

Development of remote sensing, GIS and rock mechanics cells of the civil engineering department under the scheme of FIST of Department of Science and Technology, Ministry of science and Technology, Government of India

Remote sensing and GIS application has now been emerged as the important tools and have wide applications in the field of civil engineering. It is mainly due to the availability of high-resolution temporal satellite data. It has enabled to get the correct and realistic data of otherwise inaccessible areas such as mountains, steep slopes, radical cuts etc.

As these areas are more prone for loss of stability during monsoon and post monsoon sessions, the land slide disasters like that of Matsyagandha Express of Konkan Railway could have been avoided by using tools like Remote Sensing and GIS by identifying and mapping the disaster prone areas. This can also be used for effective mitigation and management of flood disaster. RS and GIS have also the applications in the field of watershed management, transportation, urban planning etc. Therefore the present proposal will definitely be useful for this institution in keeping the stride in the immerging high technological field of RS and GIS.

In this connection, Civil engineering department has been sanctioned grant of Rs. 30.00 lakhs by Department of Science and Technology (DST), Ministry of science and Technology, Government of India under 'Fund for

Improvement of S&T Infrastructure in Universities and Higher Educational Institutions' (FIST programme-2005) for setting up of Geographic information Systems (GIS). In order to give visibility to the identified department, DST has proposed that the department should be called as 'DST-FIST sponsored department'.

List of equipment to be procured under FIST programme

Sr.No.	Equipment/ facility	Utility
	A. Equipment	
1	Light Tables	For viewing the pictorial data or ektachrome masters.
2	Anaglyph Viewers 50 No.s	To view and work with 3 D anaglyph data.
3	GIS Software, (ArcGis)	Basic tool of RS and GIS.
4	Image Processing Software (Erdas Imagine)	Basic tool of RS
5	Globe Positioning System i.e GPS Handset.	For Geocoding ,Georeferencing the data with coordinate systems.Lat-long and altitude groundtruthing data collection.
6	Data Set, IRS 1D LISS III,PAN,WIFS,IKONOS,Cartosat etc. (Both ,Pictorial & Digital). Topographic Maps(Scanned on Photogrammetric Scanner).	The basic layers required for remote sensing and GIS studies.
7	A0/A2 Size Scanner	For converting analog pictorial data into digital data.
8	Other RS Lab accessories	Smaller instrumentations like pocket stereoscopes, drawing and tracing instruments etc.
9	Rock Polishing & Lapping Machine	For obtaining finished rock samples for laboratory testing.
10	Point Load Index Tester	For determining the dimetral point load strength index of rock cores and irregular lumps which are tested without treatment.

11	Core Cutting & Grinding Machine	For cutting and grinding rock specimen of size up to 'NX'
12	Brazilian Test Apparatus	For determining permeability of rock specimens of dia. 50 to 100 mm.
13	Uni-axial Tensile Strength on Rock Apparatus	For determining tensile strength of rock samples
14	Uni-axial Compressive Strength on Rock Apparatus	For determining compressive strength of rock samples
15	Direct Shear Test (Rock)	For determining shear strength of rock samples.
	B. Infrastructural Facilities	
16	Darkroom & Pictorial Data Viewing Systems	For viewing and working with pictorial datasets.
	C. Networking & Computational Facilities etc	
17	P-4 Based High End system with dual processor support. (P-4 –2.4 GHZ/ 1GB RAM /80 GB HDD/ 21" color monitor/ CD-RW/ Floppy drive etc.)	Image data always bears the large memory size and hence there is a need of fast high end workstation system for RS and GIS studies.
	D. Maintenance of Equipment	Upgradation of software and temporal maintenance.