

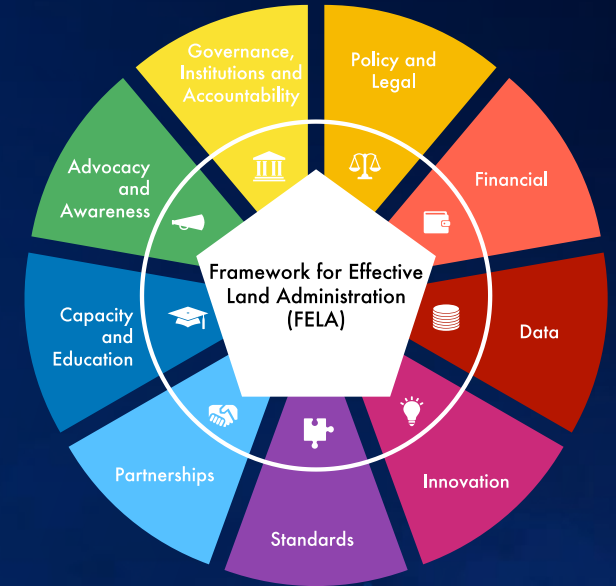
EuroSDR workshop, IGN Paris, 16 – 17 June 2025

The use of GIS in FELA implementations

Kees de Zeeuw & Nick Land, Esri.

Overview

- FELA, GIS and Sustainable Development
- GIS in the Nine strategic pathways
 - Governance
 - Pathway I: Governance, Institutions and Accountability
 - Pathway II: Policy and Legal
 - Pathway III: Financial
 - Technology
 - Pathway IV: Data
 - Pathway V: Innovation
 - AI example
 - Pathway VI: Standards
 - People
 - Pathway VII: Partnerships
 - Pathway VIII: Capacity and Education
 - Pathway IX: Advocacy and Awareness
- Conclusions



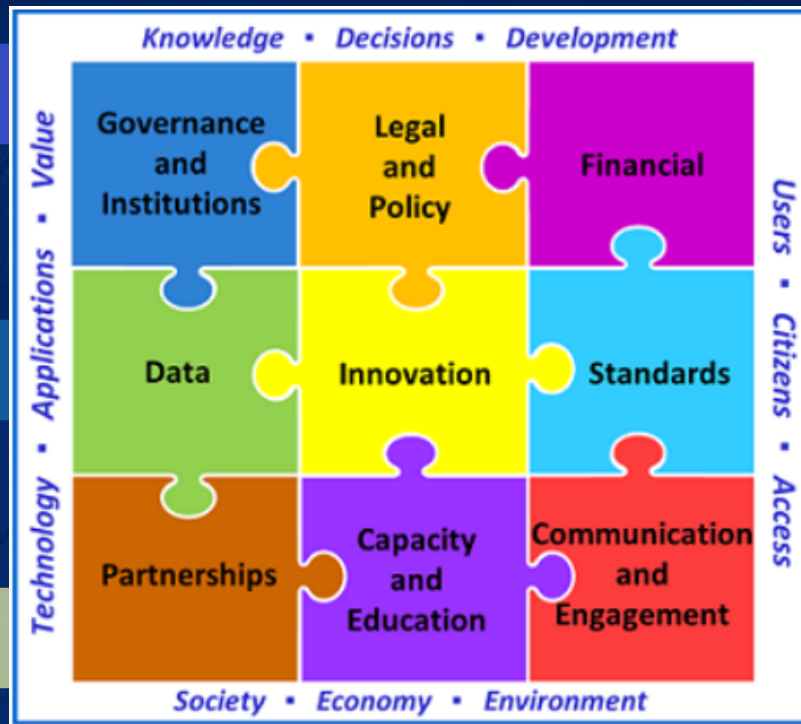
FELA and IGIF

Integrated Geospatial Information Framework (IGIF)

GOVERNANCE

TECHNOLOGY

PEOPLE



Framework for Effective Land Administration (FELA)

FELA Goals	FELA Requirements	FELA Pathways
Transparency and accountability increased	Accountable and transparent governance	Governance, Institutions and Accountability* 
Gender-responsive and inclusive of vulnerable groups	Inclusive and recognizes all forms of tenure	Policy and Legal 
Affordable investments and economic return assured	Affordable with sustainable business models	Financial 
Reliable data and service quality attained	Data maintained, secure and not duplicated	Data 
Responsible and innovation oriented	Upgradable systems and approaches	Innovation 
Interoperability and integration supported	Considers internationally agreed standards	Standards 
Cooperation, partnerships, and participation leveraged	Strengthens partnerships and supports collaboration	Partnerships 
Capacity, capability, knowledge transfer and exchange attained	Facilitates capacity development and knowledge transfer and exchange	Capacity and Education 
National engagement and communication enhanced	Advocates for effective land administration	Advocacy and Awareness* 

A Framework for Implementing Modern SDI - Driving Effective Land Administration

GIS

System of Insight
(Analytics)

