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Technical Advances in Land Administration

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Technical Advances in Land Administration

Challenges

- Keeping Authoritative Data Current
- Accuracy
- Accurate values
- Secure
- Accessible
- Multiple networks/users
- Cost
- Implementation timelines
- Scalability
- Staff

Responses to Challenges

- Standardized workflows
- Ongoing data improvement schemes
- Advanced analytical tools
- Standards
- Web GIS
- Web GIS
- Standards/Solutions/Web GIS/Cloud
- Solutions
- Standards/Cloud
- Solutions/Standards

Trends

Trends

- Contributory
- Usable
- Timely
- Evolvable
- Flexible
- 3D
- Attainable
- Inclusive

Technical Response

- Apps
- Apps
- Standards/Solutions
- Web GIS
- Web GIS
- Web GIS
- Solutions
- Partners

Technical Advances Categorized

Responses to Challenges

- Standardized workflows
- Ongoing data improvement schemes
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- Standards
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- Standards/Solutions/Web GIS
- Solutions
- Standards
- Solutions/Standards

Technical Response

- Apps
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- Web GIS
- Solutions
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Standards

Web GIS

Solutions

Standards

The Importance of Open

Enables many implementation configurations

Open Standards and Formats

WMS GML WCS KML WFS
WWW
IFC SQL Web Scene (I3S)
OPeNDAP SLD SOAP WMTS
LERC JSON LAS CSW WPS
REST WaterML INSPIRE
NetCDF Shapefiles
ISO
GeoPackage
OneGeology
CityGML



Many OGC
Certifications

Product Integration

SQL Server
Adobe Creative Cloud SharePoint
MS Office Azure AutoCAD
AWS Netezza Teradata
IBM Cognos SAP HANA
Oracle

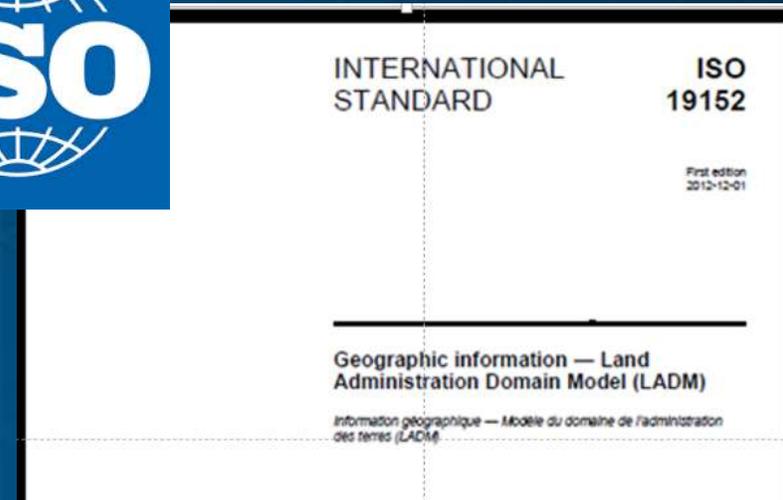
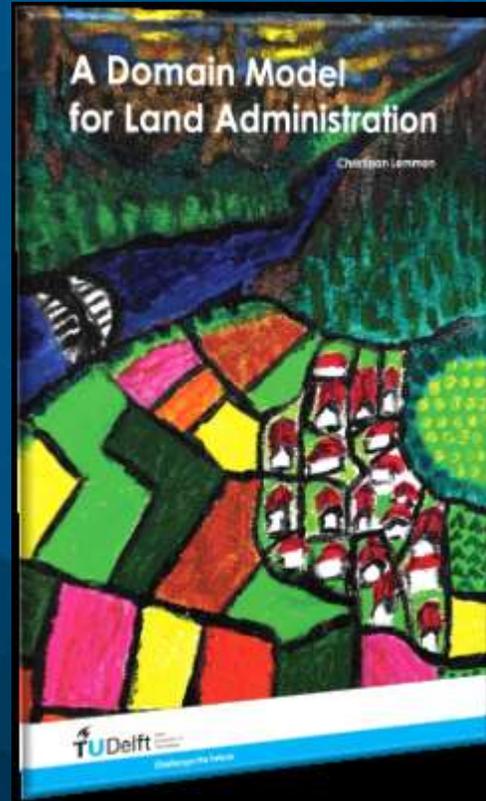
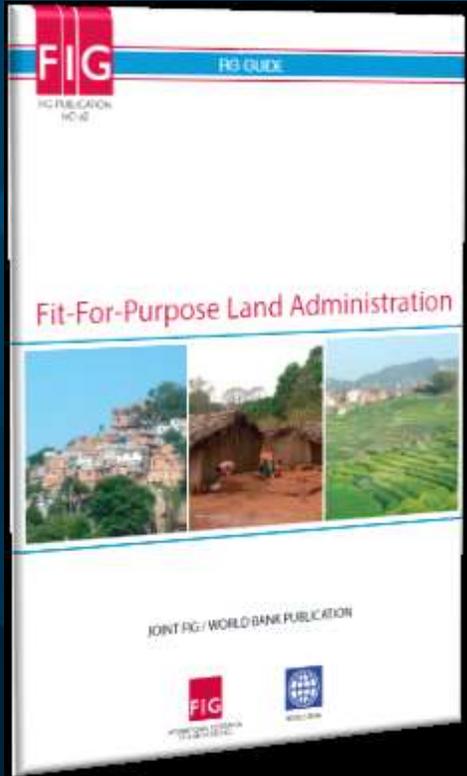
Open Software

