

Presented at the FIG Congress 2018,
May 6-11, 2018 in Istanbul, Turkey

Modernizing Land Administration Systems

Brent Jones PE, PLS

Esri

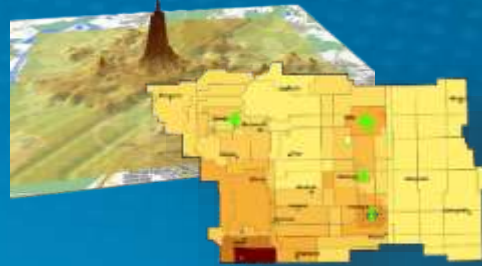
Land Administration Systems

GIS is the Technology Platform

Digital Cadastre Mapping



Property Valuation



Transaction Analysis



Integrated Land Management



Field Data Collection



Address Systems



Resource Leases



National Data Portal



Powering Land Administration Systems Worldwide.....

Collect, Manage, 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



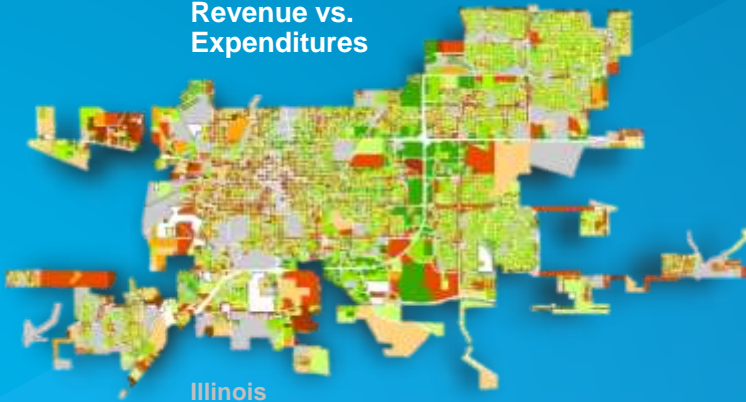
Austria
SynerGIS

Interagency Collaboration



The Netherlands
Provincie Noord-Holland

Revenue vs.
Expenditures



Illinois
GISRDC

Assessed Value



Tax Appeals



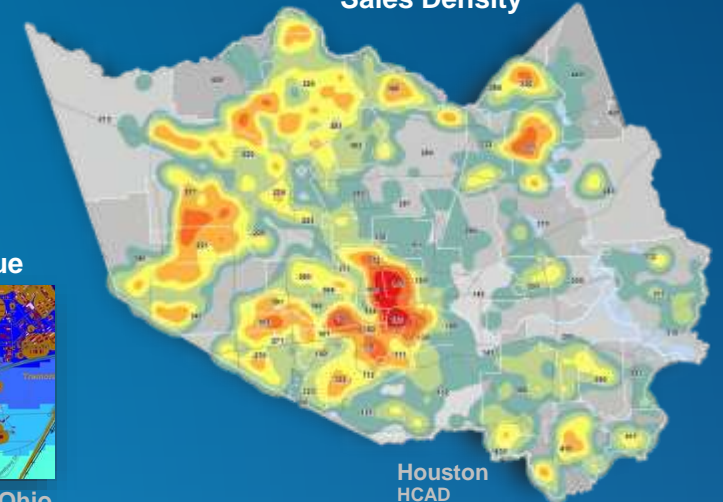
Ohio
DEVNET Incorporated

Change in
Property Value



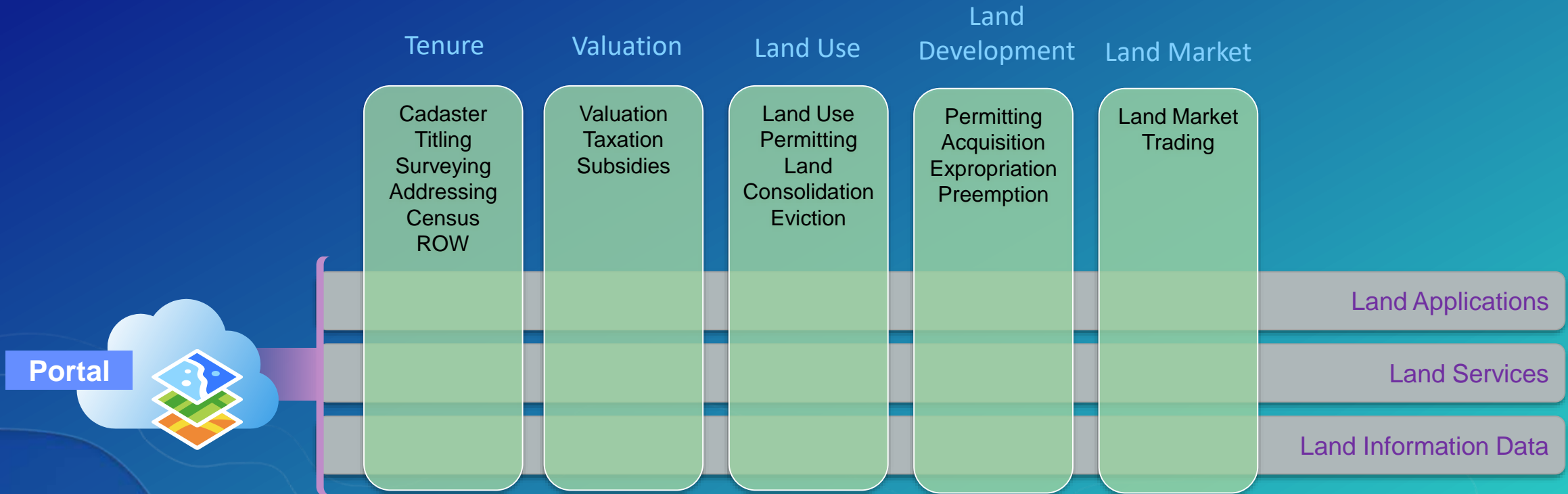
Ohio
Cleveland State University

Sales Density



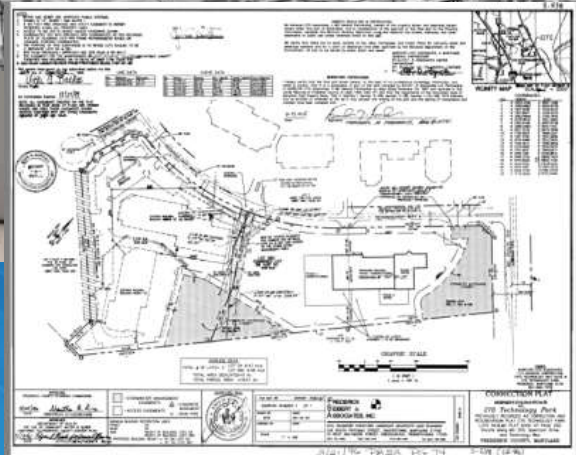
Houston
HCAD