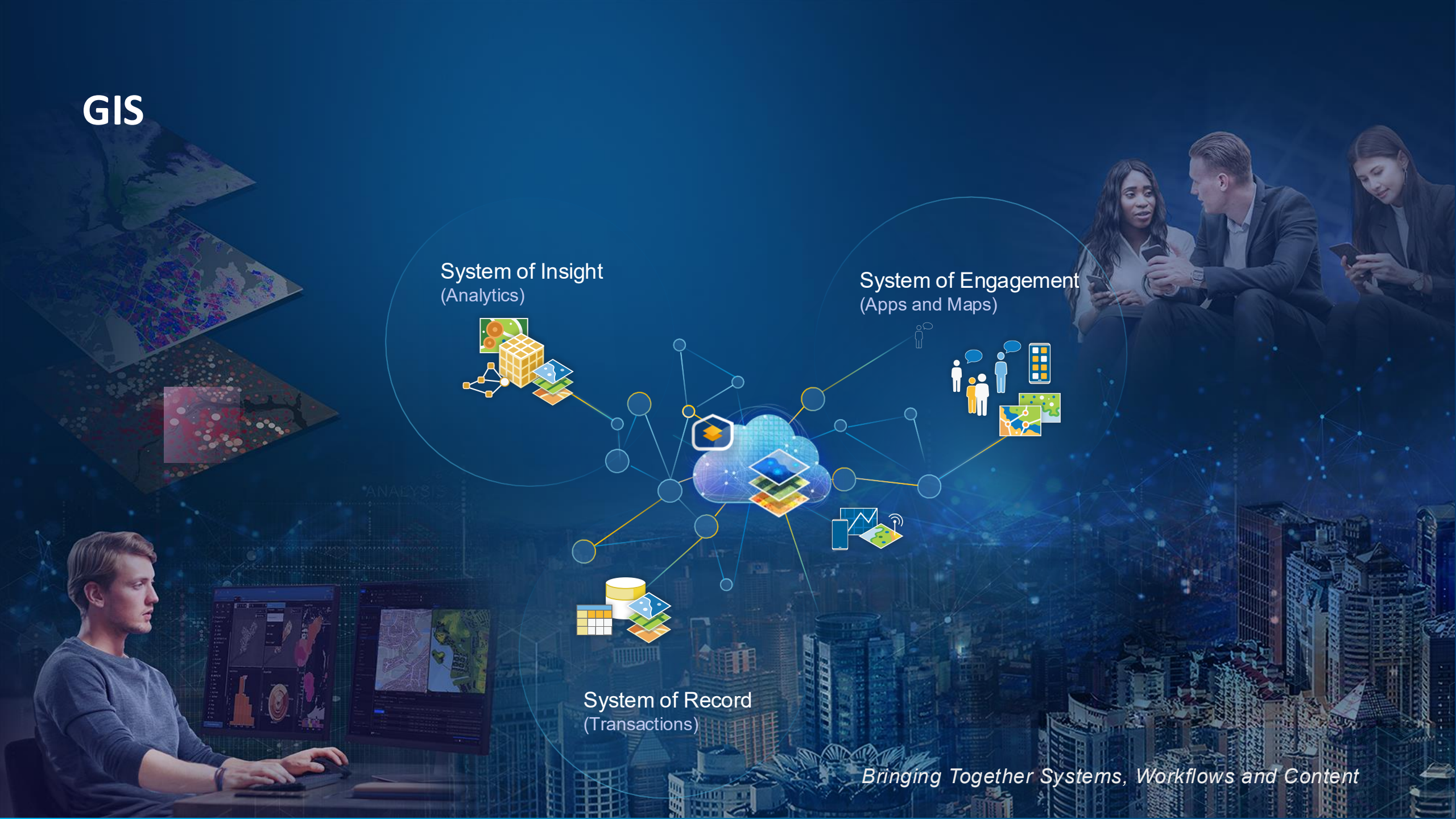


System of Engagement
(Apps and Maps)

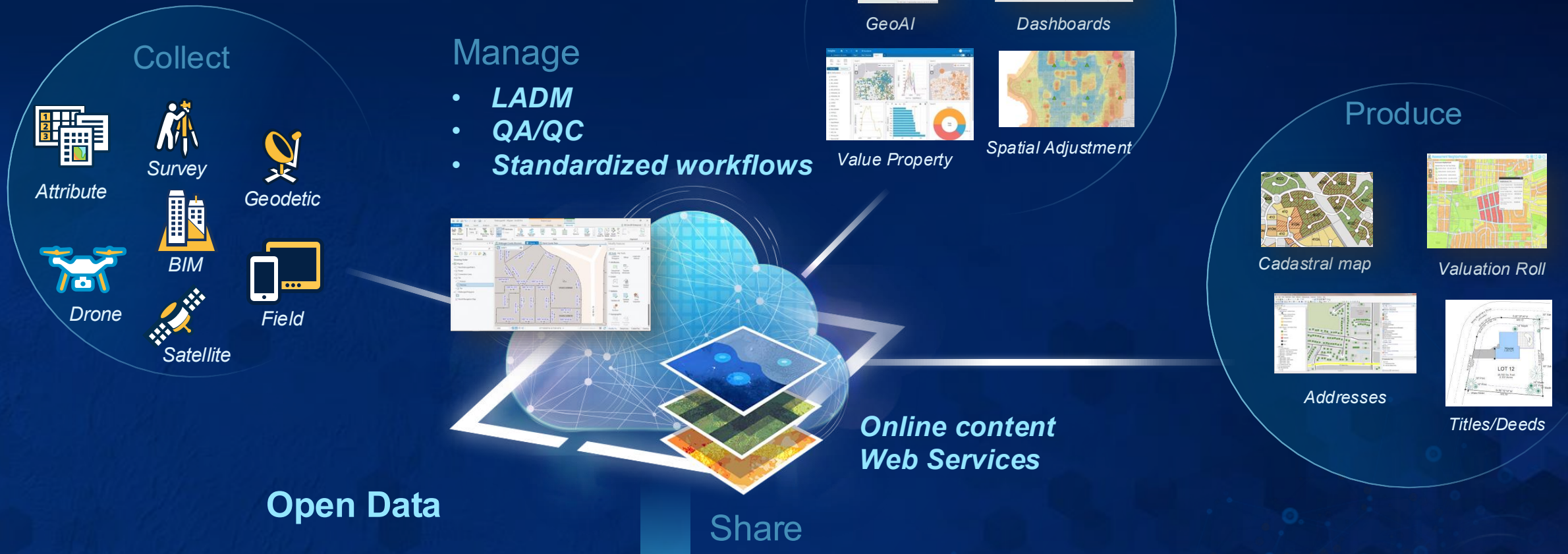


System of Record
(Transactions)

