of the project. Further to this, as and when risks will be identified, they will be logged into Risk List and a Mitigation Plan will be put for the same detailing what to do, when to do and who to do. On this mitigation plan buy in will be taken from all concerned. All this will be maintained in Risk List and Mitigations Plan.

Output-Risk Management Plan and Risk List and Mitigations Plan

- **Phase 2 (Elaboration)**

Conduct Workshops to identify Requirements/Gaps: Various workshops will be conducted to use various strategies (site visits, stakeholders' interview, packaged demonstration and discussions) and to identify all the stakeholders' requirements.

Output-Stakeholders Request Document

- Prepare Customization Specifications as per the gaps: Detailed analysis will be with the Stakeholders Requests and all the gaps with respect to Stakeholder expectations and the existing system will be done.

Output-Customization Specification Document

- Present Customization Specification Document and take sign-off: The Customization Specification Document (CSD) will be presented to the stakeholders and a sign-off will be taken for the same.

Output-CSD Sign-off Document

- Prepare Final Specifications: Based on the signed-off CSD, final specifications for the final system will be put together.

Output-Final Specification Document

- Present Final Specifications Document: The Final Specification Document (FSD) will be presented to the stakeholders and a sign-off will be taken for the same.

Output-FSD Sign-off Document

- Prepare Estimates: Based on the final specifications various projects specific estimates will be established (e.g., effort, size etc.). Based on these estimates and agreed upon schedule, total resources requirement will be established and in accordance resources mobilization will result.
Output–**Estimation Sheet**
- This document will also contain information methodology, tools and the resources who will carry out the data migration tasks
Output–**Data Migration Plan, Data Mapping Document**
- **Phase 3 (Construction)**
 - Modify Design Document as per the Final Specifications Document: As per the final specifications various Architecture and Design documents will be modified/ updated
Output–**Architecture and Design Documents**
 - Customization of the product as per the Final Specifications Document: As per the updated A&D documents and final specifications, the customization of the system will take place.
Output–**Customized version of SDI Solution**
 - Identify old, inaccurate, obsolete legacy data to be improved or eliminated before conversion: Identified resources will do a detailed study on the legacy system and will identify old, inaccurate, obsolete legacy data. They will also decide about the treatment that is to be given to the data (e.g., Discard Data, Modify Data etc.)
Output–**Modified Data Migration Plan, Data Mapping Document,**
 - Conduct integrated testing: Quality Control (QC) team will conduct multiple rounds of testing on the customized system (with migrated data). They will also be responsible for the testing the system up for supplementary requirements like usability, performance, Load testing, Stress testing etc.
Output– **QC Sign-off document**
 - Obtain QA sign-off: Quality Assurance (QA) team will conduct a comprehensive audit to verify the process compliance while carrying out various activities.
Output–**QA Sign-off document**
 - Develop plan for deployment: A deployment plan will be prepared (and agreed upon), detailing all the activities that need to be carried out (along with resources). A detailed Deployment Plan will result out of this activity.
Output–**Deployment Plan, Deployment Guidelines**
 - Prepare and Approve Training Plan: All the users that need to be trained would be identified (based on their roles) and listed accordingly training locations will be identified. Also take a buy-in from all the identified trainees.
Output–**Training Plan, Training Check List**

- Prepare and Approve Test Run Plan: Users and locations that will be involved in the Test Run for the system will be identified. This will also involve preparing a fresh instance of the database (with migrated data). Also, to take a buy-in from all the identified users.
Output–**TestRunPlan,TestRunCheckList**
- Prepare and Approve Parallel Run Plan: The system(s) will be prepared for the parallel run by making sure that it is running on all the locations and by preparing a fresh instance of the database.
Output–**ParallelRun Plan,ParallelRunCheckList**
- Prepare for the Final Run: The system will be checked / prepared for final run with a fresh instance of database with the migrated data.
Output–**FinalRun Plan,FinalRunCheckList**
- Prepare User Guide: Based on the customized system, technical writing team will prepare the User Manual for users.
Output–**UserManual**
- **Phase4 (Transition)**
 - Perform Software Installation and prepare the system for initial Demonstration: The onsite team (from Aeries and RCIL resources) will carry out the exercise of installation of the system based on Deployment Guidelines.
Output–**SystemDeliverySign-off**
 - Migrate Data: Identified resources will migrate using the identified tools and established methodology.
Output–**Instanceofthedatabasewithmigrateddata**
 - Demonstrate Customized product: AERIEIS will demonstrate the customized system to identified stakeholders of the approval of the system
Output–**InitialAcceptanceSign-off**
 - Prepare for User Training: Prepare the identified locations and Servers for trainings.
Output–**UpdatedTrainingCheckList**
 - Conduct User Training: As per the Training plan the trainings will be conducted and the attendance will be taken for the identified trainees. Also, trainee feedback form will be obtained from the trainees.
Output–**AttendanceSheet,TraineeFeedbackForm,TrainingSign-off**
 - Prepare for Test Run: Prepare the identified locations and Servers for Test Run.
Output–**UpdatedTestRun CheckList**
 - Conduct Test Run: As per the Test Run plan the test run will be carried out. Output– **Test RunSign-off**