Open Data Access
Open APIs & SDKs
Extensible Architecture
Embeddable Components
Open-Source Contributions (500+)
Open-Source Integration

Any System

... An Open, Interoperable, and Standards-Compliant Platform

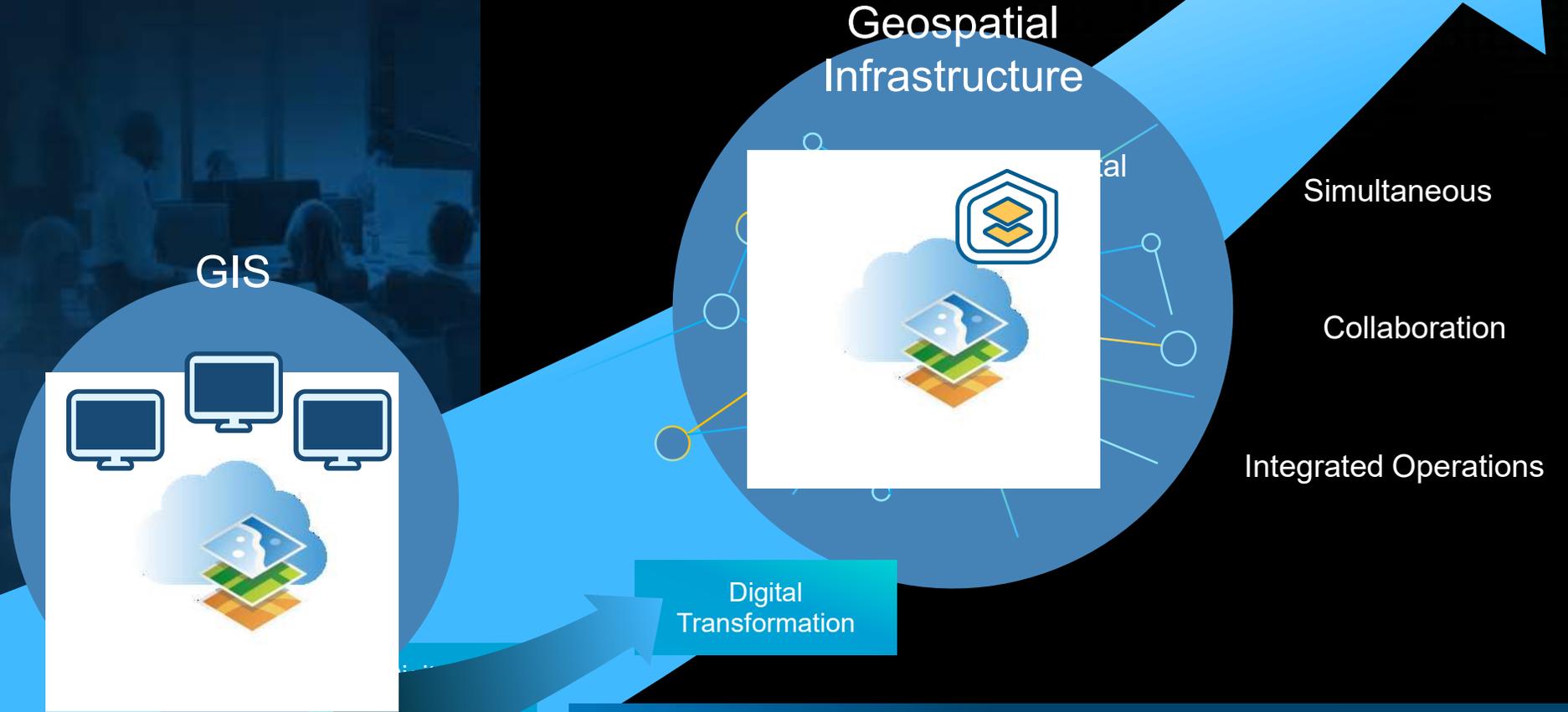
Standards-based Solutions



Web GIS

Web GIS Is Driving Digital Transformation

Helping Organizations Re-envision Their Workflows



*Changing How Organizations as a Whole . . .
. . . Do Their Work*

Web GIS Technology

Is Transforming Land Information Management

Many Innovations

Integrated Platform

Open Available Shared Content

Cloud / Web Services

Ready to Use Solutions and Apps

Advanced Analytics & Visualization

Integrated Imagery & Real Time / IoT

Web GIS Includes Global Content

Basemaps **Soils**

Agriculture

Topo Maps

Addressing

Ecology **Sentinel** **Earthquakes**

Traffic

Rainfall

Geology **Vegetation** **Roads**

Imagery

Scientific

Demographics

Stream Gauges **Landsat**

Species

NAIP

Planes

Water **MODIS** **Biology**

Elevation

Lifestyle **POIs**

Land Cover

Protected Areas

Hazards **Climate**

DigitalGlobe

Floodplains

Weather **Historical Maps**

Landscape **Oceans**

Stream Forecasts

Population

Boundaries

OSM

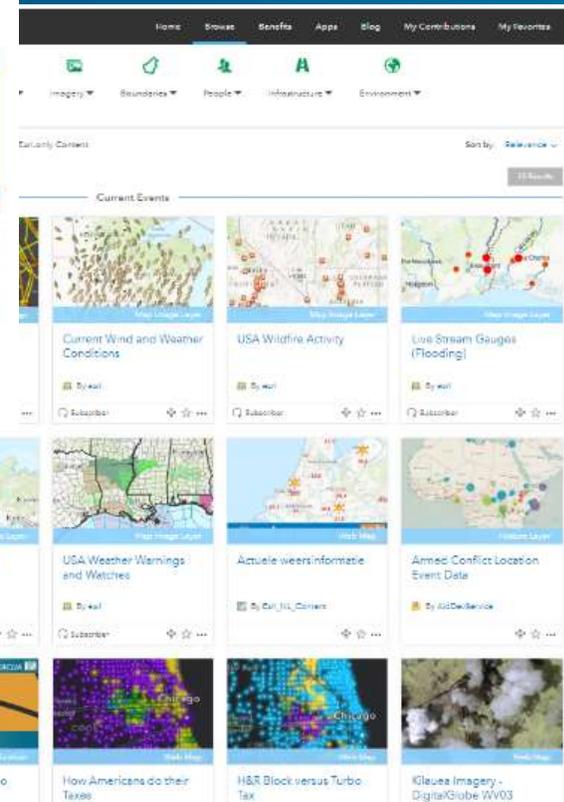
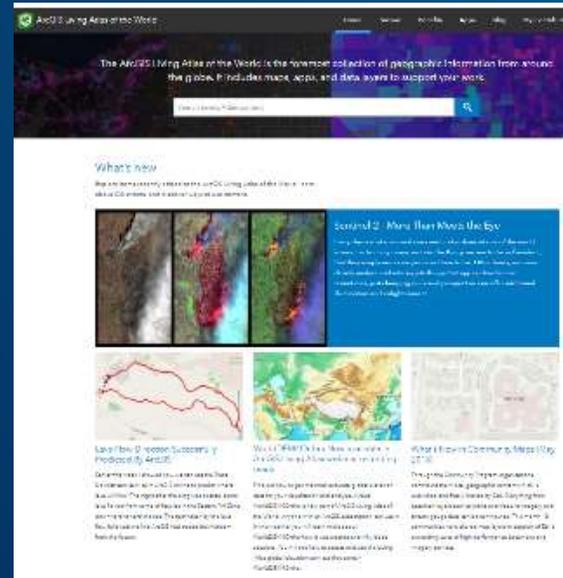
Sea Temperature

