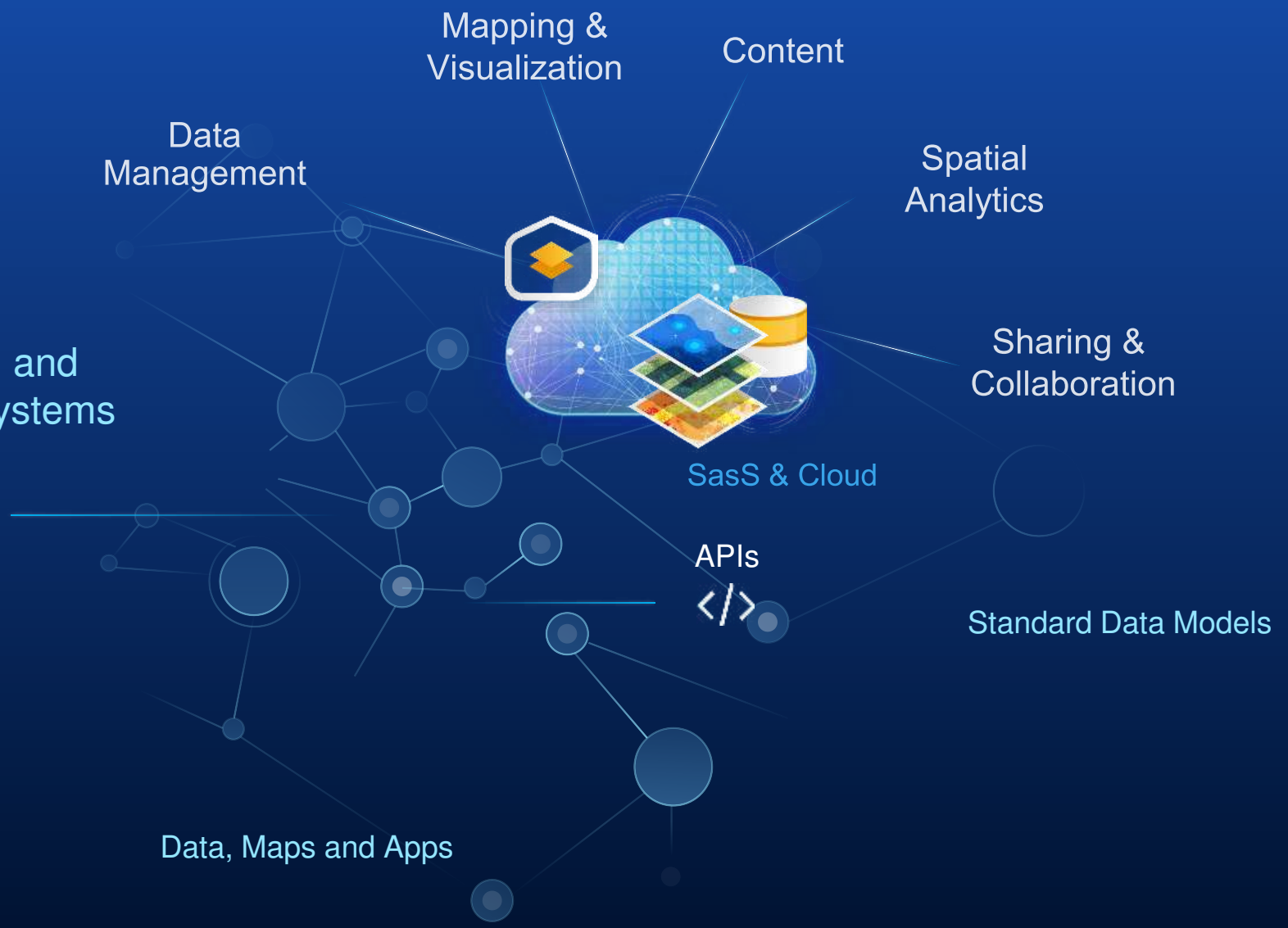
Fit-for-Purpose Land Administration

Operationalized.

Implementing the Vision…..

