Economic Solutions to Changing Professional Training Requirements in Geodesy and Surveying

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SUMMARY

The rapid developments in geodetic methodology and technology pose an increasing demand for continuing professional development (CPD). In state surveys as well as cadastral surveys, thorough knowledge of global geodetic reference frames and related transformations, of satellite positioning methods and their relation to physical heights including the geoid are as important as knowledge of mobile communication and internet technologies.

Once students complete their university education, all further training is usually up to their employing company or authority. They have the choice to provide either training courses by senior staff members or to engage external coaches. In some cases professional organisations like FIG and their national counterparts offer professional trainings too. Nevertheless, further trainings are cost-intensive and raise basic questions regarding the qualification of the instructor and the effective outcome for the employer. In contrast to the field of Geo Information Systems (GIS), in geodesy and surveying are only few external instructors available. Most of them are either from instrument or software manufacturers or from the university sector. The reasons for this situation are the high intellectual and financial investments on one hand.

On the other hand, the market is very small and quite often restricted by state authorities. Education and professional training is increasingly considered from the economical point of view. Because of budget limitations, survey authorities have to reduce the expenses for training programmes. On the other side they have to compensate for the growing age of their remaining personnel. Controlling methods are therefore applied to the selection, implementation, and evaluation of educational programmes. Employees are equally affected.

If they are searching for adequate post gradual education in the field of geodesy and surveying, they can hardly find regular programmes. The few courses offered are rarely related to each other. Their quality and cost/benefit relation is difficult to estimate. Based on the necessities and limitations mentioned before, a life long learning scheme is suggested. In this scheme, universities are the central carrier of the quaternary education phase. It is a reasonable extension of university reforms within the Bologna process. The professional organisations define the gearing of the curriculum, and are involved in the evaluation of the programmes. The computer based training (CBT) technology developed for teaching GIS courses and other subjects worldwide can be transferred and tailored to courses in geodesy

and surveying. Following the blended learning concept, a mix of different learning methods is required to support adult students, particularly in phases of distance learning. Approaches to improve the didactic aspects are pointed out. Such a scheme, in turn, can economically ensure adequate professional training in geodesy and surveying.

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