Wildfires

Railroads

Millions of Maps and Layers

Shared by GIS Users



Open / Accessible

Web GIS

Integrates All Types of Data

Creating
a Common Lang



Imagery



Unstructured



Vector



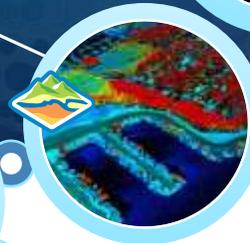
3D



Real-Time
(IoT)



Big Data



BIM

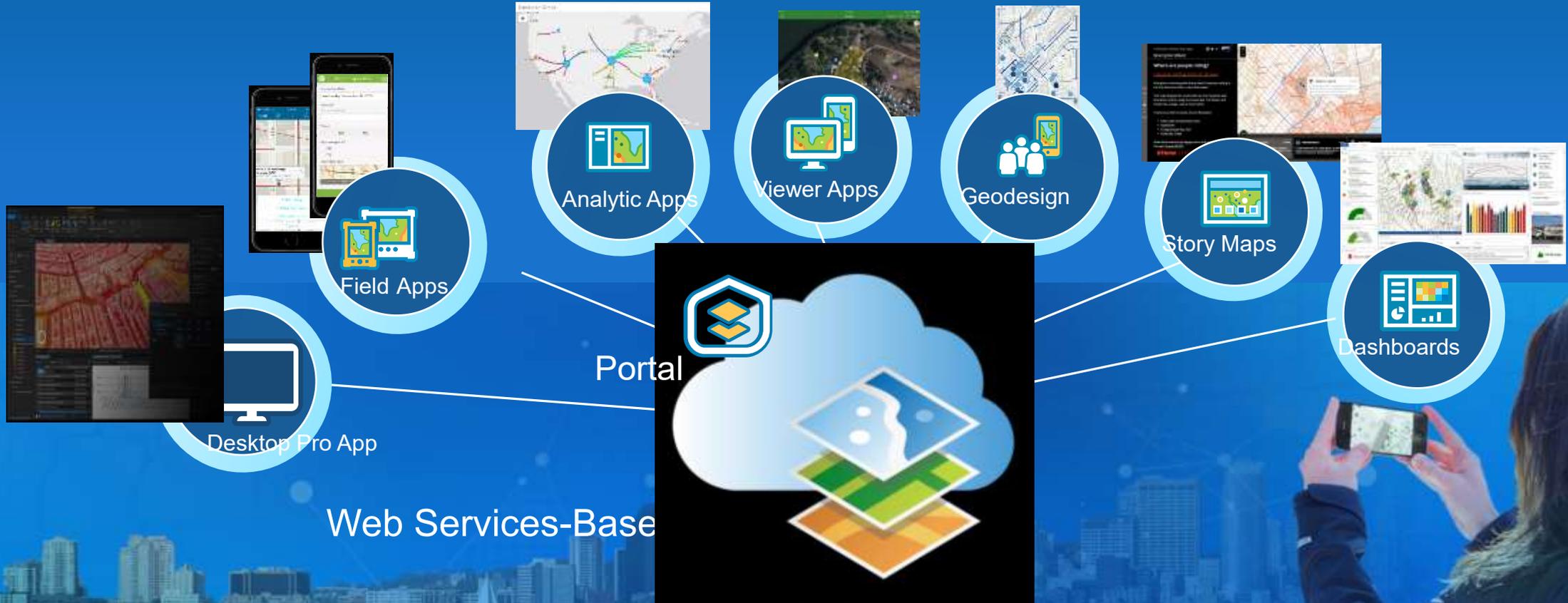


Maps,
Scenes,
Layers

D

Web Apps

Extend the Reach of GIS to Everyone



Across Organizations and Beyond

Web GIS Supports Multiple Implementation Patterns

Integrating Cloud and On-Premises Systems

Open. Scalable
... and Interoperable



Objects



Systems



System of Systems
(Geospatial Infrastructure)



