Disruption & Land Adminstration

A new, tested, cost effective approach to land administration....

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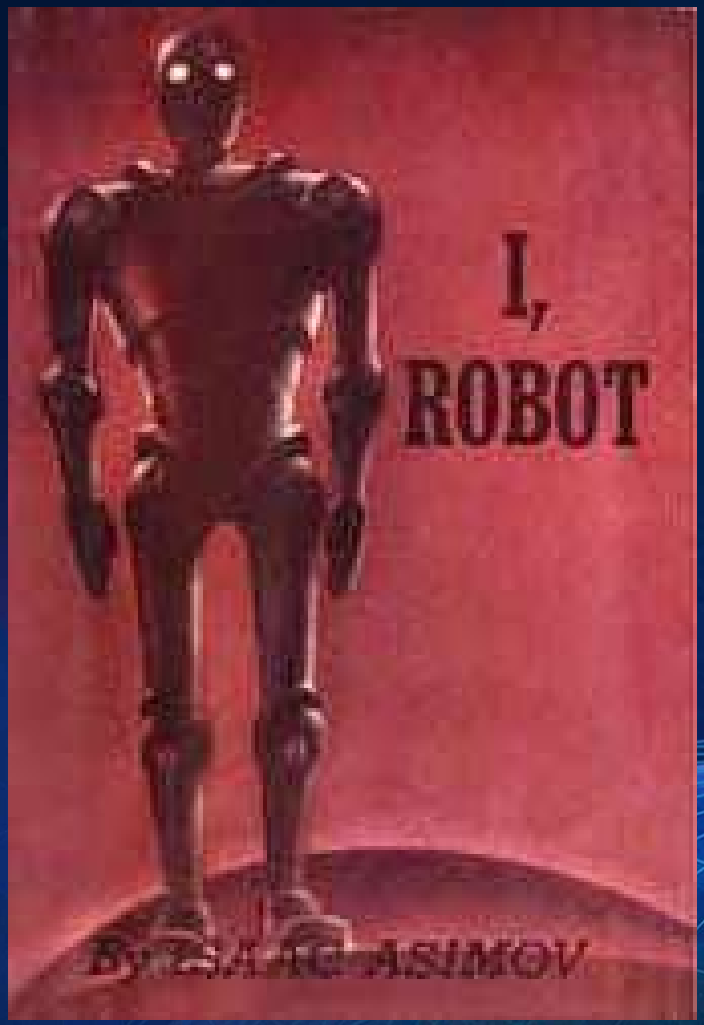
Esri

Presented at FIG Working Week 2025, Brisbane, Australia, 6-10 April 2025

What Does the Future Hold…..?

The world is going change more in the next ten years
than the past 100 years combined…..
Knightscope