GIS – The Platform for Land Administration



System of Record

Organizes and Manages the Legal Record of Ownership, Value and Location



Cadastral History



Quebec, Canada

Parcel Query



Auckland, New Zealand

Tax Parcels



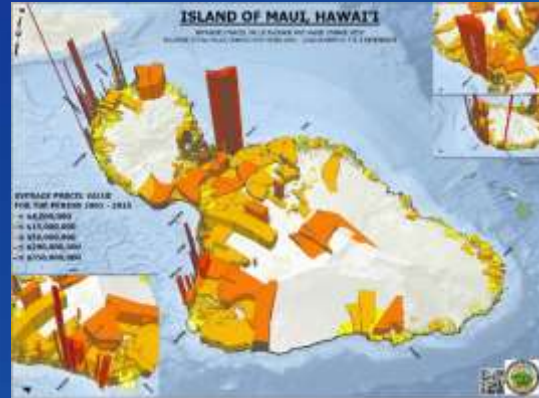
Wisconsin



System of Insight

Understand the factors impacting property value and use

Parcel Values



Maui

Historic District Property Values



Georgia

Trade Market Area Analysis



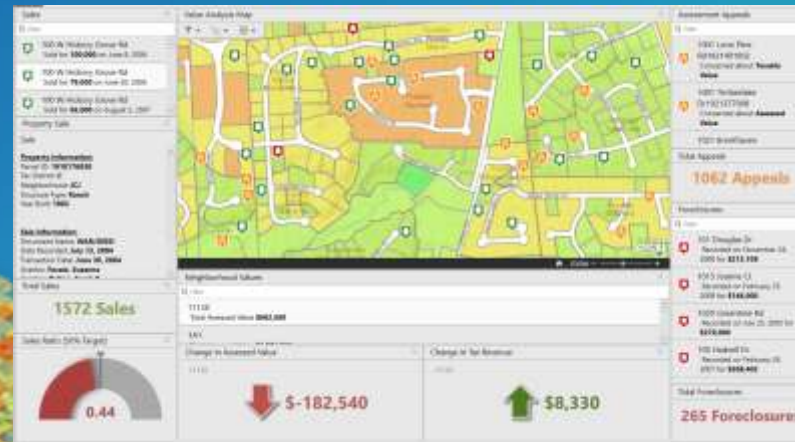
Tax Assessment Nebraska



Operations Dashboard



Value Analysis Dashboard



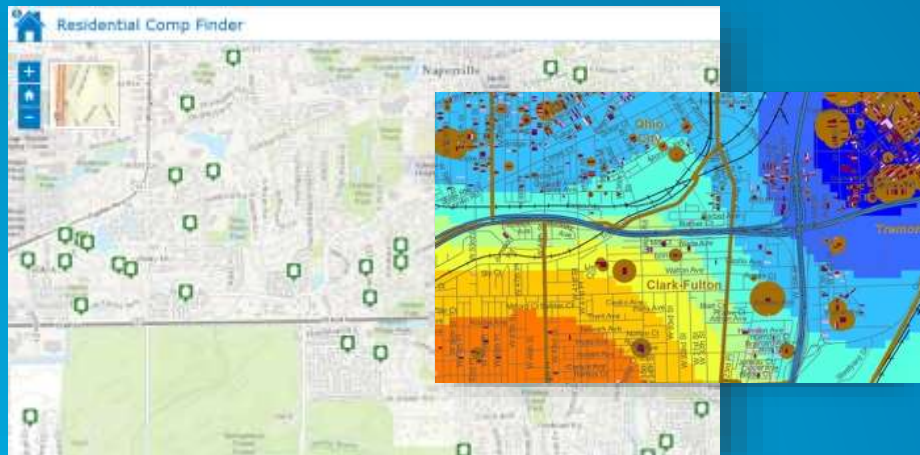
System of Engagement

Growing with public expectations and capabilities

Engaging taxpayers, businesses and citizens with government



Portal



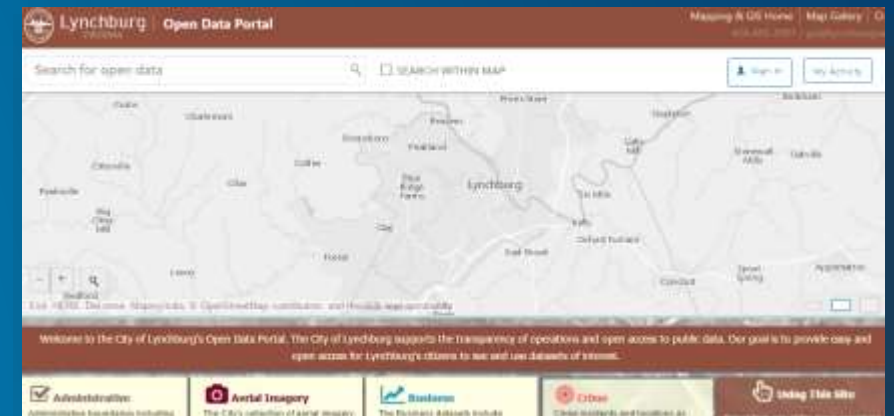
Comparable Sales/Analytics



Mobile



Story Maps

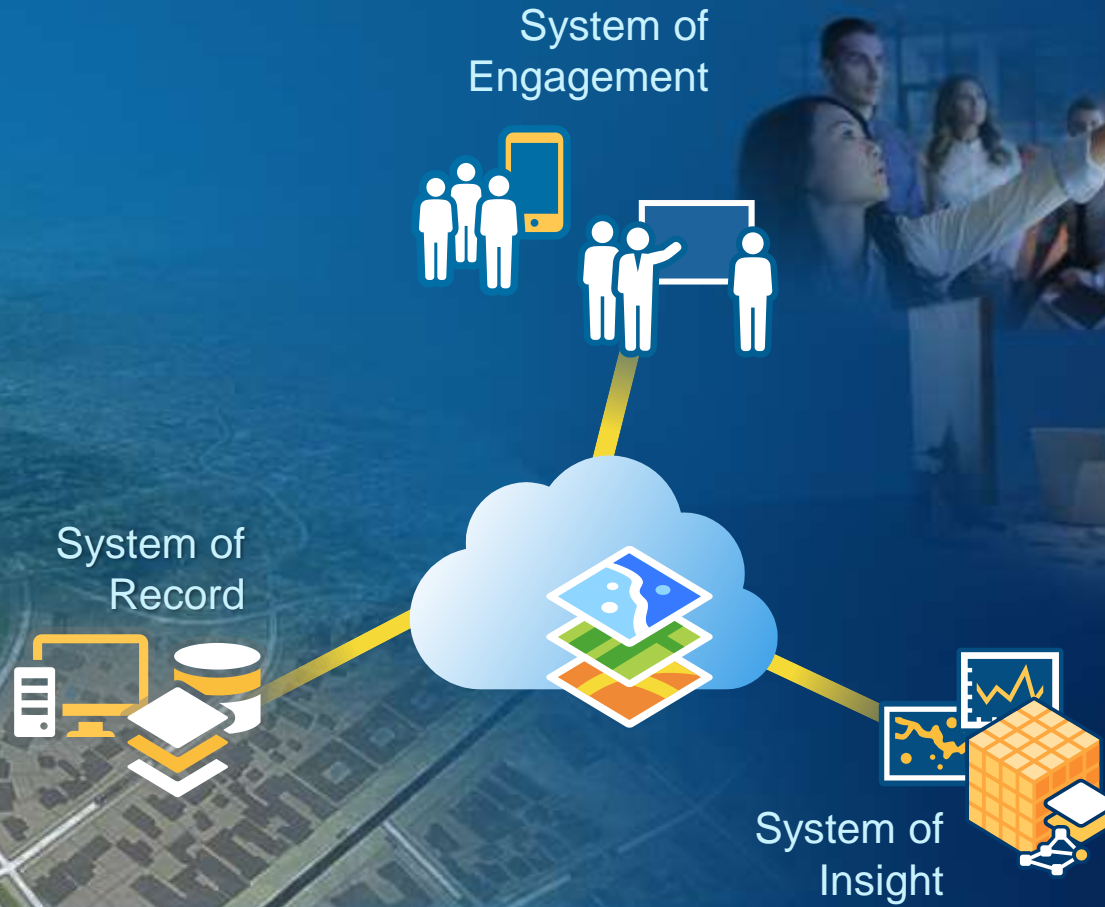


Open Data

Engaging with the public is now a two-way conversation.....

ArcGIS

Enables Multiple Types of Systems



Modern Architecture