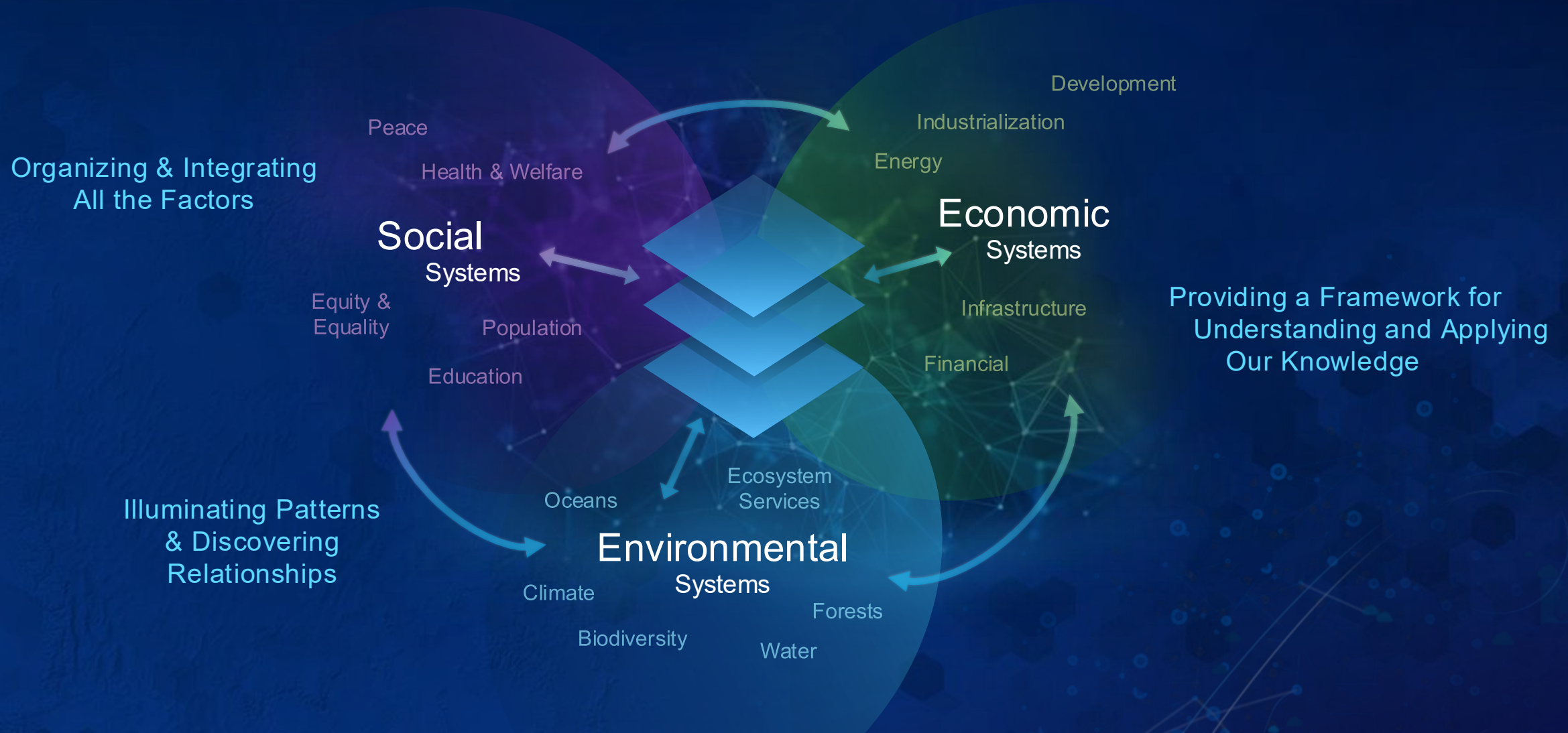
Bringing Together Systems, Workflows and Content



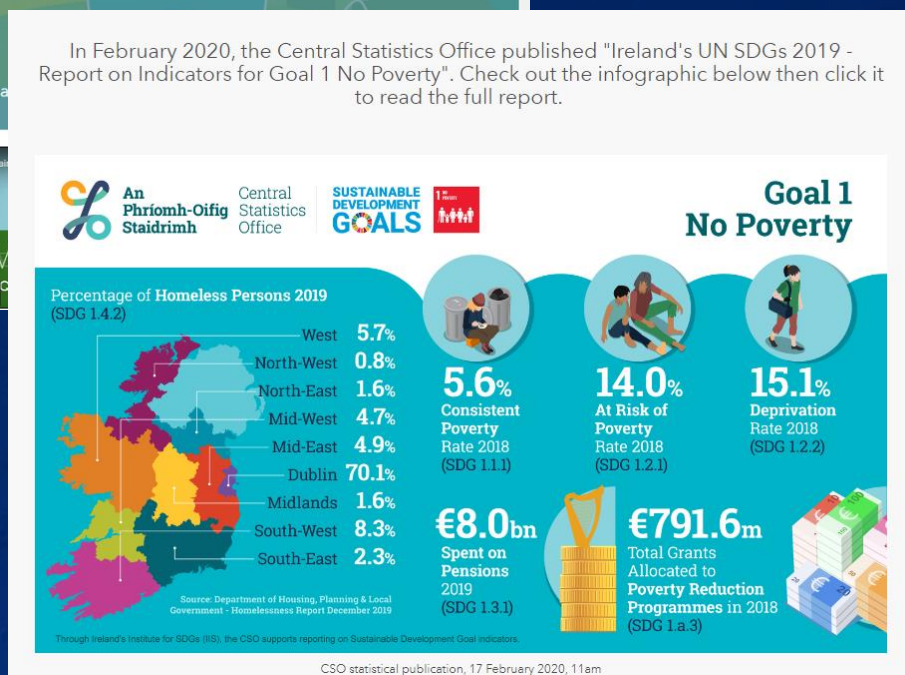
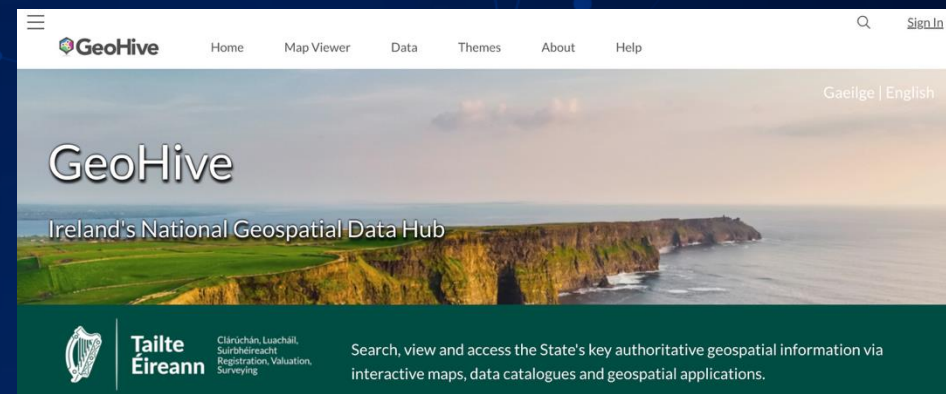
A Platform for Land Administration