I,
ROBOT
By ISAAC ASIMOV

World's Largest Media Company

- No Journalists
- No Content Producers
- No Photographers

World’s Largest Hospitality Company

- No Rooms
- No Receptionists
- No Free Breakfast

World's Largest Transportation Company

- No Cars
- No Manufacturing
- No Repair Facilities

Disruption

dis·rup·tion

dis'rəpSH(ə)n/

noun

noun: **disruption**; plural noun: **disruptions**

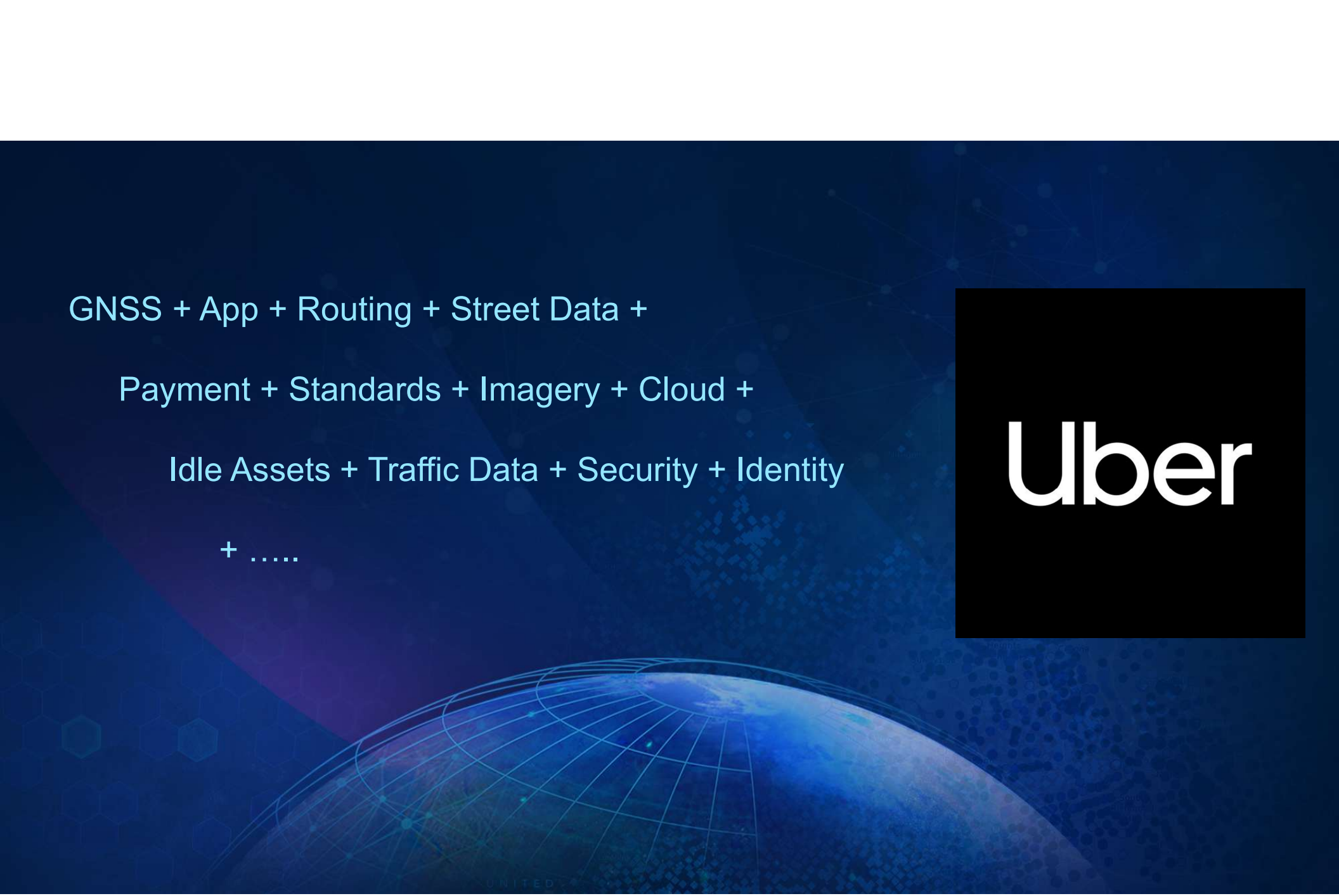
disturbance or problems that interrupt an event, activity, or process

