



## Demands for a spatial information infrastructure fit for Cadastre 2034

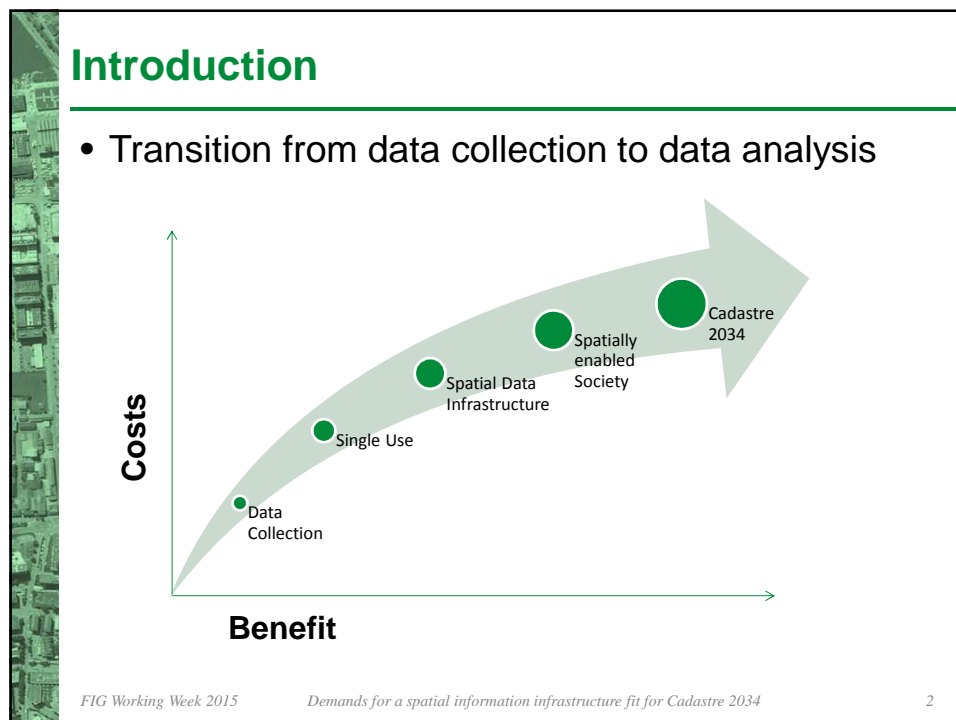
*Christian Kaul*

*Dr. J. Luethy*

*Office for Spatial Development*

*SWR Geomatik*

SWR GEOMATIK • WAGISTRASSE 6 • CH-8952 SCHLIEREN • T +41 43 500 44 00  
INFO@SWR-GEOMATIK.CH • WWW.SWR-GEOMATIK.CH





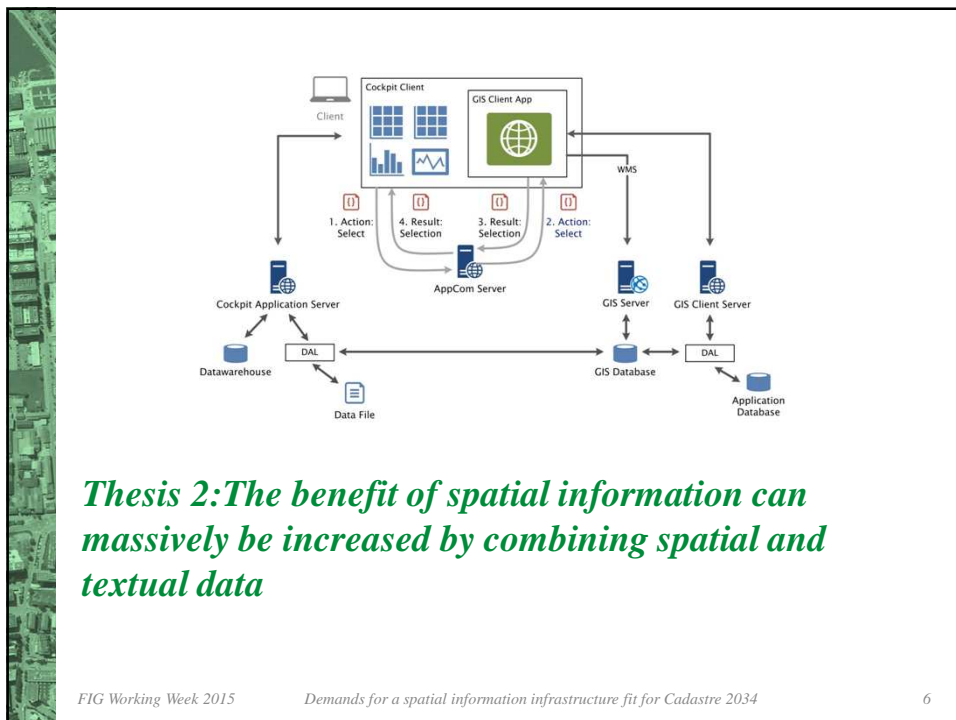
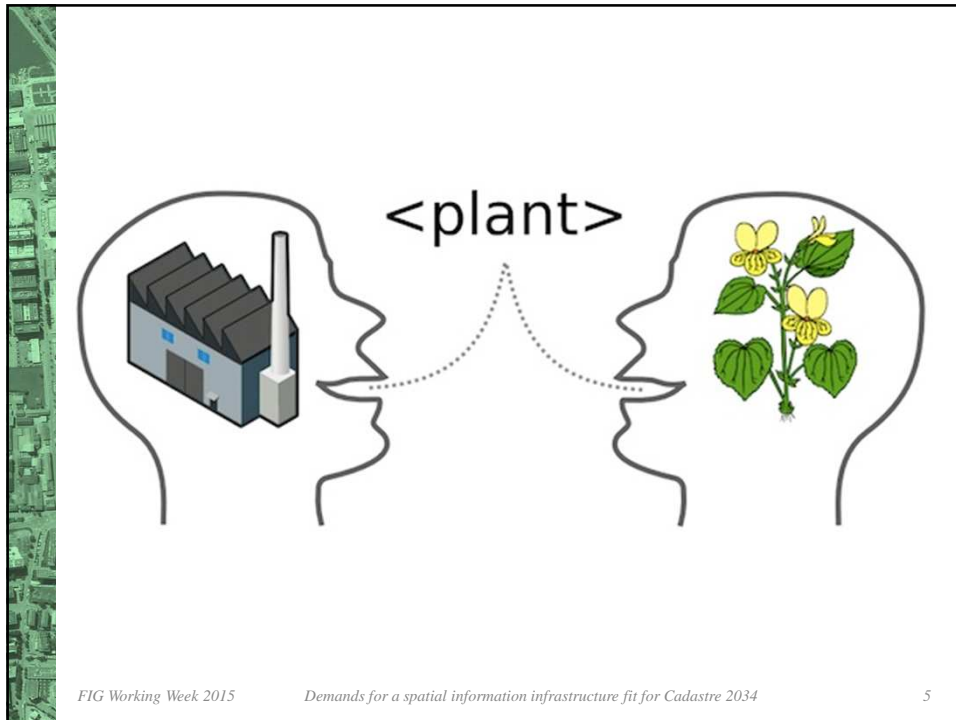
***Thesis 1: Spatial data build the foundation of Spatial Information Infrastructure***

FIG Working Week 2015 *Demands for a spatial information infrastructure fit for Cadastre 2034* 3

## **Consequences**

- Established concepts:
  - Data models;
  - Feature capture rules;
  - Portrayal models.
- Data centric, not product centric;
- Semantic interoperability;
- Legal base in general, open data strategy in specific!

FIG Working Week 2015 *Demands for a spatial information infrastructure fit for Cadastre 2034* 4



## Consequences

- Flexible data integration;
- Harmonising keys and object granularity;
- Responsibility for inter-system communication;
- Stable SDI:
  - Switch the focus from spatial data assembling, aggregation visualisation and provisioning to data integration;
  - supplemented with processing services.
- Visualisation capabilities:
  - pivot tables, diagrams and maps stories.
- Life cycle of phenomenon:
  - Stable keys;
  - Different life cycles depending on information system → not physically deleting objects, but change status.

