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Directorate of Mining and Geology,
Kesavadasapuram, Pattom, Palace PO,
Thiruvananthapuram-690004
Tel.Fax:04712447429
email:director.dir.dmg@kerala.gov.in
Web:www.dmg.kerala.gov.in
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Invitation for expression of interest - Revamping of the citizen service delivery portal (KOMPAS) of the
Department

The Directorate of Mining and Geology (DMG), Kerala, is seeking expressions of interest from Total Solution Providers to revamp its existing citizen service delivery portal, Kerala Online Mining Permit Awarding Service (KOMPAS).

We invite Expression of Interest for the revamping of our existing e-Governance application (KOMPAS), from the **Total solution Providers** notified by the Government of Kerala. The Department of Mining and Geology has been providing online services through our web portal, www.portal.dmg.kerala.gov.in, since 2017. The project, named Kerala Online Mining Permit Awarding Service (KOMPAS) was implemented through NIC, Kochi, and received the Kerala State e-Governance award in 2018, being recognised as the top performer in the category of e-Citizen service delivery. A brief note on the existing project is given in Annexure 1.

Our current application was developed between 2014 and 2017 on the JBoss platform, utilising Java and PostgreSQL. Currently, KOMPAS serves a maximum of 2000 concurrent users, generating 20000 to 25000 mineral transit passes daily through its portal. However, as the number of modules, ePasses, and users increased, the performance of the portal has significantly decreased. To address this issue and enhance its performance and user experience, the Department has decided to revamp the project by developing KOMPAS 2.0 using a modern and efficient technology stack.

The key requirements for the project are as follows:

1. Objective: The primary goal is to revamp our existing application using modern

technologies to improve performance, user experience, and scalability. The new application shall be created as a progressive web application to support mobile interfaces. In addition, the new application shall integrate with our existing mobile application.

2. Technology Stack: We have identified Java Spring Boot, React, PostgreSQL, and a cache server as the preferred technologies for the new application. We are open to discussing alternative technologies if they better align with our needs.

3. Requirements: We expect the new application to have faster response times, a user-friendly interface, improved data management, and the ability to handle a larger user base compared to our current application. Seamless integration with our existing systems is crucial.

4. Project Scope: The project includes the complete redesign and development of the application, database migration, integration with existing systems (KOMPAS 1.0, Drone-LiDAR), testing, and deployment. We would also require continual ongoing support and maintenance for a period of minimum three years after project completion.

The following are the key functional requirements of the KOMPAS 2.0 software

1. user registration with OTP validation (Separate module for Officials and Public)
2. Super admin system
3. Staging (Demo) site
4. Staging admin
5. Login logs
6. Master data updation
7. Mandatory documents updation (Composite license, Dealers license with crusher, Dealer's license without crusher, Mining Lease, Mining Lease, Quarrying lease, Quarrying permit, Reconnaissance permit etc)
8. Concession backlog entry
9. Mining entity masters (Quarry, Crusher, Depot, excavation sites etc)
10. Mining entity locations (Google Earth, Google map, Toposheets)
11. Mining entity vs Concessions
12. Mine surveillance (View and compare the satellite image/Photo/boundary map/mining plans and sections of the mine)
13. Personal profile
14. View information
15. Search
16. SMS Alert

17. Send email
18. Reset password
19. Home page file upload
20. View notification
21. Feedback
22. Weighbridge integration
23. Vehicle enrolment/cancellation
24. Help
25. Downloads
26. Announcements
27. Reports
28. Lock and unlock log in
29. Grievance Redressal
30. Application acceptance for permits (Composite license, Dealers license with crusher, Dealer's license without crusher, Mining Lease, Mining Lease, Quarrying lease, Quarrying permit, Reconnaissance permit etc)
31. Validation of documents
32. Site inspection and clearance verification
33. Online Payment for Drone-LiDAR survey
34. Drone-LiDAR survey and data validation
35. LOI or demand note issuance to applicant.
36. Mining plan acceptance and approval
37. Acceptance and verification of LOI-related documents (Revenue, SEIAA, Police, PESO, LSGD, etc integration with ReLIS, Parivahan Sewa, Parivesh, PESO, KSPCB etc)
38. Issuance of permit/Lease
39. Payment (Royalty, DMF, TCS etc)
40. Issuance of eMovement permit.
41. Generation of epass
42. Stock register
43. Vehicle tracking and monitoring during movement
44. Integration with e-Courts/CIS/MISAGO
45. Compounding
46. AG's
47. Auditing
48. All related reports
49. GIS Application

The requirements from SI No. 29 to 49 are also needed for 5 other services as

part of KOMPAS 2.0

5. Timeline for implementation: We are seeking a partner who can deliver the project within six months.

We plan to upgrade the existing ePass module by integration with weighing bridges, Parivahan Sewa, etc and also integration with other departments like Revenue, LSGD, PESO, KSPCB, SEIAA, Registration etc. It is also decided to develop few more additional modules (Integration with CCTNS for mahassar clearing, mobile app for volume estimation etc). We can ensure the support of NIC to understand the current application architecture and to facilitate data migration. In addition, services of a domain expert who is conversant with the mining rules and regulations will be provided for the redesign of the application.