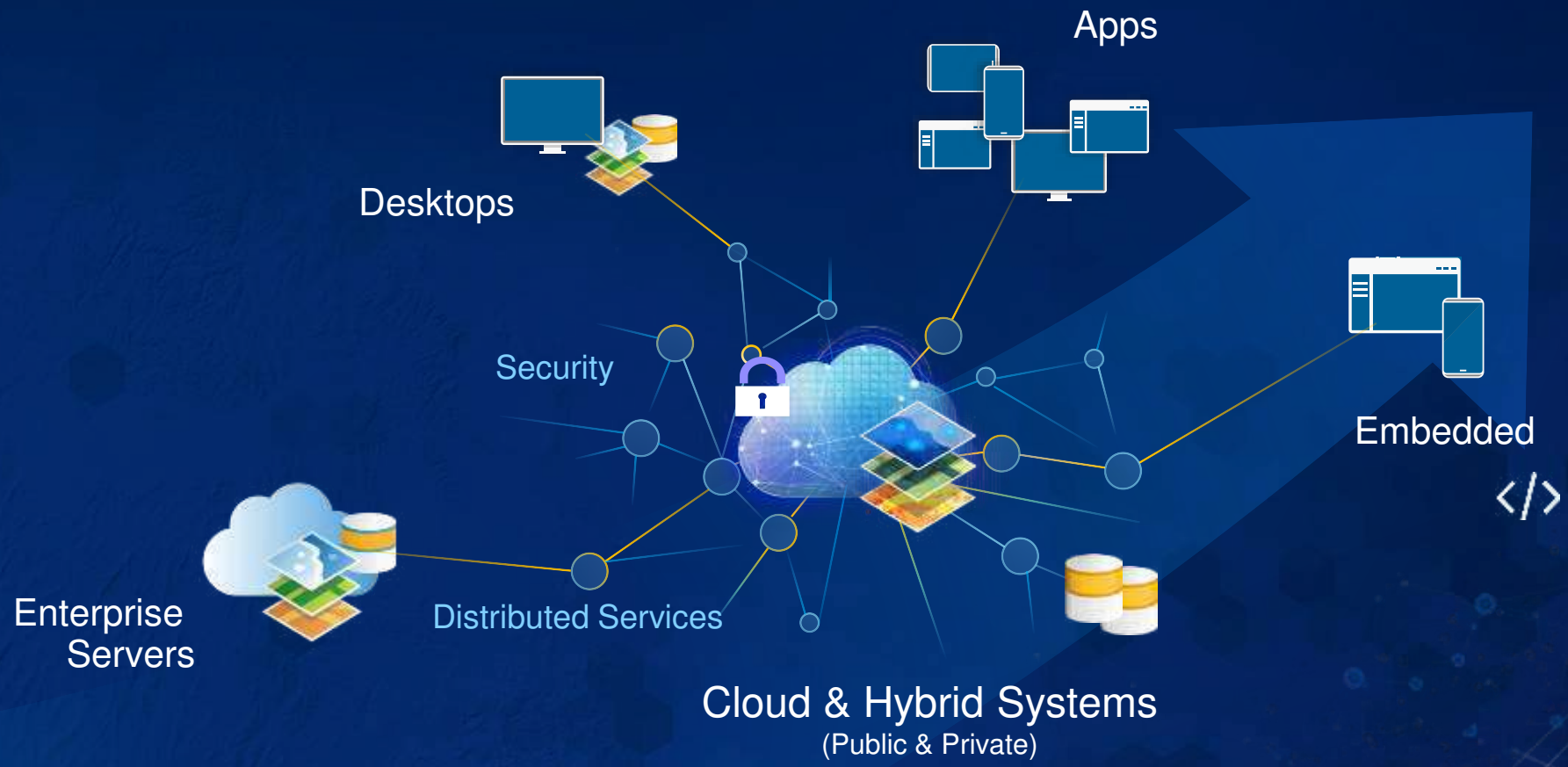
Brent Jones, Esri

GIS Comprehensive Geospatial Infrastructure



GIS

Creating Secure Geospatial Infrastructure



Connecting and Streamlining . . .
Collaboration, Workflows and Decision Making

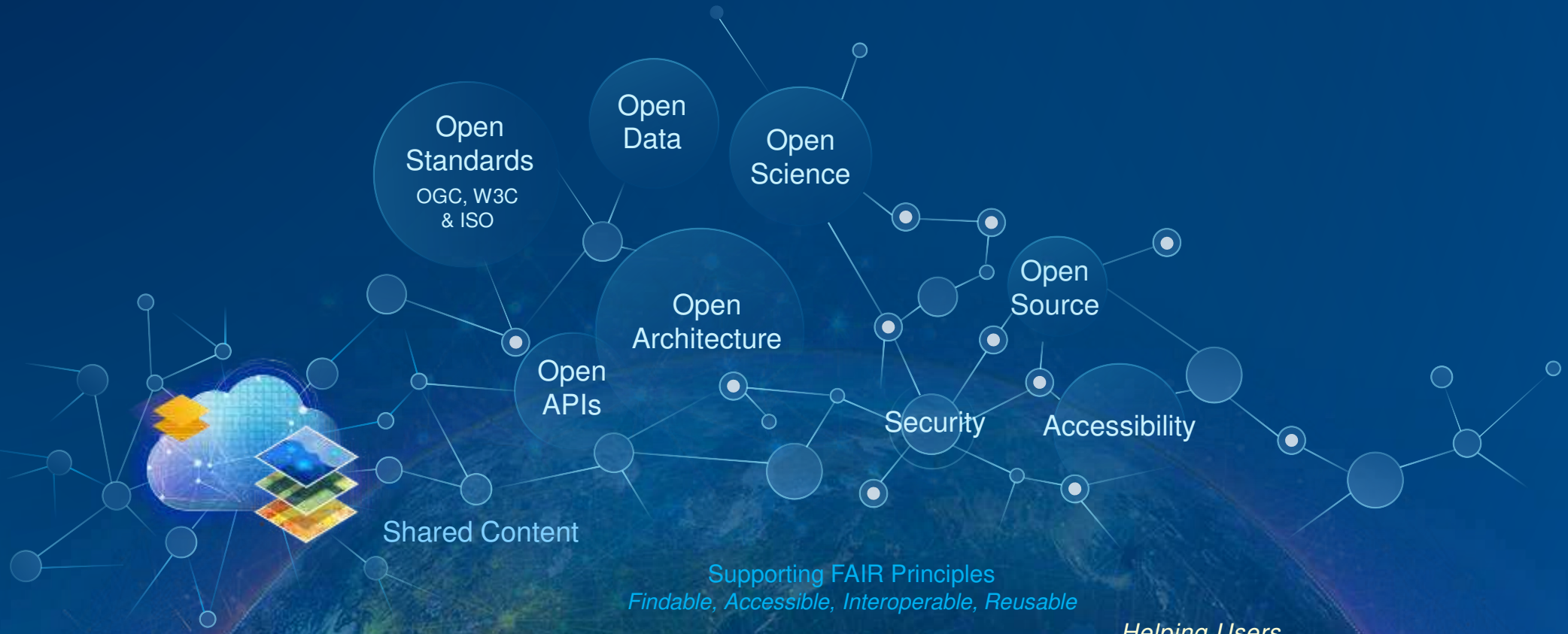
Geospatial Infrastructure Technology Is Advancing Rapidly

Integrating and Leveraging Many Innovations

Mix and match a configured solution….

