GOVERNMENT OF WEST BENGAL
DIRECTORATE OF MINES & MINERALS

No. 63 MD / 2C - 567 /13   Dated 20.01.2014

NOTICE

Directorate of Mines & Minerals, Govt of West Bengal, for the purpose of GIS based portal service is interested to procure software which will enable to carry out preparing GIS based information platform (for geological maps and related service) and digitization and georeferencing of maps. Competent Agencies, capable of supplying appropriate software to cater the need, are requested to express their interest before the selection committee set up by the Director, Directorate of Mines & Minerals, Govt of West Bengal, for the purpose of pre-selection of competent Agency to enter into Tender.

The desired functionalities of the software are enlisted below:

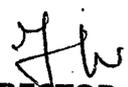| Sl. No.	Specification	Quantity Required
1.	**GIS SOFTWARE SHOULD BE CAPABLE OF CARRYING OUT THE FOLLOWING FUNCTIONS :-** • Should be able store spatial data in industry • standard RDBMS format. • Create hot link/hyperlink to external application, macro or URL. • Create/Manage/Use spatial bookmarks. • Use map templates to standardize maps. • Interactively set transparency for all data. • Interactive histogram for data classification. • Create layers or shortcuts to geographic data that store symbology for displaying features. • Thematic classifications like: Single symbol, Unique value, Match to predefined style, Graduated colors or symbols, Proportional symbols, Dot density mapping, Chart mapping including pie and bar chart, Bivariate and multivariate data rendering. • Should support rule based symbology and cartographic representations of map entities. • Should support 2D animations with time series data support and historical playback of event data. • Image classification like thematic classes, individual band settings, color maps, contrast, brightness. • Should have image rectification tools for easily georeferencing existing scanned images. • TIN data classification like classify and render faces, Nodes, Triangles, Slope, Aspect, Elevation, and hillshade. • Interactive symbol composer. • Advanced drawing options for control over draw order. • On –the-fly automatic labeling, multi labeling, Interactive labeling, rotation of labels from an attribute field, Interactive label placement, predefined label styles & finally save labels as data layer. • Export graphics to : Enhanced Metafile (EMF), Windows bit map (BMP), Encapsulated Post Script (EPS), Tagged image file format (TIFF), Layered Portable Document format (PDF), Joint Photographic Experts Group (JPEG), Computer Graphics metafile (CGM), Adobe Illustrator (AI) etc. • Create layers from all supported data sources including coverage feature classes; shapefiles, CAD, TIN, raster, and geodatabase feature classes; or tables containing x,y co ordinates. • Create Group layers from multiple data sources including vector overlays on top of raster data. • Spatial references including the ability to customize and save the custom settings. • Custom file type support to view specific files • Documentation /Metadata management • On the fly projections and transformation of the layers • Set display projection of map using predefind or custom parameters (includes specifying geographic co ordinate system or datum) • The software should have inbuilt report generation facility without requiring any additional software. • Facility to display Aerial, Projection and surface distances. • Edit multiple layers simultaneously with unlimited undo/redo options. • Should be able to control & create rule based topology for the spatial database residing in RDBMS.	1 (One)

