

7 May 2026

PCC Conference – Presidency of Cyprus

Building a Future Ready Geospatial Information
Ecosystem:

Resilience, Innovation, Interoperability and **Digital Unity**
in Cadastre, Land Registry and Land Administration

Integrating AI and Land Registry Data for a Green European Future

1. Introduction

Cadastre

Land Registry

AI and automation

1. Introduction



**Future-ready
Ecosystem**

Geospatial data

Legal certainty

Cadastre

Land Registry



Integration

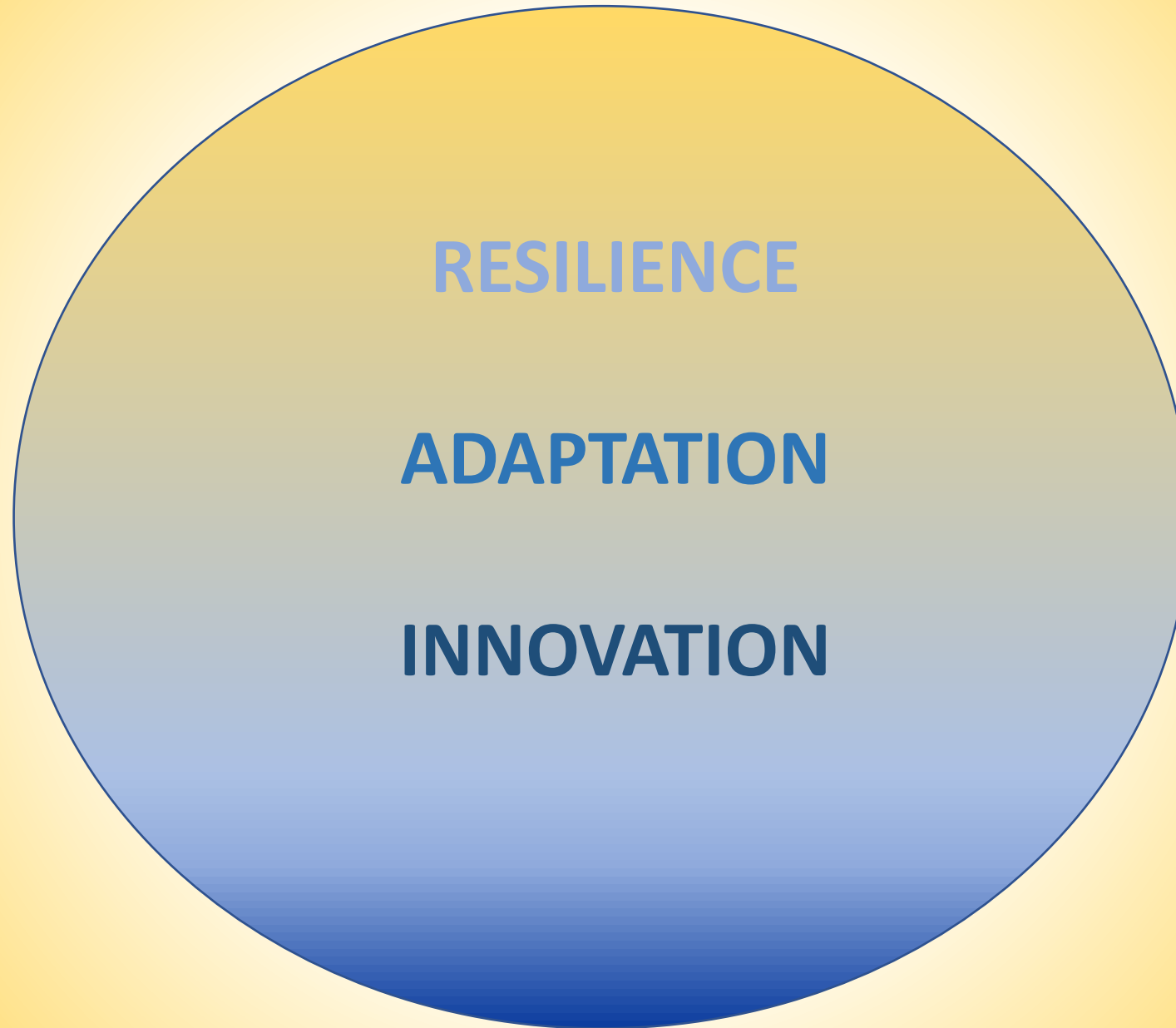
**European Digital
Unity**

Green Economy

AI and automation

2. The Challenge of Resilience for Land Registries and Cadastre - innovation and interconnection

2. The Challenge of Resilience for Land Registries and Cadastre - innovation and interconnection



2. The Challenge of Resilience for Land Registries and Cadastre -
innovation and interconnection

HYPER-DIGITALISATION

**ULTRA HIGH DEFINITION
SATELLITE IMAGING**

REAL TIME DATA - IoT

**HIGH- FREQUENCY
MONITORING – LiDAR +
DRONES**