GIS – Enabling Platform

Enabling New Capabilities



How You Integrate

Client / Server → **Web Services & Apps**

Stand-Alone Desktop → **Connected Desktop**

What You Integrate

Data Models → **Web Maps & Layers**

Static Data → **Real-Time**

Single Server → **Distributed Computing**

Why You Integrate

Custom Applications → **Configurable Templates & Apps**

Proprietary Data → **Open Data & Shared Services**

2D Features → **3D Features**

Spatial Analysis → **Spatiotemporal & Big Data Analytics**

Digital Cartography → **Smart Mapping**

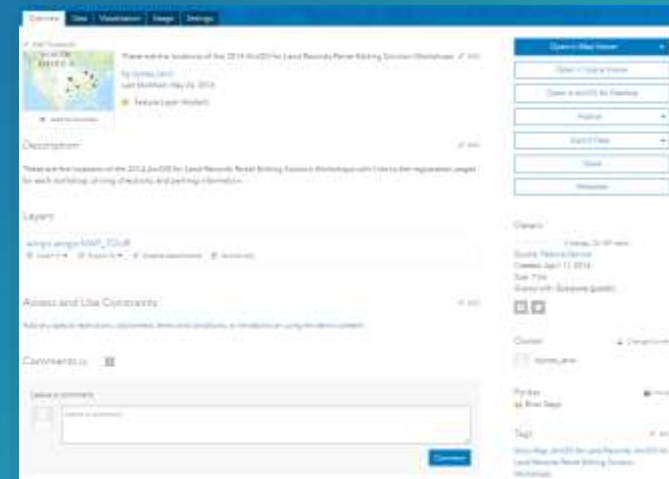
Web Services

Organizes and Securely Sharing Data.....

https://

- Secure/Identity
- Standards-based
- Controlled Access via Identity
- Control Who Does What
 - View
 - Query
 - Edit
- Monitor/Track

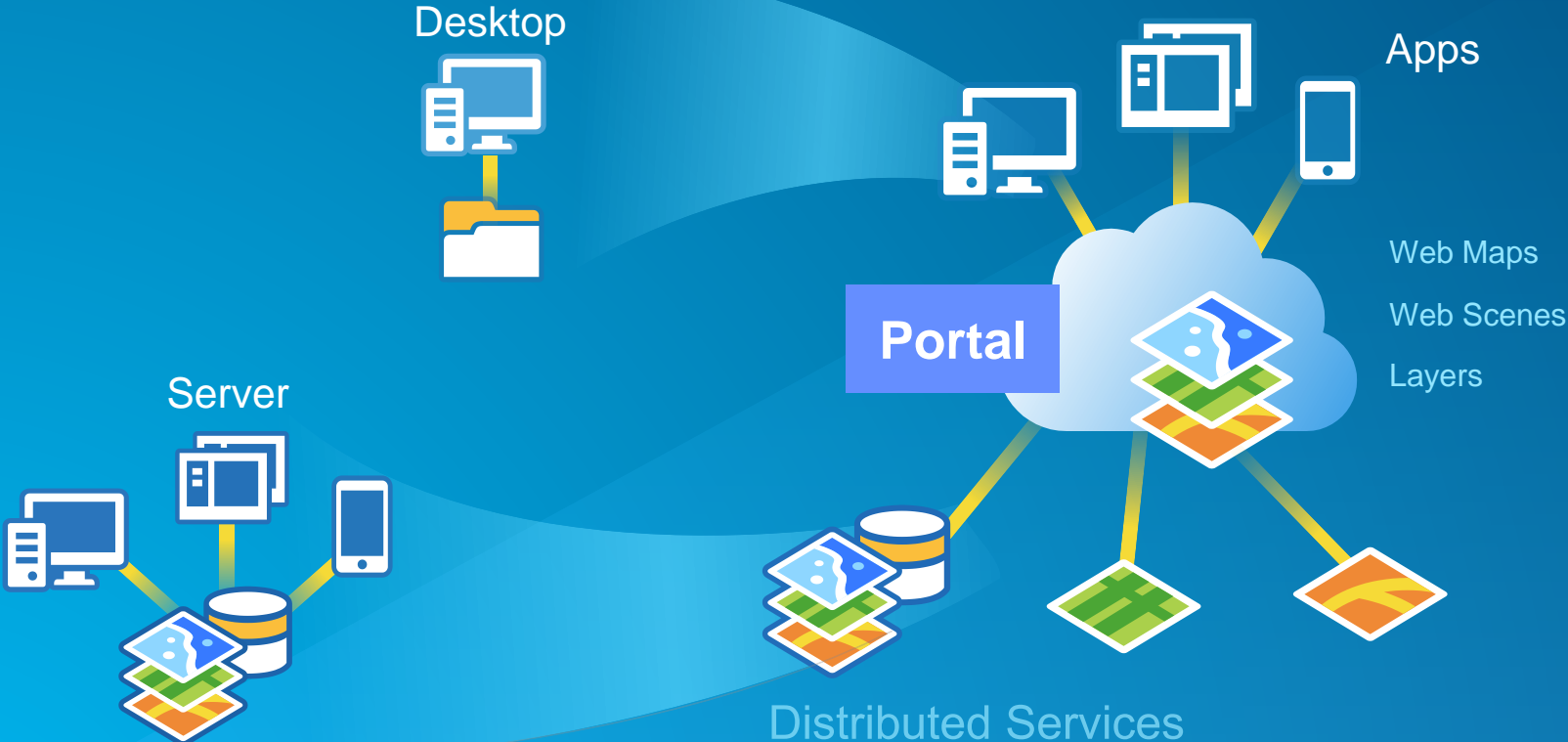
<http://esriland.maps.arcgis.com/home/item.html?id=5969689b642840e39cf0491669484e0b>



Web GIS

WebGIS is a Transformational Architecture

Web GIS



Bringing Together Systems with Modern Architecture.....