GNSS + App + Routing + Street Data +

Payment + Standards + Imagery + Cloud +

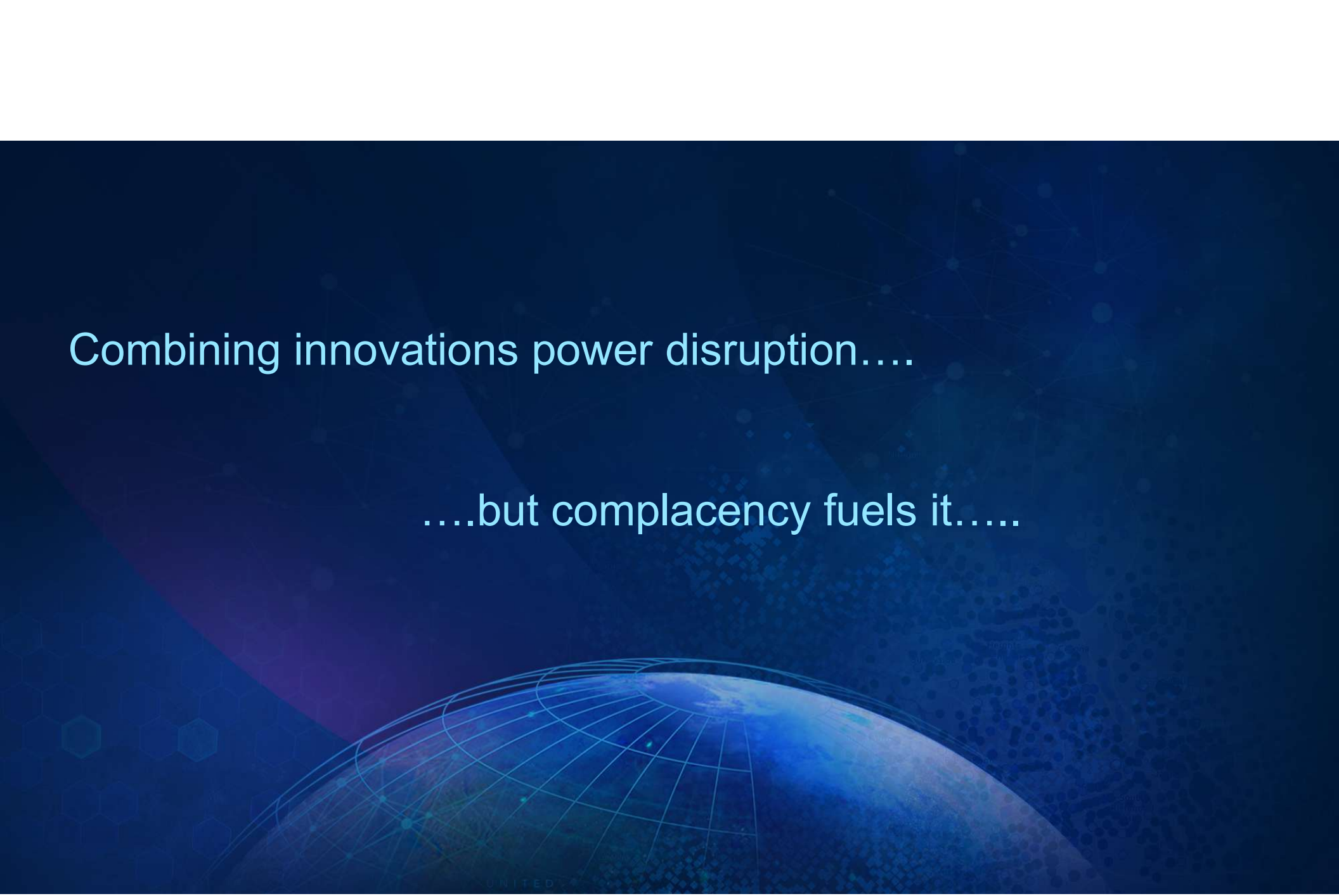
Idle Assets + Traffic Data + Security + Identity

+ …..



Combining innovations power disruption….

….but complacency fuels it…..



Transformation

trans·for·ma·tion

tran(t)sfərˈmāSH(ə)n/

noun

noun: **transformation**; plural noun: **transformations**

a thorough or dramatic change in form or appearance

GIS is Disruptive and Transformative. . .

