DIGITAL TRANSFORMATION OF LAND REGISTRY AND CADASTRE IN FEDERATION OF BOSNIA AND HERZEGOVINA

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HISTORY OF THE ESTABLISHMENT OF LAND REGISTRY AND CADASTRE

- The Land Cadastre (LC) in Bosnia and Herzegovina was established between 1880. and 1884. by Austro-Hungarian Empire;
- On the basis of the established Land Cadastre was established the Land Book (LB) at the end of the 19th Century;
- The LC and LB were estblished for the whole territory of Bosnia and Herzegovina;
- The new LC have been established (starting after the second World War ending 1984.) for about 55 % of the territory;
- The new geodetic survey was carried out and new Real Estate Cadastre was established between the 1984. and 2005. for the 17 % of the territory;

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PHASES OF DIGITAL TRANSFORMATION OF THE LR AND CADASTRE

- Digitalization of Land Registry (LR) and Cadastre data;
- Implementation of the LR and Cadastre ICT systems;
- Integration of the LR and Cadastre ICT systems;

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DIGITALIZATION OF THE CADASTRE DATA

- Started at the end of 1970s. It was digitalised just the alphanumeric part of the LC data without vectorization of the cadastre maps;
- Vectorization of the cadastre maps started in 2003. (without official Data Model). Alphanumeric data and vectorized cadastral maps were managed separately;
- In the 2008. was put into official use the Rulebook on Real Estate Cadastre Database (RECDB) with the Data model of the RECDB as the part of the Rulebook. The Rulebook prescribed all processes on the RECDB and maintenance of the all Land Cadastre data together in the Database based on the object-relational Data Model;
- All official Cadastre data have already been digitalized and managed in Oracle (object-relational) Database.

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DIGITALISATION OF THE LAND REGISTRY DATA

- Started in the 2004. with the deployment of the Land Registry software (LARIS);
- Until 2012. through the implementation of the Land Registration Project (financed by the World Bank loan) were digitalized Land Registry data for about 95% of the territory;
- The rest of LR data were digitalized through the implementation of the Real Estate Registration Project (financed by the World Bank loan) in the 2015.;

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IMPLEMENTATION OF THE LR AND CADASTRE ICT SYSTEMS

ICT/IM Land Registration and Cadastre Strategy for the Federation of Bosnia and Herzegovina (2011-2017) objectives:

- Redesign of LARIS and implementation of the new LR IS;
- Implementation of the Cadastre IS;
- Sustainable maintenance of LR an Cadastre IS;
- Capacity building;
- Cadastre Geoportal;
- LR Web services;
- Digital Archive.

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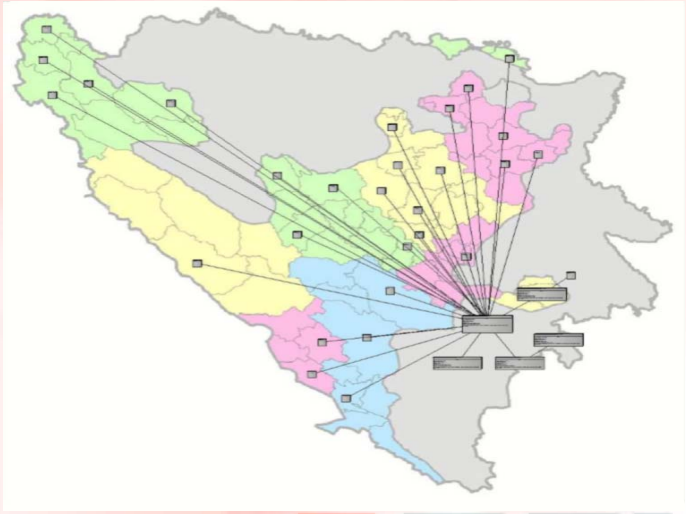
ARCHITECTURE OF THE LR ICT SYSTEMS



