

## Expression of Interest(Eoi) Notification.

**HYDERABAD METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD.**

O/oThe Chief General Manager(Engg).

Revenue Circle, Khairatabad,

Hyderabad-500004.

Eoi.No:01/HMWSSB/Revenue/RBS /2021-22/ Dt:15-07-2021.

HMWSSB – Revenue Circle –“Expression of interest (EOI) for Design, development/customization, implementation of Revenue Billing System (RBS) and Metro Customer Care (MCC) software modules along with training and implementation support complete as directed by the HMWSSB Officials” – Proposals (Quotations) called.

### **Preamble:**

HMWSSB intends to embark on digital transformation of the organization with an a objective to achieve operational Excellency ,improve customer satisfaction and loyalty, reduce costs and enhance revenue. In this regard, HMWSSB looking for professional organizations to provide a team of consultants for Design Development / Customization implementation of Revenue Billing and Metro Customer Care(MCC) Software Modules along with training and complete implementation support as directed by HMWSSB officials.

As part of digital transformation initiative conducted several workshops and developed over 1500 user stories and defined 604 dash boards to enhance the efficiency of the system at an enterprise level. A team of over 200 employees have participated in developing the overall requirements redefining the processes and workflows and documented the same. This activity looked into 14 departments ( wings) of HMWSSB and defined the requirements into 6 major sub activities. These includes the revamping of existing software or implementation of new software that are digitized yet also redefining the workflows, bringing in all the departments into the fold of Digital enablement.

The Revenue Billing System & Metro Customer Care (MCC) Services mainly focus on Revenue and Billing, New connections and Grievance and are consumer oriented modules which required adoption of newer requirements/ workflows for improve the Productivity of the HMWSS Board.

1. **Scope of the Work:**

The scope of the work to be entrusted to the Bidder includes the following:

Activity	Description
<p>Consulting for Functional Systems Study &amp;</p>	<p>Study of existing systems and procedures, Departmental functional requirements, business processes, user requirements and finalize the baseline requirement for Digital Transformation of the "Commercial Processes". The vendor based on the initial understanding shall submit a detailed phase-wise and module-wise project plan</p> <p>The overall Use cases as user stories provided as Annexure 1 for "Commercial Processes" include the following modules</p> <ul style="list-style-type: none"> <li>• Revenue and Billing</li> <li>• Customer care (SWC and MCC)</li> <li>• Integrating with GIS</li> <li>• Interfacing with all the other subsystems (Finance, O&amp;M etc.) including third party gateways such as payment, digital signatures, SMS servers, Email servers</li> </ul> <p>Detailed systems study needs to be carried out at the Head office, Divisional offices, Section offices for a comprehensive understanding of the system.</p> <p>It is to be noted that all the above systems are already ICT enabled at various levels. The vendor is expected to do a comprehensive study to suggest the way forward in terms of adopting the existing solution or replacing it with new modules based on latest technologies. The vendor shall ensure that the technology transition should have zero impact on business continuity and the solution should be taking into consideration all the User Stories and improvements suggested by the process champions and process owners.</p> <p>Appropriate Business process re-engineering is required to be performed in all the above aspects of the work and detailed requirement documentation needs to be provided as SRS.</p> <p>The detailed user stories provide almost all the requirements however, any missing use cases need to be captured in the analysis stage. Specific requirements in understanding the interfaces is essential in confirming to the overall architecture</p> <p>The Vendor should deploy a team of 3 Technical / Business analysts along with required number of Subject Matter Experts for all the above modules for the duration of detailed systems analysis.</p> <p>The process champions along with the PMU of HMWSSB for each of the modules shall sign-off the SRS and the development. The next phase of solution shall be initiated only upon the signing of SRS and the detailed presentation made by the vendor.</p> <p>During this phase detailed planning is also required for understanding the transitioning of any of the existing systems to the new</p>