- PrepareforParallelRun:PreparetheidentifiedlocationsandServersforParallel Run.
Output–**UpdatedParallelRun CheckList**
- ConductParallelRun:AspertheParallelRunplantheParallelRunwillbecarriedout.
Output–**ParallelRunSign-off**
- PrepareforFinalRun:PreparetheidentifiedlocationsandServersforFinalRun.
Output–**Updated FinalRunCheckList**
- Final Run and Sign-off: After making sure that the system has performed as perthe specified performance criteria for a scheduled timeframe, the Final Run willbesigned off
Output–**FinalSign-offdocument**
- Project Closure: After analyzing various project management related parameters(Sizevariance,effortvariance,requirementsstabilityindexetc.)anddocu menting various lessons learnt during the course of the project the projectwillbe declaredclosed.
Output–**ProjectClosureForm**

4.3. ProposedEnvironment

TheproposedsolutionforRCILautomationshallbeacentralizedWebbasedapplication, developed and deployed on Linux Server.The CLIENT shall have aProduction Setup and a Backup Setup.The proposed solution shall be deployed ontheProductionandBackupSetup.TheBackupsetuphasbeenproposedforimmediatet akeoverincaseofFailoverof anyserverintheProductionsetup.

Detailed deployment architecture has been given under the section“**IllustrativeDeploymentArchitecture**” of thisproposal.

DeploymentServers

- OperatingSystem:Centos7(Linux)
- Web/ApplicationServer:Apache
- RDBMS:MySQL

It is assumed that there shall be around 100 concurrent users in total for accessingthecentralized HRMSSolution.

DevelopmentEnvironment

- OperatingSystem:Centos7(Linux)
- Web/ApplicationServer:Apache
- RDBMS:MySQL
- DevelopmentTools:MicrosoftVSCode

- Language:PHP
- Othertools:AJAX,HTML,JavaScript,jQuery,Bootstrap,CSS

Clients

Operating System:Windows 10 / Windows
11Browser:MozillaFirefox/Chrome

4.3.1. FeaturesSupportedbytheProposedTechnology

- CentralizedArchitecture
- ServiceOrientedArchitecture(SOA)
- ObjectOrientedmethodologytosupportRe-usability
- HighlyAvailable,Scalable,Flexible,ReliableandComplytoOpenStandards
- UserAuthentication(Passwordbased)
- RolebasedAuthorization
- SecuredAccess
- Centralizedstorage&accessofCLIENTdatabase
- AccesstotheproposedsolutionoverIntranet&Internetwithappropriateaccessprivileges

4.4. IllustrativeSolutionArchitecture

The proposed technical solution shall be Web based on **n-tier architecture** withobject-oriented approach. The following layers/tiers are being proposed for thedevelopmentof the application;

- PresentationTier
- ServiceTier
- BusinessLogicTier
- DataAccessTier
- EntityObjects

TheproposedsolutionarchitectureisFlexible;Interoperable,ScalableandSecured.ThefeaturAereishesolutionarchitectureareexplainedbelow:

The**Presentationtiers**shallhavetheuserinterfaces,whichshallbeusedforgathering inputs from the end-users.This tier shall ensure user friendliness andeasy to navigate during data entry operations which leads to less effort and time.Most of the items shall have selectable data from lists and a very few items shall beenterable.