Web GIS Simplifies Working With All Types of Data

Using Web Maps, Scenes, and Layers



Apps Are Bringing the Power of GIS to Everyone

Extending the Reach of GIS



Across Organizations and Beyond

GIS Content

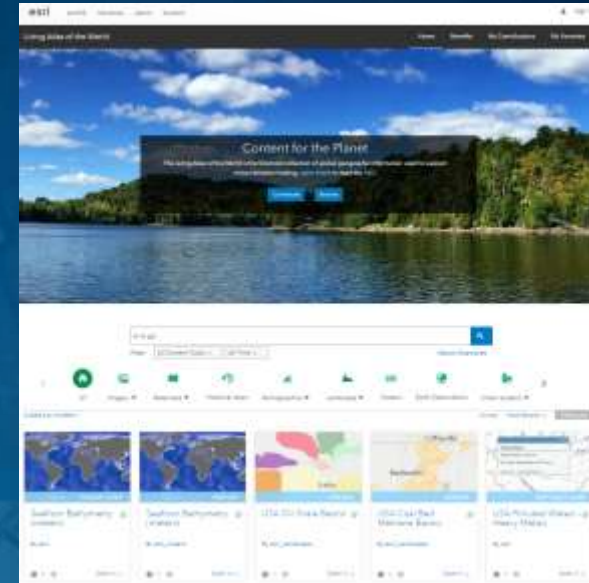
Ready-to-Use Maps and Data

Tens of Thousands of Open Datasets &
Curated *Living Atlas*

- Basemaps
- Demographics and Lifestyle
- Transportation
- Urban Systems
- Boundaries and Places



- Imagery
- Landscape
- Oceans
- Earth Observations

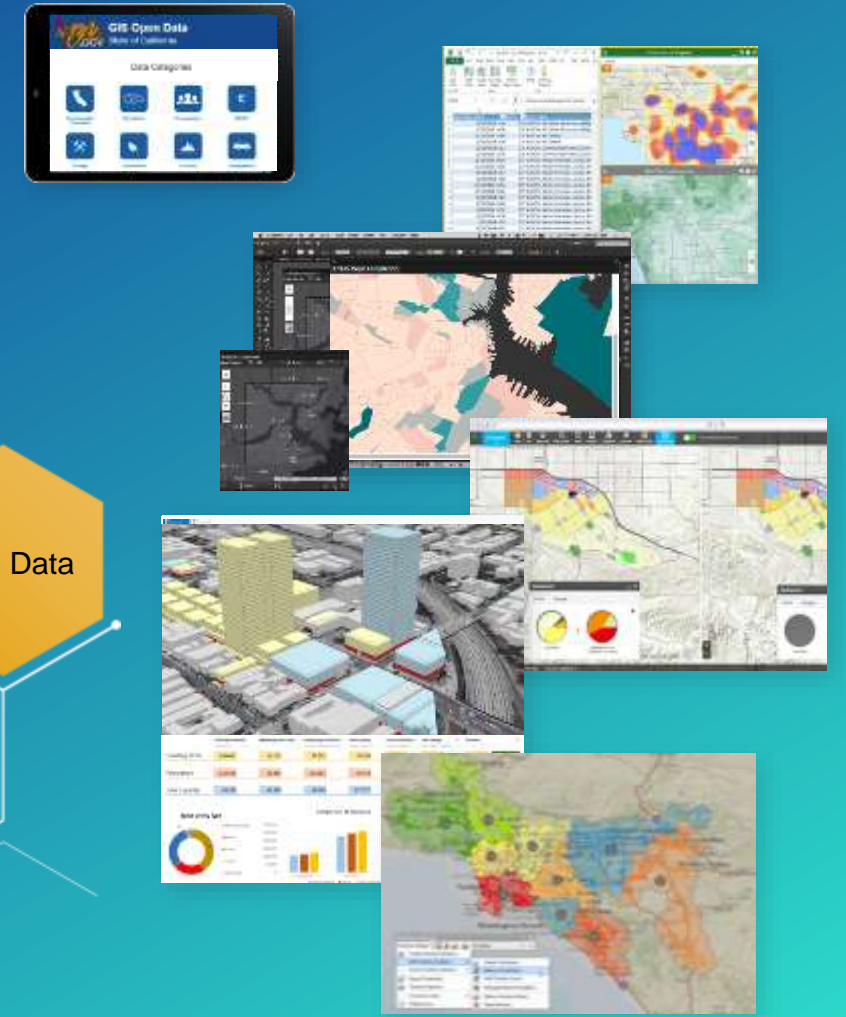
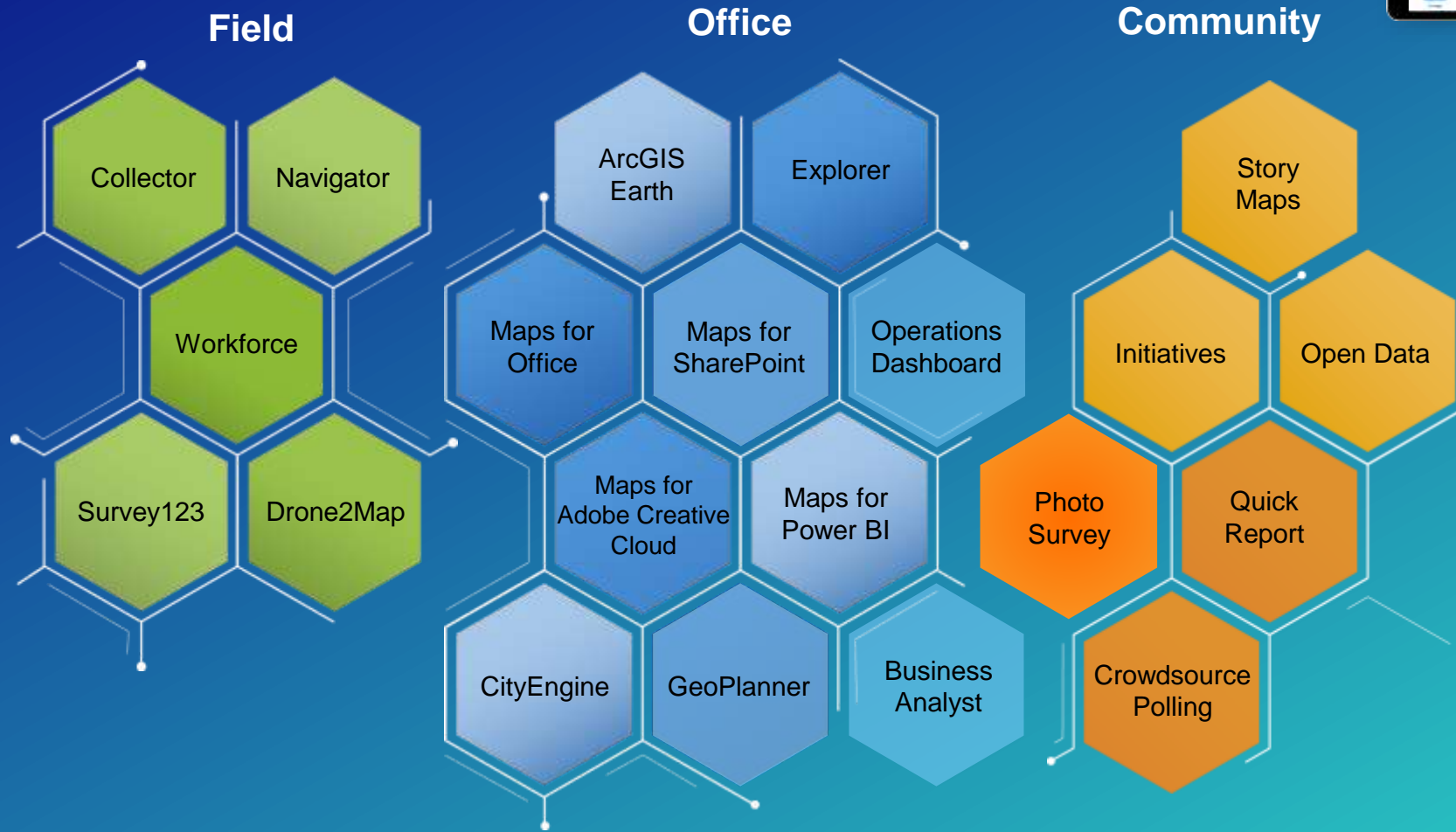