	<p>Digital Transformation Solution for “Commercial Processes”. The transition plan should clearly define the weaning process of the existing systems and adoption of the New system.</p> <p>This phase is to be completed in a span of 10 weeks</p>
Systems Architecture and Design	<p>Designs of the application software for “Commercial Processes” including all the subsystems as specified in the Systems study stage, following an open architecture so as to meet the functionality</p> <p>Design of the application, database structures, and security architecture and interfaces.</p> <p>The vendor should provide the interfacing mechanisms along with the design constraints</p> <p>The Architectural views of the solution (data view, network view, information exchange view, deployment view etc confirming to TOGAF) that present all aspects of the solution have to be provided as Architecture documents</p> <p>The solution architecture should also provide the various delivery mechanisms such as</p> <ul style="list-style-type: none"> <li>• Cloud based solutions</li> <li>• Mobile apps</li> <li>• External device integration – POS machines etc. (if required)</li> </ul> <p>The vendor shall engage the required Solution Architect and Design specialists and domain experts to develop the required architecture for all the above-mentioned modules.</p> <p>The Architectural solution is presented along with the technology solution architecture documentation to the Technical Team / IT Dept / SI partner / Authorized representative of HMWSSB and upon approval shall proceed to the next stage</p> <p>This phase is to be completed in a span of 3 weeks</p>
Security Architecture	<p>Design of the Security Architecture, preparation and implementation of a Security Administration Plan for the “Commercial Processes” for the specified sub-systems</p>
Development / Customization	<p>Development of the application software or Customization of the existing product based on the system specifications frozen during Systems study and as per the Business process reengineering recommendations and architectural and design framework.</p> <p>Development of all the modules and covering the various workflows across the organization for every role of the organization.</p> <p>Development of the appropriate Mobile apps that cater to every stakeholder of the system for information exchange and M&amp;E</p> <p>Development of the application software or Customization of the existing product simultaneously for all of the subsystems.</p> <p>The Vendor should engage the required team for the development of the Digital Transformation Solution for the “Commercial Processes” along with the required Mobile Apps. The suggested development team</p>

	<p>consists of the following:</p> <ul style="list-style-type: none"> <li>1 – Project Manager</li> <li>1 – Technical Architect</li> <li>1 – Database Architect</li> <li>1 – Designer</li> <li>15 – Developers</li> <li>2 – Subject Matter Experts</li> </ul> <p>The vendor may choose to add more team members based on their own study</p> <p>The Vendor shall demonstrate in a phased manner the Development and Deployment of the solution as sets of functionalities based on a Solution Deployment plan. The solution demonstrations shall be approved by the Process Champions/ Technical Team / IT Dept / SI partner / Authorized representative of HMWSSB and upon approval shall proceed to the next Phase</p> <p>During the development phase testing by the vendor has to be done at Unit level, Module and System level. Automated testing is preferred.</p> <p>This phase is to be completed in a span of 28 weeks</p>
<p>Acceptance Testing by User</p>	<p>The vendor shall prepare the Acceptance test plan - 1 for each of the sub-systems and the In-Lab testing with dummy data would be performed as ATP-1 Generating ATR-1 (Acceptance Test Report -1)</p> <p>The Vendor shall prepare the ATP-1 documentation at Unit level, module level and system level testing</p> <p>Upon the certification of the ATP-1 based on the ATR-1, the vendor based on the transition plan provided given the vendor shall prepare Final Acceptance plan ATP-2 and generate the ATP-2 with live data</p> <p>Based on the ATR-2 the system is declared ready for a Go-live phase</p> <p>The ATP1 and ATP2 test plans are provided by the vendor and shall be validated by the assigned officer of the HMWSSB</p> <p>The vendor shall deploy a team of 6 testers during this phase at the site to demonstrate the features, robustness, functionality, security and flexibility of the solution</p> <p>The Process Champions along with the Technical Team / IT Dept / SI partner / Authorized representative of HMWSSB shall participate in the testing process of each of the modules and certify the completion of Testing phase</p> <p>This phase is to be completed in a span of 4 weeks</p>
<p>Go-live</p>	<p>The vendor shall demonstrate the solution with live data and declare it as "Go-live".</p> <p>Vendor to submit a detailed "Go-live Transition" plan</p> <p>Each subsystem could Go live separately as per the Go-live plan suggested by the vendor</p>



