The current application was developed between 2014 and 2017 on the JBoss platform, utilizing 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 redesign and develop our existing application(https://www.portal.dmg.kerala.gov.in/) using modern technologies to improve performance, user experience, and scalability. In addition, redesign and development of our existing mobile application has to be carried out by improving the user interface, enhancing functionality, and ensuring seamless integration with the revamped eGovernance solution.

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 align with our needs better.

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, testing, and deployment. We would also require ongoing support and maintenance after project completion.

5. Timeline and Budget: We are seeking a partner who can deliver the project within six months. The budget will be allocated based on the scope and complexity of the project. Furthermore, we plan to upgrade the existing ePass module by integration with weighing bridges, Parivahan Sewa etc. It is also decided to develop few more additional modules. 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.

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 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.