Millions of User Contributions . . . Billions of Views per Week



Apps

Extending GIS Capabilities Everywhere



Focused, Powerful, and Ready-to-Use

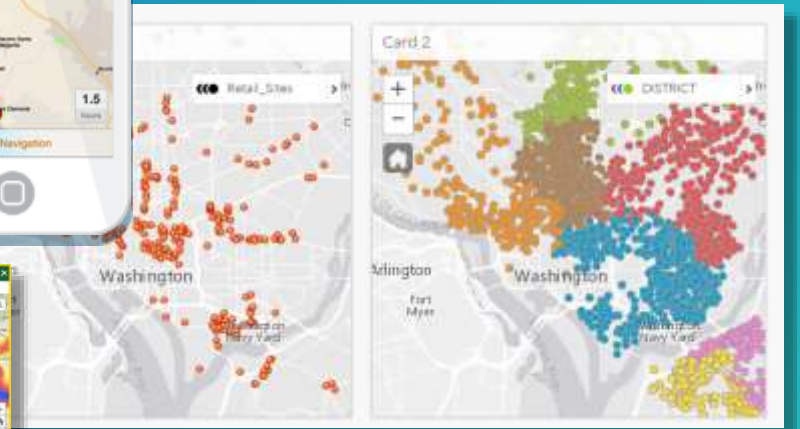
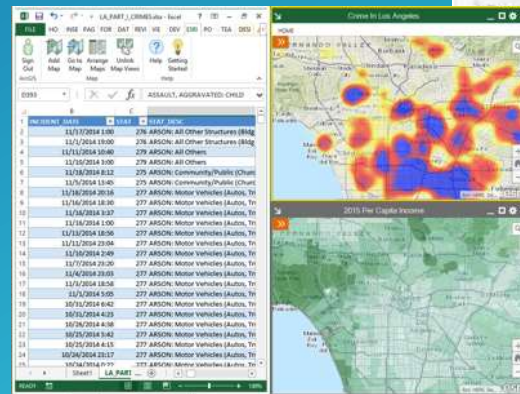
What Apps to Use?

Powered by Services

- Collector
- Survey123
- Explorer
- Operations Dashboard
- Drone2Map



Maps for Office



Insights

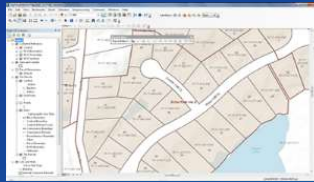
Support your workforce and workflows.....

GIS for Cadastral Agencies

Supporting All Requirements

Parcel Management

Parcel Editing



Quality Control



Map Production



Address Management

Field Operations



Mobile Access to View & Edit



Workforce

Value Analytics

Foreclosure Mapping



Construction Permit Visualization



Property Appraisal



Visualize Property Value



CAMA Visualization



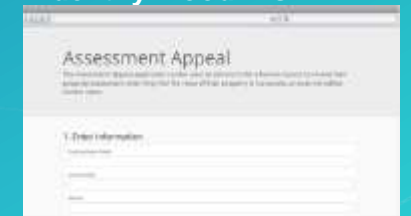
Residential Comp Finder

Public Relations

Modern Public Access



Identify Flood Risk



File Assessment Appeals



My Tax Distribution

Support Data/Parcel Aggregation

Web GIS solution for parcel aggregation

Authoritative Parcel Data



Community Parcel Layer



Information Products



Revenue
Audit
Health
Transportation
Econ/Dev
Environment
....

Contributor Tools

Aggregation Model

Maps and Apps

COTS Tools for aggregating and sharing.....

