Proposal for Procurement of latest version of ArcGIS software under Enterprise Agreement (EA) programme for 5 years for Geological Survey of India by upgrading the existing inventory from NMET fund

1.0 Introduction

- Geological Survey of India (GSI) was established in 1851 and over the years, it has not only grown into a repository of geo-science information required in various fields in the country but has also attained the status of a geo-scientific organization of international repute.
- The main functions of GSI relate to creation and updation of national geoscientific information and mineral resource assessment. These objectives are achieved through ground surveys, air-borne and marine surveys, mineral prospecting and investigations, multi-disciplinary geoscientific, geo-technical, geo-environmental and natural hazards studies, glaciology, Seismotectonic study, and carrying out fundamental research. Outcome of work of GSI has immense societal value. Functioning and annual programme of GSI assume significance in the national perspective.
- GSI has been using ESRI's ArcGIS software for a long time since two decades for various geoscientific project where GIS is used as an essential tool for scientific deliverables such as maps, reports, analytical models etc that serve the base of the Field Season Programme of GSI.
- GSI has developed comprehensive geoscientific repositories, including the Geospatial Portal, NGDR, and NLFC, which store a wide range of geological, geophysical, geochemical, and other geospatial data using the ArcGIS desktop platform. Base data for the NGDR is meticulously prepared and scrutinized in ArcGIS software. All map services in OCBIS are created in ArcGIS and customized in the Geospatial portal, preserving legacy maps.

2.0 Objective

- GSI intends to procure latest version of ArcGIS software through Enterprise Agreement (EA) as a PAC item along with comprehensive support (including license renewal/upgradation) for a period of 5 years by upgrading the existing inventory.
- The high demand for ArcGIS Desktop advance version along with the extensions are very much essential for the ongoing NGDR projects, NGLM, NLFC, Map compilation, FSP projects of GSI as well as for GSITI.
- Base data for the NGDR is meticulously prepared and scrutinized in ArcGIS software. All map services in OCBIS are created in ArcGIS and customized in the Geospatial portal, preserving legacy maps. Moreover, legacy datasets were created in ArcGIS Platform and the same is to be maintained in latest version of ESRI for ease of work.

3.0 Background Information

- In March 2022, 60 nos. of Floating licenses of ArcGIS was upgraded to ArcGIS 10.3 to the Enterprise Agreement (EA) (Having uncapped licenses) program for a period of thirty months and the period has ended on 30th September 2024.
- The EA program provides organizations with flexible software management and deployment options for a fixed term. The program also includes maintenance services such as technical support, new software releases, patches, and updates.
- Over the past two and a half years, GSI has utilized an Enterprise agreement to receive an unlimited number of licenses for ArcGIS software. This includes extensions such as 3D analyst, Spatial analyst, and Geostatistical Analyst, with the latter being the most commonly used.
- GSI has installed the software with bundle extensions license authorizations on a total of around 1500 laptops/desktops. As a result, all field officers have access to the software on their personal laptops, which can enhance the productivity and technical output of the officers in the time bound projects.

- Subsequent to the expiry of the service contract since 30.09.2024, many of the end users of GSI are facing problems with regards to the utilization of the various ArcGIS software utilities and hardships in software reinstallation, in case of hardware / operating system failure and associated license configuration, due to the lack of technical support etc.
- Presently as all the geospatial database is existing in ArcGIS platform hence it is imperative to continue using ArcGIS for seamless access of geospatial data without any loss of data. It is to further to mention that ArcGIS is the sole product of ESRI.
- It was observed that GSI was using ArcMap 10.8.2 and ArcPro 2.9 version, which are perpetual licenses and in such case working with existing perpetual licenses is not hampering at present unless any major technical glitches occur. However, procurement of latest version of ArcGIS software through Enterprise Agreement (EA) is a need for the hour for uninterrupted services.
- In view of the above, the Central Procurement Committee (CPC) headed by DG GSI approved the proposal submitted by MIIIA CHQ on Dt. 29.10.2024 for the procurement of latest version of ArcGIS software through Enterprise Agreement (EA) as a PAC item along with comprehensive support (including license renewal/upgradation) for a period of 5 years *(Annexure 1: Approved CPC minutes)* . The committee examined the techno-commercial proposal submitted by ESRI and the software specification *(Annexure 2 & 3 respectively)* and also examined the Proprietary Article Certificate (PAC) submitted by MIIIA *(Annexure 4)*. The CPC agreed to the estimated price of rupees Eleven Crores based on the last purchase price. The CPC also decided that as the software will be widely used for mineral exploration activities for various FSP projects of GSI, the request for procurement of ArcGIS software from NMET fund may be made to the Ministry of Mines.