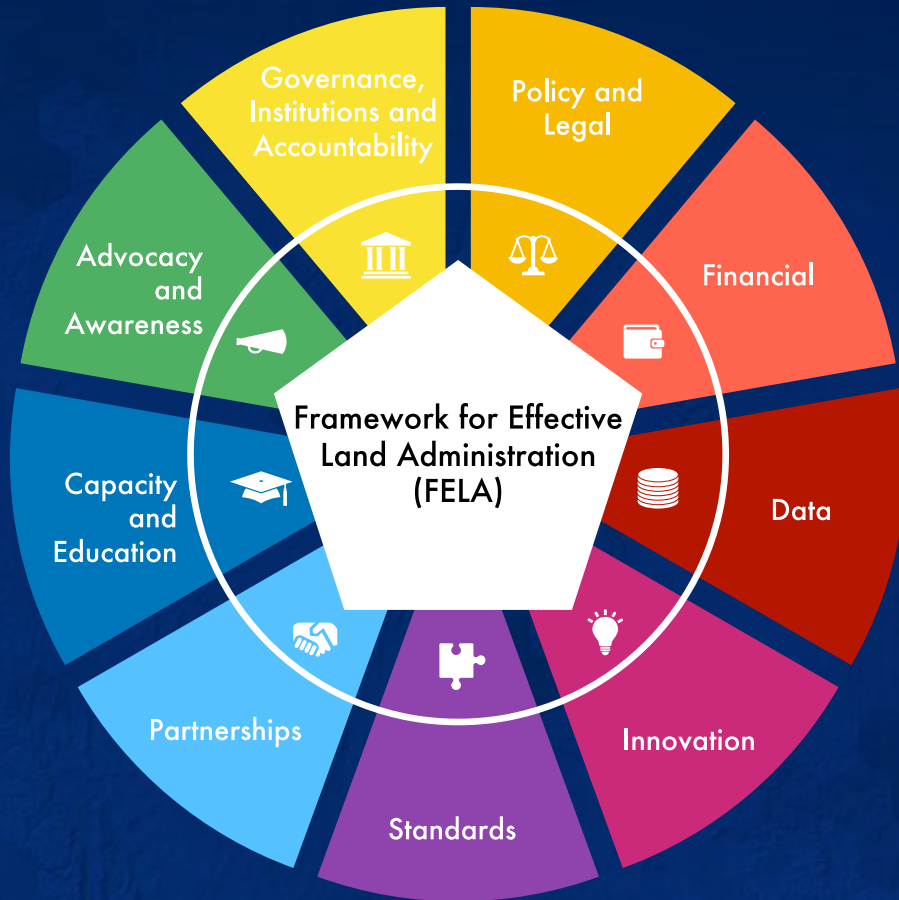
GIS and sustainable development



Example: Ireland



FELA and GIS



System of Insight
(Analytics)



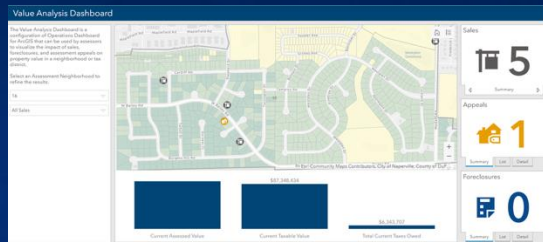
System of Engagement
(Apps and Maps)



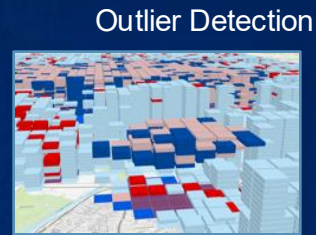
System of Record
(Transactions)



