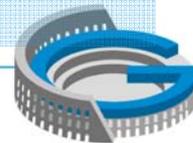# FIG Working Week 2012
Rome, Italy 6–10 May

Knowing to: Manage the territory, Protect the environment, Evaluate the cultural heritage

Vladimíra ŽUFANOVÁ

Czech Office for Surveying, Mapping and Cadastre
Cadastral Office for South Moravia Region

PROJECT MANAGEMENT IN THE STATE SECTOR Implementation of a Centralized Information System

Platinum sponsors: esri · Trimble.

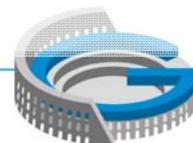# FIG Working Week 2012
Rome, Italy 6–10 May

Knowing to: Manage the territory, Protect the environment, Evaluate the cultural heritage

Information System of Cadastre of Real Estates – The Origin

- Launch of ISCRE – september 2001 (version 2.5)
- System development – 24 versions (+ patch, minimum one after each upgrade ☺)

  - 2001:   2.5, 2.6
  - 2002:   3.0, 3.1, 3.2, 3.3
  - 2004:   4.0, 4.1, 4.2, 4.3, 4.4, 4.5
  - 2005:   5.0, 5.1 (Oracle 9, W2k), 5.2, 5.3
  - 2006:   5.4, 5.5

  - 2007:   5.6, 5.7
  - 2008:   5.7.7 (WinXP)
  - 2009:   5.8, 5.9
  - 2010:   5.9.5, 5.9.7

Platinum sponsors: esri · Trimble.

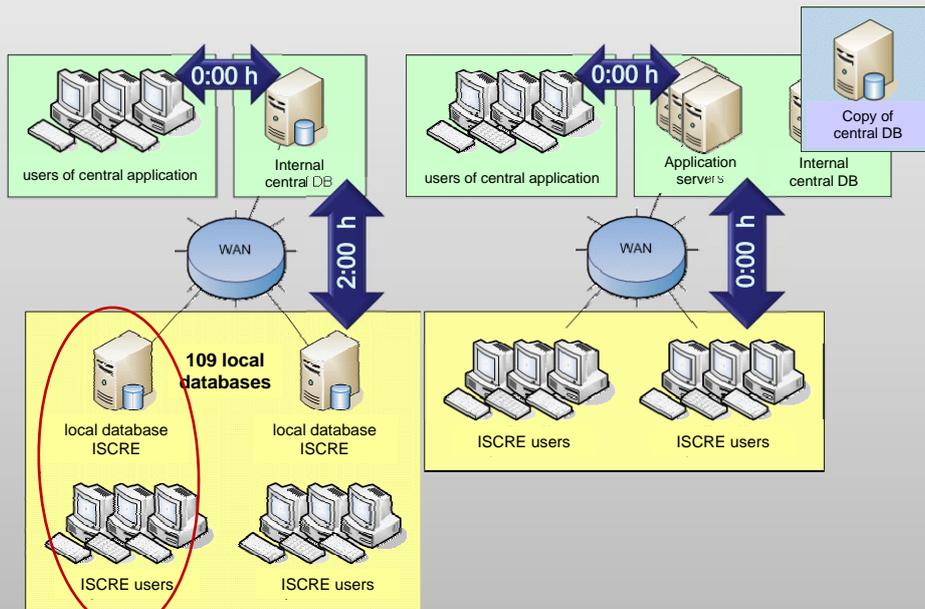## Information System of Cadastre of Real Estates – The Origin

- ISCRE
    - 109 local databases + 1 central database (+ 1 copy of central database)
    - nearly 5,000 users (employees in 14 Cadastral Offices, 107 Cadastral Workplaces, 7 Survey and Cadastral Inspectorates, Land Survey Office).
    - the system takes care of all aspects of the Cadastre administration
    - development   dependent on structure of the system   decision to switch over to a centralized system
        - 3 layers architecture
        - database Oracle 10g
        - Microsoft Internet Explorer v8, MicroStation V8i

Architecture of ISCRE

FIG Working Week 2012
Rome, Italy 6–10 May

Human resources

- Supplier – separate project team for ISCRE project
- COSMC – team of experts (a project leader, a principal consultant, a test leader, a member of quality team, consultants, testers and technical support)
  - separate/systemized job - the project leader, the principal consultant, the test leader
  - the participant on several projects - member of quality team, technical support
  - regular employees in Cadastral Offices or Cadastral Workplaces - consultants and testers

Platinum sponsors: esri Trimble.