Open and Interoperable

Supporting and Leveraging Multiple Open Initiatives



Supporting FAIR Principles

Findable, Accessible, Interoperable, Reusable

Helping Users . . .

Create Successful Integrated Systems

GIS

Saleable, Secure, Sustainable Technology

Client / Server
Stand-Alone Desktop
Software Products
Static Data
Limited Sharing
Custom Applications
Proprietary Data
Niche Technology
Using Data Created by Others
Printed Maps

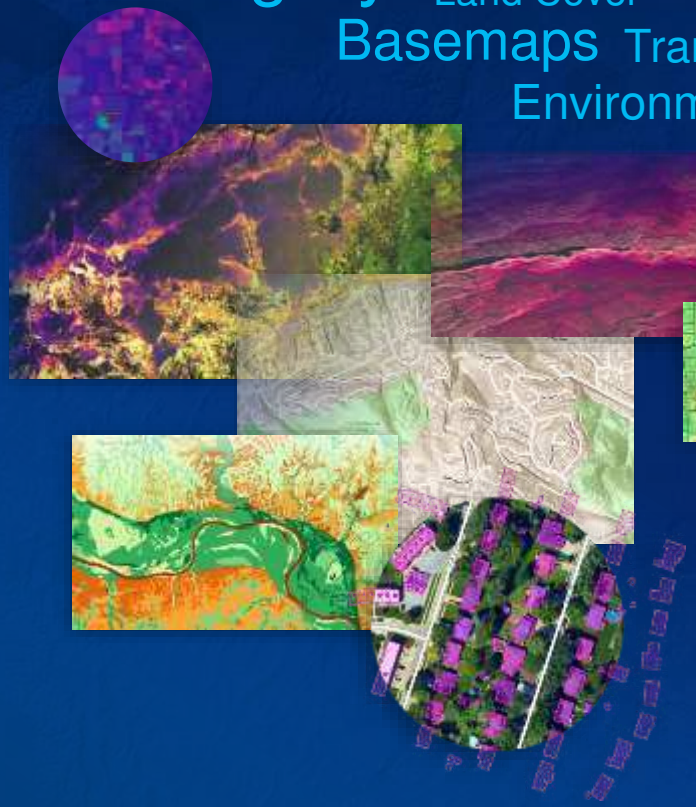
Evolving with Enabling Technology

Web Services & Apps
Connected Devices
Platforms and APIs
Data Services, Live Streams, Big Data
Many Ways to Share
Interoperable Packages, Libraries
Open Data & Shared Services
Ties to Larger IT Community: GitHub
Combining Others' Data with Your Own
Web Maps, Dashboards and Other Apps

Global Maps and Data

ArcGIS Living Atlas of the World

Imagery
Land Cover
Habitats
Biodiversity
Basemaps
Transportation
Landscape
Environment
Movement
Infrastructure
Hydro
Traffic
Business
Elevation
Boundaries
Demographics
POI
Oceans
Hazards
Weather
Soils
Authoritative
Community Content



- Thousands of High-Quality Maps, Layers and Datasets
- Updated Regularly
- Billions of Requests Daily

Statistics

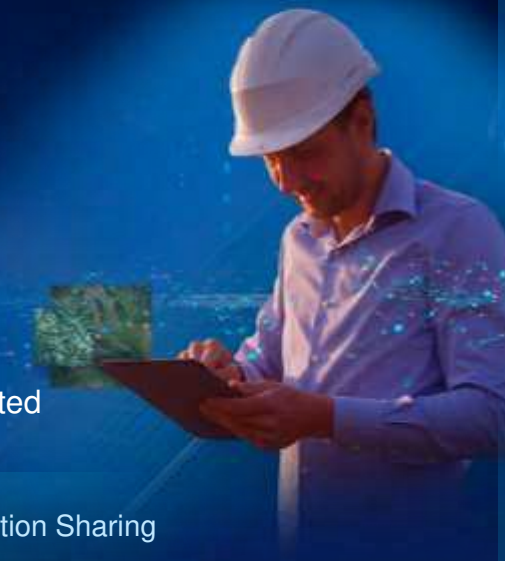
Real-Time Observations

OpenStreetMap Layers

Global & Local Geographic Content . . .
About Everything

Many GIS Options for Field Data Collection

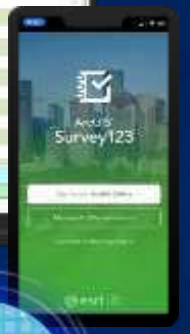
Integrating Mobile Data Collection, Location Awareness and Enterprise Data Access



Connected & Disconnected

Survey123
(Form Centric)

Field Maps
(Map Centric)



QuickCapture

- Location Sharing
- Utility Network (Viewing & Tracing)
- Geofencing / Alerts
- Indoor Positioning (IPS)
- Calculations (Arcade)
- Sensor Support
- Windows 11 Support (Coming)

Office and Field Synchronicity

Dashboards

Includes Task Management & Navigation . . .