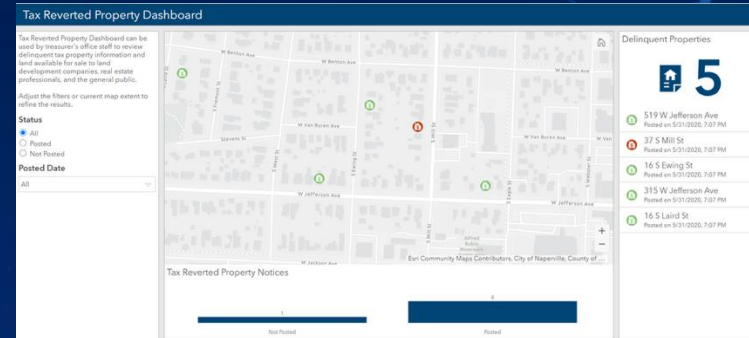
I, II and III: Governance



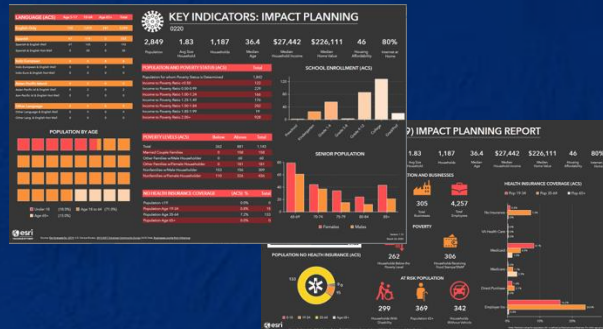
Value Analysis Dashboard



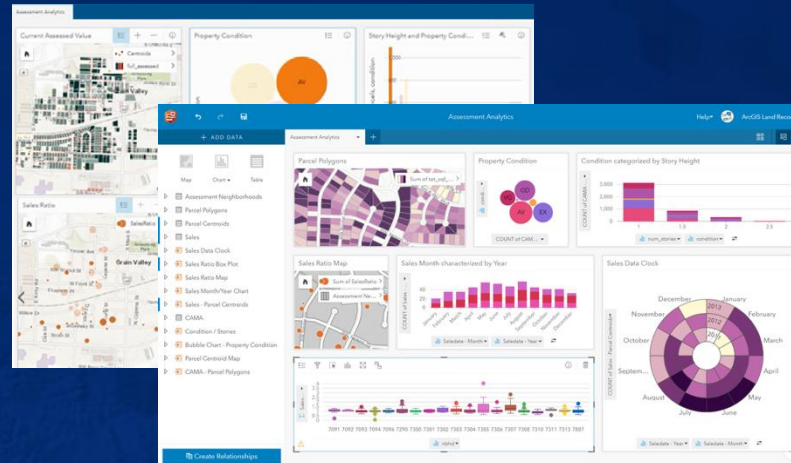
Outlier Detection



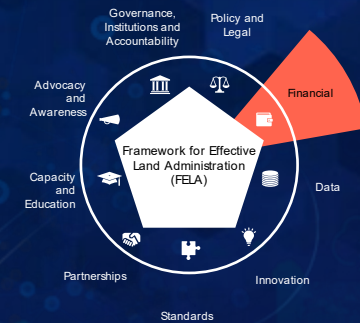
Manage Tax Reverted Property



Community Analyst

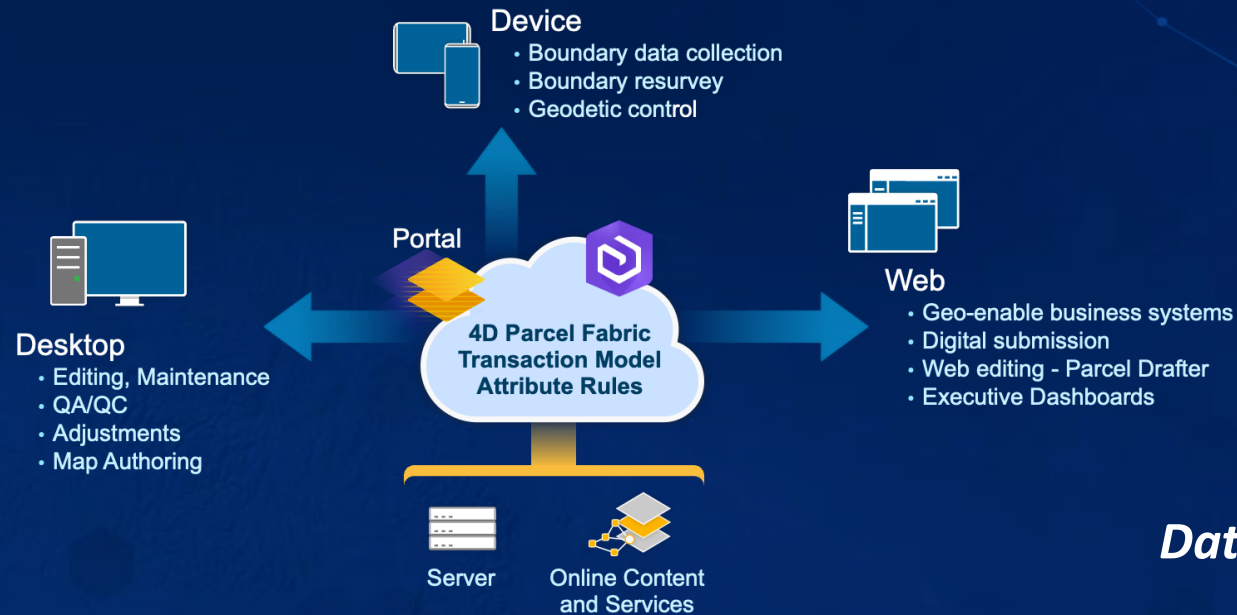


Insights



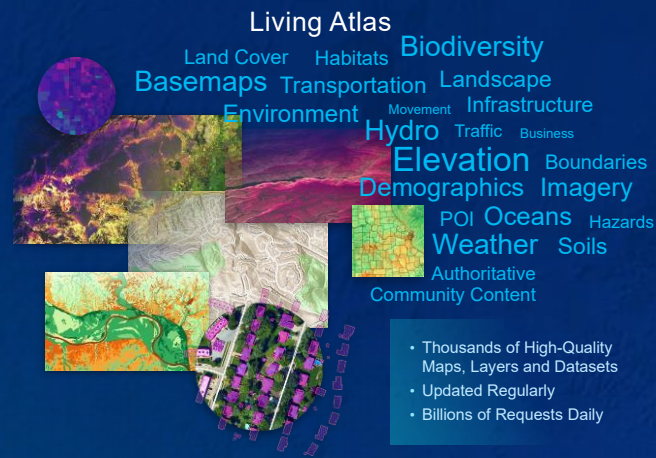
IV: Data

Parcel Management:

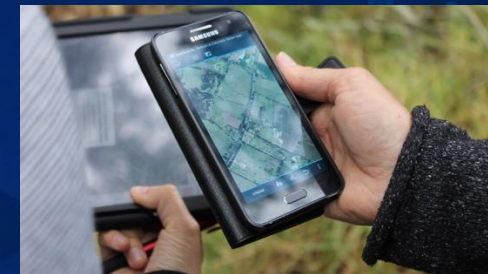


Data Acquisition and Management:

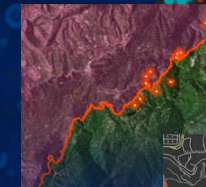
Data Access:



Field apps



Real-Time Observations



Monthly Unemployment Statistics (BLS)



