कुमाऊँ विश्वविद्यालय, नैनीताल

अल्पकालिक निविदा सूचना

डी0एस0टी0 शोध परियोजना, भूगोल विभाग डी0एस0बी0 परिसर नैनीताल हेतु कुमाऊँ विश्वविद्यालय नैनीताल में भूगोल विभाग की शोध परियोजना हेतु 1. **RS & GIS Desktop Software, GIS Server and Web Development Combo Package 2. Satellite Data** सामग्री की आपूर्ति हेतु दिनांक 11.03.2024 की सायं 02:00 बजे तक मुहरबन्द निविदायें अधोहस्ताक्षरी द्वारा आमन्त्रित की जाती है जो दिनांक 11.03.2024 को 03:00 बजे समिति के समक्ष खोली जायेंगी। निविदायें केवल पंजीकृत डाक/स्पीड पोस्ट/कोरियर द्वारा ही स्वीकार की जायेंगी। कार्य का विवरण तथा अन्य शर्तें निविदा प्रपत्र में दी गयी हैं। निविदा प्रपत्र दिनांक 26.02.2024 से दिनांक 11.03.2024 तक कार्यालय दिवसों में रु0 1770/– नकद अथवा बैंक ड्राफ्ट से जमा कर सहायक लेखाधिकारी कार्यालय डी0एस0बी0 परिसर, नैनीताल से प्राप्त किये जा सकते है। निविदा के साथ रु0 50,000/–(पचास हजार मात्र) की धरोहर धनराशि जो सहायक लेखाधिकारी, नैनीताल के नाम बन्धक हो, जमा करना अनिवार्य है। (अधिक जानकारी के लिए विश्वविद्यालय की बेव साइट https://www.kunainital.ac.in/ व प्रधान अन्वेषक के दूरभाष से सम्पर्क करें +91-09690659365)।

हस्तगत डाक तथा साधारण डाक से किसी भी दशा में निविदा स्वीकार नहीं की जायेंगी। डाक द्वारा विलम्ब से निविदा पहुँचने पर परिसर उत्तरदायी नहीं होगा।

प्रधान अन्वेषक

पृ0सं0: डी0एस0टी0/भूगोल विभाग/023/2024 दिनांकः 24/2/2024

प्रतिलिपिः– निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

1. स्थानीय संवादाता उत्तर उजाला नैनीताल को इस अनुरोध के साथ उक्त निविदा सूचना को दिनॉक 26–02–2024 को अपने अखबार में संस्करण में छपवाने के उपरान्त बिल भुगतान हेतु दो प्रतियों में अधोहस्ताक्षरी के कार्यालय को प्रेषित करने का कष्ट करें।
2. सहायक लेखाधिकारी, डी0एस0बी0 परिसर नैनीताल।
3. वित्त अधिकारी, कुमाऊँ विश्वविद्यालय, नैनीताल।
4. कुलसचिव, कुमाऊँ विश्वविद्यालय, नैनीताल।
5. निजी सचिव कुलपति को कुलपति जी के सूचनार्थ।