Connecting & Transforming Mobile Workflows

Geospatial Infrastructure Technology Is Advancing Rapidly

Integrating and Leveraging Many Innovations

Mix and match a configured solution….

Quick Statistics - Colombia

- Population 48 Million (between Italy and Uganda)
- Parcels 15 Million
  - Urban 11.6 Million
  - Rural 3.5 Million
- Area 441,000 sq. mi. (between South Africa and France)
- Population Density 105 per sq. mi. (between Congo and South Africa)

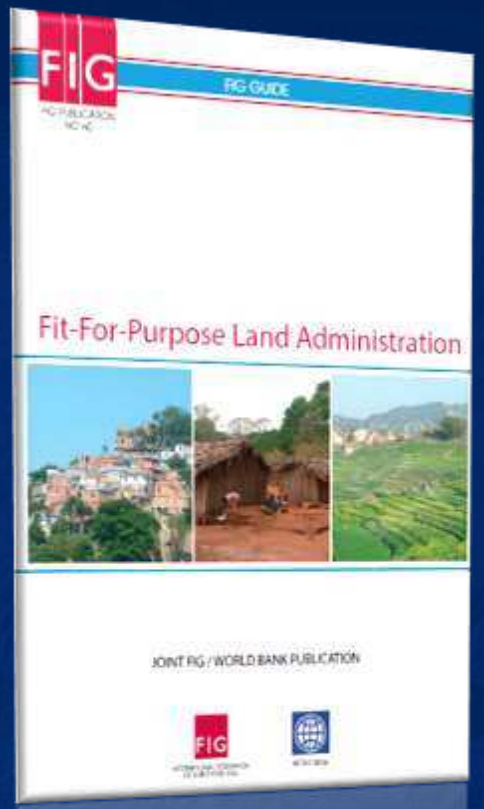
- Peace process with FARC began 2012 - Havana, Cuba

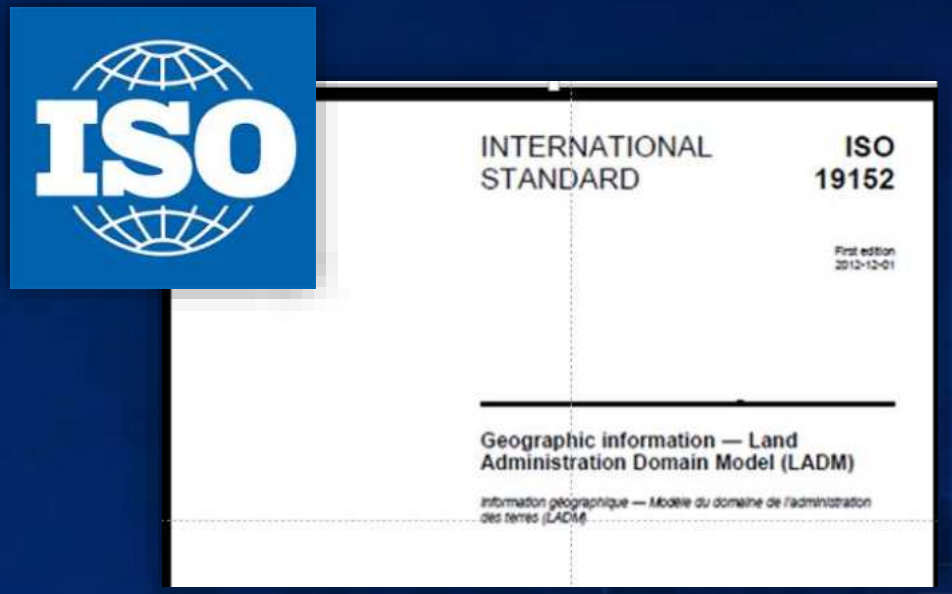
Requirements

Fit-for-purpose - Fit-for-the-future…..