OpenStreetMap Layers



V: Innovation



GeoAI in GIS

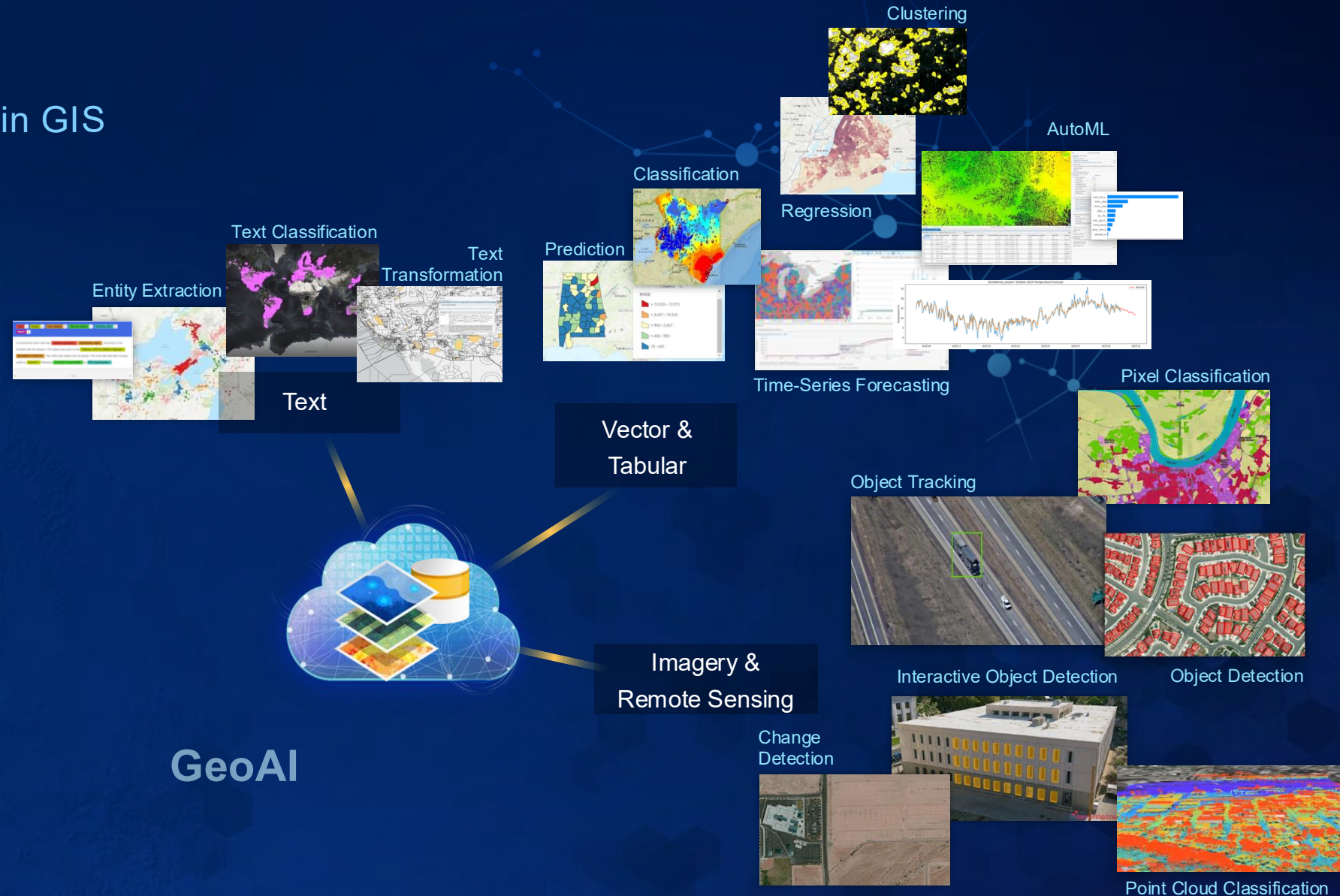
Unlock the power of AI in GIS

Extracting Data

- Imagery
- Text

Analyzing Data

- Vector
- Tabular
- Time series



GeoAI

Accelerating intelligent decision-making

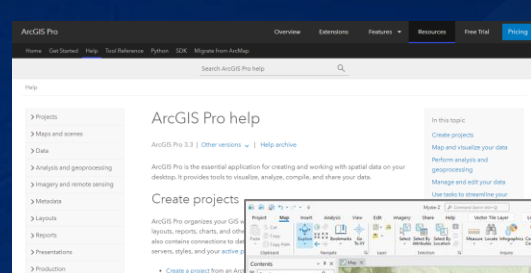
AI Assistants

Leveraging Generative AI to streamline your work and make GIS easier for everyone

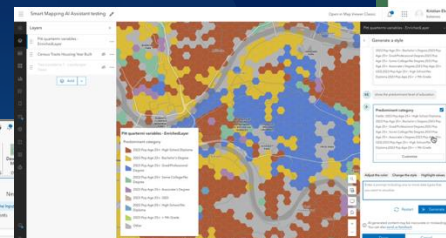
Assistants for ...

- Mapping
- Analysis
- App creation
- Data management
- Administration
- Search
- Learning
- ...

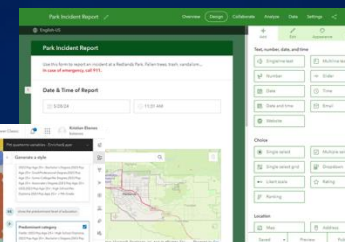
Documentation



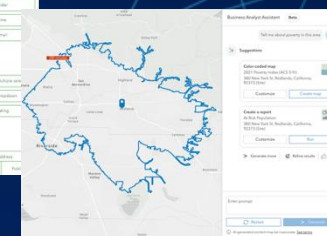
Smart Mapping



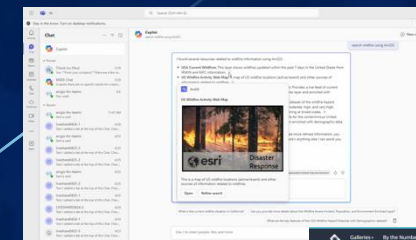
ArcGIS Survey123



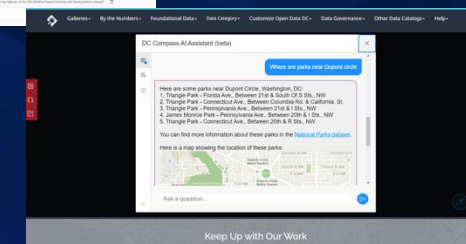
Business Analyst



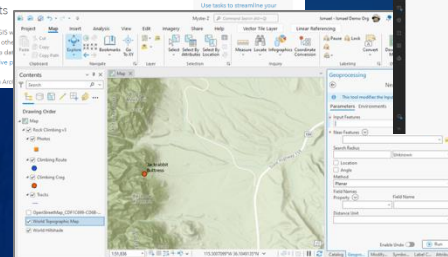
ArcGIS for Microsoft Teams



Configurable Assistant Apps



ArcGIS Pro



Also in the works ...

- Enhanced search
- Coding assistants for Arcade and Python
- Streamlined metadata editor
- Many more...