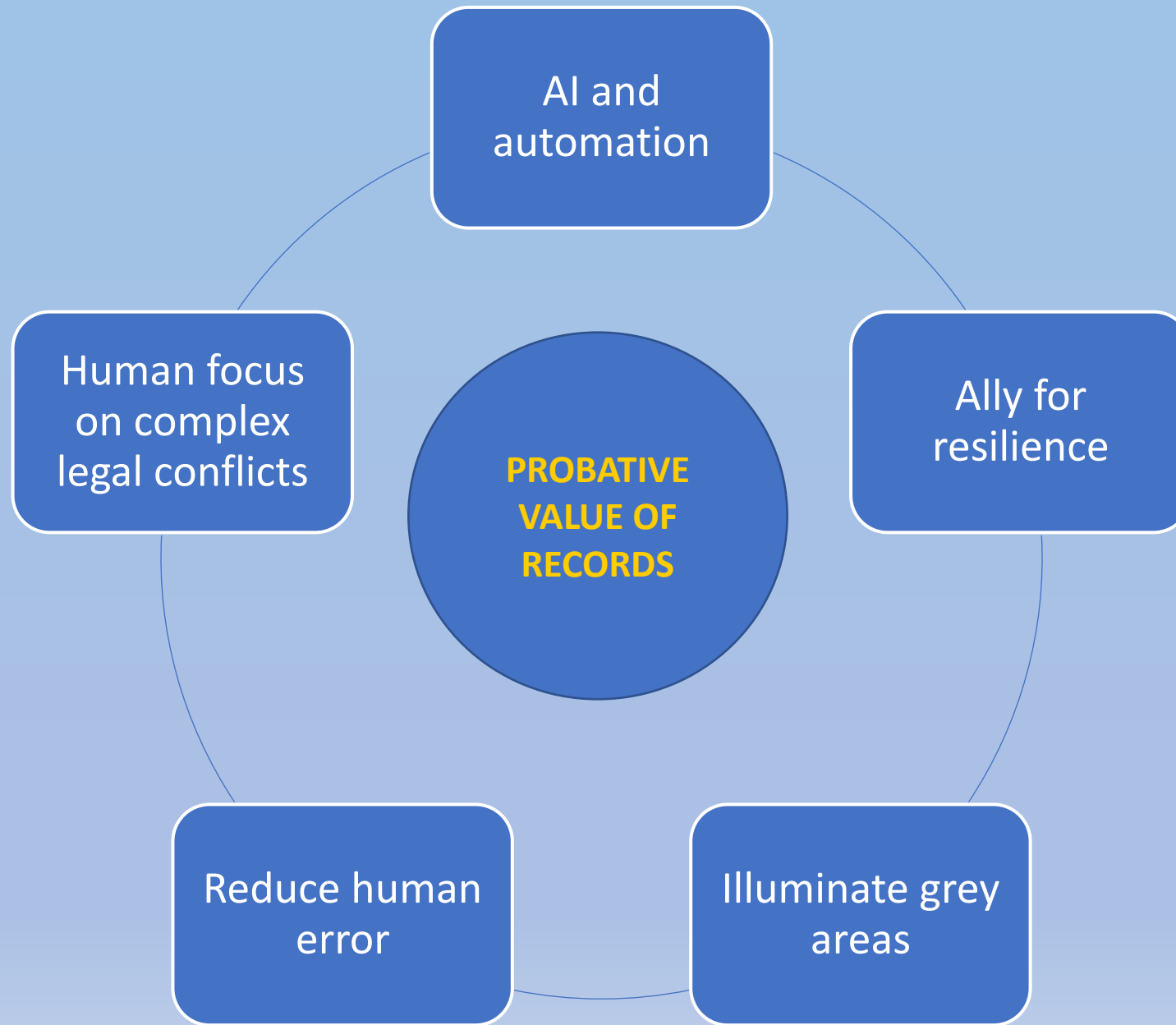


**OPERATIONAL
CONTEXT**

2. The Challenge of Resilience for Land Registries and Cadastre -
innovation and interconnection



3. AI and Automation – The Filter of Truth





01

Fraud Forensics & Pattern Recognition

- flag suspicious or anomalous behaviours
- detect the misuse of complex legal mechanisms, such as trust deeds or powers of attorney
- ✓ AI and anti-money laundering
- ✓ AI and buy-to-flip



02

Automated Conflict Detection

- real-time cross-referencing between historical deeds, current titles, and cadastral maps
- identify areas of "legal friction"

03

Computer Vision & Geospatial Tools



bridge the gap between the legal right and the physical land



Satellite imagery
LiDAR



detect unauthorized encroachments or construction



04

IDP - Intelligent Document Processing

- ❖ AI - scan, read, extract, categorize, and organize meaningful information from large data streams
- ❖ convert structured, semi-structured, and unstructured documents into usable digital data