Sl. No.	Specification	Quantity Required
	- Feature construction tools including: Point and Click feature location with mouse, streaming locations with mouse, x, y co ordinate input with keyboard co ordinate input with keyboard. - Feature edit tools including: Move, rotate, delete, copy and paste, Reshape, Split and trim, Divide into N-Parts or into specified intervals, Vertex editing (add, delete and move) etc. - Spatial adjustment tools including: Rubber Sheeting, Transformation, Edge matching, Attribute transfer. - Snap to vertex, endpoint, midpoint or along the edge of features & layer wise snapping. - On the fly dynamic joins between different data bases. - Create statistics & various statistical operations, viz - create charts and reports reports and sort tables by multipl Attributes. Populate values based on expression, summarize data. - Connect to and use remote data base data (Oracle, SQL, Access etc) - Should be able to plot data on the map directly from the tables. - Customizable look and feel (drag and drop to rearrange tools/toolbars) - Create and save macros using inbuilt Visual Basic for Applications (VBA). - Use any COM compliant language for development environment. - UNICODE support for Multilanguage attributes. - Automatically generate metadata. - Import/Export Metadata. - Find Tool to find data based on metadata and location, web enabling the metadata. - Direct Read of Vector data like Shapefile, Coverages, Geodatabase, VPF etc. - Direct Read of CAD, DXF, DWG, DGN. - Direct read of Raster (all industry standard Raster formats) - Should have the facility to interactively change brightness, contrast,transparency, set resampling method-Nearest neighbor, bilinearr ar interpretation, and Cubic convolution of the raster database. - Georeferencing of raster, vector data, Raster-raster, Raster-vector, vector-raster, vector – vector and vice versa should be possible. - Should have the functionality of creating GUI based workflows and models. - Should have the capability to web enable the GUI based workflows and models without any customization. - Should have inbuilt Geospatial data management software alongwith inherent RDBMS so that multiple users can access the same object oriented Geospatial data. - Should support publishing and encryption of GIS maps for the purpose of of viewing and querying GIS data by multiple royalty free GIS data readers. - Should have the capability to export map to Geo PDF. - Should have the ability to do multi user editing - Should have tools like Linear Regression for Spatial - Statistics – Modeling Spatial Relationships etc. - Should have ability to perform attribute validation by creating subtypes and domains. - Should have the ability to graphs like horizontal and Vertical Bar, Line and Area, Histogram, Scatterplot, Scatterplot Matrix, Box Plot, Buble, Polar Plot, Pie. - Should have the ability to create high performance dynamic Maps by analyzing map errors unsupported contents, performance tips. - Should have ability to track the editing date the editing date and time in UTC or user defined database time zone.Should have a automatic conflict detection tool for layer placement in map. - Should have direct to read raster format like Bathymetric Attributed Grid (BAG), Controlled Image Base (CIB), Digital Image Map (DIMAP), Enhanced Compression Wavelet (ECW), Heightfield Raster (HF2), Hierarchical Data Format (HDF)-4, including Subdatasets, LAS (Lidar Data Files). - Should have interactive snapping tolerance fix up facility. - Should have Geometry creation tools like Stream Digitizing, Auto Complete construction ((polygonBorder, Freehand curve), Freehand Be'zier Splines - Should have Vector Data Transformation tools like Rubber Sheeting Transformation, Affine Transformation, Similarity Transformation, Projective Transformation, Edge-matching Transformation. - Should have ability to transfer Accurate Attributes from Features with Inaccurate Geometry to Features with Accurate Geometry.	

Specification	Quantity Required
• Should have ability to split a line at specific interval. • Should have ability for automatic vectorization of whole or specific area of raster • Should have ability to measure geographic distribution using central feature, directional distribution, linear directional mean, mean centre, and standard distance techniques. • Should have statistical tools for rendering like hot spot analysis with rendering, z-score rendering, cluster/outlier analysis with rendering. • Should have ability to build up one to one, one to many and many to many relationship between the source and external data bases.	
2. **DIGITIZATION SOFTWARE CAPABLE OF CARRYING OUT FOLLOWING FUNCTIONS :-** • Georeferencing and Survey • Data handling involving import of GPS data. • Capable of working with real world co ordinate system. • Capable of import/export of Point Data. • Capable of importing different types of Survey datafrom different types of total stations. • Capable of importing data from Google earth. • Surfaces, Grading & Dynamic Relationships – Capable to generate surface models for several types of Grading Projections • Terrain Analysis • Capable of generating catchment area for any terrain. • Profile Creation • Geospatial Analysis • Cartographic mapping functionality- generating maps that highlight specific features or information etc. • Direct Data & Access- capable of directly access GIS data from a variety of data sources. • Should be capable of importing, analyzing and documentation of Borehole data, thus facilitating borehole analysis.	1 (One)

Response from interested Agencies shall reach O/O the Director, Directorate of Mines & Minerals, Govt of West Bengal, 4, Abanindra nath Tagore Sarani, 2nd floor, Kolkata 700016, on or before the 10th day from the date of issue, of this notice. The interested Agencies shall have to submit, along with their Expression of Interest, the certificate of Dealership / Distributorship of the software Developer, if applied.

The Agencies expressing their interest shall have to undergo a screening process to establish the efficiency of the software. Those, who qualify for their technical ability will be eligible for submitting financial bid.

The undersigned reserves sole authority to accept/reject any Agency presenting Expression of Interest without showing any reason to the Agency.

DIRECTOR