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Technical articles

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The Swiss Cadastral Surveyors' Licence has been reviewed

In early 2005, the Federal Council decided to examine the need for a licence for cadastral surveyors and to make provision for new regulations within the framework of the new geographical information law (LGeo). Following that decision, the Federal Directorate of Cadastral Surveying (FDCS) set up a committee of experts to carry out a *Study on the importance of, and the need for the Cadastral Surveyors' Licence*. The study has been completed and this article provides a summary of the results.

The study, under the leadership of Professors Urs Christoph Nef (Civil Law) and Alessandro Carosio (GIS and Theory of Errors) at the Federal Institute of Technology (ETH), Zurich, examined the legal aspects of the official cadastral survey, described the Swiss cadastral system and its organization, noted the regulations in force in neighboring countries, drew up a list of the requirements placed on the cadastral surveyor, and made recommendations for the improvement of the training and examination process.

Proposals for improvements in training and examinations

The proposals for improvements begin by acknowledging that the regulations currently in force date from a time when a diploma from ETH indicated a standard minimum content, and that passing the entrance examination implied that all candidates possessed basic knowledge of the constitution and organisational structures of the Swiss confederation.

This is no longer the case today, so revision of some aspects of the regulations is essential. The minimum requirements must be more clearly formulated. The conditions for admission to the examinations should draw a distinction between desirable knowledge and truly essential professional requirements. The regulations must also be

adapted to take account of current developments at the specialised universities and institutes.

It is necessary above all to acknowledge the fact that in an international context similar professional designations do not indicate identical qualifications. Any new Ordinance must guarantee that courses which can lead to the acquisition of a cadastral surveyors' licence at ETH conform to standard course structures (Bachelors' and Masters' degrees). One cannot, however, exclude the possibility that in exceptional cases the Examination Board may organize further individual training.

Summary and conclusions

It was concluded that the matter of the need for the cadastral surveyors' licence cannot be treated in isolation, but that its value must be considered in the context of the whole of the Swiss cadastral surveying system. The main features of this system are as follows:

a) The delegation of national governmental tasks to the private sector

The state entrusts all of the tasks of capture and processing of survey observations and the management, archiving and checking of the resulting data to private sector cadastral surveyors. Such persons exercise a governmental role and must be considered to be public officials. The delegation of tasks of this nature to individuals by the state means that it is essential to lay down precise requirements for their technical and personal qualifications.

b) Extension of the objective of the cadastral survey to form the basis for setting up and operating land information systems

Until the reforms of 1993, the prime objective of the cadastre was the production of the cadastral plan for the land register. The establishment and operation of land information systems increased the professional demands

on those who are actively involved in cadastral surveying.

c) Minimal involvement of, and cost to, the state in both personnel and financial terms

For almost a century, the state has entrusted the initial cadastral survey, its renovation and its revision as well as the management of cadastral data to licensed cadastral surveyors operating under civil law. Due to this delegation to the private sector, the survey and data management tasks are being accomplished with minimal state involvement and at minimal personnel and financial cost. The cadastral surveyors' licence guarantees the high quality of the work.

d) Outsourcing of government tasks by competitive tender

The award of contracts to private sector cadastral surveyors is based on market economy criteria and is operated by competitive tender. The requirements of the licence ensure that tenders are objective. Without this, the awarding authority would have to use other means of checking the professional qualifications of bidders, which would inevitably lead to increased costs.

e) Cadastral surveyors working at federal, cantonal, municipal level, and independent private sector cadastral surveyors all have the same level of education and training

To foster the creation and maintenance of a uniform and cohesive national cadastre, close cooperation between all those involved in the process is essential. It is easier to achieve this when a uniform level of education and training is required of all the cadastral surveyors concerned.

f) Complementary nature of the cadastral survey and the upkeep of the land register

The cadastral system in Switzerland rests on two pillars, the cadastral survey and the land register. The cadastral survey provides the spatial basis for the land register. The mutual support of these two pillars is guaranteed by the unified culture resulting from a common standardized examination of all the cadastral surveyors.

On the basis of the considerations above, the study concluded that the cadastral surveyors' licence is a basic component of the current organisation of the Swiss cadastral survey. The licence is a link in the chain of legal and organisational requirements designed to ensure the high quality of the cadastral survey. It is a guarantee of quality, independent from the legal and organisational form of the participating survey offices. The award of a licence depends on a solid technical education and professional practice covering all four subjects of the licence examination.

In this respect it can be noted that during the examination, spread over three weeks, the candidates not only reproduce their knowledge but also have occasion, in their practical work, to fill gaps in their knowledge and experience. Moreover, working under examination conditions is the mark of an effective apprenticeship. For these reasons, according to the authors of the study report, the licence examination should be retained, while taking account of the proposals for modification of the requirements mentioned earlier.

Further action

The conclusions of the study will be incorporated in the new geoinformation law, LGeo. Naturally the findings and recommendations will be taken up by the working group on the design of training courses (see p. 15) and the revision of the Ordinance on the Federal Licence for Cadastral Surveyors. It is planned to bring the revised Ordinance into force on 1st January 2008, at the same time as LGeo.

The study report (in German, French and Italian) is available on the "publications" page of www.cadastre.ch. It is also planned that the report will appear in the series of publications of the Institute of Geodesy and Photogrammetry at ETH Zurich.

The Licence examination covers the following subjects:

- Topic 1: Cadastral Surveying;
- Topic 2: Land regulations, structural improvements, development planning;
- Topic 3: Applications of information technology;
- Topic 4: Management and administration