 Title Search Automators

 Validation Bots



05

Large Language Models (LLMs) for Public Interface

AI systems that understand and generate natural language

- 📄 Legal Guidance Chatbots
- 📄 Summarization Engines

**4. Enabling the Green Economy –
The Grounding of the Green Deal: The Land as the
Core Asset**

4. Enabling the Green Economy - The Grounding of the Green Deal: The Land as the Core Asset



 **Artificial Intelligence**

 **Land Registry and Cadastre integration**

 **Green Economy**

 **European Green Deal – climate neutrality - 2050**

4. Enabling the Green Economy - The Grounding of the Green Deal: The Land as the Core Asset

▶ **large-scale solar farms and wind parks**

▶ **surface rights management**

▶ **RED III Directive 2023/2413**

▶ **solar energy in buildings**

▶ **Energy Performance of Building Directive n. 2024/1275:**

Article 10 paragraph 3:

“ Member States shall ensure the deployment of suitable solar energy installations, if technically suitable and economically and functionally feasible, as follows:

a) **by 31 December 2026**, on all new public and non-residential buildings with useful floor area larger than 250 m²;

(d) **by 31 December 2029**, on all new residential buildings; and

(e) **by 31 December 2029**, on all new roofed car parks physically adjacent to buildings “

- **Land Use and Zoning**
- **Property Rights and Compensation**
- **Infrastructure Integration**



4. Enabling the Green Economy - The Grounding of the Green Deal: The Land as the Core Asset

💰 green Mortgages

💰 EPC - Energy Performance Certificate

💰 integrated and comprehensive registry

💰 assess risk and reward properties -
environmental footprint



4. Enabling the Green Economy - The Grounding of the Green Deal: The Land as the Core Asset

① **Carbon farming credits**

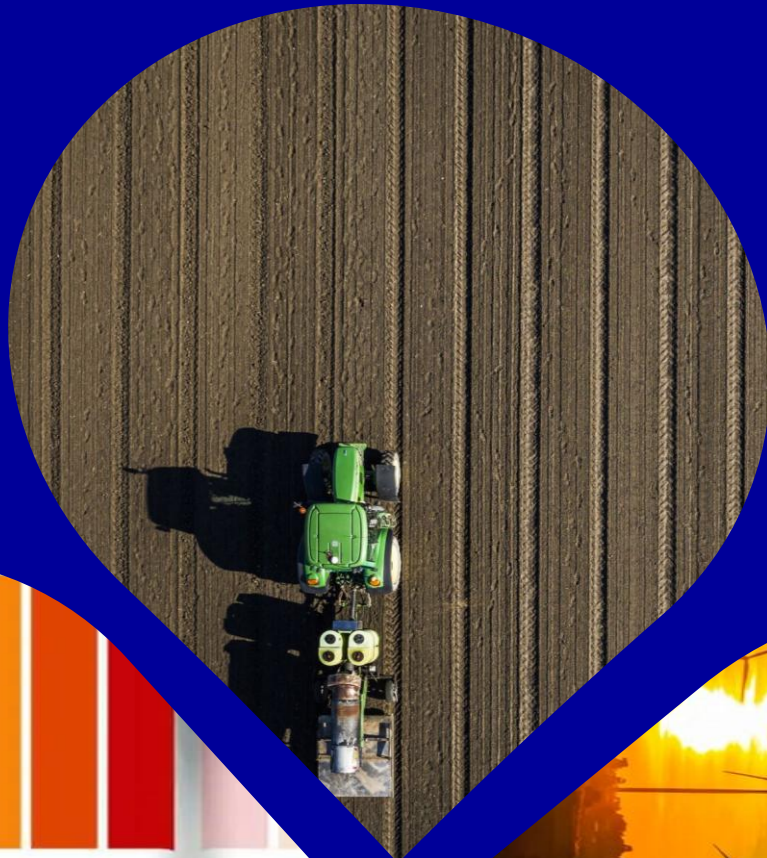
① **a "New Encumbrance" on real estate**

① **combined synergy between Cadastre and Land Registries + AI tools**

① **Purchaser Transparency + Enforceability Against Third Parties**

① **AI for Carbon-farming purposes:**

- **Credit Validation - Digital MRV - Monitoring, Reporting, and Verification**
- **Green Value Assessment**



**5. CONCLUSIONS - Securing the Future of
European Land Data - Core Principles: Legal
Certainty in the Digital Age**

5. CONCLUSIONS - Securing the Future of European Land Data -
Core Principles: Legal Certainty in the Digital Age

technological innovation



legal certainty and stability

Ultimate test:

**enhance the public's trust in the
legal validity of the Land Registry**



true digital coherence



Integration + interoperability





THANK YOU

Elena Prada
treasurer@elra.eu