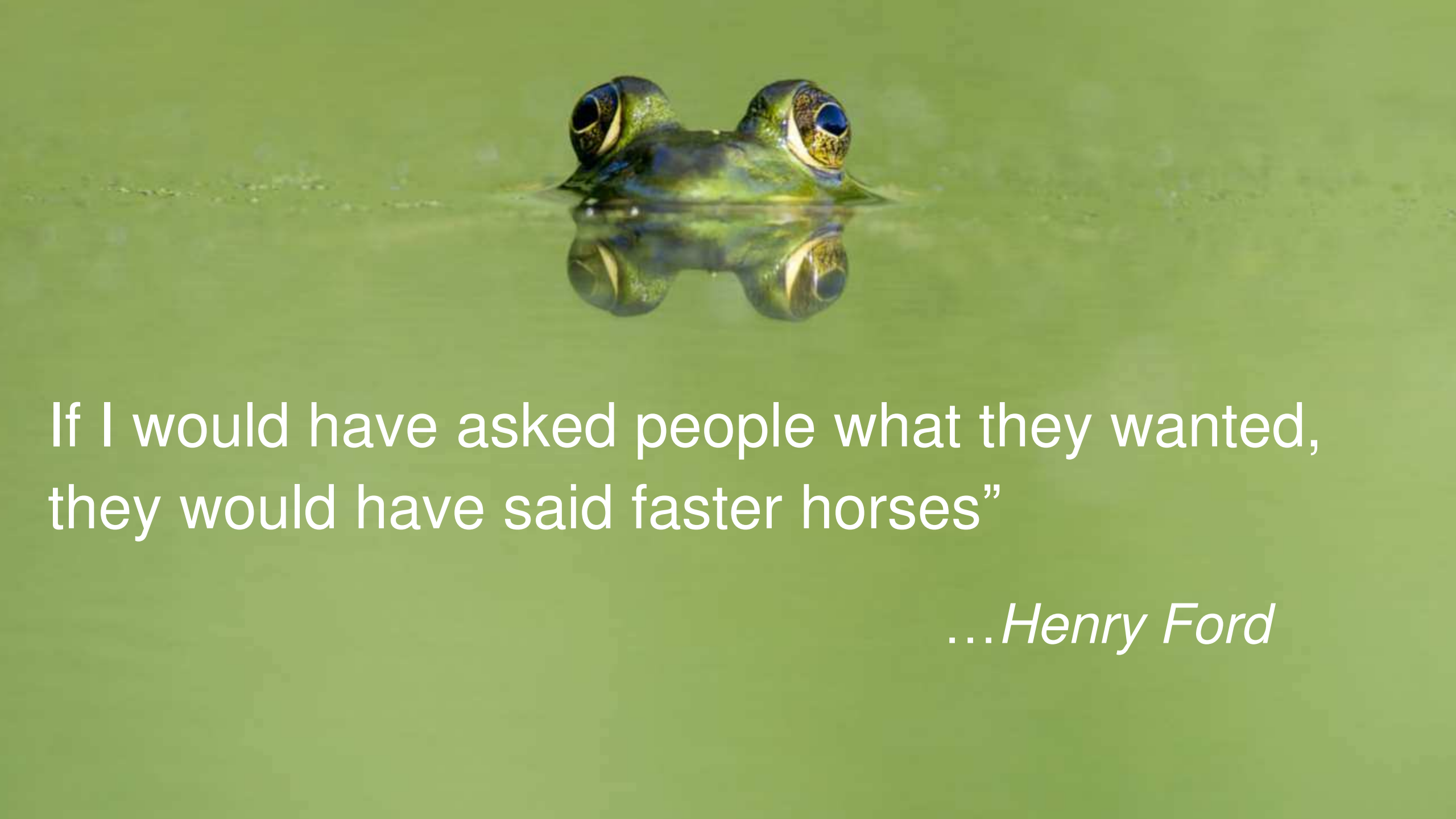
- Fast-to-Implement
- Scalable
- Low Cost
- Reliable
- No Software Development
- Secure
- Leverages External Data
- Accurate
- Future Proof
- Standards-based
- Repeatable
- Works Disconnected

Standards-based Solution Requirement





ISO 19152



If I would have asked people what they wanted, they would have said faster horses”

…*Henry Ford*

Collaborative

Partnering for the Future of Colombia

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

Mobile Devices

Open Standards

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

High Accuracy

ArcGIS Content

Cloud ArcGIS Online

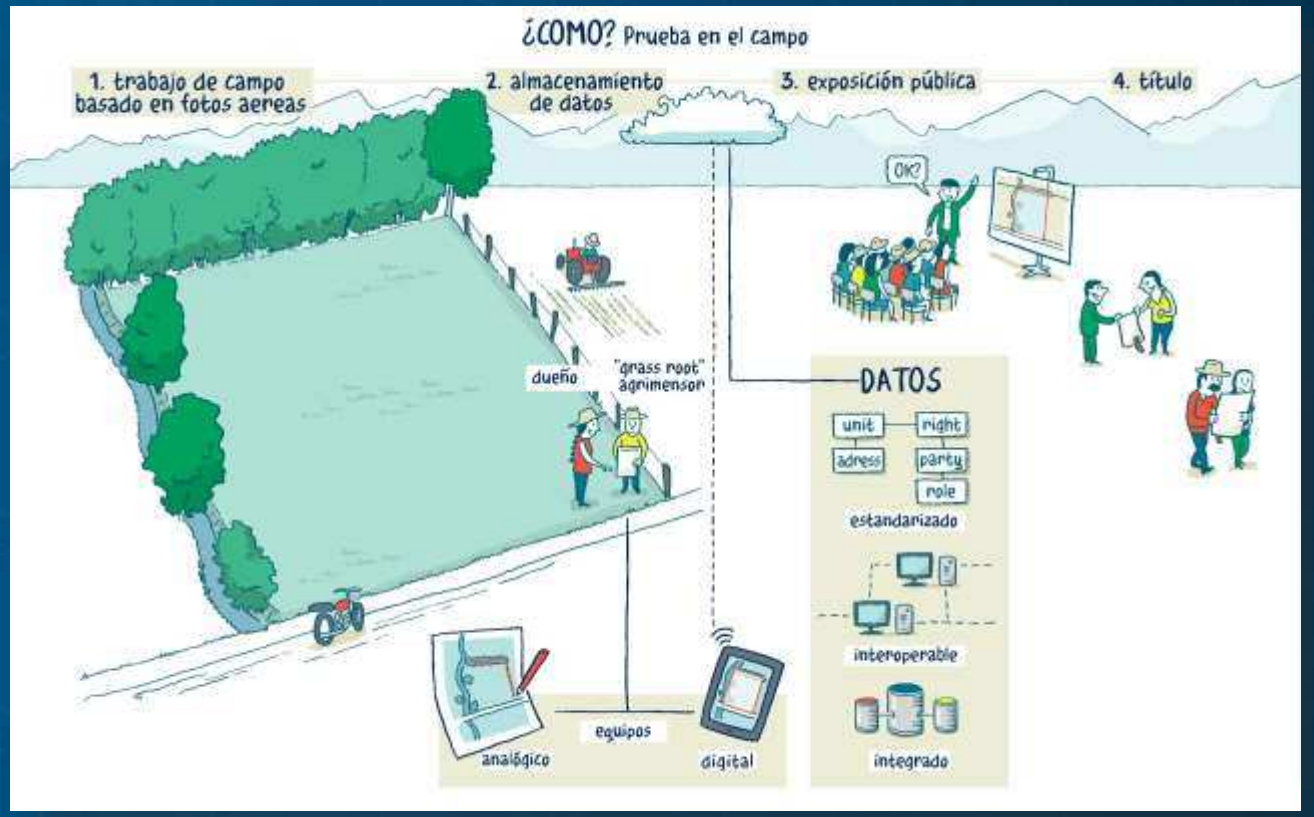
Fit-for-Purpose - Scalable, Secure, Sustainable, Stable….