प्रधान अन्वेषक

o/c

शर्तें एवं प्रतिबन्ध

1. सील बन्द निविदा प्रधान अन्वेषक, डी0एस0टी0 शोध परियोजना, भूगोल विभाग डी0एस0बी0 परिसर नैनीताल के पदनाम से भेजी जाय, जो दिनांक 11.03.2024 के अपरान्ह 02:00 बजे तक पंजीकृत डाक/स्पीड पोस्ट/कोरियर द्वारा स्वीकार की जायेंगी। निर्धारित तिथि के उपरान्त पहुँचने वाली निविदायें स्वीकार्य नहीं होगी। निविदा के बाहर (Tender for the RS & GIS Desktop Software, GIS Server and Web Development Combo Package and Satellite Data) एवं विभाग का नाम स्पष्ट रुप से लिखा होना चाहिए।
2. निर्धारित तिथि तक प्राप्त निविदायें दिनांक 11.03.2024 के अपरान्ह 03:00 बजे उपस्थित निविदाकर्ताओं के सम्मुख खोली जायेंगी। किन्तु अपरिहार्य स्थिति में इसमें परिवर्तत किया जा सकता है। प्रधान अन्वेषक, को अधिकार होगा कि वे किसी अथवा सभी निविदाऐं बिना कारण बतायें निरस्त कर दें।
3. निविदा के साथ रु0 50,000/–(पचास हजार मात्र) की साविधि जमा जो सहायक लेखाधिकारी डी0एस0बी0 परिसर नैनीताल के पदनाम से बन्धक हो, जमानत धनराशि स्वरुप अनिवार्य रुप से निविदा प्रपत्र में संलग्न किया जाय। जमानत धनराशि के अभाव में निविदा स्वीकार नहीं की जायेगी।
4. वांछित सामग्री की आपूर्ति एफ0ओ0आर0 डी0एस0बी0 परिसर, नैनीताल पर दी जाय। इसके अतिरिक्त सभी प्रान्तीय करों का उल्लेख करें। निविदा में कर की दरों का उल्लेख करने पर ही अलग से भुगतान देय होगा।
5. दरें केवल प्रपत्र में उल्लिखित विवरण के अनुसार ही प्रेषित करें। भ्रमित करने वाली दरें स्वीकार नहीं की जायेंगी।
6. पृष्ठ 5 से पृष्ठ 11 पर दिये गये विवरण के अनुसार आपूर्ति की जाने वाली सामग्री उच्च कोटी की एवं साफ–सुथरी होनी चाहिए अन्यथा बिल से 10% की कटौती कर ली जायेगी।
7. उपकरणों इत्यादि को लगाने/उतारने तथा इस सम्बन्धी समस्त सामग्री लाने व ले जाने का उत्तरदायित्व निविदाकर्ता का होगा जिसके लिए किसी प्रकार का कोई अतिरिक्त भुगतान विश्वविद्यालय द्वारा नहीं किया जायेगा।
8. आपूर्ति की जाने वाली सामग्री की दरों का निर्धारण निविदाकर्ता से विचार–विर्मश के उपरान्त विश्वविद्यालय द्वारा गठित समिति द्वारा किया जायेगा।
9. आपूर्ति की गयी सामग्री से सम्बन्धित किसी भी प्रकार की हानि का उत्तरदायित्व परिसर का नहीं होगा।
10. किसी निविदा को केवल न्यूनतम दरों के आधार पर ही स्वीकार नहीं किया जायेगा वरन् गुणवत्ता एवं अनुभव के आधार पर अन्तिम निर्णय लिया जायेगा।
11. आपूर्ति की जाने वाली सामग्री की मात्रा में परिवर्तन किया जा सकता है।
12. सॉफ्टवेयर/सैटेलाइट डाटा की सप्लाई आदेश की तिथि से एक सप्ताह के भीतर पूर्ण करनी होगी।
13. इस सम्बन्ध में किसी भी विवाद के लिए न्यायिक क्षेत्र नैनीताल होगा।
14. निविदा स्वीकार किये जाने के उपरान्त दरों में किसी भी प्रकार की वृद्धि स्वीकार नहीं की जायेगी।
15. समस्त नियम क्रय अधिप्राप्ति नियमावली 2017 के अनुसार लागू होगी।
16. सॉफ्टवेयर लाइसेन्स न्यूनतम 04 यूजर्स के लिए परपेचुअल लाइसेन्स (Perpetual License 04 Users–Single Software having capabilities of RS & GIS) मान्य होगा।
17. जी0आई0एस0 सर्वर की सेवा जो न्यूनतम 02 वर्ष के लिए सदस्यता मान्य होगी।
18. सॉफ्टवेयर, जी0आई0एस0 सर्वर एवं वेब डेवलेपमेण्ट इन तीनो सामग्रियों का एक Combo package होगा।
19. अधिक जानकारी के लिए विश्वविद्यालय की वेबसाईट https://www.kunainital.ac.in/ व भूगोल विभाग से प्राप्त की जा सकती है।

प्रधान अन्वेषक,
डी0एस0टी0 शोध परियोजना,
भूगोल विभाग
डी0एस0बी0 परिसर नैनीताल

D.S.B. CAMPUS KUMAUN UNIVERSITY NAINITAL

Sl.No. ---------- **Dated: 26 Feb.2024**

TENDER DOCUMENT (DST Project-Creation of a Geo database Management System DBMS for the Nainital Town, Uttarakhand)

1. RS & GIS Desktop Software, GIS Server and Web Development Combo Package 2. Satellite Data

LAST DATE OF SUBMISSION: - 11-03-2024 (02:00 P.M.)