<p>Implementation / Handholding support / Parallel runs</p>	<p>The vendor shall extend the required implementation support for demonstrating the set outcomes.</p> <p>Implementation support means providing both technical support and data migration support to see to it that the outcomes are demonstrated be it in the form of</p> <ol style="list-style-type: none"> <li>a. Solution feature demonstration</li> <li>b. MIS Report generation</li> <li>c. Query handling for various departments</li> <li>d. Document management</li> <li>e. File tracking</li> <li>f. Flexibility in adopting policy changes</li> <li>g. Load balancing, response times</li> <li>h. Performance issues on connectivity and hardware availability</li> </ol> <p>Implementation support needs to be supported by at least a dedicated team of 6 members during this phase.</p> <p>This support needs to be provided for a duration of 6 months from Go- live</p> <p>The team shall be positioned at HMWSSB premises and shall be reporting into the IT Department and the designated project Manager</p>
<p>Warranty</p>	<p>The vendor warrants that the systems supplied to HMWSSB shall have no defects arising from design or workmanship or any act or omission of the vendor. The vendor provides hyper care during this period free of cost.</p> <p>The warranty shall remain valid for period of 6 months post the date of Go-Live</p> <p>Warranty shall be for all modules and could run simultaneously. However, if any of the modules gets delayed in going live, the Warranty period for all the above specified modules will get extended making the warranty for all modules coterminous. The Warranty support is extended by the Technical team of the Vendor with a help desk and a ticketing system to be implemented right from the Testing Phase</p>
<p>Data Migration</p>	<p>Data migration from manual and legacy system to the Digital Transformation Solution of “Commercial Processes” with reasonably error free conversion including preparation of data and uploading. The Data migration to be preceded by an appropriate data migration strategy</p> <p>Data preparation, data validation, data integration and interfacing would be a part of the implementation phase. Vendor is required to assess the data migration and legacy data conversion and integration requirements and provide the required support to perform the required task</p>
<p>Comprehensive Training</p>	<p>For each module installed, the vendor is required to train the designated Department’s technical and end-user staff to enable them to effectively operate the total system.</p>

	<p>The vendor shall also be responsible for re-training the operators whenever changes are made in the software.</p> <p>Training shall be provided for 4 batches per module for a duration of 2 weeks on every module for a batch of 25 members. Training is to be assuming zero prior knowledge in computing.</p> <p>Refresher training is conducted once for a select batch of 10 members per module who need further training during the operations support phase. Detailed Training plan to be submitted by the vendor and this activity takes 4-6 weeks simultaneously during the Go-Live transition phase</p>
Documentation	Preparation of documents including that of BPR, Systems requirement Specification, Deployment Plan , Test Plans, ATP s and ATRs, Architecture documents, User Manuals, Operational Manual, Maintenance Manuals, etc. as per mutually acceptable standards.
Infrastructure Requirements study	Study of existing infrastructure (hardware, systems software and networking infrastructure) available at HMWSSB. Analyze and recommend the requirements of the infrastructure with specifications needed for successful implementation of Digital Transformation Solution for "Commercial Processes". The recommendations to include a details of services required in terms of cloud computing facilities, storage requirements, connectivity bandwidth requirements etc. These shall be procured separately by HMWSSB.
Maintenance (Outside the current scope of work of the Bid and shall be contracted separately as annual maintenance)	<p>The vendor shall deploy a dedicated maintenance team of consultants at the HMWSSB to carry out annual maintenance and technical support</p> <ul style="list-style-type: none"> <li>• all changes in functionality periodically as per the needs of the departments</li> <li>• changes in business rules on account of changes in applicable legislations / statutes, Rules and notifications (Government Orders and Regulatory changes time-to-time) resulting in modification to the baseline requirements</li> <li>• Fixing of bugs, attending to minor modifications. The changes include all modification or alterations that are minor and limited enhancements. Any major development / customization and functional requirements outside the SRS may be considered as additional work and additional work orders shall be given based on the Change Control Board recommendations</li> </ul> <p>The vendor has to implement a standard ticketing system for monitoring the bugs, errors and enhancements and report on a weekly basis and adhere to the SLAs</p> <p>The technical maintenance shall be done by a support team of 10 technology members on-site supported by a Help Desk operating remotely from the agency's premises.</p>
SLA adherence	The vendor during Implementation support, Warranty support,