FIG Working Week 2015

Demands for a spatial information infrastructure fit for Cadastre 2034

7

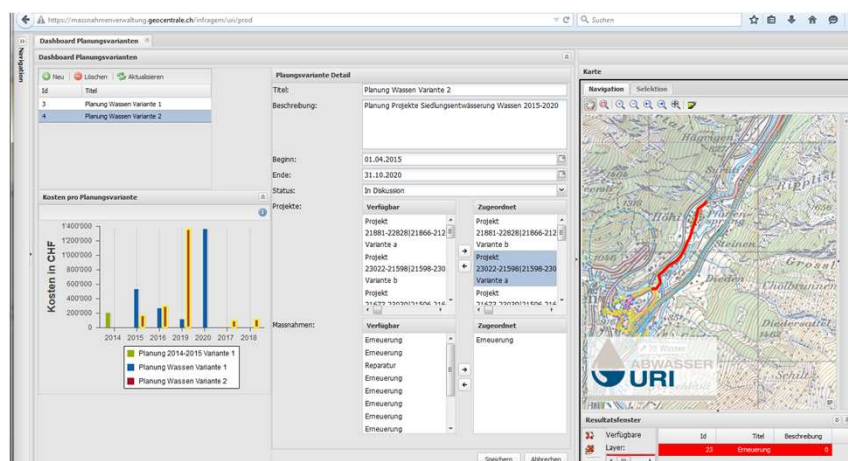


FIG Working Week 2015

Demands for a spatial information infrastructure fit for Cadastre 2034

8



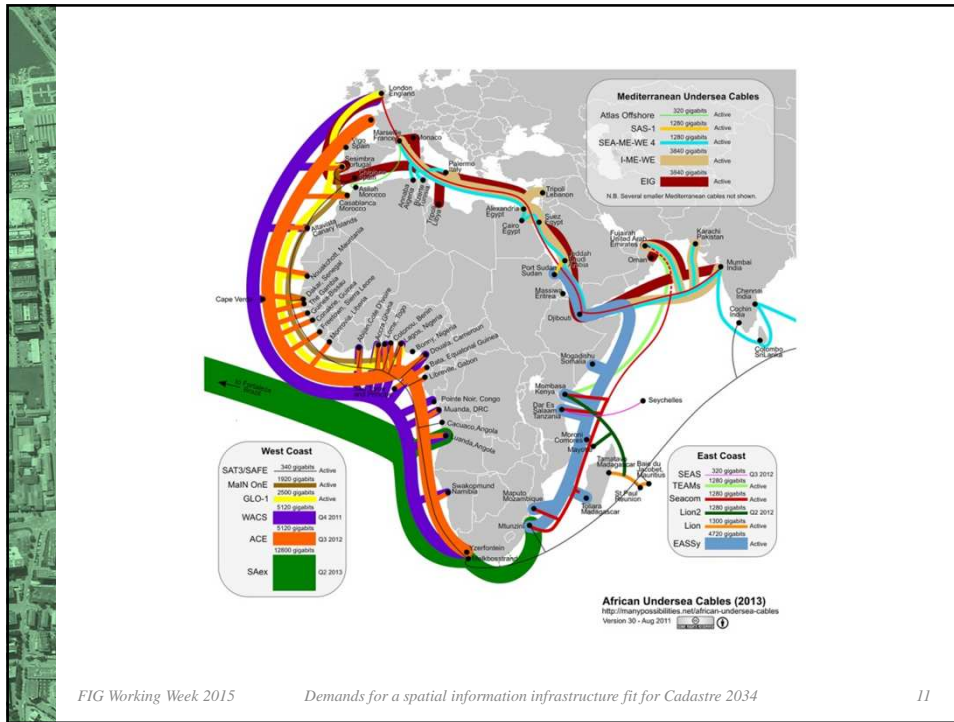
*Thesis 3: The demand for ubiquitous availability of spatial datasets will increase: current data, real-time access, always, everywhere, fast and free of charge.*

FIG Working Week 2015      Demands for a spatial information infrastructure fit for Cadastre 2034      9

## Consequences

- Web-clients must be enhanced for data maintenance and standardized tasks (reports, analysis) and the SII must therefore consequently be designed as web-applications.
- Importance of safety and security will massively increase for ensuring data and service quality;
- Growing demand for free-of-charge spatial data should be used to position the SII as public infrastructure similar to roads and highways, paving the way for securing the funds for continuous enhancements of the SII.