DATE OF ISSUE	----------
NUMBER OF PAGES	04 (Four)
Cost of the Tender Form	Rs. 1500.00 (One Thousand Five Hundred Only) + 18% GST extra (Total Rs. 1770/-)
Name & Address of the Firm	----------

Dated Signatures of the Vendor/Party
(Signatures of the authorized representative)

N.B: Please go through terms and conditions thoroughly before you offer your rates.

Rates (in figures & words) must be quoted in the prescribed column(s) against each items as per the list enclosed with the Tender form and be attached in original with the offer failing which the tender may be liable for rejection.

List of contents:

Assistant Accounts Officer
D.S.B. Campus
Nainital

Asstt. Accts. Officer
Kumaon University
D.S.B. Campus
NAINITAL

मैं/हम फर्म का नाम मै0.....
.....उक्त शर्तो उप प्रतिबन्धों (क्रमांक 01 से 19 तक) पूर्णरुप से सहमत हूँ/हैं।

हस्ताक्षर निविदाकर्ता.....दिनांक...../..... /2024

हस्ताक्षरकर्ता का नाम.....

फर्म का पूर्ण पता (मुहर सहित).....
.....
.....

प्रधान अन्वेषक

सामग्री की विशिष्टता :–

1. RS & GIS Desktop Software, GIS Server and Web Development with subscription Combo Package		
	Product	Specifications
1.A	**Web PORTAL Design , LICENCE and Subscription Domain**	1.Types of GIS Software offered in the scope of supply: Server GIS ,Mobile GIS ,Cloud GIS 2.Types of Licence Subscription-Minimum 02 Yrs. 3.OEM Licensing policy: Per Named User/User 4.Platform type Server based ,Web based ,Cloud based ,Hosted Service based ,Mobile Based 5.Hosting Enviroment/ Deployment Option Cloud ,On Premises The offered product have support from OEM for 6.GIS Server Features Support publication/hosting of OGC service like WMS, WFS, WCS & WMTS ,Enable role based access management to let administrators to add, update, manage and maintain GIS data and user management, Content Sharing and capability to build various GIS applications. ,Capable of maintaining data history, version management and conflict detection. ,Capable to manage maps, satellite images, GIS data of various point of interest information, infrastructure and assets. 7.Location Tracking Features GPS Tracking capability ,Mobile device tracking capability 8. Domain Creation/ Develop and Licence 9. Web Development package –Development package with 02 years minimum subscription: custom web development (Standard education package) services to create a users-friendly and responsive geo portal for institute. 10 Integration of GIS Data in to the Website for interactive maps and engaging content.

1.B - RS & GIS Desktop Software

1. **<u>Desktop Remote Sensing and GIS Software:</u>**
   Minimum 4 user education pack for education with GIS Server with portal development Perpetual License single software having capabilities of RS & GIS and GIS server with 2 Years Subscription OEM, Server to Host GIS Data

<u>Specification for the above are as below:</u>

Software Specification for Integrated GIS & Image Processing Platform

The propose software platform should be a COTS (Commercially off the shelf) product. The proposed software platform should be Indigenous and 100% Make in India. The source code of the software should be within boundary of India. Proposed software platform should have GIS, Image processing and 3D Analysis functions natively integrated as single product. The software should be OGC certified and support. **Geo-portal specification:** -The basic functionality of GIS portal as given below:

Map Visualization Module This module will provide the different layers of information basic map view and navigation tools to different stake holder departments & other Stake Holders.

Layer Management:

The solution available enterprise wide will have capacity to manage layers by switching on or off layers. In addition, transparency and visibility scale shall be fixed for each layer.

Attribute Viewer:

The Attribute Viewer allows you to view the attribute fields of selected features. Facility to click on any feature of the map and return a select set of attributes for feature.

Search and Query Module:

Select features in a layer using a SQL-based expression against their attributes. This widget will provide users to search & locate different POI's across the GIS & IP map based on their interest of selection of themes. It will enable users to search and view information with regards to their wards. Users will also be able to see data the ward level.