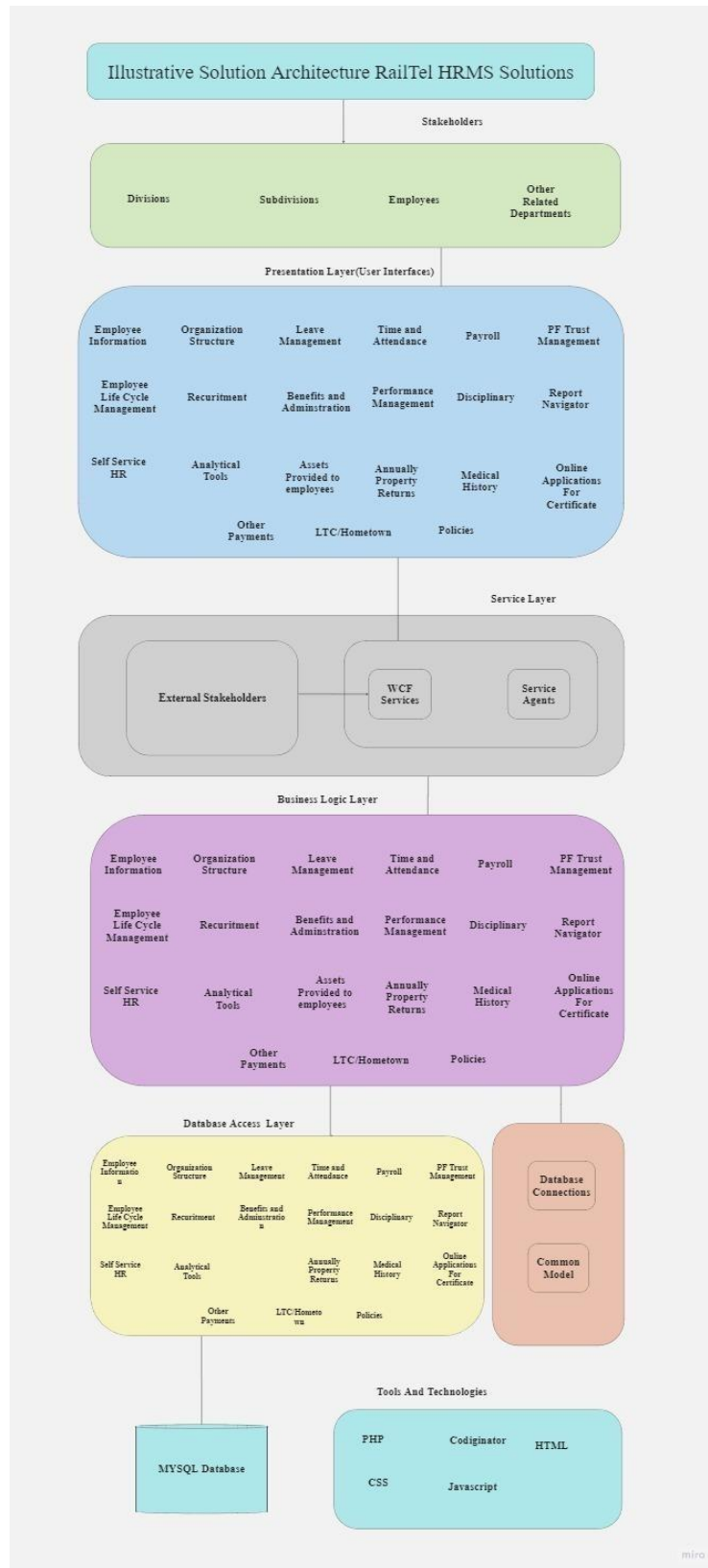
The **Service tier** shall enable data exchange across external stakeholders on openstandards.This tier shall have web methods, which shall be consumed in a securedmannerbyanyexternalapplication.Thisensuresseamlessdatainterchangebet weenheterogeneoussystemsandexternalstakeholders.

The **Business tier** shall have Business components pertaining to various modules of the applications in addition to Business Work flow processes. All business rules shall be embedded in this tier. Whenever there is a change in the business rule, only this tier needs to be modified and deployed without disturbing the entire solution, which in turn ensures smooth functioning of existing applications in the solution, thus supporting component-based development.

The **Data tier** will have Data access methods pertaining to various modules of the application in addition to Data components. All Database objects shall be accessed only through this tier, which ensures enhanced security to the data. This tier is generic to any backend RDBMS.

In addition to the above tiers, there shall be a set of **Entity Objects**, which act as intermediated data containers accessible vertically across all tiers. These entity objects act as data carriers in and out of different tiers.

The illustrative Solution Architecture for the proposed Human Resources Management System Software RCIL is shown below:



4.5. Illustrative Deployment Architecture

4.5.1. Production Site

AEREIS expects that RCIL has the following servers & setup as a part of the production site for successful deployment of the proposed HRMS solution as a centralized setup at RCIL.