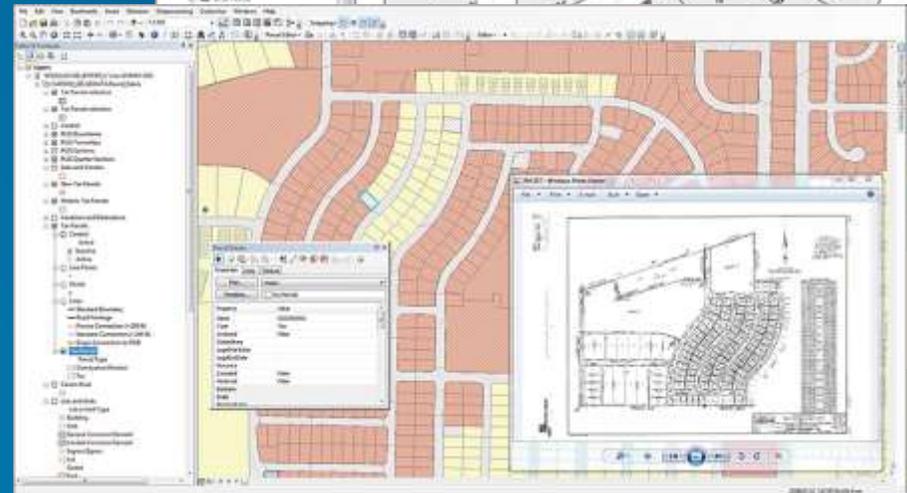
Solutions

Parcel Management | Web Based Solution for Cadastre

Ready to Use



- Apps & Workflows
- Data Management
- Easily Configurable



Fabric Data Model

- Accurate and Efficient
- Topological
- Least square adjustment
- History
- ADM / Standards Based



Field Apps | Empowering Mobile Workers

Integrated

Connected and
Disconnected



- Data Capture
- Coordinating Work
- Navigation
- Mapping & Markup
- Location Tracking