GIS for the Field

Field Data Collection and Field Force Management

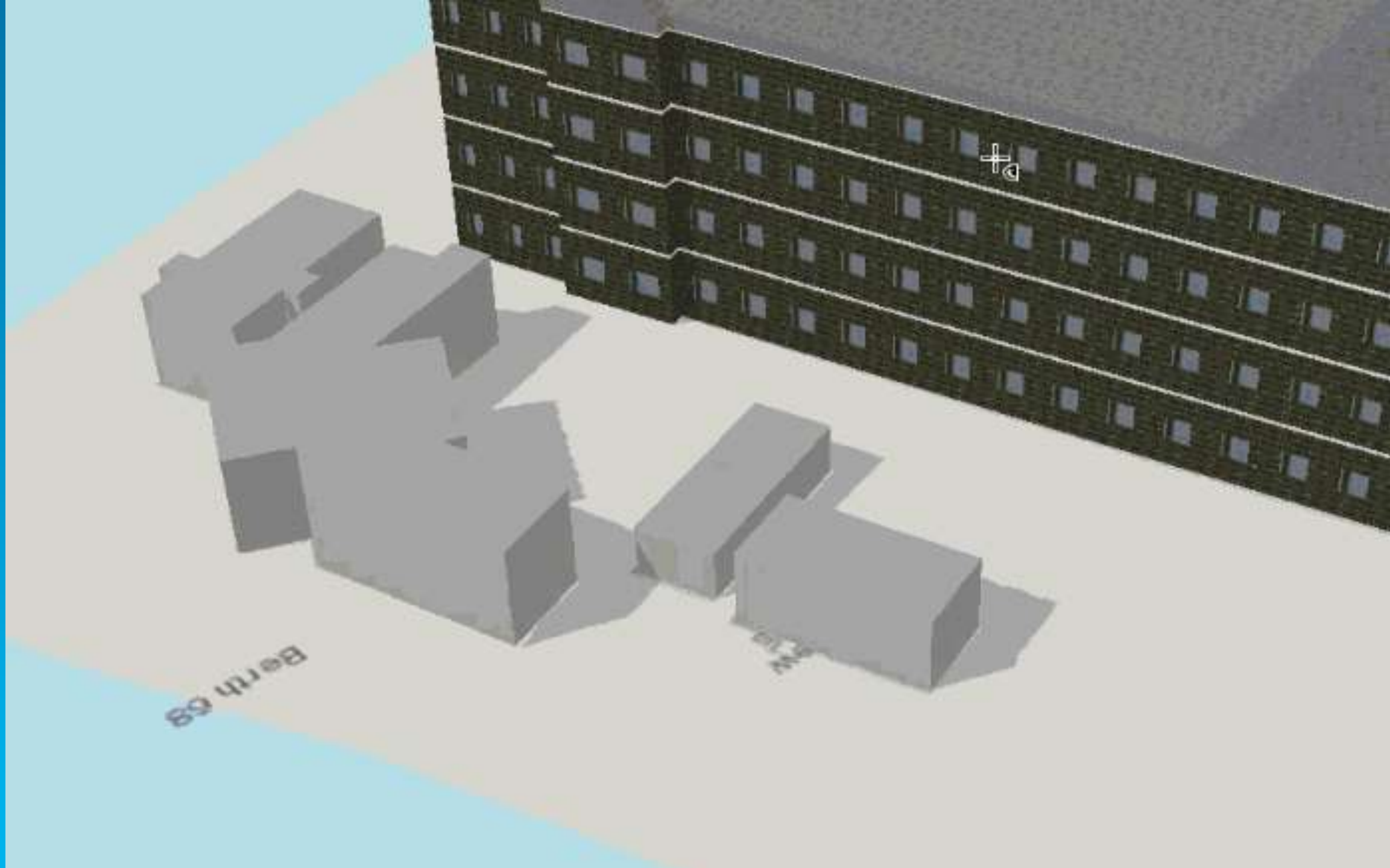


3D Cadastre

Analysis, Visualization, Maps and Apps



Uncovering value locked in your data.....



Berth 09

Berth 10



Colombia



Collaborative

Partnering for the Future of Colombia

- IGAC – National Mapping Agency
- Kadaster International
- Trimble
- Esri
- Esri Colombia

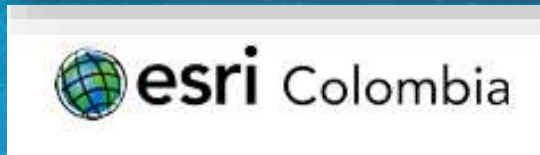


ISO 19152:2012
Geographic information -- Land Administration Domain Model (LADM)

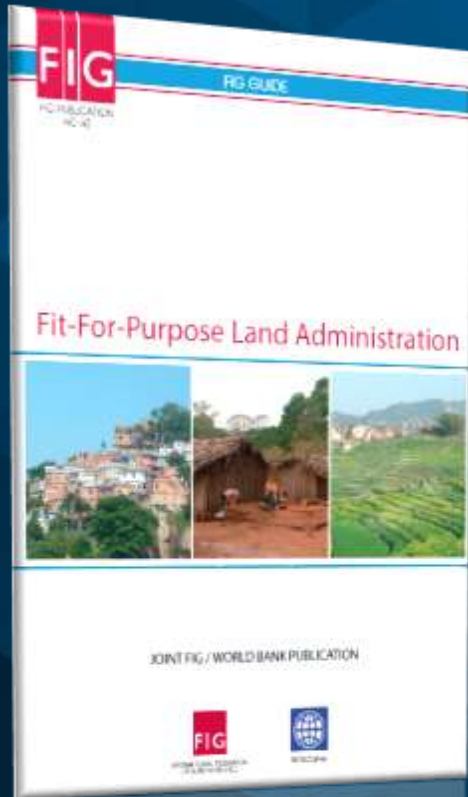
FISMA Authorization & Accreditation

TRUSTe
CERTIFIED PRIVACY

FedRAMP
Ensuring secure cloud computing for the Federal Government



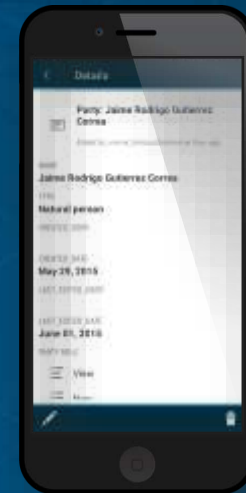
Standards-based Solution Requirement



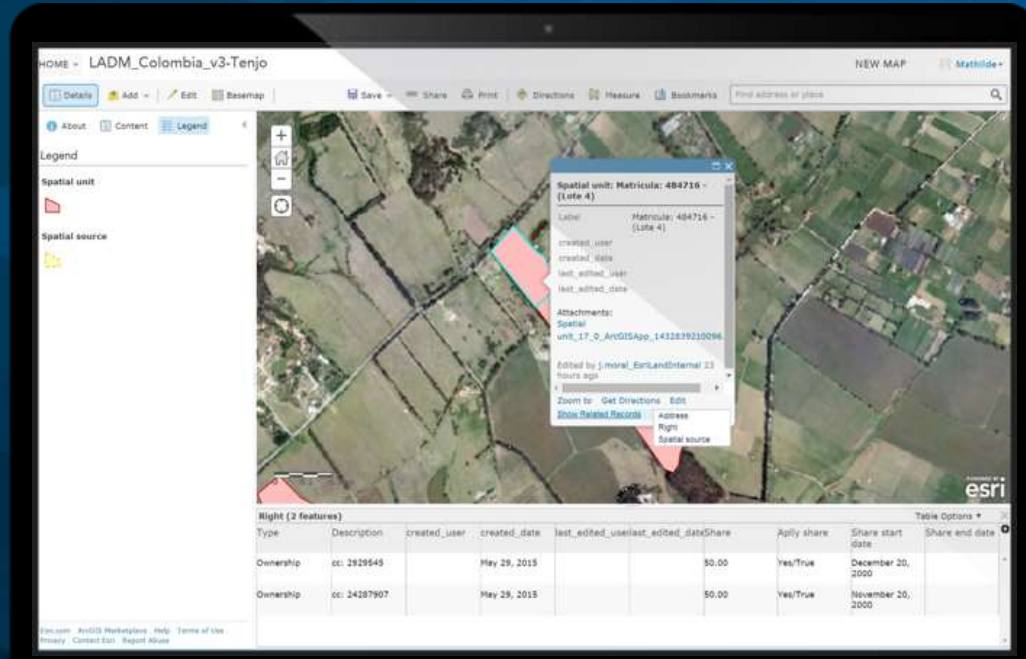
Typical Situation



Methodology



LADM in ArcGIS Online



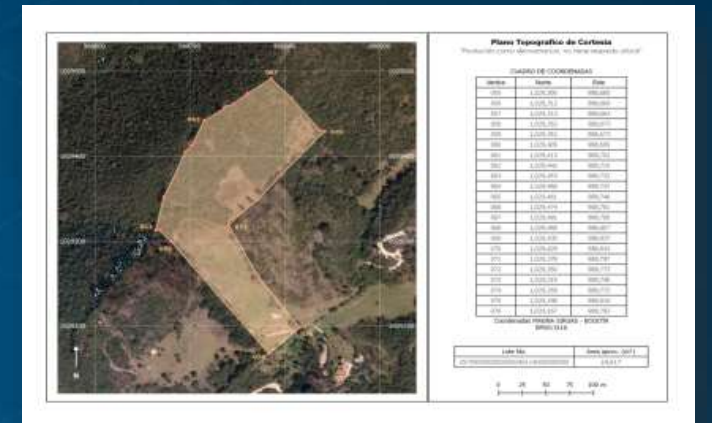
Browser
Capabilities



Apps



Base Maps and Data



Reports

Many More.....