FIG Working Week 2012
Rome, Italy 6–10 May

Planned schedule

- The milestones in the plan:

Specification of requirements (architecture, technology, HW	January 07	January 07
Analysis (necessary changes, possible modifications)	December 07	
Prototype (user interface, technology)	I.Q 08	February 08
Supplier selection (public competition)		
Prototype of solution		February 09
Practising of data migration		
Testing of the functionality	**!!! start in** August 10	
Pilot run		
Verifying activity		January 10
Data migration and ISCRE startup		2.3.2010

Platinum sponsors: esri Trimble.

FIG Working Week 2012
Rome, Italy 6–10 May
Knowing to:
Manage the territory
Protect the environment
Evaluate the cultural heritage

Process of work – Testing of the functional

- Analysis included
  - 55 necessary changes
  - 62 possible modifications.
- 7 periods of testing
  - Each period included implementation of changes, testing, evaluation and maintenance
  - Necessity of increasing the number of testers (6→)
- The testing runs on the data, which was created from backup of real data

FIG Working Week 2012
Rome, Italy 6–10 May
Knowing to:
Manage the territory
Protect the environment
Evaluate the cultural heritage

Process of work – Verifying run

- Complete training of data migration - first half of 2011
  - from 109 local databases into one central database
  - the training was carried out with the real data – impact to all Cadastral Workplaces (interruption their service)
  - migrated data were used for verifying runs
- Verifying run
  - the first round: from 10.3. to 31.5.2011, the second round: from 4.7. to 28.7.2011
  - approx. 120 users (18 CW)
  - simulation of providing service parallel with the real service

FIG Working Week 2012
Rome, Italy 6–10 May

Process of work – Stress testing

- The goals
  - the common operation would perform in seconds
  - the software does not crash in unusually high concurrency.
- 2 types of tests
  - the automatic stress tests (automatic generation of a large number of changes)
  - the user stress tests (23 types of procedure)
- All the Cadastral Workplaces were involved in login test
  - fundamental problem in login more than 2000 users
  - repeating test in 5 dates, one to four times repetition in the date

Platinum sponsors:
esri   Trimble.

FIG Working Week 2012
Rome, Italy 6–10 May

Process of work – Data migration and system launch

- Based on the results of the testing, verifying runs and stress tests - a decision to launch migration. The schedule:

Decentralized ISCRE	
Exit of using ISCRE	Thu 11.8.2011, 15:00
Creation of printouts for verifying (property sheets, statistics)	Thu 11.8.2011, 16:30
Start data migration	Thu 11.8.2011, 20:30
Centralized ISCRE	
Launch ISCRE	Sat 13.8.2011, 06:30
Creation of printouts for verifying (property sheets, statistics)	Sat 13.8.2011, 08:30
Decision on successful migration	Sat 13.8.2011, 12:30
Migration of remote access	Sat 13.8.2011, 12:30
Decision on using centralized ISCRE	Sun 14.8.2011, 18:30
ISCRE come into operation	Mon 15.8.2011, 06:00

Platinum sponsors:
esri   Trimble.

FIG Working Week 2012
Rome, Italy 6–10 May

Process of work – Data migration and system launch

- The verification
  - manually comparing printouts from decentralized and centralized system (1% printouts of property sheets)
  - carried out by employees of CW
  - the checking detected several errors – repairation of the systém

- The decision on using centralized ISCRE published on Monday 15.8.2011, 1:30 am.

FIG Working Week 2012
Rome, Italy 6–10 May

Product Training

- Each step in the project was accompanied by training of users
  - before testing of the functional – provided on a central level (approx. 120 users)
  - before verifying run – provided on a central level
  - before launch centralized ISCRE – two levels
    - training of trainers from Cadastral Offices by consultants
    - training of end users by trainers

FIG Working Week 2012
Rome, Italy 6–10 May

Conclusion

- The project management in the state sector has own specifics
  - a strict conditions of financing, procurement and ordering services,
  - limited options to obtain human resources
- The project to centralize ISCRE:
  - an enormous number of people involved in
  - the need of minimum impact on the public sector and providing standard services.
- The project would not have been successful without the extraordinary activity of employees in testing, pilot runs, stress tests, and verification of data
- The implementation of centralized ISCRE was finished in August 2011, more than one year after planed date - the debugging of the system run till the end of the 2011

Platinum sponsors: esri, Trimble

FIG Working Week 2012
Rome, Italy 6–10 May

Thank you for your attention