

# **Demands for a Cadastral System Fit for Cadastre 2034**

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## **SUMMARY**

With the change from traditional mono-thematic cadastre to more complex and comprehensive information systems like Cadastre 2014 / 2034 and with the growing use of cadastral data through web-services (split between data producers and data users) the requirements for cadastral applications have changed significantly. A new generation of cadastral system must be built. The paper describes the general demands for such a system. The new cadastral system must reuse established concepts and core functionality: The system must be data centric and not product centric. A strict separation between data storage, application and presentation layer will, therefore, allow a broad usage of data in different applications and devices. One of the big challenges will be the provision and support of a holistic data quality: The barriers for data users have been massively minimized. Nowadays a big variety of data sets can be consumed conveniently through web-services. This makes forgotten that the entire infrastructure may not be free of errors. To ensure correct data the entire infrastructure must support a service quality instead of data quality only. The service quality encompasses availability, traceability and integrity. Traceability must be achieved on a data level (i.e. supporting documentation to a feature) but also on a configuration level (i.e. documentation of data model, feature capture rules, presentation model). The integrity focuses on the process and service quality ensuring that data is not lost or corrupted between origination and consumption. On the functional level the new system must be capable to handle 3D and 4D (temporal) data. More and more users need historical or not yet effective data. The challenges herein are the correctness of topologies (areas without overlaps or gaps). Within the next decade it is also expected that the demand for 3D data will continuously grow. The system must be ready to handle each geometrical object with three dimensional coordinates. Besides well-established visualisation applications the core requirement of cadastral systems like topological data quality, data maintenance processes and data analysis are not yet standard. To support the challenges of a rapid urbanization and mega-cities cadastral system must include the third and fourth dimension. The divided responsibility over information from real world objects makes a coupling of cadastral with other information systems necessary. Such a coupling should not only allow data integration (SES) but also data synchronisation for ensuring the consistency between the different data sets.