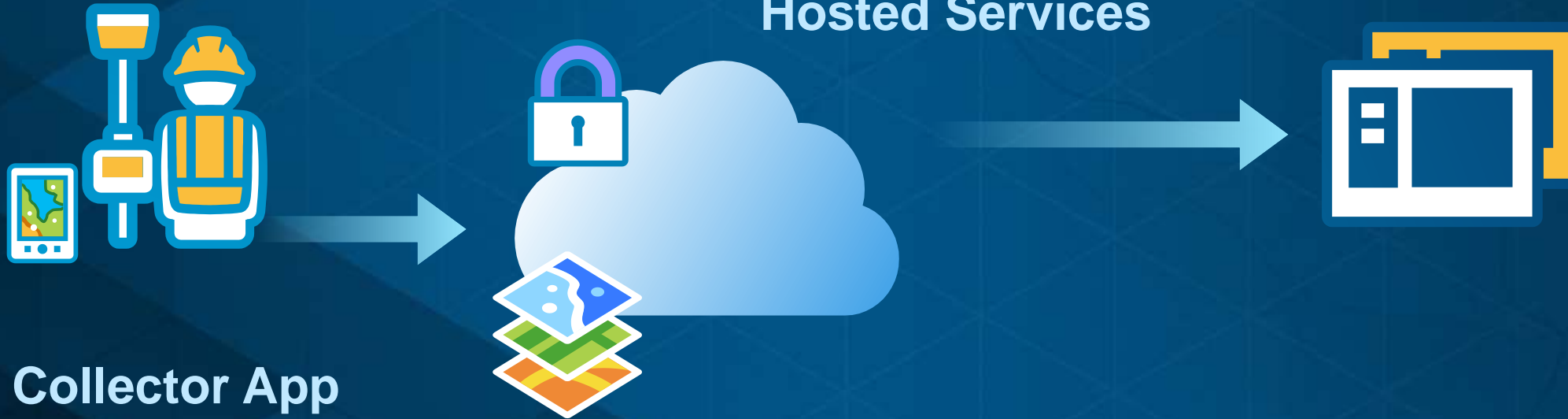
Fit For Purpose LA & GIS

FFP processes with FFP technology

LADM

Hosted Services

Browser Editing

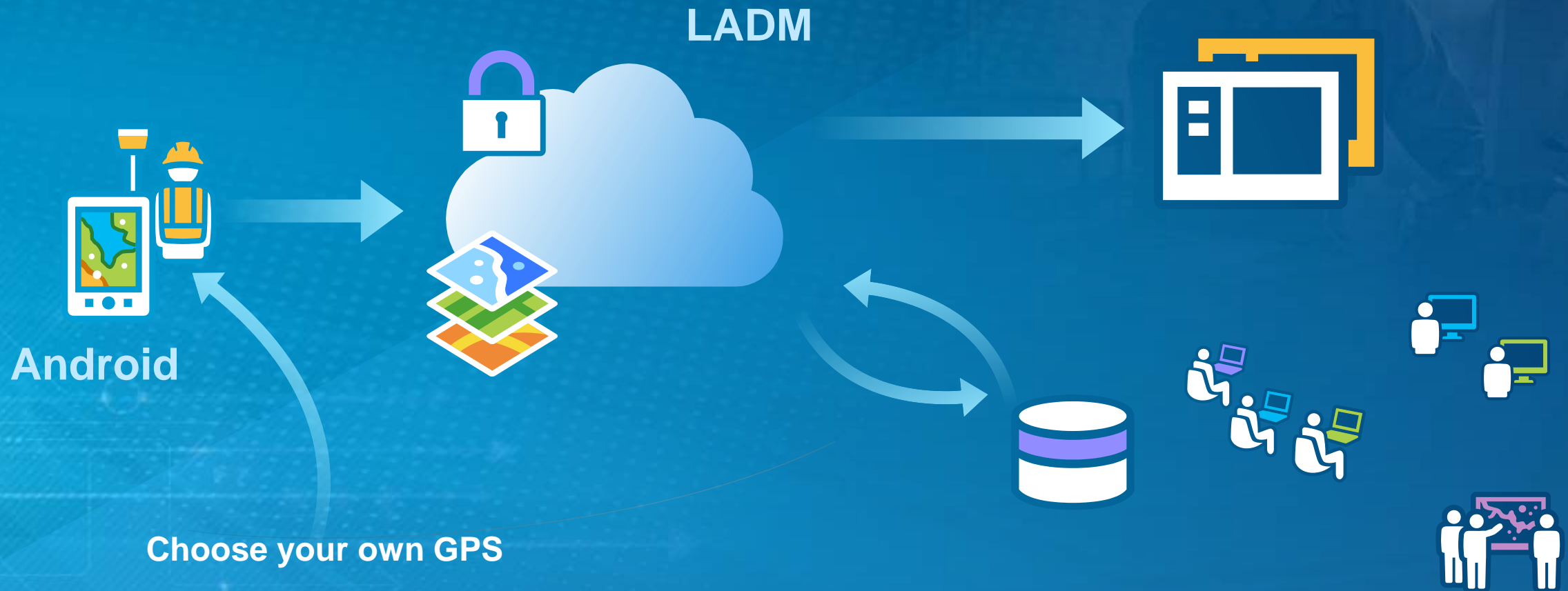


Collector App

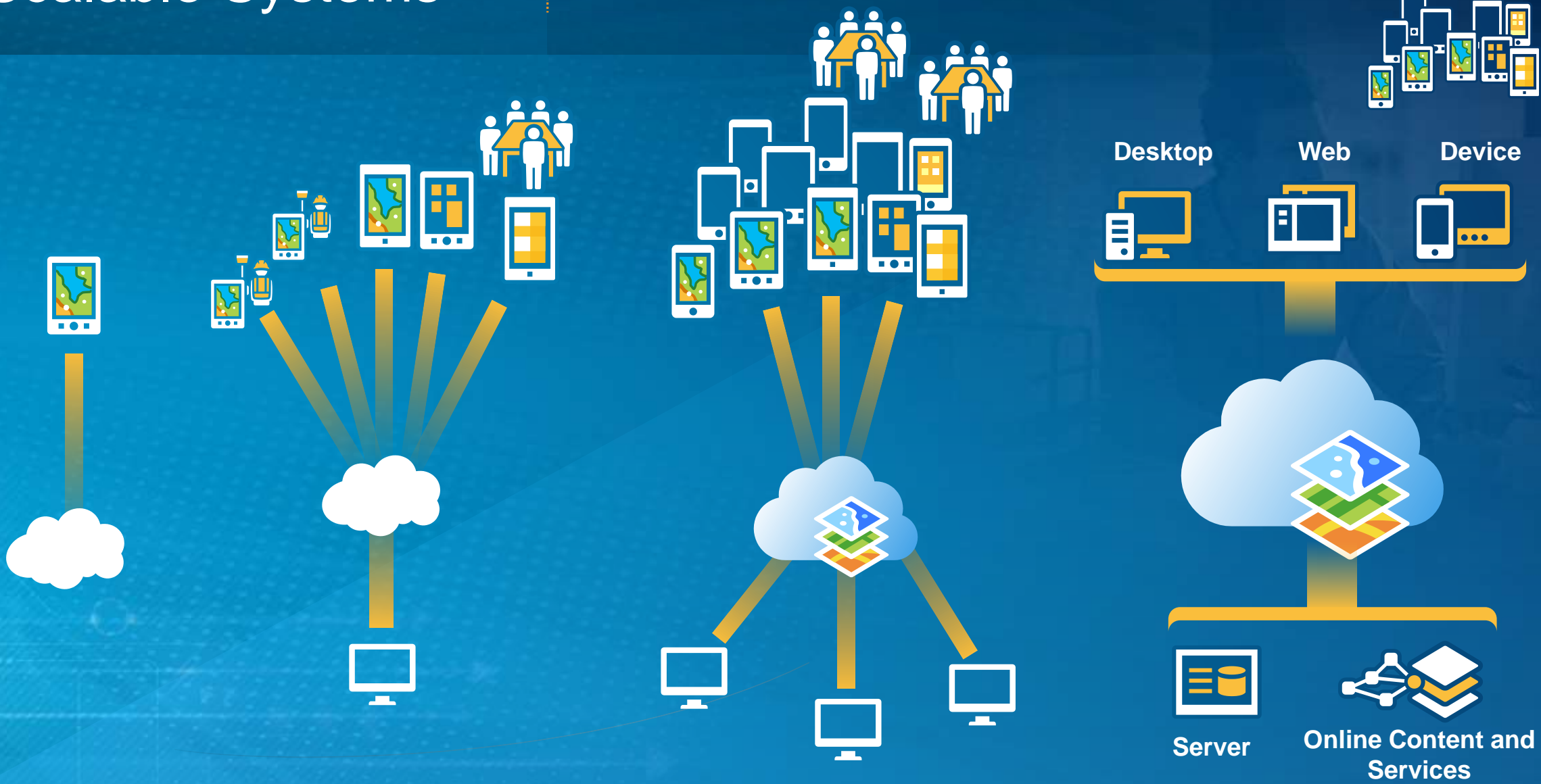