	Maintenance support period is bound by Service Level Agreements. Details of the SLA are given in section #4 of the document.
System Software	The Vendor shall provide the overall system software to be procured by the HMWSSB for the deployment of the solutions developed.

## II. Required Manpower:

Manpower and Qualifications required for Design, development/customization, implementation of Revenue Billing System (RBS) and Metro Customer Care (MCC) software modules along with training and implementation support complete are as follows:

#	Role	Responsibility	Experience and qualification
1	Program Manager*	Program Management Interfacing with the HMWSSB project SPOC for: Day to day project issues Contractual obligations Deliverables Reviews Technology team coordination Represent in the Steering committee, CCB and PMU of the project	<ul style="list-style-type: none"> <li>• 15 years of Overall experience,</li> <li>• B.Tech / M.tech in /IT/Computer Science from premium institutions like NIT /IIT/IIT/BITS or Equivalent with min. 4-5 years of experience in the CMMI level 5 or Fortune 500 listed Companies as Project Manager</li> <li>• PMP / Prince Certification is Mandatory.</li> <li>• Demonstrated understanding of Project Management processes, strategies and methods</li> <li>• Proven ability to complete projects according to outlined scope, budget, and timeline</li> <li>• Experience in large project management and technology integrations</li> <li>• Excellent time management and organizational skills and experience establishing guidelines in these areas for others</li> <li>• Strong familiarity with project management software tools, methodologies, and best practices</li> <li>• Experience seeing projects through the full life cycle</li> <li>• Excellent analytical skills</li> <li>• Strong interpersonal skills and extremely resourceful</li> </ul>

			<ul style="list-style-type: none"> <li>• Positive outlook in meeting challenges and working to a high level</li> </ul>
2	<b>Solution Architect*</b>	<p>Solutioning</p> <p>Defining the Solution Architecture</p> <p>Setting up tech processes, providing technology options</p> <p>Ensuring appropriate technology is deployed for the solution</p> <p>Adherence to Open standards</p> <p>Adherence to documentation standards</p> <p>Reviews of tech integration</p> <p>Emerging technologies deployment</p>	<ul style="list-style-type: none"> <li>• B.Tech / M Tech from IIT/IIIT/NIT/BITS or equivalent with</li> <li>• Minimum of 7 Years' experience as an Enterprise Applications Architect.</li> <li>• TOGAF certification is highly preferred.</li> <li>• 2Years' Experience in IoT technologies is preferred</li> <li>• Working Experience in Fortune 500 Companies</li> <li>• Minimum 10 years of Analysis experience</li> <li>• Broad background in different sectors – Utilities is preferred</li> <li>• Demonstrated skills and Models built using (any) Enterprise Framework</li> <li>• Positive outlook in meeting challenges and working to a high level</li> <li>• Should have delivered End-End projects and lead teams in technology projects</li> <li>• Should be familiar with latest dev stacks</li> <li>• Should be skilled in full stack</li> </ul>
3	<b>Solution Designer*</b>	<p>Design</p> <p>Defining the Design of the solution based on the Architecture</p> <p>Documenting the detailed design and responsible for the delivery of SDD</p> <p>Providing overall UI/UX design, database design, workflow design etc guidelines and adherence to the same thru Reviews</p> <p>Coordinate with the tech</p>	<ul style="list-style-type: none"> <li>• 15 years' experience in Designing large projects with experience in SI</li> <li>• B.Tech / M Tech from IIT/IIIT/NIT/BITS or equivalent with</li> <li>• Minimum of 7 Years' experience as an Solution Designer / Applications Architect.</li> <li>• Project Management and Leadership skills essential</li> <li>• Experience in software</li> </ul>