- Web/Application Server with Centos/Apache – For Web based RCIL HRM solution

4.5.2. Server Security

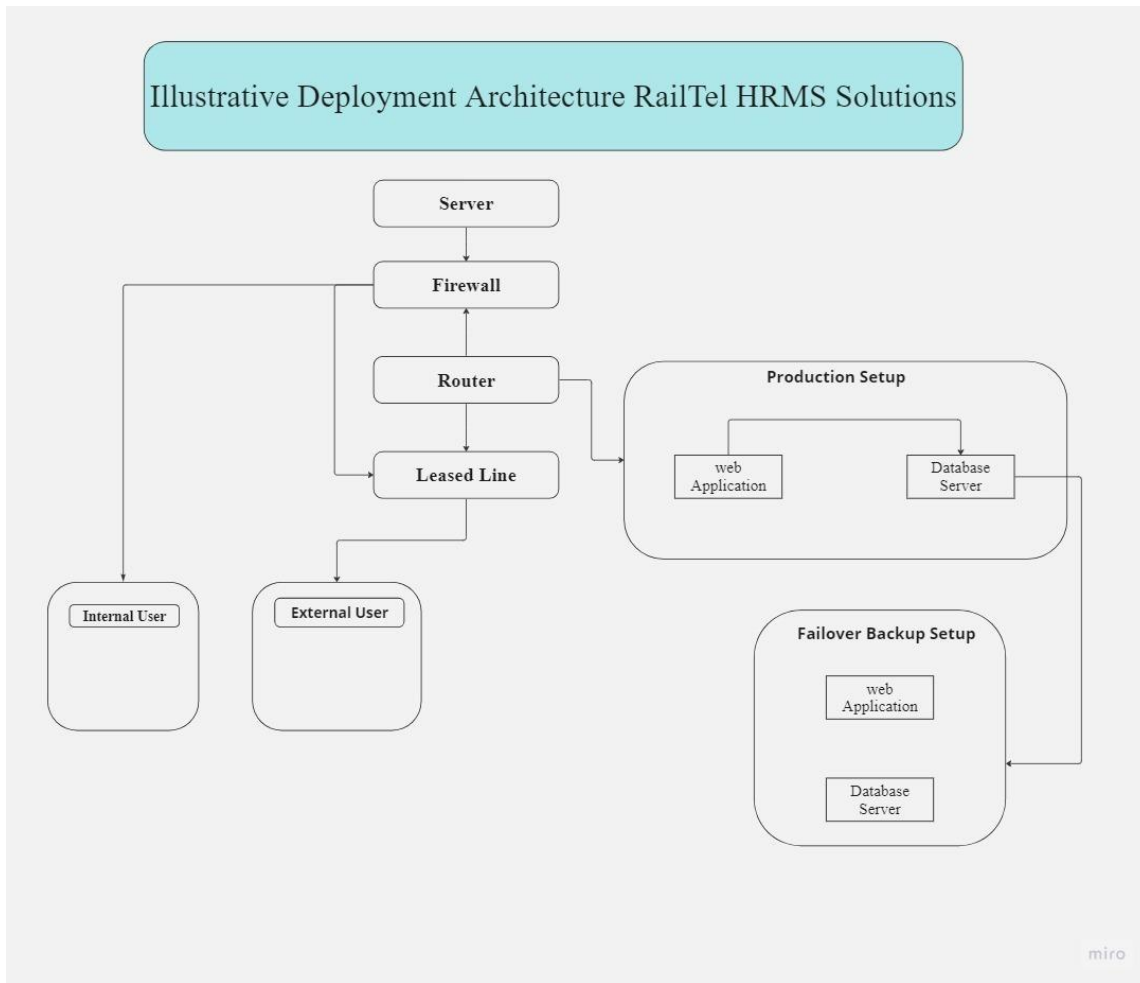
All these servers shall be configured on the Intranet zone with Private IP addresses. The existing Firewall (if any) will be on the Internet zone with various access policies defined and implemented. Only the required network ports shall be enabled to avoid attacks and intrusion.

4.5.3. Failover Backup Site

Aeries expects that RCIL has a Failover Backup Site with two servers that shall be on the same network as that of the Production site. One of the servers shall be responsible for Web/Application/AD activities & the other server shall be responsible for back-end database activities which shall be configured for DB replication with the Active database server of the production site. This site is required to take over the operations, in case any of the servers in the production site fails.