FIG Working Week 2015      Demands for a spatial information infrastructure fit for Cadastre 2034      10




*Thesis 4: A change from data quality to system quality is needed in the context of distributed data, shared responsibilities and decoupling data users from data owners*

FIG Working Week 2015 Demands for a spatial information infrastructure fit for Cadastre 2034 12

## Consequences

- Provision and support of a holistic data quality;
- System quality for availability, traceability and integrity;
- Better controlled entire data chain;
- Data driven community needs system quality to avoid decisions being taken with incorrect information.





*Thesis 5: The third and the fourth dimensions are inherent ingredient of the spatial infrastructure*

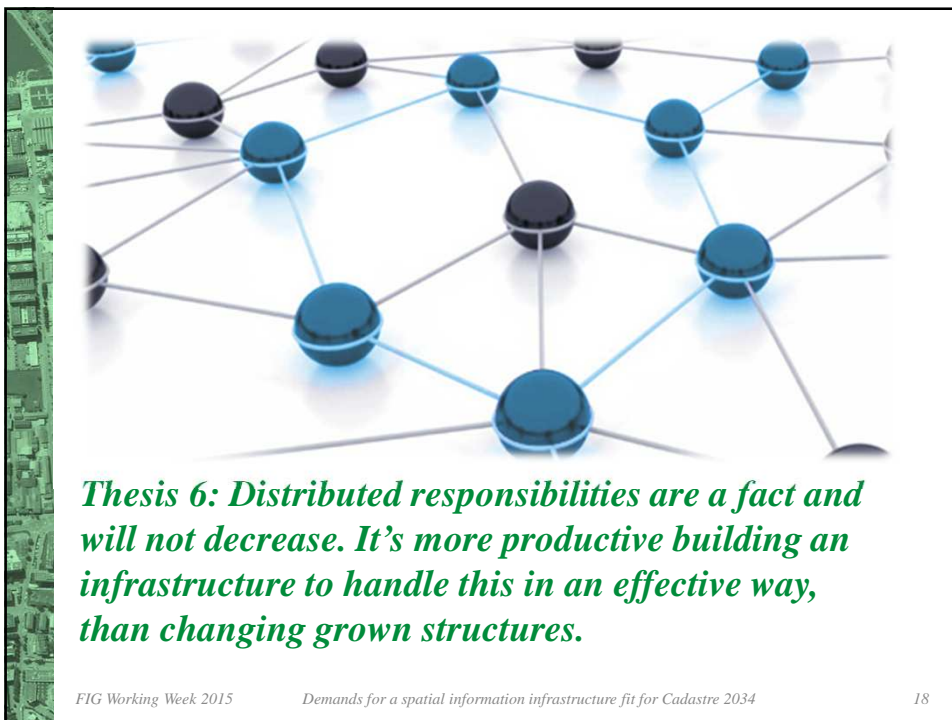
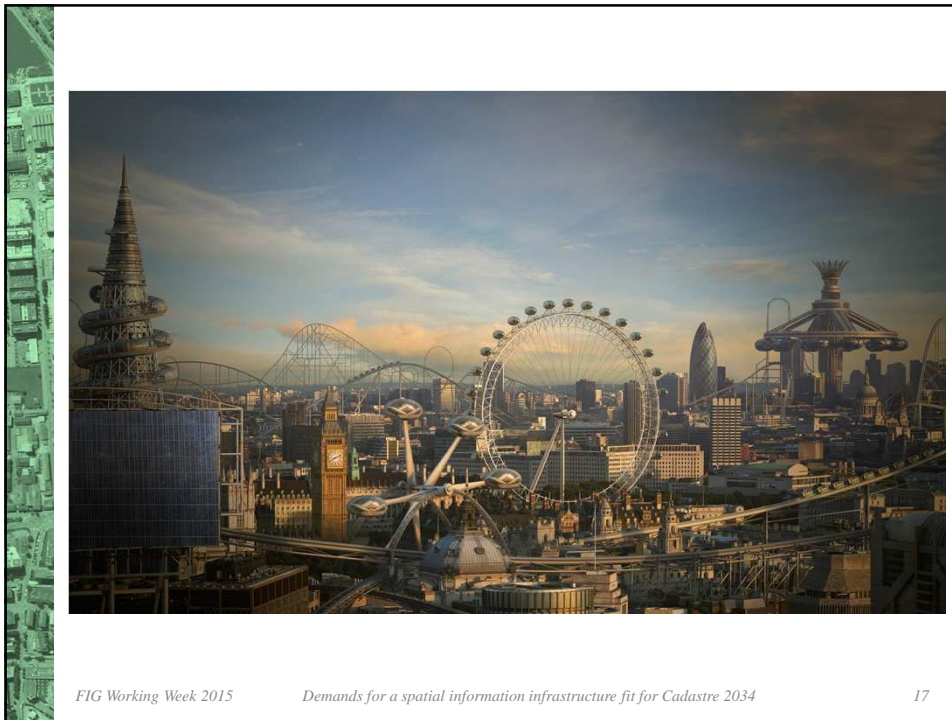
FIG Working Week 2015      Demands for a spatial information infrastructure fit for Cadastre 2034      15