GIS enables a new paradigm in land administration – Leveraging Standards - LADM

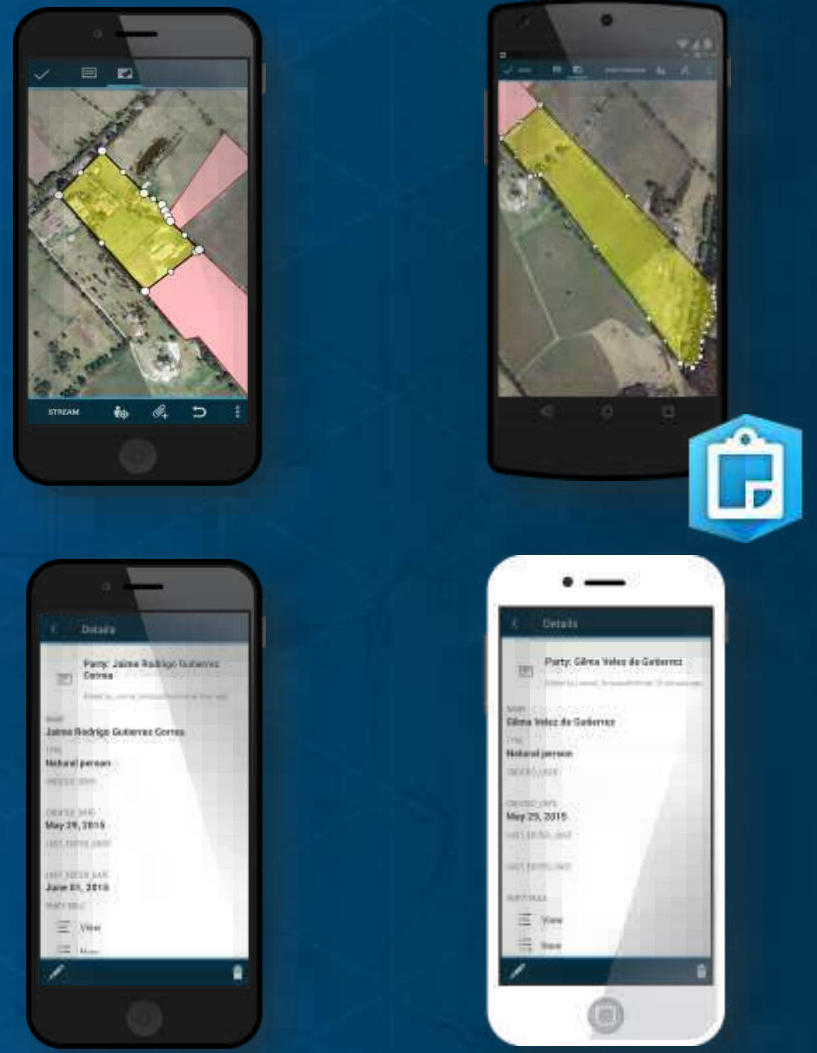
Typical Situation

Methodology

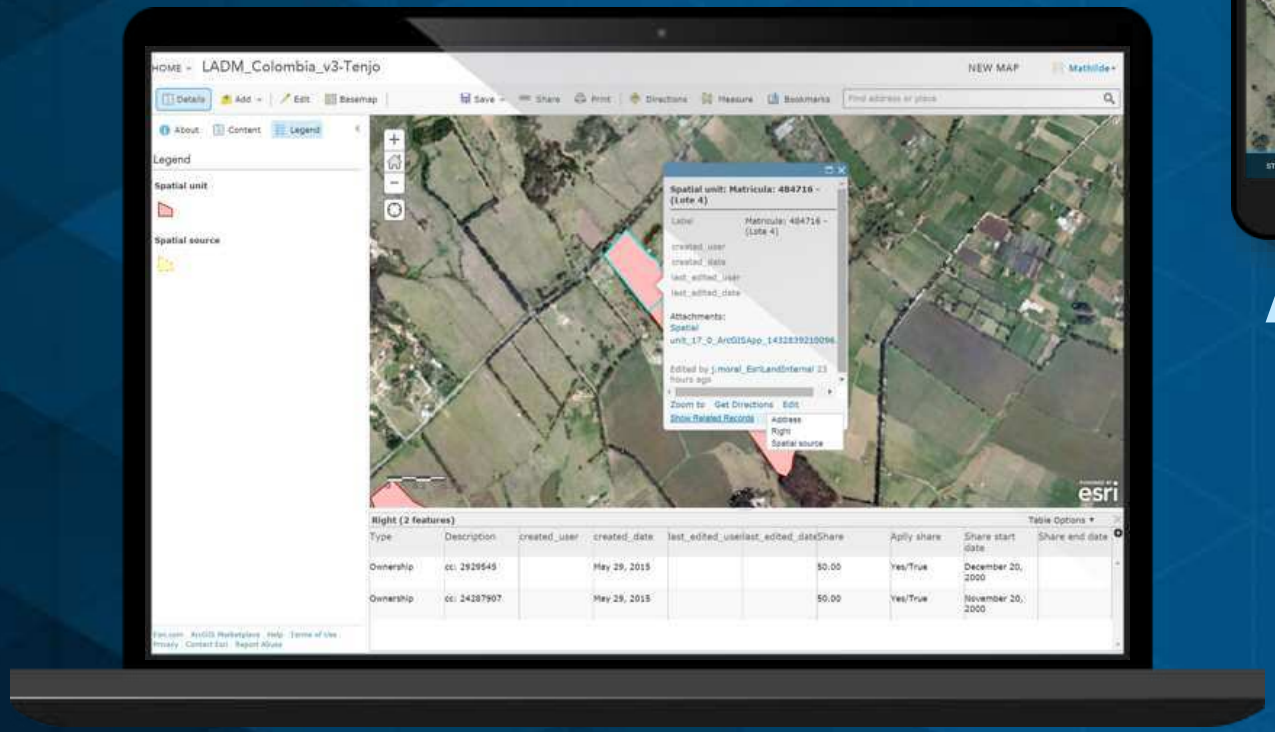
- Data model LADM
- Trimble R1 GNSS (sub-meter)
- Ortho photos (digital)
- FieldMaps for ArcGIS on Android
- Cloud storage Data (spatial and legal)
- Collect Once - participatory aspect