Map Tools:

Navigation bar like Zoom in, Zoom out, Pan, full extent and north arrow, Measure Tool, Table of Content, Scale bar, Legend, Overlay KML/CSV/XLS, Share Links (mail/social media), Print, Draw feature, Magnifier Map, Overview Map, Bookmarks.

Location Identified Tool:

This tool will help to identify attribute of any location within the AOI and will give view of the hyperlinked panoramic image captured during the drone survey.

Buffer analysis:

It creates a zone around a map feature (Point & Line) measured in units of distance or time. This buffer is useful for proximity analysis in spatial query.

Predefined queries:

Predefined query to make it easier for users to view particular subsets of a map's data from an end-user perspective,. executing the query is simple and is performed with a single button click. It is designed to work on a single layer.

Navigation:

Map navigation facility available such as zoom in, zoom out, pan, real time pan etc.

Chart:

A user-friendly interface of chart tool will provide department officials to analyse different kind of data related to spatial data and generate reports, charts & graph for better understanding and effective day-to-day decision-making system.

Report generation:

Crystal Reports is quite a user-friendly tool. It will easily be learnt from the database from where the data is to be drawn to generate the reports.

Printing:

Print reports, graph, charts and maps as user define size and format

Software specification

The detailed list of functions required in the COTS Desktop software and Enterprise Server are given in the below tables:

S. N	I- Functional Description Desktop GIS and GIS Functions
1.	User should be able to create multiple views in single project using the capability of multiple document interface (MDI) of the proposed software.
2.	The application framework of the software should be such that it should have Dockable/Floating Toolbars, Dockable and Auto Hiding Windows, Unicode Support for Multilanguage Attributes, Drag and Drop to Rearrange Tools/Toolbars, Create New Toolbars or Menus without Programming, Extend the Applications with Add-ins built with .NET, Java, or Python, Build New GIS Components with .NET or Java or other development platforms.
3.	The user should be able to create layer as per the data model defined by the authority or concerned stakeholders along with the modification in table structure as per the requirement of project.
4.	Provision for defineding of map projection system and geodetic datum is required to set all the maps in a common projection and scale.
5.	The proposed software should have capability to create custom projection system using 3 to 7 parameters.
6.	Display of coordinates on map click is required to readout the co-ordinate in any projection i.e. multi projection coordinate readout.
7.	The proposed software should have facility to click on any feature of the map and return a select set of attributes for feature.
8.	User should be able to perform geo-processing functions such buffer generation, clip, erase,

	intersection, dissolve, union, polyline to polygon, etc. for various type of GIS analysis. It should have facility to perform the spatial intersection analysis like plot area with buffer zone to calculate road-widening impact on adjacent land.
9.	The Software should be able to import / export data from / to various formats like .dwg, dxf, .dgn, .shp (shape files), coverage file, .mif (MapInfo), .mdb (GeoMedia), .gml, .kml, .gpx. , Geo PDF GeoJSON, GeoRSS, SqlLite, GeoJson, etc.
10.	The proposed software should have function to process tabular data such as .xlsx, .csv, .dbf, etc.
11.	Support of Coordinate Geometry (COGO) description for GIS objects creation and store in GIS database.
12.	Facility to define joins between the two tables (graphic / non-graphic) of the database to get integrated information in the table and perform GIS analysis.
13.	The proposed software should provide facility to exchange the GIS Data with other platform applications like Microsoft Word, and Excel to use GIS data and generate reports like graph and charts.
14.	Software should have rich display and navigation tools. It should have zoom in, zoom out, fixed zoom in, fixed zoom out, pan, real time pan, bookmark, Geo link multiple views, swipe, flicker, search by location, cross hair, cursor location value, numeric dump, query cursor etc. It should have support of continuous panning i.e. real time pan.
15.	The proposed should have Almanac module for Sun and Moon to see the phase as per the date and time.
16.	Software should allow the user to perform undo / redo operations during editing of GIS maps.
17.	The software should have capability for geo-referencing of vector and raster data both.
18.	Facility to capture the geometry from the layout maps, creating maps by maintaining the coincident geometry i.e. when a new polygon is captured simply by selecting an existing polygon to digitize the common boundary thereby ensuring no slivers or gaps between adjacent area features like parcels.
19.	The software should provide a complete set of drawing & editing tools in order to enable the user to Draw & Modify any or parts of various geographical objects (point, line and polygon) on the map.
20.	The software should have capability to remove the topological errors from vector data such as road network, drainage network, canals, building, etc.
21.	The software should have the ability to add third party published data through internet or intranet to the existing map data using OGC services.
22.	The software should allow user to save legend template of geographic data that store symbology for displaying features.
23.	The proposed software should have capability of thematic map mapping. User should be able to apply color and symbology using the attribute attached with the layer based on single, quantile and unique values functions.
24.	In the proposed software, user should be able to perform labelling activity using the attribute information of the layer. Therefore, a rich annotation tool should be available in the software such as add label, edit label, move label, rotate label, remove all label, etc.
25.	User should be able to define the rules for displaying the labels on map by defining the class using the attribute to be displayed and can set the priority for displaying the multiple labels of single layer.
26.	The software should have a provision of hyper linking the GIS feature as well as its attribute fields with existing documents, URLs, Images, drawing files or scanned maps related to that feature.
27.	User should be able to create version for history tracking.
28.	Query builder tool should be available with the software to perform simple and complex queries.
29.	The customized application should provide the user facility to make dynamic queries on GIS GUI. The application should allow users to store and retrieve standard queries used by them in day to day operation.
30.	Software should have various query tools for queries based on attributes, location, etc.
31.	Software should have map composition / layout tool for printing spatial data at different scales and at adjustable print quality.
32.	Software should allow users to export results to various file formats like EMF, BMP, TIFF,