Dashboard

Connecting the Field with the Enterprise

Value Analysis

Analyze and Securely Share Land Information

ArcGIS is the platform for land administration systems

Tax Map



Canadian County, Oklahoma

Land Registration



Russia

Cadastral



Jamaica
National Land Agency

Predicting Vacancy



Pennsylvania
City of Philadelphia

Public Land
Use Portal



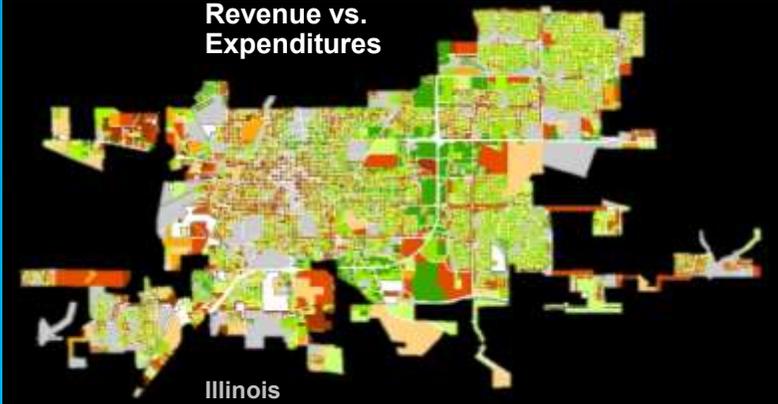
Austria
SynerGIS

Interagency Collaboration



The Netherlands