Boosting productivity
and making GIS easier

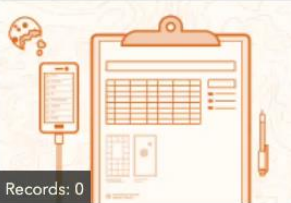


Example: Survey assistant

ArcGIS Survey123 ▼ My surveys Organization ?  Chris ▼

My Surveys + New survey Search 🔍

Surveys I own ▼ Count: 38 ☰



Records: 0

Untitled survey_3
by clesueur_disc



Records: 0

Untitled survey_2
by clesueur_disc



Records: 0 

Untitled survey_1
by clesueur_disc

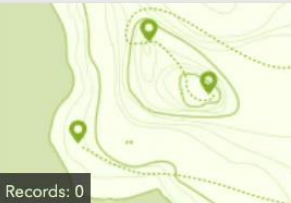
    



Records: 0

Untitled survey
by clesueur_disc



Records: 0

Airport Runway
by clesueur_disc



Records: 0

Quick Tree Hazard Survey_1
by clesueur_disc



Records: 0

Quick Tree Hazard Survey
by clesueur_disc



Records: 0 

Boating Experience Survey
by clesueur_disc

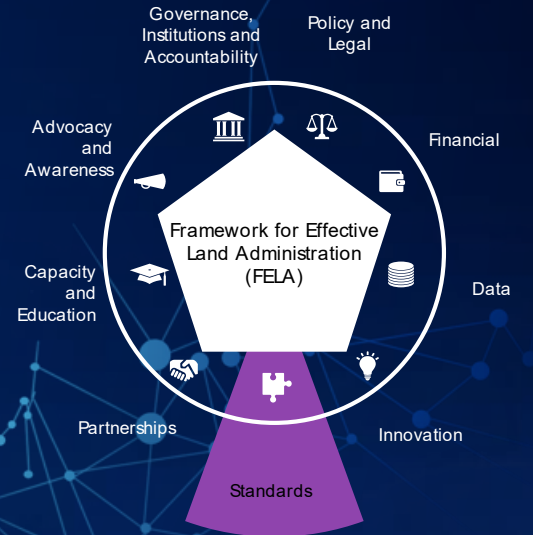








VI: Standards



Supporting and Leveraging
Multiple Open Initiatives

Standards across the GIS system

DOMAIN DATA MODELS

INSPIRE
FGDC
ISO LADM, ...
IHO S-57 / S-100 series
NENA
...

METADATA

FGDC CSDGM
ISO 19115 / 19139
INSPIRE
North Am. Profile
Dublin Core
...

WEB SERVICES/APIs

GeoServices REST
OGC WFS, WMS, WMTS
OGC API Features, Tiles,
Catalog, Records...
I3S
...