KOMPAS has a demo site, and we are willing to provide an online demo of the present application to you in case you are interested.

To fulfill our requirements, we are seeking to collaborate with an agency that possesses a proficient software development team with extensive expertise and experience in the latest software technologies, as outlined in Annexure 2. We believe that partnering with such an agency will enable us to meet our project objectives effectively.

In the event that your agency possesses the desired experience and expertise to undertake this project, we kindly request that you express your interest in collaborating with us **on or before 30/07/2024**. All prospective agencies may be invited to make a technical presentation to the technical committee, dates of which shall be intimated later. Please send an email to director.dir.dmg@kerala.gov.in with a copy to geo.egov.dir.dmg@kerala.gov.in to indicate your interest and provide the following details:

1. Agency/Company Profile: Please provide an overview of your firm, including its history, core competencies, and relevant project experience.
2. Approach: Describe your approach to application development, particularly with regard to Java Spring Boot, React, PostgreSQL, and cache server technologies.
3. Team Expertise: Highlight the expertise and experience of your team members who would be involved in this project, including developers, designers, database administrators, and project managers.

4. Previous Projects: Please share examples of previous similar projects that demonstrate your ability to deliver high-quality applications using the mentioned

technologies.

5. References: If possible, provide references from previous clients who can vouch for the quality of your work.

Should you have any questions or require further clarification, please do not hesitate to contact our Nodal Officer, Shri. Subhesh Thottiyil at 8281616379.

Dr. K Harikumar IAS
DIRECTOR

Annexure 1.

Introducing the KOMPAS Application (www.portal.dmg.kerala.gov.in)

The Department of Mining and Geology, responsible for implementing mines and minerals Act and Rules in the State of Kerala, currently operates an online portal known as KOMPAS. Developed by NIC, Kochi, this portal serves as a platform for providing various online services. The Department facilitates the issuance of different mineral concessions, such as quarrying permits, quarrying leases, and dealer's licenses, through this portal.

KOMPAS also plays a crucial role in granting e-movement permits for transporting minerals from mines or quarries to other destinations. It further offers electronic mineral transit passes for vehicles carrying minerals, issuing an impressive volume of 25,000 passes per day. Additionally, the Department maintains a comprehensive database encompassing quarries, mines, crushers, mineral sales depots, and more throughout the State. This database also stores coordinates necessary for creating KML maps, outlining the boundaries of quarries and mines.

To facilitate seamless transactions, the Department has implemented an online payment system through the Kerala eTreasury portal. Moreover, it provides email and SMS notifications to ensure efficient communication with stakeholders. The application witnesses an average of 1000 to 1500 concurrent online users. However, the current version of the application suffers from performance issues and requires significant improvements.

In light of this, the Department intends to upgrade the KOMPAS application to a more advanced platform, aiming to address the existing shortcomings. The migration process will include transferring the data from the current application to the new platform, ensuring a seamless transition. Additionally, the Department maintains a demo portal specifically designed for training purposes. Interested agencies have the opportunity to request a demo of the current application to better understand its functionalities and requirements.

Annexure 2.

The software development team should ideally possess the following expertise:

Operating System (Cent OS): Familiarity with Linux-based operating systems is beneficial, and experience with Cent OS or other similar distributions would be advantageous.

Java (minimum version 11): For developing KOMPAS 2.0, it is desired to have at least 2-3 years of experience working with Java or similar object oriented languages.

Spring Boot: It is desired to have at least 1-2 years of experience working with Spring Framework and related technologies.

Microservice Architecture: Since developing applications based on a microservices architecture requires a good understanding of distributed systems, scalability, and designing loosely coupled components, it is desired to have at least 2-3 years of experience in building complex applications and working with distributed systems.

Front-end (React): It is desired to have at least 1-2 years of experience in JavaScript development and proficiency in HTML and CSS.

RDBMS (PostgreSQL) and Hibernate/JPA: It is desired to have experience in working with relational databases and ORM frameworks like Hibernate/JPA is. Having 2-3 years of experience in database design, SQL, and Hibernate/JPA is desired.

Testing (JUnit): Experience with unit testing frameworks like JUnit is important for ensuring code quality. It is recommended to have at least 1-2 years of experience in writing and executing unit tests using JUnit or similar frameworks.

Continuous Integration (Docker) and Continuous Deployment (Jenkins): Experience with CI/CD practices and tools like Docker and Jenkins is beneficial. It is desired to have at least 1 year of experience in setting up CI/CD pipelines and working with containerization technologies.

Version Control (Git): It is desired to have at least 1-2 years of experience in using Git for source code management and collaboration.

Performance/Load Testing (Apache JMeter): Experience in performance/load

testing is valuable for optimizing application performance. It is desired to have at least 1-2 years of experience in using tools like Apache JMeter or similar performance testing frameworks.

Cache (Redis): Familiarity with caching concepts and Redis is beneficial. Having 1-2 years of experience in working with caching mechanisms and Redis is a desired qualification

UI Testing (Lind): It is desired to have at least 1-2 years of experience in UI testing and proficiency in automated testing tools like Lind or similar frameworks.

IDE (IntelliJ, Eclipse, VS Code): Familiarity with one of these IDEs is helpful. It is desired to have at least 1-2 years of experience working with an IDE for Java development.