4.0 Advantages of using ESRI ArcGIS application

- ESRI GIS application is a complete web GIS, open standards compliant, interoperable, configurable, easy to use, scalable platform with Web 2.0 cloud architecture. It has the capability to process drone data within the platform and create DEM, DSM, Ortho-mosaic, Point cloud datasets in 2D and 3D simultaneously. ESRI Enterprise Latest platform is also having dynamic reporting functionality and advanced image processing capability using digital imagery data and maps. The platform provides configurable dynamic dashboards for data visualization.
- It has integrated pre-defined deep learning modules and capabilities. It also has integrated mobile apps for field data collection. Mobile applications can be configured on the fly which can be used to capture data, location, photo from the location using smartphones.

5.0 Rationale for procurement of ESRI ArcGIS software

- ESRI was providing GSI customers a seamless Technical Support, Web-based help, user forums, training and the Customer Care Portal.
- All the map services present in the OCBIS are prepared in ArcGIS, and the same legend is further customized in Geospatial portal of GSI. The high demand for ArcGIS Desktop advance version along with the extensions are very much essential for the ongoing NGDR projects, NGLM, NLFC, Map compilation, FSP projects of GSI as well as for GSITI. Moreover, legacy datasets were created in ArcGIS Platform and the same is to be maintained in latest version of ESRI for ease of work.
- ArcGIS software also benefits for Mineral Exploration projects with the following applications:
  1. Data Integration: Combines geological, geochemical, and geophysical data.
  2. Spatial Analysis: Identifies mineral deposits using tools like interpolation and site suitability analysis.
  3. Visualization: Creates detailed maps and 3D models for better geological understanding and planning.

4. Decision Support: Links spatial data with reserve estimates and production statistics for efficient exploration.
5. Environmental Monitoring: Manages the environmental impact of mining activities.

- The software can be distributed amongst the different offices of GSI (Region and State Unit) and GSITI for uninterrupted services of ArcGIS software for technical assignments of Field Season Programmes of GSI.
- ArcGIS software version 10.3 was previously been utilised by GSI and needs to be upgraded to a newer version of ARC GIS viz "ArcGIS Enterprise Agreement (EA) programme". The new software proposed by GSI has many new software specifications and tools. The duration of licence for this new version of ArcGIS Enterprise Agreement (EA) programme is five years and likewise the payment terms have also been revised.

6.0 Software specification

The detail software specification along with uses are given at Page 1-7 of Annexure-3.

7.0 Fund requirement

- The base price offered by ESRI is ₹ 10,16,94,916 (Ten crore sixteen lakh ninety four thousand nine hundred and sixteen only) plus 18 % GST of ₹ 1,83,05,084 (one crore eighty three lakh thirty five thousand eighty four only), with a total amount of ₹ 12,00,00,000/- (Twelve Crore only) for the duration of 5 years with the following payment terms:
  1. Payment for Enterprise Agreement for 1styear: 50% of the EA fees against signing up of Enterprise Agreement and delivery of invoice (within 30 days) along with Enterprise Licensing Management Site login credentials to download Esri Software licenses at GSI.
  2. Payment for Enterprise Agreement for 2ndyear: 12.5% of the EA fees against delivery of invoice (within 30 days) on the first anniversary date of the Enterprise Agreement.
  3. Payment for Enterprise Agreement for 3rdyear: 12.5% of the EA fees against delivery of invoice (within 30 days) on the second anniversary date of the Enterprise Agreement.
  4. Payment for Enterprise Agreement for 4th year: 12.5% of the EA fees against delivery of invoice (within 30 days) on the third anniversary date of the Enterprise Agreement.
  5. Payment for Enterprise Agreement for 5th year: 12.5% of the EA fees against delivery of invoice (within 30 days) on the fourth anniversary date of the Enterprise Agreement.
- **However, the CPC agreed to the estimated price of rupees Eleven Crores (Rs. 11,00,00,000) based on the last purchase price and hence the requirement of fund from NMET is of rupees Eleven Crores (Rs. 11,00,00,000).**

8.0. Procurement challenges and Timeline for procurement

- The timeline for the procurement in the standard procurement process of GSI may hamper the productivity of the FSP projects due to lack of proper software utilisation with all extensions.
- The CPC also decided that as the software will be widely used for mineral exploration activities for various FSP projects of GSI, hence the request for procurement of ArcGIS software from NMET fund may be made.
- GSI is the premier exploration agency of the country. Overall, ArcGIS software enhances the quality and efficiency of mineral exploration by providing comprehensive tools for data management, analysis, and visualization, aligning well with the objectives of the National Mineral Exploration Trust (NMET) of the Government of India.

9.0 Approval sought

- Procurement of latest version of ArcGIS software under Enterprise Agreement (EA) programme for 5 years for Geological Survey of India by upgrading the existing inventory with an estimated cost of rupees Eleven Crores shall be done by floating an open tender in GeM.

- As per the delegation of financial power, in case of open tender, the financial power of DG GSI is of rupees twenty Crores (Rs. 20,00,00,000). The proposal is within the financial power of DG GSI and in this regard necessary administrative approval and financial sanction has been obtained from DG GSI.
- Therefore, the proposal is hereby submitted to NMET for funding for an amount of rupees Eleven Crores (Rs. 11,00,00,000).