The Illustrative Deployment Architecture for the proposed RCIL HRMS solution is shown below:





4.6. Servers Required for HRMS solution Production Site

S.No.	Servers	Make /Model	Technical Specifications	Quantity
1	Web / Application Linux Server	Intel Xeon Processor (To be model)	x86 Servers of (2CPU, 6GB RAM, 3 * 146GB RAID 1 HDD)	1

4.7. Failover Backup Site

This section gives the List of Servers required for the Failover backup site:

S.No.	Servers	Make /Model	Technical Specifications	Quantity

1	Web / Application Linux Server	Intel Xeon Processor (To be model)	x86 Servers of (2 CPU, 6 GB RAM, 3 * 146 GB RAID 1 HDD)	1
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Note: Aeries has to provide the above said servers (Production & Failover sites). Aeries shall only deploy the proposed HRMS Solution.

4.8. Illustrative Network Architecture

For the proposed HRMS solution the entire network shall be on TCP/IP backbone. The stakeholders are grouped into two categories namely; External users & Internal users.

4.8.1. External Users

In this category, the users belong to Divisions, Sub-Divisions & Related departments of RCIL. These users connect through Leased lines (2 Mbps Minimum) and have to pass through the policies set on the Router and Firewall, only authorized users get connected to the services made available on the Centralized Web/Application server.

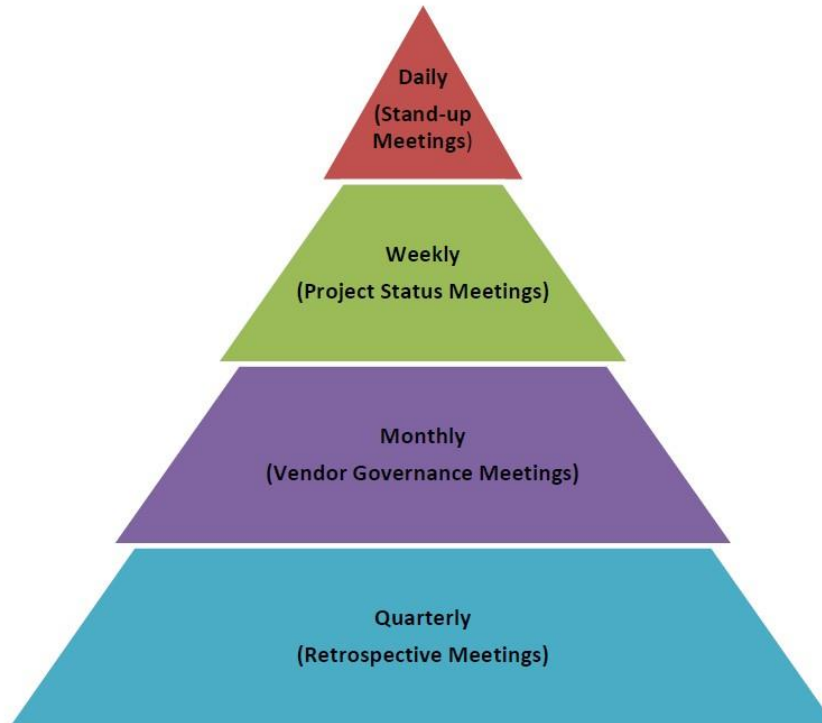
4.8.2. Internal Users

In this category, the users belong to RCIL. All these users shall be provided with a user-id and password on the Directory services (AD) server. These users connect through LAN (10/100 Mbps) and have to pass through the policies set on the Firewall, only authorized users get connected to the Centralized Web/Application server.

Access to the Centralized Database Server is only through the RCIL HRMS solution. No user can directly access the Database server. In case the role of a user is to generate Business Intelligence (BI) reports, then the application gets him connected to the "Passive Database Server" which is meant and configured for such reports.

4.8.3. Project Governance

Project Governance



4.9. Testing Methodology

4.9.1. Manual Testing Process

Aeries adopts the following testing procedure during the Manual testing process.

One of the senior members of the QA team usually the Test Lead shall initiate the process of writing Test Cases after thorough understanding of the functionality.

Before the Build is released to System Testing, the Development Team shall run the Unit and Integration Level Test Cases.

The Testing Team shall check that at least 75% of the Unit Test cases are passed otherwise the build shall be rejected.

If the system is ready for System Testing, then the Testing Team shall execute the system test cases and report the bugs to the development team in the form of a Test Report.

The reported bugs are fixed by the Development Team and send the InternalReleaseNotesfor SystemTesting.

Thus, the above process is carried out iteratively until the Testing team gives a clean Test Report on the Release being tested. This version of the release is sent for implementation.