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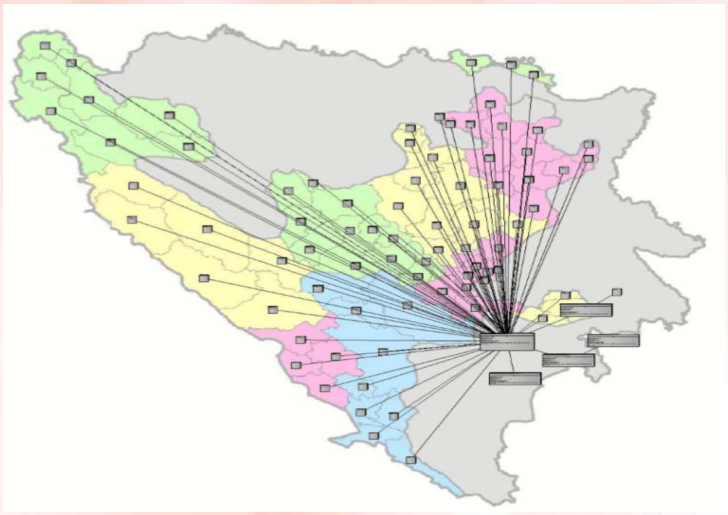

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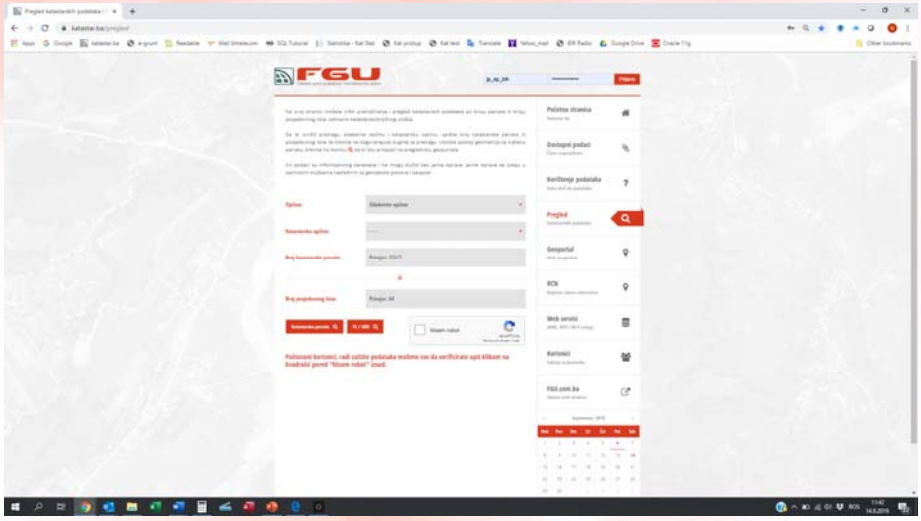
CADASTRE GEOPORTAL



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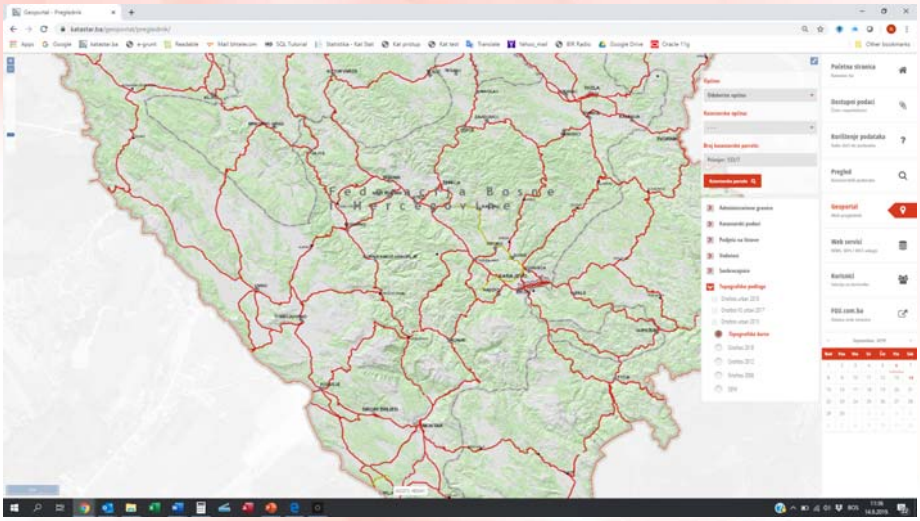