	JPEG, PDF, etc.
33.	The proposed software should support HRSI (High Resolution Satellite Imagery) and low resolution satellite images (panchromatic & multispectral) such as IKONOS, Quick bird, Geoeye, Worldview, CARTOSAT, EROS, LISS-IV, LISS-III, AWIFS, Sentinel, RISAT-1, ALOS, Terrasar-X, Radarsat, KALPANA-1, INSAT3A, INSAT3D, PROVA-V, etc..
34.	The software should have capability to process optical satellite data as well as microwave image data.
35.	The software should support images with More than 8 bits, 11 bit, 16 bits, and 24 bits per band.
36.	The software should support image format such .tif, geotiff, .img, .pix, .hdr, .h4, .h5, DTED, DEM, CEOS, .bmp, .jpeg, etc.
37.	The software must have the user-friendly tool for re-projecting geospatial data (raster and vector) from pre-assigned projection to the other projection system as per the user's requirement.
38.	Software must provide the functionality for clipping the area of interest from raster data using user defined extent, extent defined through inquire box, and polygon layer.
39.	The software should have the functionalities for splitting the image in the tiles based upon user defined parameters. It should support mosaicking of images by geographic coordinates based mosaicking method as well as pixel based mosaicking method.
40.	The software should have the Geometric Correction tool for assigning geographic or projected coordinates and to remove the geometric distortion in the image. It should also provide the functionalities for Atmospheric correction for Haze reduction, and DN to Reflectance conversion. The software must support the Atmospheric Correction of ResourceSat-2 AWiFs data for removing the impact for atmospheric anomalies from the satellite-measured signal to retrieve the surface reflectance.
41.	The software should have Layer stacking tool to create composite multispectral satellite image from a number of spectral bands of same spatial resolution.
42.	The software must have image enhancement tools to permanently apply enhancement on the imageries for further processing and exploitation. Some of the basic enhancement tools such as Linear, Logarithmic, Histogram Equalize, Histogram Matching, Density Slice, Gaussian, Squire root, Tone Balancing etc., must be available for the on the fly image viewing and interpretation purpose.
43.	The software is expected to have the Image filtering tool with various filtering algorithm such as Convolution, Texture, Adaptive, Crisp, Laplacian, Statistical, FFT, etc.
44.	The software should have image transformation modules e.g., Principal Component Analysis (PCA), Inverse PCA, De-correlation Stretch, etc., for information enhancement. It should have the tools for image fusion using various image fusion algorithms like Pan sharpening, Wavelet, Brovery multiplicative, and HIS etc. for spatial resolution enhancement of the image.
45.	The software should have readymade indices tools such as vegetation indices, water indices, geology indices and landscape indices.
46.	The software should have the module for Natural Color image generation using NIR, Red and Green band of high-resolution multispectral image data. This module should have capability to stretch the natural color image into 8 bit.
47.	The software must support image classification modules such as supervised and unsupervised classification along with image segmentation.
48.	The software should have machine learning algorithm such as Object based segmentation, SVM Classification, etc.
49.	The software must have tools for the accuracy assessment such as contingency matrix, signature separability, random sampling, etc.
50.	The software should be capable to process the temporal or time series image data. The software should provide change detection module such as Basic Change Detection, Advance Change Detection, Auto Change Detection and Site Monitoring.
51.	The change detection module should be capable to ingest multiple input images to find the change. It also handles the multi resolution satellite image along with mis-registration. It should support various methods of advance change detection such as single band differencing, cross correlation, Image regression, Image ratioing, PCA, Change Vector Analysis (CVA), Magnitude Differencing, Vegetation Index Differencing, Tasseled Cap, Chi-Square, Unsupervised Change Detection, etc.