		team, development team in translating the design into solution	<p>engineering and design architecture</p> <ul style="list-style-type: none"> <li>• Advanced understanding of business analysis techniques and processes</li> <li>• Experience in developing IT and Cloud Infrastructure</li> <li>• Positive outlook in meeting challenges and working to a high level</li> </ul>
4	Technical Analysts	<p>Technical Analysis of the functional requirements</p> <p>Detailed process flow and work flow analysis. Interact with process champions and process owners in defining the system requirements</p>	<ul style="list-style-type: none"> <li>• 7 years. Bachelor's degree in CS or related area</li> <li>• Experience in interacting with Managers, clients and Developers</li> <li>• Experience in communicating in various levels of technical understanding</li> <li>• Proven exposure / competence in the software technology areas / environment</li> </ul>
5	Database Architects*	<p>Database Architecture</p> <p>Defining the Database architecture</p> <p>Designing for the Optimization and Normalization of transaction databases.</p> <p>Defining the Entity relationships.</p> <p>Designing the databases for optimal performance with security and controls</p>	<ul style="list-style-type: none"> <li>• B.Tech / M Tech from IIT/IIT/NIT/BITS or equivalent with experience as 10 years. Bachelor's degree in CS or related area with specific experience in data base design and integration of multiple data base systems and models</li> <li>• Certification on Database Management skills – Mandatory (example – Oracle Certified etc.)</li> <li>• Experience in the areas of Database Design, Data Maintenance, Database Management, Database Security, Requirements Analysis</li> <li>• Exposure to Project Management practices</li> </ul>
6	Testing Monitoring team	<p>Testing</p> <p>Define Test Cases</p> <p>Perform testing</p> <p>ATPI and ATP 2</p>	<ul style="list-style-type: none"> <li>• 2 years. Bachelor's degree in CS or related area</li> <li>• Working knowledge of Test management software</li> <li>• Ability to document and troubleshoot errors</li> </ul>

7	Implementation team	<p>Implementation Support Support the solution Fix the bugs, Enhancements, Post-Go-Live support Ensure solution meets the requirements defined by the process Champions</p>	<ul style="list-style-type: none"> <li>• Experience in QA methodology</li> <li>• Familiarity with Agile frameworks.</li> <li>• 2 years, Bachelor's degree in CS or related area</li> <li>• Strong Programming background</li> <li>• Ability to document and troubleshoot errors</li> <li>• Familiarity with Agile frameworks.</li> </ul>
8	System Administrators	<p>System Administration Ensure the management of Users Privileges Security System integrity Availability Uptime Load balancing Performance tuning Network management</p>	<ul style="list-style-type: none"> <li>• Graduate degree in a Computer Science / Electronics</li> <li>• Working Experience in Fortune 500 Companies</li> <li>• Minimum 4 years experience in System Administration</li> <li>• Advanced knowledge of system vulnerabilities and security issues</li> <li>• Extensive experience in distributed infrastructure deployments</li> <li>• Working experience in managing systems on ERP systems, Cloud enables software, etc.</li> <li>• Recognized Certified N/W and System engineers Mandatory – of the class of CCNA, MCSE, OCA etc.</li> </ul> <p>Recommended Soft skills:</p> <ul style="list-style-type: none"> <li>• High-level <u>problem-solving</u> skills</li> <li>• Analytical and <u>critical thinking</u> capabilities</li> <li>• Strong <u>interpersonal</u> and <u>collaborative</u> skills</li> <li>• Exceptional <u>written</u> and <u>verbal communication</u> skills</li> </ul>
9	Database Administrators	<p>Database Administration Database optimization Backup Restore Data access rights management Data base performance Reporting Data Migration</p>	<ul style="list-style-type: none"> <li>• Graduate Degree in Computer Science / Engineering or Equivalent</li> <li>• Working Experience in Fortune 500 Companies</li> <li>• Minimum 4 years experience as Database Administrator</li> <li>• Advanced knowledge of Database Structure and Theory</li> <li>• Excellent knowledge of data</li> </ul>