SECURITY

Data Sovereignty
Trust
Identity
GAIA X

ENCODINGS

JSON
XML
GML
RDF

CATALOG & SEARCH

DCAT
DCAT-AP
SEO practices
CSW

ACCESSIBILITY

WCAG
W3C



Data & Metadata



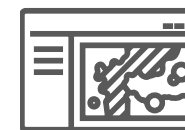
Web Services &
Metadata



Work with
Partners



Open &
Private Data



Hub Sites &
Catalog



Maps &
Apps

produce → *publish* → *collaborate* → *share* → *use (& reuse)*



Desktop



Enterprise



SaaS

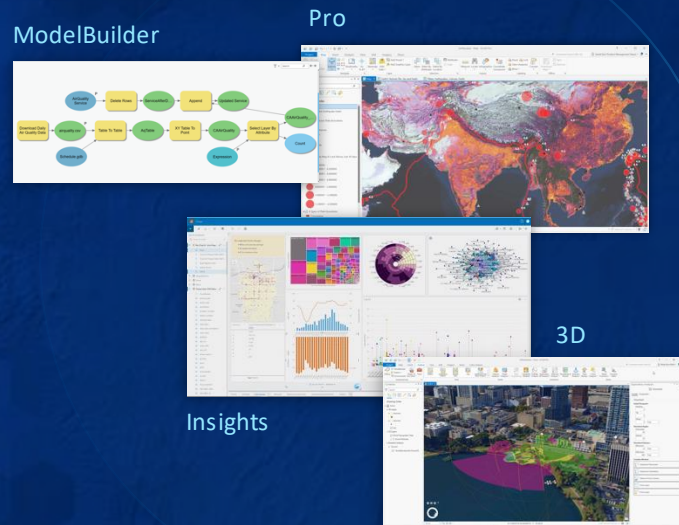


Portals

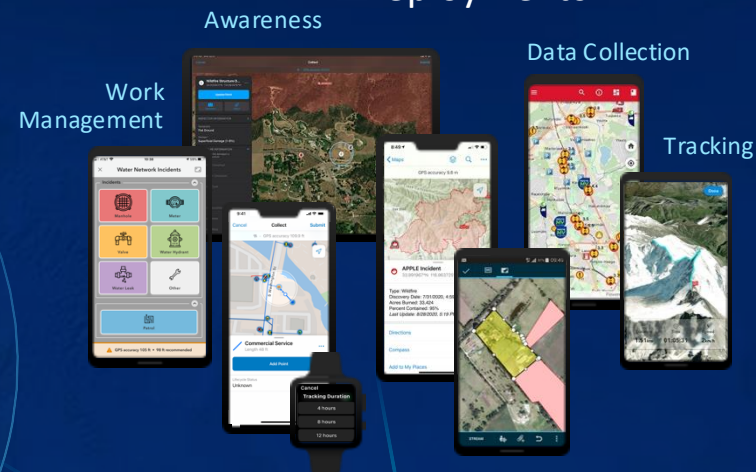
SDI

VII, VIII and IX: People

Powerful Desktop Apps



Massive Mobile Deployments



Geospatial Infrastructure

Pervasive Web Apps



VII, VIII and IX: People

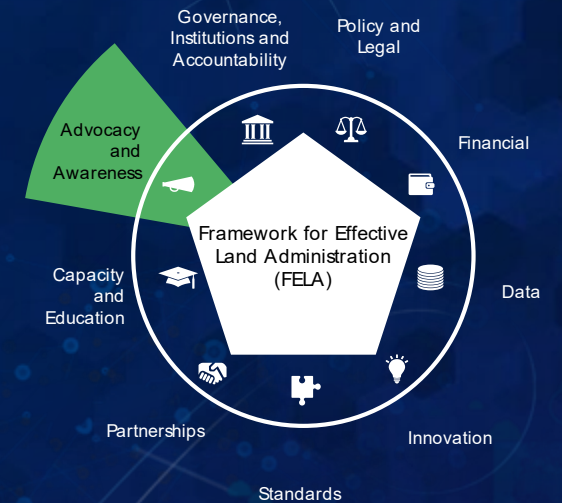
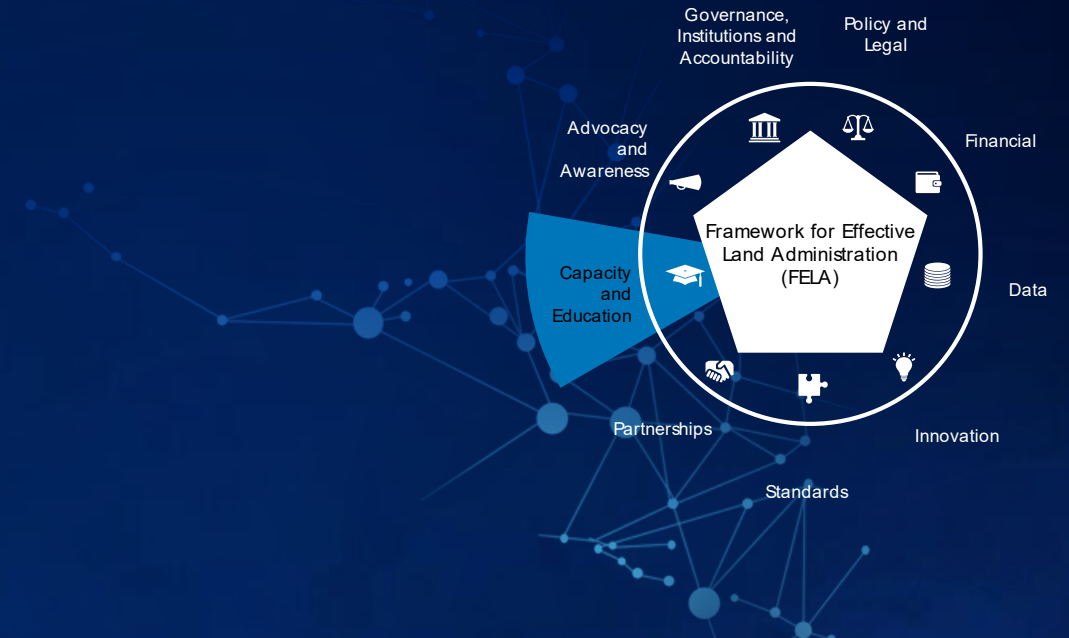
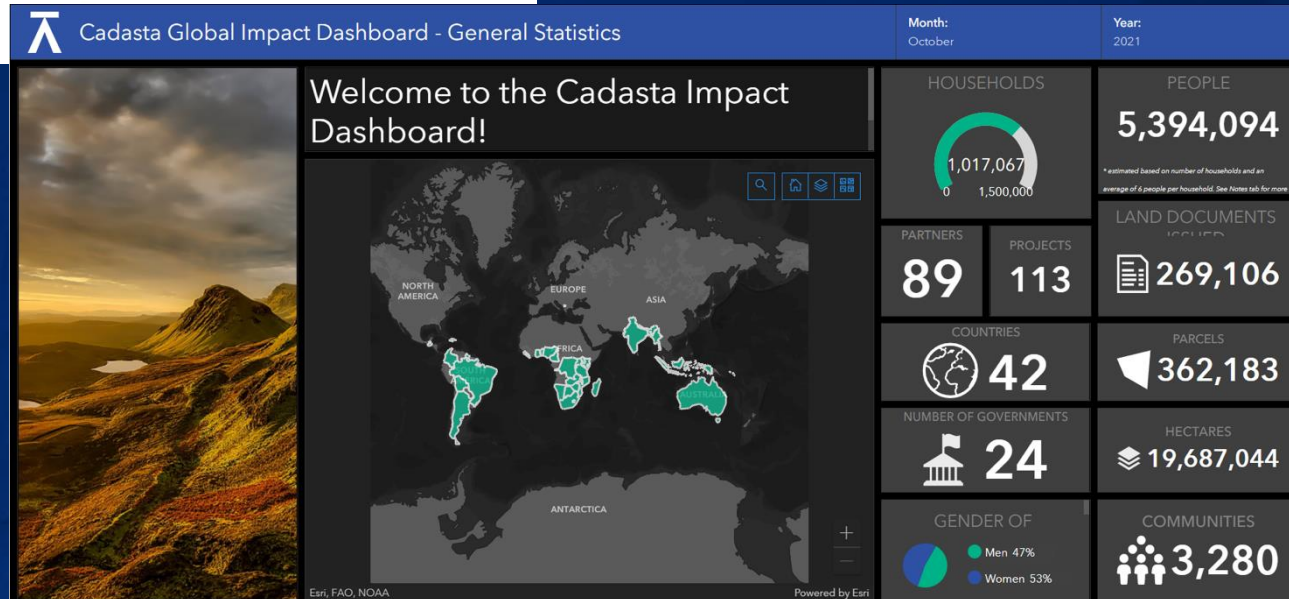


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ARCUSER

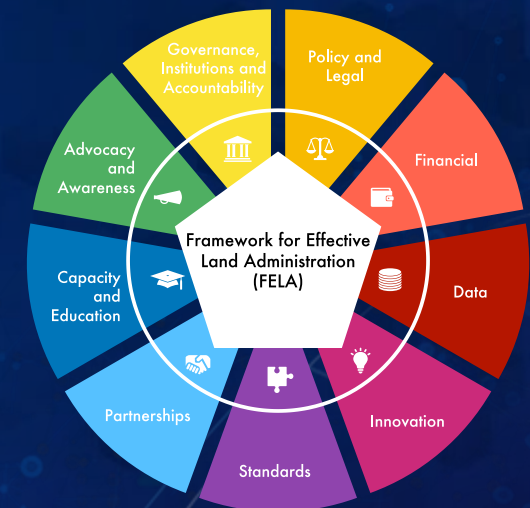
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EDUCATION Summer 2018



Conclusions

- GIS underpins all 9 strategic pathways of FELA
- GIS will evolve, as FELA evolves
- FELA will evolve, as GIS evolves





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