52.	The software should have capability of Object Library Creation for Object Identification and Automatic Feature Extraction (AFE) based on the object library.
53.	The software should have functions like Linear Algebraic Combination, Change resolution, Bit Conversion, etc.
54.	The software should have function called Dynamic threshold for analyzing change detection using image. This function is used to categorize the pixels in input image based on the threshold value.
55.	The software should have raster catalog and vector catalog tool for raster and vector data management.
56.	The software should have support LIDAR Data and should have function such as Merge LAS file, Find Duplicate, Classify Ground, Classify LAS, LAS Boundary, LAS to Shape, etc.
57.	The software should have network analysis module to find the shortest and Optimum path using the topologically corrected road network.
58.	The software should have tools for terrain analysis and 3D analysis. The module should be able to create slope/aspect, relief map, elevation profile, painted relief, line of sight and, viewshed analysis. It should also support the "cut and fill analysis" and topographic normalization using DEM data.
59.	The software should have algorithm for surface generation such as Linear, IDW and Kriging.
60.	The software should have capability to create HRSR (High Resolution Shaded Relief) Map automatically using input such as DEM and Image files.
61.	The software should have modules for the calibration of SAR data such as RISAT-1, ALOS, Sentinel, TERRASAR-X, Radarsat, etc. It should have facilities to perform hybrid polarimetric analysis and should have conversion tool for Full Polarimetric to Hybrid Polarimetric. It should have various conversion tools such as amplitude to intensity, intensity to amplitude, complex to amplitude, complex to intensity, etc. The software should have function to create Radar Vegetation Index (RVI) using intensity image.
62.	The software should have support of Meteorological Satellite data such as Kalpana-1, INSAT-3A, INSAT-3D, etc. It should have tool T-Phi Gram generation using Sounder data of INSAT and ground station data.
63.	Software should support fully automatic raster to vector conversion tools.
64.	The GIS server should be based on a Services Oriented Architecture (SOA).
65.	The Enterprise GIS software should support Java /VB Script, .Net etc. and other latest technologies.
66.	The Enterprise GIS software must be OGC certified and must have the capability to serve and consume OGC complied web services including WMS, WFS, WCS, CSW, WFS-T, WMTS, INSPIRE, etc.
67.	GIS Server application Should support 64 bit Windows and 64 bit Linux platform in native mode.
68.	The Enterprise GIS software should be able to support broad range of clients including Interoperability and different browsers, desktops, Mobile Handsets etc.
69.	The Enterprise GIS software must be highly interoperable with the ability to import and export to a wide range of industry standard formats including CAD (DGN, DXF, DWG), MapInfo, GML (GEOGRAPHY MARKUP LANGUAGE), XML, SHP, ArcInfo Coverage, ESRI Arc Info Export (EOO), Micro Station V7/V8, Geo PDF GeoJSON, GeoRSS, SqlLite etc.
70.	The Enterprise GIS software must provide support for the standard Web /application server like IIS, Apache, Tomcat, etc.
71.	The Enterprise GIS software should support unlimited Desktop client connection simultaneously. Desktop GIS applications with the capability to consume WMS services should be able to connect and use data from the server.
72.	The Software should support various DBMS for database storage such as Oracle, DB2, SQL Server, Postgre SQL, Informix, etc.
73.	The Software must have capability of centrally managed data, models, tools, maps and applications.
74.	The Software should have the capability to link various documents like Adobe pdf, word/power-point JPEG, GIF, PNG, DTED and TIFF files etc., to map features.
75.	The Enterprise GIS software should have access to extensive GIS capabilities so as to enable