			<p>backup, recovery, security, integrity and SQL</p> <ul style="list-style-type: none"> <li>• Working knowledge of Disaster recovery and database backup procedures</li> <li>• Demonstrated previous experience in DBA case tools and 3<sup>rd</sup> party tools</li> <li>• Recognized Certifications for DBA are mandatory – like Oracle Certified DBA etc.</li> </ul>
10	Subject Matter Experts	<p>Techno Functional</p> <p>Defining the processes and work flows</p> <p>Ensuring the process owners and process champions comprehend the scope of automation in using the solutions</p> <p>Resolving conflicts</p> <p>Adherence and implementation of accounting standards and best practices in Revenue and Billing, AMRs, Customer grievances, CRM</p> <p>Provide domain expertise in Finance, HR and Inventory management</p>	<ul style="list-style-type: none"> <li>• B.Tech from IIT/IIIT/NIT/BITS or equivalent with 8 – 12 years of experience in IT Industry</li> <li>• Working Experience in Fortune 500 Companies</li> <li>• 8 – 10 years experience in tools like solution development and providing domain specialization in Revenue, CRM etc</li> <li>• Well versed in the highlighted functional modules in various tools.</li> <li>• Strong expertise in Cloud deployments of these Modules – with a specific focus on Utilities Sector</li> <li>• Experienced in solution development methodologies</li> <li>• Familiarity with modelling tools, reporting tools, data warehousing and big data will be an added advantage</li> <li>• Very good written and verbal communication skills</li> <li>• Certified Techno Functional Consultants from Recognized institutions /organizations is Mandatory</li> </ul>


**Annexure -A**

The interested firm/agencies shall submit their Proposals (Quotations) for Design, development/customization, implementation of Revenue Billing System (RBS) and Metro Customer Care (MCC) software modules along with training and implementation support complete as directed by the HMWSSB Officials are as follows:

SI No	Description	Quantity	Unit	Unit Price
1	Design Customization / Development, User Acceptance and Go Live along with 6 months Warranty maintenance of the RBS solution Consisting of Revenue and Billing Module including interfacing 89 Use cases + 78 dash boards (The use cases and dash board will vary as per requirement of the department during the analysis phase). The requisite resources and their qualification as per scope in the phase to be positioned by the vendor.	1	Set	
2	Design Customization / Development, User Acceptance and Go Live along with 6 months Warranty maintenance of the RBS solution -Customer Module including interfacing 43 Use cases + 62 Dash boards (The use cases and dash board will vary as per requirement of the department during the analysis phase). The requisite resources and their qualification as per scope in the phase to be positioned by the vendor	1	Set	
4	Training for RBS – Revenue and Billing module 6 batches of 25 members each plus 6 batches of 10 members of already trained as refresher program The requisite resources and their qualification as per scope in the phase to be positioned by the vendor	1	Set	
5	Training for Customer module 6 batches of 25 members each plus 5 batches of 10 members of already trained as refresher program The requisite resources and their qualification as per scope in the phase to be positioned by the vendor	1	Set	
7	Implementation support 6 member team for RBS solution – Revenue, Billing and customer care with 1 system administrator for a period of 6 months (Experience and qualification included in Annexure A)	1	Set	
	Total			



The Interested firms shall submit their proposals (Quotations) and all supporting documents (i.e. Registration copy and other relevant documents) through online (email) [cgm - rev @ hyderabadwater.gov.in](mailto:cgm - rev @ hyderabadwater.gov.in) (or) submit all relevant documents along with proposals (Quotations) in sealed covers to the Chief General Manager (Engg). Revenue Circle, HMWSSB, Administrative Building, rear block, Khairatabad, Hyderabad-4, during office hours on or before the due date i.e. Dt: 22.07.2021 @ 03.00PM

  
Chief General Manager(Engg).  
Revenue Circle, Khairatabad.  
Hyderabad-4.

  
16/7/21

  
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