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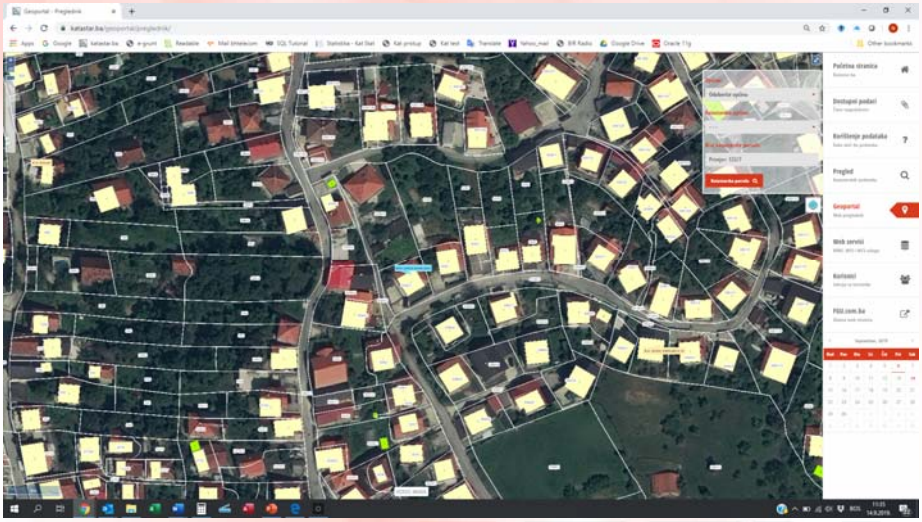

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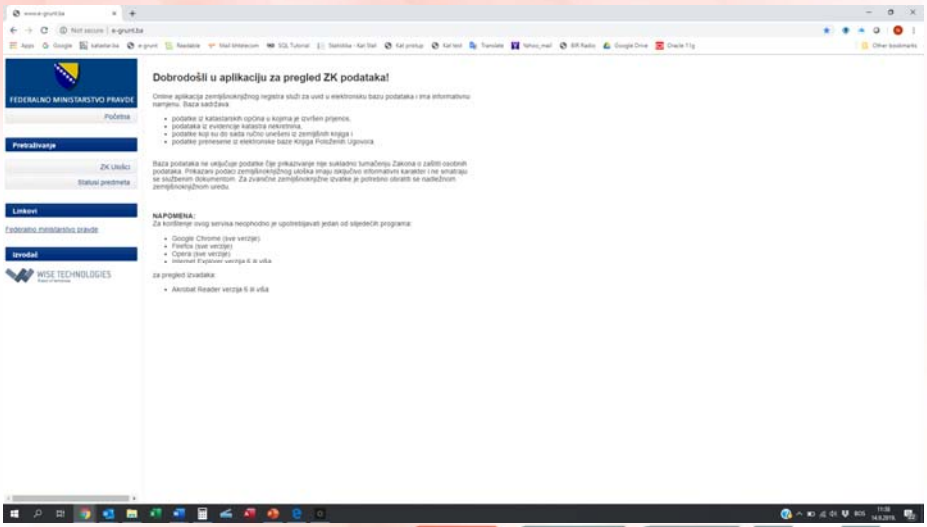
INTERNET PRESENTATION OF THE LR DATA



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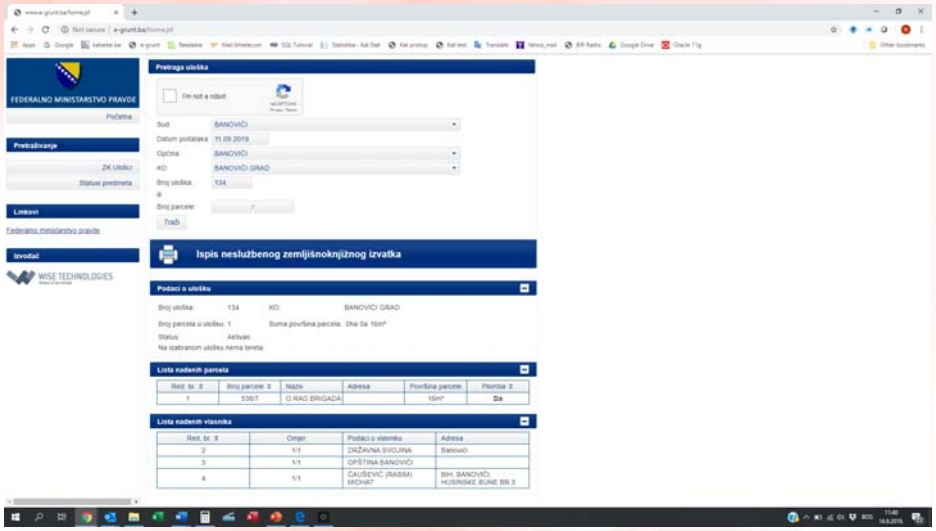