Provincie Noord-Holland

Revenue vs.
Expenditures



Illinois
GISRDC

Assessed Value

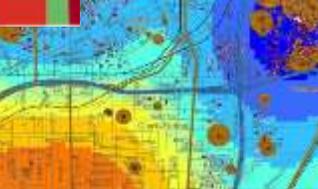


Tax Appeals



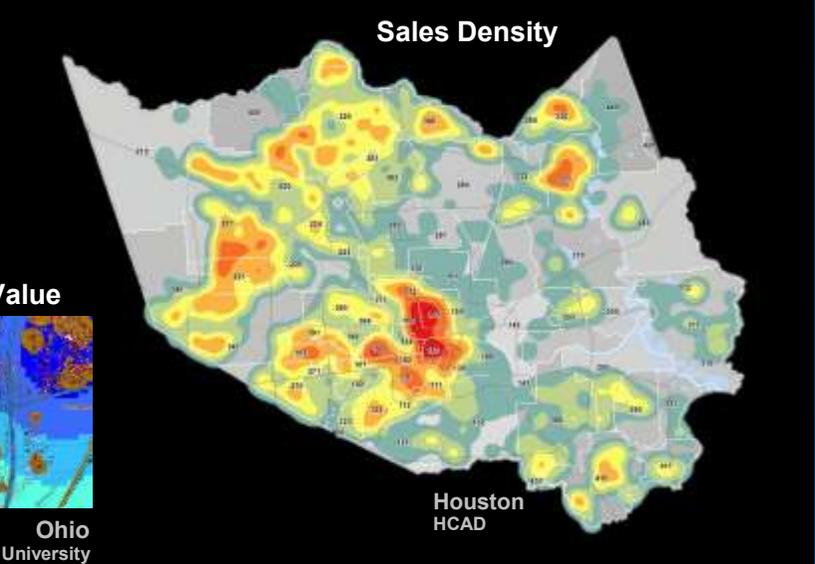
Ohio
DEVNET Incorporated

Change in
Property Value



Ohio
Cleveland State University

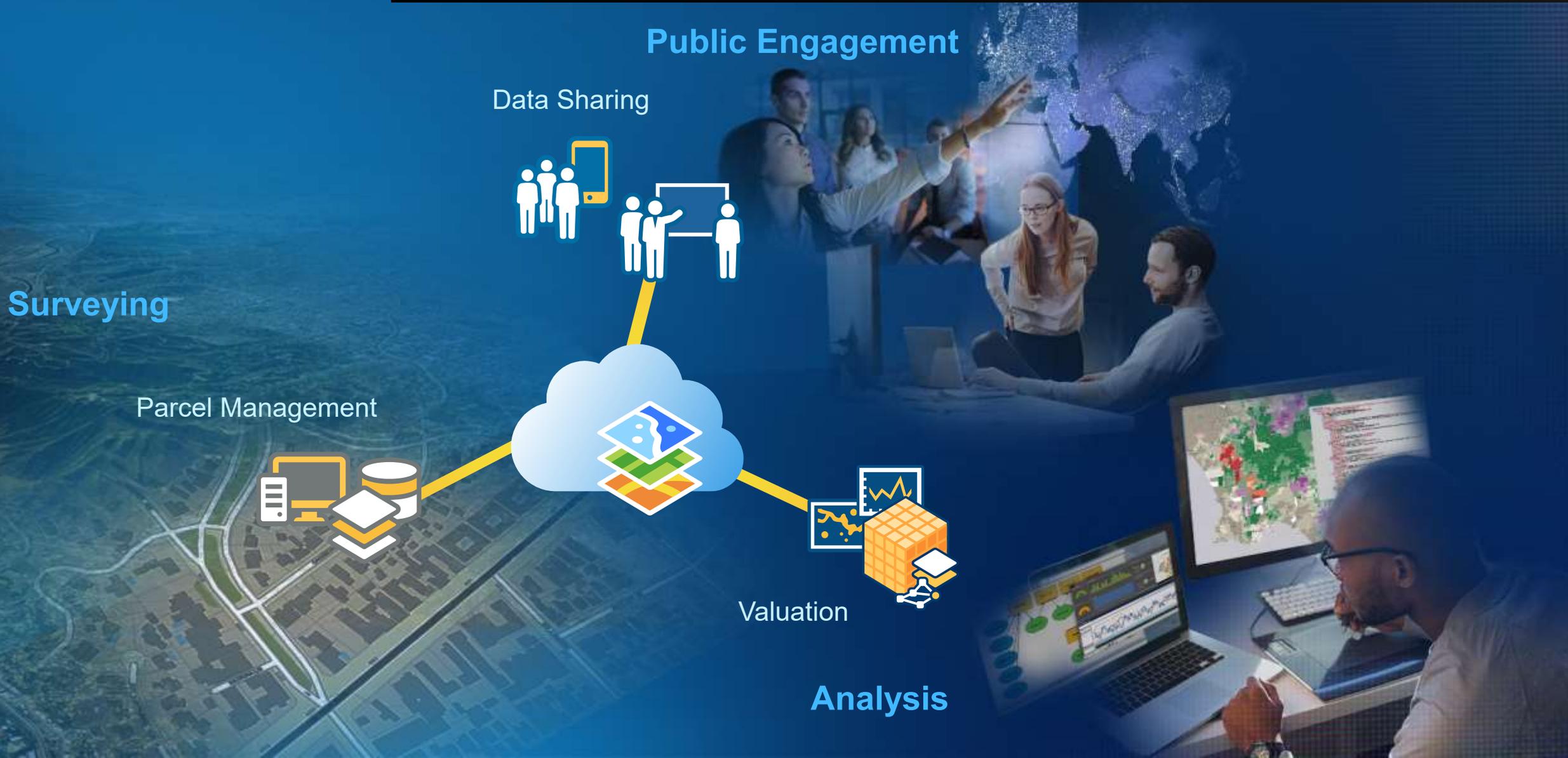
Sales Density



Houston
HCAD

Web GIS

Delivers Land Administration Solutions



Modern Cadastral Solution Platform – Web GIS

Supporting Global Cadastre Requirements