4.9.2. Automated Testing Tools

Aeries also uses the testing tools such as Win Runner & Load Runner for automated testing purposes Functionality & Load testing respectively.

The testing team is well versed with these tools and shall prepare testing scripts based on the system functionality and executes these testing scripts on the release. The bugs occurred are sent to the development team as a Test Report which is generated by the tool.

The reported bugs are fixed by the Development Team and send the InternalReleaseNotesfor SystemTesting.

Thus, the above process is carried out iteratively until the Testing team gives a clean Test Report on the Release being tested. This version of the release is sent for implementation.

5. Project Management Plan

5.1. Proposed Project Team

Aeries proposes the following resources as part of this project team;

Customization/Development/Deployment team

Resource Type	Qualification	Experience	Technology
Project Lead	B.Tech	8	PHP
Business Analyst	B.Tech	6	PHP
Test Lead	B.Tech	6	Manual
Sr. Programmers	B.Tech	6	PHP
Programmers	B.Tech	5	PHP
Testers	B.Tech	4	Manual

Note: These resources shall be a part of the project during the different phases of the Aeriesware Development Life Cycle (SDLC).

Support (for a period of 2 years)

5.2. Illustrative Project Plan

A high-level project plan is given below. However, a detailed project plan for all the phases of

the project will be worked out and given after the completion of detailed system study. The duration mentioned in the table below is after the receipt of Work Order from RCIL.

S.No.	Tasks/ Activities	Duration
1	On receipt of Work order within a span of 7 days, interact with all divisions & stakeholders of RCIL in order to gather the requirements and come out with a Software Requirement Specification (SRS). Submit SRS for analysis and sign-off.	2 Weeks
2	Design and Develop HRMS Application that shall address the required functionalities of RCIL- HRMS.	3 Months
3	Implementation	4 Days
4	Incorporating changes from the Pilot implementation	2 Weeks
5	Go-Live	4 Days
6	Training RCIL end users (10 no's) on usage of HRMS Application and RCIL IT Team (2 no's) on Administration activities.	4 Days
7	Final Sign-off	4 Days

Security

The RCIL HRMS solution would be deployed inside a web secure zone, which is shielded by a firewall. The front-end IIS based web server will be load balanced.

The database servers are placed inside a De-Militarized Zone protected by the firewall for maximum security. The database servers will be clustered using Active/Passive topology to provide high availability.

The centralized application is implemented using the Apache server. This would make sure that only authorized users would see their own relevant information.

We appreciate the importance of customers' data and ensure its safety and security by applying industry best policies and practices to ensure that there is no loss of data by any means. Our Information Security Management System (ISMS) ensures the protection of Physical devices, Software and Information assets against all threats and vulnerabilities that can be exploited deliberately or accidentally by internal or external entities.

- Longer and strongest passwords are maintained
- Access privileges to systems are restricted based on requirement to access
- Firewall, Anti-Spam, Anti-virus to protect the servers.
- Confidentiality, integrity and availability of all the assets are maintained throughout the lifecycle.
- Risk assessment is carried for all the assets and applicable security controls are implemented

plemented.

- Business Continuity Plans are in place, tested and maintained.
- Information Security Awareness and User responsibilities' training is provided to all employees.
- All the incidents or suspected security breaches are thoroughly investigated and preventive or corrective actions are taken.

All the users will access their own HRMS application to perform their work.

6. Roles and

Responsibility AEREIS

- Gap Analysis & SRS document preparation
- Design and Develop HRMS solution
- Pilot Implementation at RCIL
- Rollout of the proposed solution
- Training to the identified trainers on the proposed solution
- Post implementation support for 2 years

RCIL

- Identification and positioning of the personnel to perform as the Project Coordinator for a single point of contact with the vendor
- Issuance of Orders, Circulars wherever required, on policy issues
- Site Preparation and Network Infrastructure
- Master Data collection and Entry
- Basic Computer training to end users and identifying Master Trainers
- Give high priority to project team from Aeries
- Give access to the vendor to relevant records for familiarization with the existing system and the office staff will be available for interaction and consultation with their officers
- Approve all deliverables within the agreed time after the delivery
- Should submit changes, if any within the stipulated time frame, after which the vendor shall incorporate the changes. In case, no changes are received within the stipulated time frame, the deliverables will be considered as approved. Any changes thereafter will be treated as change request.
- Prepare test data in consultation with project team
- Provide all the consumables used during the implementation phase
- Support for Pilot Implementation
- Identify officials for one-time training on application
- Provide necessary facilities for conducting on-site training programs
- Responsible for master data collection and entry, day-to-day data entry, data checking & updating and Report Generation
- Allow extension of schedule and enhancement of project cost, in case requirements are changed at a later stage in the project.