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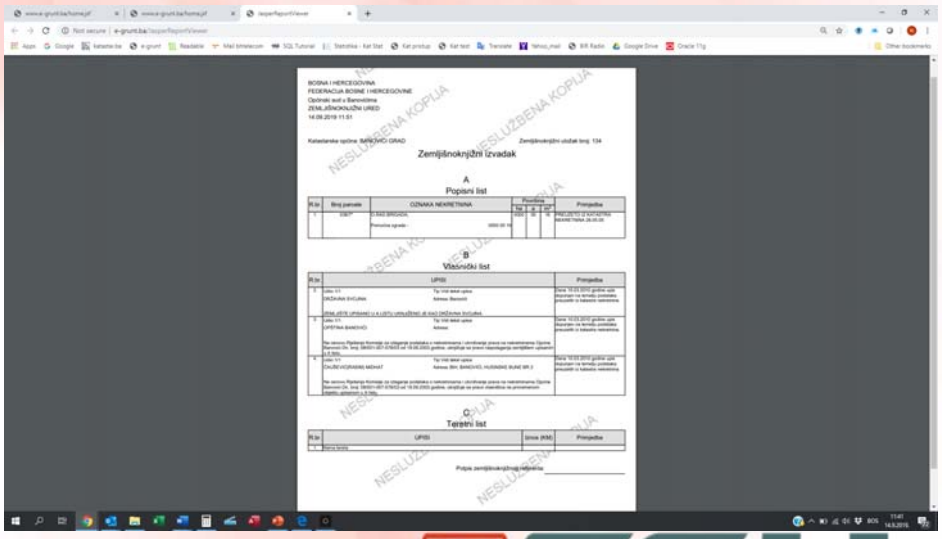

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INTEGRATION OF THE LR AND CADASTRE ICT SYSTEMS

ICT Strategy for Land Registry and Real Estate/Land Cadastre in the Federation of B&H for the period of 2019-2029.

- **The scope of the ICT Startegy is to define short-term (1-3 years), mid-term (4-6 years) and long-term (7-10 years) strategic objectives, projects and activities that will enable further development and advancement of Land Registry and Real Estate/Land Cadastre information systems;**
- **The ICT Strategy also address ICT systems sustainability, business continuity, capacity development, data harmonization, integration of LRIS (E-grunt) and RECIS (katastar.ba), as well as data exchange and interoperability with Digital Archive System and other relevant public registers: Citizens Identity Protection System (CIPS), Register of Business Entities (RoBE), Address Register (AR), etc.**

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Short-term strategic objectives (2019-2021):

- **Renewal of HW infrastructure for existing systems;**
- **Enhancement of existing systems (katastar.ba and E-grunt) towards data interoperability and data exchange with (DA, ARIS, RoBE and IDDEA) based on Web services;**
- **Establishment of communication infrastructure to support data interoperability;**
- **Necessary and urgent functional extension and data quality enhancement:**
  - **Katastar.ba – support for public display business process;**
  - **E-grunt – consolidation and management of code data;**
  - **GUI optimization of E-grunt for mobile devices.**
- **Development and adoption of cyber security policy and action plan;**
- **Capacity building;**

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Mid-term strategic objectives (2022-2025):

- Analysis and design of the system architectures (decentralized vs. centralized vs. distributed vs. integrated) – Feasibility study;
- LRIS and RECIS will be:
  - distributed systems that ensure horizontal scalability, strong consistency, fault tolerance (reliability) through replication and distributed query processing;
  - centralized systems that ensure vertical scalability, strong consistency and fault tolerance (reliability);
  - integrated into a single, unified system;
- Redesign and enhancement of communication infrastructure;
- Implementation of cyber security policy and action plan;
- Capacity building;

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Long-term strategic objectives (2026-2029):

- Introduction and implementation of strategic (OLAP) and high potential (Data Analytics/KDD) applications;
- Cloud and SaaS for deployment of strategic and high potential applications/prototypes based on SaaS cloud services;
- Capacity building;

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