	organizations to publish and share geographic data(2D&3D), maps, analysis tools, Manipulate data, 3D models etc.
76.	The Enterprise GIS software suite should have separate user-friendly interface with the capability to publish the project/data on GIS server with user defined style and annotation layer and enable OGC services such as WMS, WFS, WCS, WFS-T, WMTS, SLD and CSW in the data layer.
77.	The Enterprise GIS software should have support of various GIS and Image Processing functions at GIS server side such as geo-processing (buffer creation, clip, erase, union, etc.), network analysis, zonal tools, image subset, image enhancement (Linear 0-255, Linear MIN-MAX, Liner Percent, Liner STD-Deviation, Gaussian, Logarithmic, Histogram Equalize, Square Root), image filtering (Histogram Equalize, Statistical Filter, Occurrence Filter, Co-Occurrence Filter, Laplacian Filter), Vegetation Indices Calculation, classification, etc. User should be able to perform the particular processing at server end by sending the request using the web client and should enable the WMS service to display the processed data on web.
78.	The Enterprise GIS application Server should support Time stamped data for Trends / Time Series Analysis. Application Server must support network and perform Routing analysis, etc.
79.	The Enterprise GIS software suites must support GML, RSS (Real Simple Syndication) and KML/KMZ (Keyhole Markup Language).
80.	The Enterprise GIS server should have in built map caching capability for enhanced performance.
81.	The Software should provide imagery access quickly after acquisition with dynamic mosaicking and on- the-fly processing.
82.	The Enterprise GIS software should support standard Web server/application server
83.	The Enterprise GIS software suite must have Web GIS Application Functionalities like pan, zoom, identifying features on a map, feature based hyperlink, measure distance, overview window, find place, query attribute, search attribute, editing and geo processing task.
84.	The publisher tool should have function of masking using existing polygon layer.
85.	The software should allow visualization of data in 2D, 3D in web as well as desktop application.
86.	The application should support LDAP (Lightweight Directory Access Protocol) or Active directory-based authentication.
87.	The Enterprise GIS software should support SSL and signed certificates to ensure complete security from browser to server.
88.	The Enterprise GIS software must support to Connect securely to operate the Web application over a Hypertext Transfer Protocol Secure (HTTPS) Connection. It should have optional Lockdown mode to remove anonymous access and require all users to log in.
89.	The Enterprise GIS software suite should provide a web publishing wizard so that registered users can publish websites without coding/programming.
90.	The software should enable the authorized users to create and manage groups to control publishing the data and its services on Data store/workspaces.
91.	The Software should provide the facility of customizable reports and map layout as per the requirements.
92.	The software must provide Print server application for online printing in different formats with desired GIS Map scale and customized templates.
93.	The Software should have the capability to create SLD as per the legend applied and software should be able to integrate third party SLD as well.
94.	The Software should have the capability to publish the SLD along with the other layers.
95.	The Software should have the capability of scale range setting to declutter the layers of the project.
96.	The Software should have the capability to configure the clustering of location or point data.
97.	The Software should have the facility to create WMS group to bundle multiple layer.
98.	The Enterprise GIS software should have web builder to create a basic level of web application by doing some configuration only (Without Coding).
1.C Enterprise GIS Server (Minimum 2 Yrs. Subscription) Functional Description Enterprise GIS Function	
99.	GIS server with 02 years subscription: Enterprise level geospatial solution tailored to the specific needs of educational institutes, Collaboration tools for students, users and faculty, fostering

	teamwork and knowledge sharing. Data visualization and analysis for research project and academic studies.

2- Satellite Data

	High Resolution Satellite Data	**Resolution**	**Temporal**	**Bands**	**Area of Interest**
	1.	<1m (Spatial)	Latest whatever available	Multispectral (RGB+NIR)	20 sq km (Nainital Town & Surrounding) minimum Area to be Acquired
	2	<0.50m (Spatial)	-Till September 2023(Latest)	Multispectral (RGB+NIR)	12 sq km (Nainital Town & Surrounding) minimum Area to be Acquired