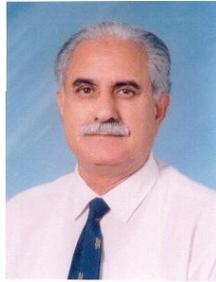


Geomatics: Case for Upgrading

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Geomatics is the art and science of measurements on the surface of earth including what is below the earth and in the oceans. This is the simplest form of definition; more exact and elaborate definition has been produced by FIG¹. In other simple words Geomatics is the new terminology for the centuries old profession of Surveying and Mapping. The need for more elaborate definition was felt some years ago because the profession has gone through major changes and surveyor's job is far more complex and varied now than that of a surveyor say as recently as twenty years ago. The good thing about the developed or advanced nations is that they change with time whereas we are very reluctant to change on our own except when an expensive World Bank or IMF assigned *Gora Shaib* (White man) comes over at an enormous fee and tells us to change. His advice carries weight and we do happily accept and follow. As it happen no *Gora Shaib* (White man) as yet has visited our country to advise us to change the profession's name to Geomatics from the old name surveying. Some institutions on writer's suggestion have adopted the name geomatics in their courses of study e.g. G.C.University being one and UET Lahore do tell their engineers what is geomatics means.

In the recorded history early Egyptian are the only known people who practiced the profession of surveying (modern day's geomatics). Other older civilizations subsequent to the Egyptians appear to have had knowledge of the profession otherwise they could have built the massive structures and building to such precise measurements.

British introduced the modern surveying technology and practices to the Indian sub-continent when they wanted to consolidate their grip on the territory for collection of land revenue and for military purposes. They established of survey control network over such a large mass of earth and at the time it was rated a great scientific achievement of unparallel dimensions. We do salute them as well

as the natives of the time who produced mapping through pain staking process of Plane Tabling in the some of the most difficult terrain in the world.

Geomatics is the basic to all civil engineering projects and quality of survey data has direct bearing on the design and quantities of the project. Our country constructed very large water related works in the sixties as a part of the Indus Basin Water Treaty. We know that for all major projects at the time both the consultants and the contractors brought in their own expatriate Chief Surveyor for the projects and in some case even senior surveyors were also expats. The reason being we were not producing senior level surveyors at any of our technical institutes. We were producing at best technician level personnel. Khewra Mining School and Rasul Technical College were the only two places which imparted surveying training in the form of survey diploma courses. No effort was ever made to upgrade them to graduate level in the form of B.Sc. Engineering in Surveying like it was done in Europe, North America and elsewhere in the world including in Iran and India. UET Lahore does make civil engineering undergraduates do surveying I & Surveying II classes during their degree programme and include a 10 day or two weeks field camp to carry out field surveying activities in the hills around Abbottabad. They should have taken lead in introducing degree programme in geomatics. This did not happen.

It could be because of short sightedness of our policy makers in the civil engineering profession. Part of the blame for this neglect also falls on Survey of Pakistan (SOP) who did next to nothing in the development of the profession. This department continues to live in the cloud of secrecy inherited from the British Policy of 18th and 19th century. The British slackened and eventually abandoned the policy of secrecy about survey data in their own country but we continue to live with it even in this age of satellite imagery and GPS when nothing is hidden or secret from rest of the world. SOP does have their own training institute but the quality of teaching of an institute is directly related to the teaching faculty of the institute.

Geomatics is also very basic and important activity in cadastre.

An important government activity for all nation states is building and maintaining a land administration system (LAS) with the primary objective of supporting an efficient and effective land market. This usually includes cadastral surveys to identify and subdivide land, land registry systems to support simple land trading (buying, selling, mortgaging and leasing land) and land information systems (LIS) to facilitate access to the relevant information, increasingly through an Internet enabled e-government environment².

Unfortunately cadastre is in the hands of poorly trained / qualified revenue department's famous or should we say infamous personnel called *Patwari*.

In our country courts are loaded with land related civil cases and other disputes and including very many murder cases stemming from land disputes. Geomatics

can contribute to put an end to all this. No LAS or LIS can function without credible basic land related data and only geomatics will provide this. It is very important technology of this age and we have been neglecting it for too long.

When we explore further deep down we notice that few of our young persons go for this profession when they go abroad at undergraduate level and in our own country no university offers degree course in geomatics. In this age of internet we only need to key in the word geomatics and see for ourselves the places and the countries offering degree courses in this technology. Do we want Pakistani technical universities to lag behind others; the answer is no then its time we wake up and do something about it.

Higher education commission should take some interest in this field of engineering and encourage our engineering universities to offer B.Sc. Engineering degree in Geomatics.

References:

1. FIG – *Federation Internationale des Geometres* (International Federation of Surveyors).
2. Using Cadastres to Support Sustainable Development - Professor Ian WILLIAMSON, Centre for Spatial Data Infrastructures and Land Administration, The University of Melbourne, Australia