Methodology

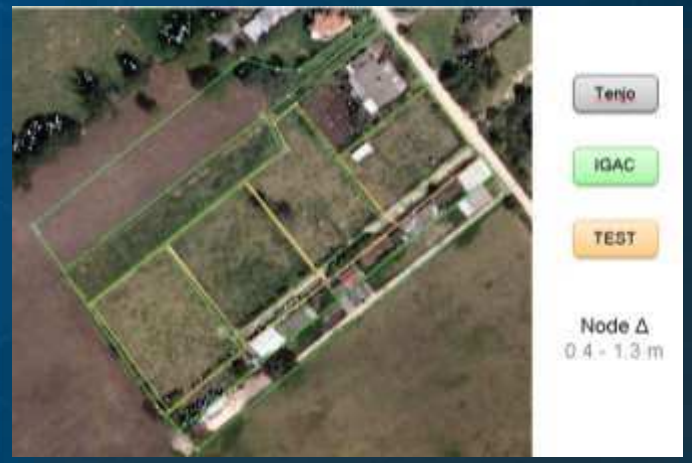


LADM in ArcGIS Online

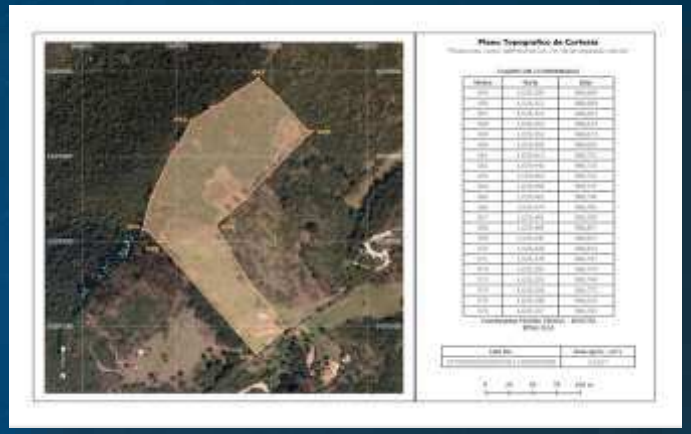


Browser Capabilities

Apps



Base Maps and Data



Reports

Kenya

Fit-for-Purpose Land Administration

http://go.esri.com/fit4purposekenya

Community-based Solutions…..

Kenya

Citizen Assisted Surveying

http://go.esri.com/fit4purposekenya

Community Driven Solutions…..