Collector/ArcGIS Online

Enabling New Workflows with High Accuracy

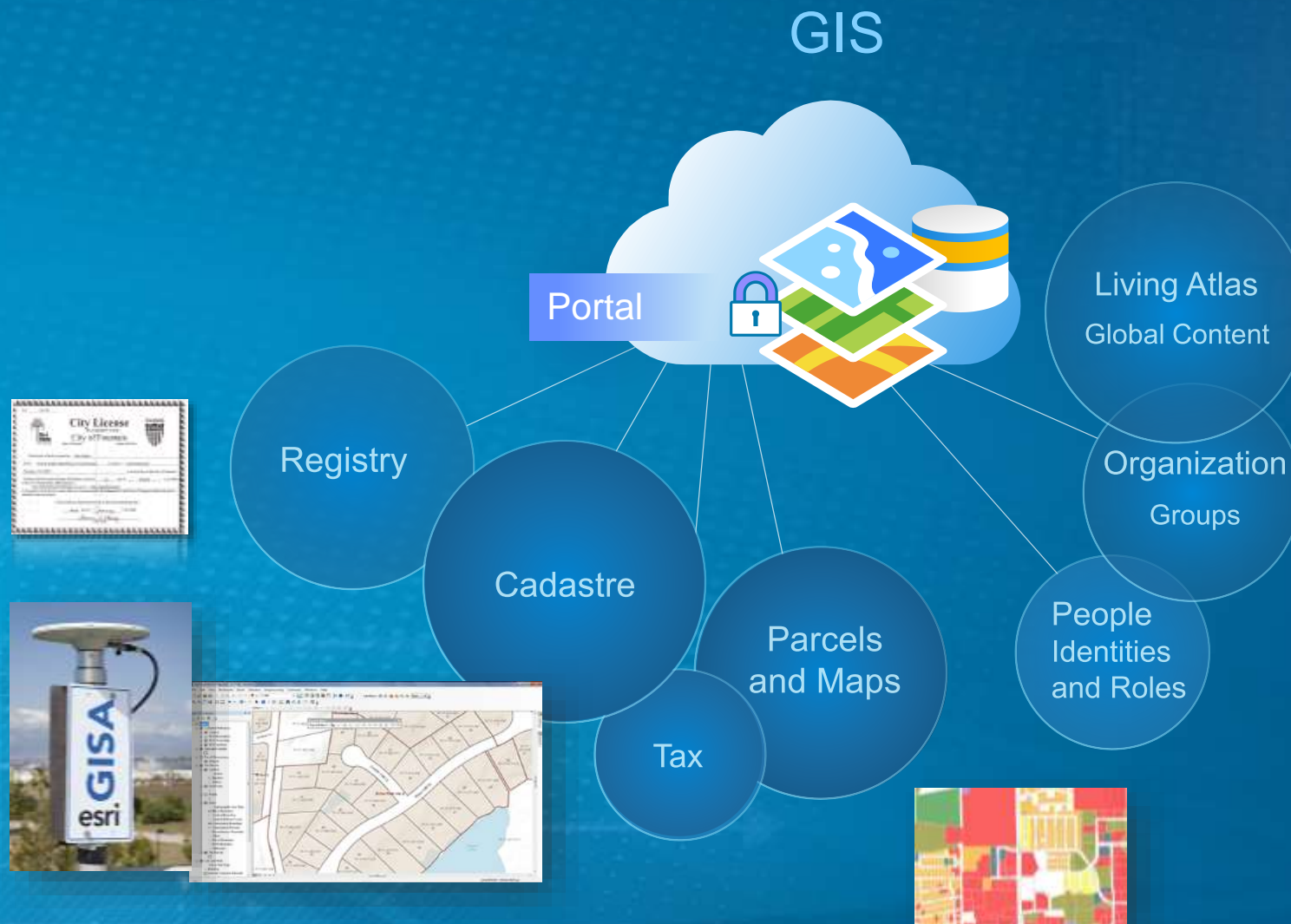


Scalable Systems



Modern Cadastral Platform – Web GIS

Supporting Global Cadastre Requirements





esri

THE
SCIENCE
OF
WHERE