7. Training Methodology

The methodology for training can be as follows:

Following type of Aeries trainings are identified:

- Train the trainer
- Train Administrator and Technical Staff

Methodology

- Overview of Product
- Current business process of SDIS Portal solution and implementation of the same in application
- Salient Features of the product

Prerequisites

- Actual practitioner in the area of training
- For administrator training, being computer literate is mandatory

At Course Completion

At the end of the course, users will be able to:

- Understand and work on application from a business perspective
- Will be able to suggest incorporation of future business requirements within the current system

Hands-on Session

During Hands-on, the Candidates will be able to:

- Navigate through the entire process flow as stated in the hands-on manual.

Student Materials

Conceptual Documents, which explain:

- End-to-End Process Flow for Multiple Scenarios
- A high-level scope of solution as addressed through the current implementation

PowerPoint Presentations

- Implementation Flow with respect to

Hands-on Manual

Exercises, which are explained and practiced during Hands-on include:

- Screen Shots
- Field level values to be configured
- Expected Outputs
- Processes required for Expected Outputs.

Course Assessment / Trainee Assessment / Trainer

Assessment Course Assessment

Feedbacks will be collected from the end-users on:

- Course Structure
- Course Schedule

- CourseMaterial
- ConfidenceLevelbefore/afterthecourse

TrainerAssessment

FeedBacks willbecollectedfrom theend-useron:

- PresentationStyleoftheTrainer
- CommunicationoftheTrainer
- QueryhandlingcapabilityoftheTrainer
- KnowledgeoftheTrainerontheProduct
- KnowledgeoftheTrainerontheend-usersImplementationscope
- KnowledgeoftheTrainerontheDomain

TraineeAssessmentFeedBack

FeedBacks willbecollectedfrom theTrainers on:

- TraineeResponse
- NatureofQueries
- PrerequisiteleveloftheTrainees

CandidateExpectations

Thisincludes:

- SpecificrequirementstobecoveredduringTraining

ScopeofTrainingProgramfromCandidatesangle

Approval on Training Plan/

MaterialsThisincludes:

- ApprovalofTrainingPlan
- Approval of Training

MaterialsApprovalonTrainingphase/phase

s

Thisincludesapprovalof:

PositioningoftheTrainingprogramduringtheprojectCycle

8. SupportMethodology

AereisproposestoprovideSupporttotheproposedHRMSSolutionforaperiodoftwoyears.

SupportPlan

The service level agreement entered at contract sign-off level would become thebasis for the extent of support Aereis would provide. The salient points of the supportmethodologyare:

LevelsofSupport

AsexplainedbelowAereisshallprovidethreelevelsofsupport:

- Atthefirstlevel,thereshallbealocalHelpDesktotroubleshootproblemsat (Level1).
- In case the Help Desk is unable to solve the problem, the problem will beroutedtothesecondlevelofsupportthatistheAereisteambasedatHyderabad (Level 2). The Level 2 shall be connected through ISDN and VPN(ifavailable).
- Thethirdlevelofsupportisthecodelevelsupportprovidedbytheengineering

teamof Aereis(Level3).

Connectivity

Connectivity is the key for problem resolutionability at Level 2. Connectivity toAereisSoftwareDevelopmentCenter(SDC)locatedatHyderabadinIndiashallenable Aereis to download log files, troubleshoot problems in a test environment aswell as pass on emergency releases. While an ISDN offers the advantage of higherbandwidth, VPN can also be used. Aereis however recommends ISDN with callbackconnectivity.

Note:RCIL, Hyderabad has to provide the necessary network connectivity facilityandaccessprivilegesfor Aereis teamtoconnectandwork.

SupportHours

Level 2 supports shall be available at Hyderabad in India during the business hours(0900to1800hours)MondaythroughFridayexcludingscheduledholidays.Turnar ound response time depends on the severity level of the problem reportedwhichisdefinedinthesubsequentsection.

SeverityLevelofProblems

Problemsareclassifiedas“Emergency”,“High”,“Medium”and“Low”asper definitionsgivenbelow:

- **“Emergency”**

The relevant criteria for determining whether a Support Issue falls underthis SeverityLevel shallbe:

TheSupportissueaffectstheProductionSystem;andRCIL’suseofthAereiswareP roductissoseverelyimpactedthatreasonablyworkcannotcontinue.