Kenya

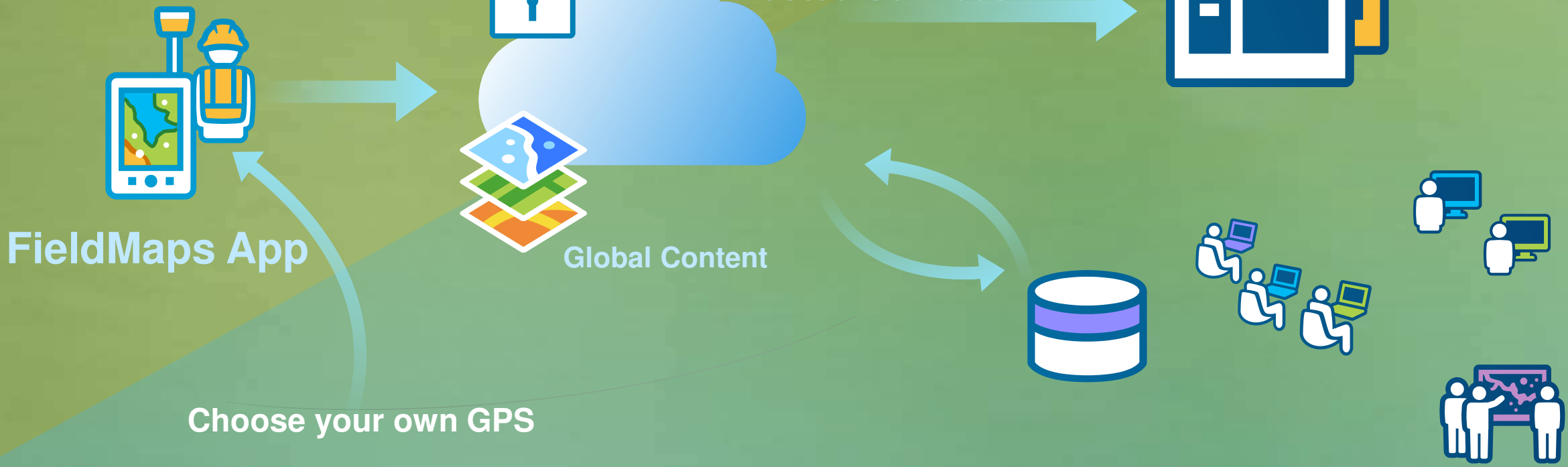
Community Adjudication

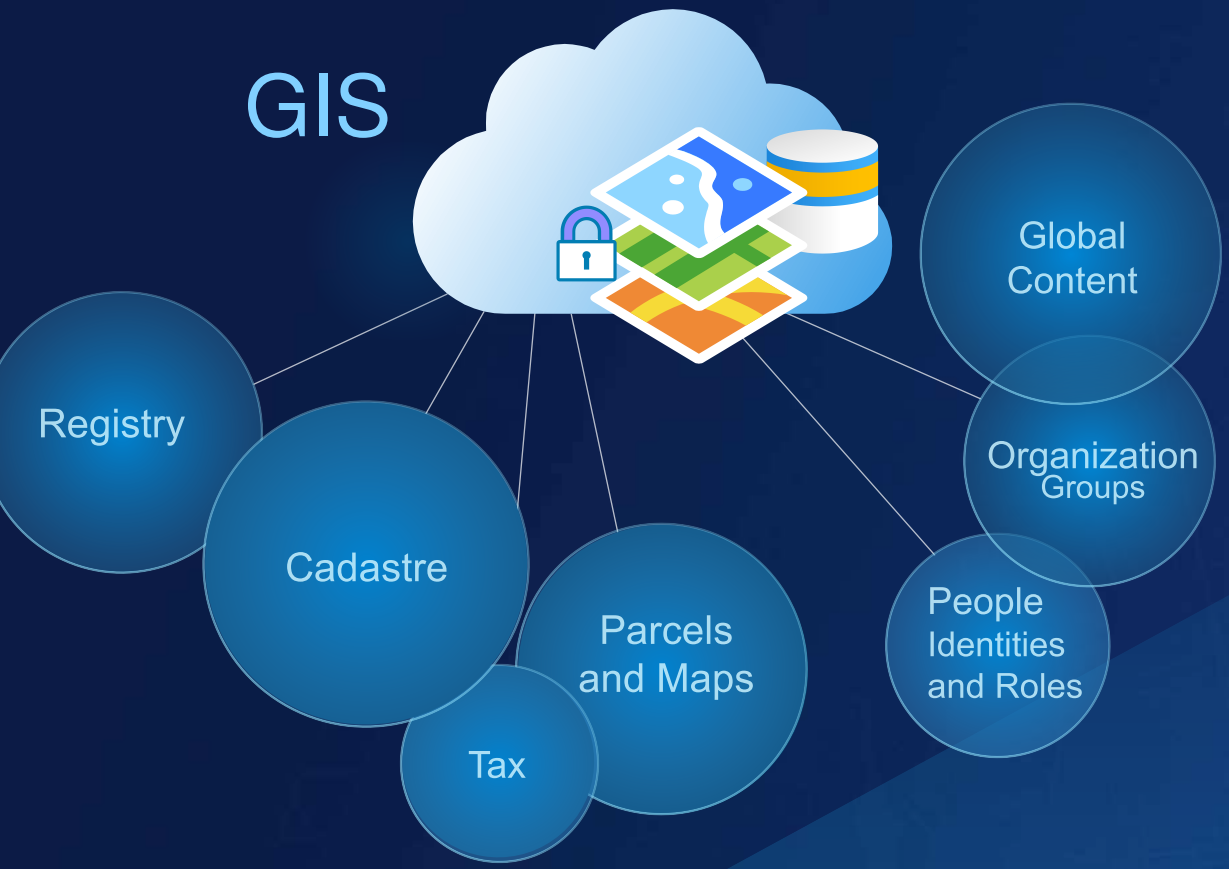
http://go.esri.com/fit4purposekenya

Community Driven Solutions…..

Transforming Global Land Administration with ArcGIS

Fit for Purpose Land Administration and ArcGIS





Fit-for-Purpose Land Administration

Operationalized.

Brent Jones, Esri

esri