## Consequences

- Paradigm shift in system design;
- 3D-based topological validation rules;
- the entire lifecycle including future changes:
  - marked as withdrawn or inactive instead of physically deleting an object.
- 3D: Cadastre in competition with Gaming Industry, Big Data Providers, UAV-sensor platforms for cheap mass data acquisition.

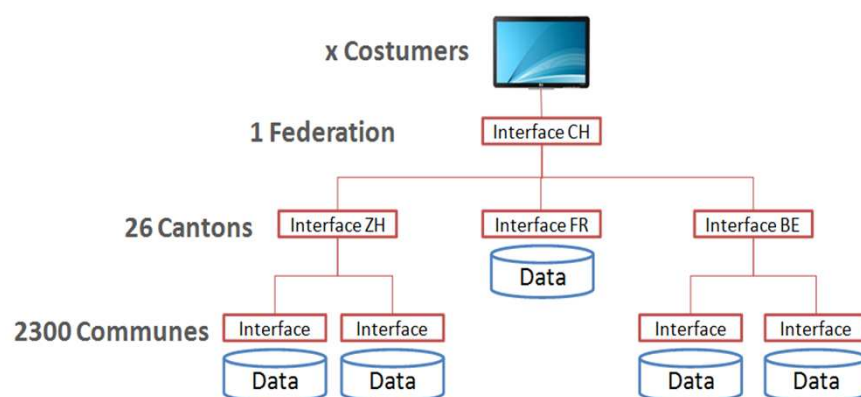
FIG Working Week 2015      Demands for a spatial information infrastructure fit for Cadastre 2034      16





## Consequences

- Open attitude and the intention of the parties, to taking the advantages of distributed responsibilities seriously;
- Open system architecture based on web-services and clear separation between data storage, application logic and presentation layer (tiers);
- Systematic and standardized coupling of application parts and well defined interfaces between the tiers;
- High-performance network infrastructures (band-width, latency);
- Ensure, that the SII in its entirety does not contain gaps in the responsibility.



## Conclusion and Outlook

- It can be expected, that the spatial information will follow the "ubiquitous computing" and become permanently present;
- The demand for more and "better" (spatial) information will increase;
- The public agencies must be aware that the provision of governmental data offers more changes and benefits than disadvantages;
- The cadastral community should actively influence the transformation processes and take over a pioneer role for SII.



- Contact information:
- [juerg.luethy@swr.ch](mailto:juerg.luethy@swr.ch)
- [christian.kaul@bd.zh.ch](mailto:christian.kaul@bd.zh.ch)

*Thank you for your attention and...*

# FIG Working Week Switzerland 2019



**Get to know us**  
**Come along, have a drink, and get surprised!!!**

**Wednesday, 20 May,**  
**17h30-18h30**  
**at**  
**"Culture Beat"**