- **“High”**

Therelevant criteriafor determiningwhethera SupportIssue fallsunderthis SeverityLevelshallbe:

Important Software Product features are unavailable but a workaround isavailable, or less significant Software Product features are unavailable withnoreasonablyworkaround.TheCLIENT’sworkhasnomajorlossofOperatin g Capability or implementation resources; and the Support Issueaffectsthe ProductionSystem.

- **“Medium”**

Therelevant criteriafor determiningwhethera SupportIssue fallsunderthis SeverityLevelshallbe:

The problem causes a minor loss of service which is inconvenient to CLIENTbut which does not materially affect Operating Capability; and this includesallcallsthatwereoriginallyclassifiedasEmergencyorHigh,butwithresp ecttowhichlevel1supporthasprovidedasolutionthatrestoresfunctionalitytothi slevel;andTheSupportIssueaffectstheProductionSystem.

- **“Low”**

CLIENT requests information, or clarification regarding the Aeriesware Product or Documentation but there is no or minor impact on the Operating Capability of the Aeriesware Product. HRMS Solution's implementation or production use of the Software Product is continuing and there is no work being impeded at the time; and the Support Issue doesn't affect either the Production System or the Non-Production Systems.

Response Time to Problems Reported

Based on the severity of the problem Aeries's turnaround shall be:

Severity Level	Response time
Emergency	Aeries will begin work on the support issue without delay after confirmed notification from Level 1 during business hours and will engage staff until an acceptable solution or work-around is achieved. Response will be without delay.
High	Aeries will begin work on the Support Issue within 60 minutes of confirmed notification during Business Hours from Level 1 and will engage staff until an acceptable solution or work-around is achieved.
Medium	Aeries will provide initial response regarding the requested information or documentation clarification within twenty-four (24) Business Hours of confirmed notification during Business Hours and will consider a work-around, if appropriate, and enhancements for inclusion in a subsequent New Release.
Low	Aeries will provide initial response regarding the requested information or clarification within forty-eight (48) Business Hours of confirmed notification during Business Hours.

Screening Committee

A Screening Committee shall be created as part of the support process. This team shall comprise of:

- RCIL, Hyd-Representative
- Aeries Representative as coordinator

This team periodically reviews pending issues, which have been recorded in the Problem Tracking System and also plans release dates. The different states of

the problem are:

- Open: An unresolved problem
- Assign: Problem assigned to a Level
- On Hold: The problem is on hold temporarily until further clarification is sought from the requester are received
- Accepted: Problem accepted for a code change
- Ready: Code changed and ready for User Acceptance Testing
- Verify: UAT testing over. Code ready to move to production.
- Part Closed: Some defects are still pending closure
- Closed: Resolved problem
- Rejected: The reported complaint has been rejected after consultation with the Screen Team
- Deferred: The problem resolution has been put on hold for incorporation in a future release

The screening team assigns priorities and end-dates to problems recorded in the system. Level 1 shall route the unresolved problem to Level 2 at Hyderabad. If the problem is not satisfactorily resolved at Level 2 the issue can be escalated to Level 3. If Aeries's support personnel differ in perceptions about the severity of the problem, the problem is assigned back to the Screening Team. This process may be iterative.

Quality Reporting at Aeries for Support

Quality shall track all defects to closure. Internal reports are prepared for Aeries's management and metrics are collected on the following:

- Defect
- Productivity & Efficiency
- Size and Effort

Periodic reports shall be prepared for both the Screening Team as well as Aeries's management covering the following grouped under the various severity levels:

- New problems that have entered into the systems since the last reporting
- Problems resolved since the last reporting
- Aging analysis of problems
- Production Breakdown Instances
- Production System Downtime
- Post Delivery Defects detected during the Acceptance Phase
- Overall Efficiency (No. of Problem Tickets Resolved / No. of Problem Tickets Generated)

9. Assumptions

- Based on the nature of work, we expect that there would be a core counterpart team that would comprise of key officials of RCIL who will facilitate all interfaces with the Department for the project including study, user testing, and user feedback. We would work closely with this team during the entire course of this project.
- It is also assumed that RCIL and its core team would facilitate all workshops, interviews, and interactions that would be necessary to take up this project.
- Master Data / Employee Related Data collection and Entry is the responsibility

of RCIL.

- Ensure that the site and network infrastructure is available for the development team and for implementation as per schedule