Integrating and Leveraging Many Innovations

Distributed
. . . And
Interconnected

Configurable

Data Measurement

Images & Remote Sensing
Lidar
Sensors & IoT
Multi-Dimensional
BIM
Big Data
Real-Time Streaming
Unstructured
HD Mapping
Crowdsourcing

Computing

Ultra-High Bandwidth
AI & ML
Mobile
Network Architecture
Edge Devices
Very Fast Processing
Microservers
Clouds in Network
Cloud
Distributed
Interoperability & Standards
Social

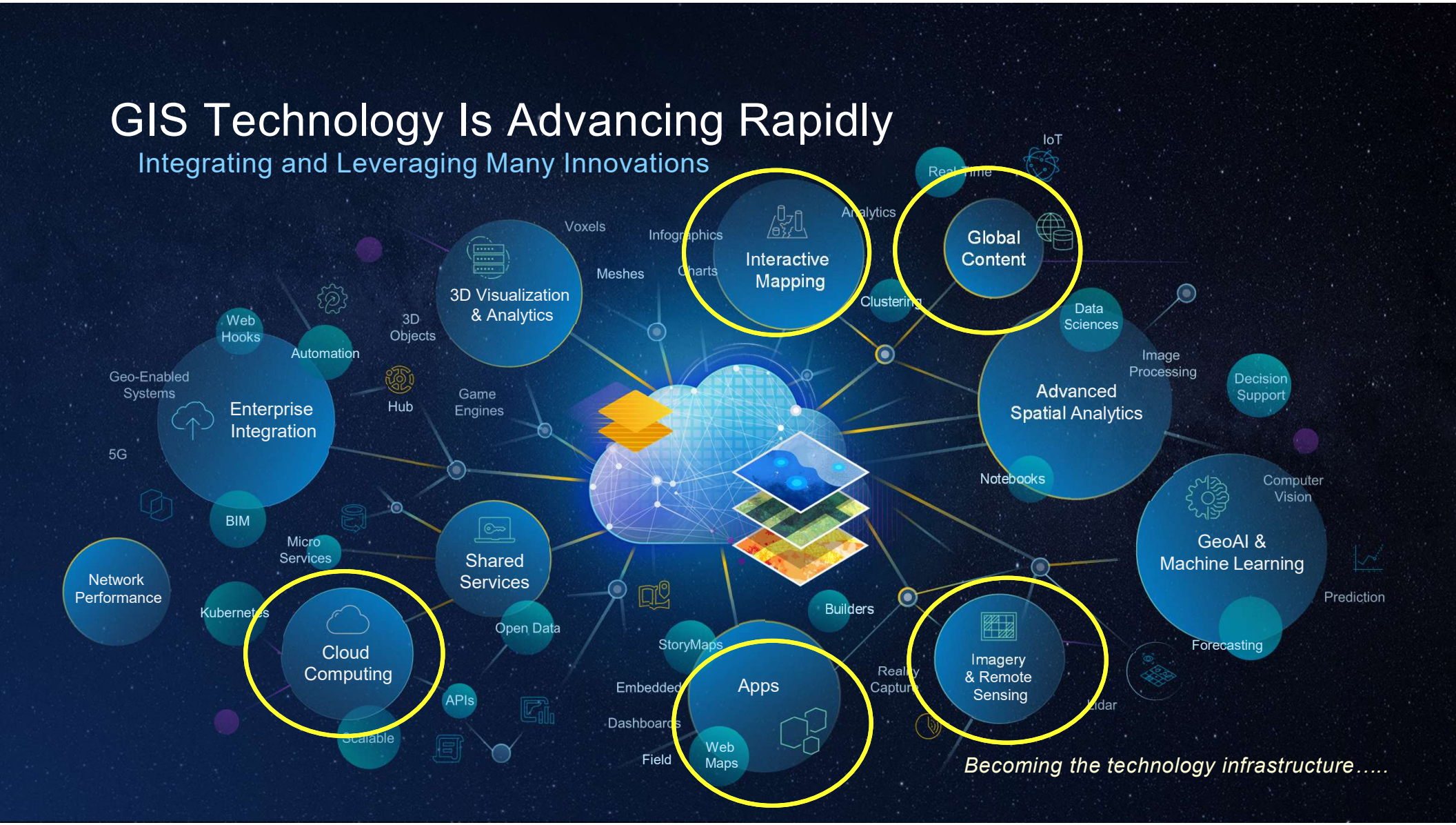
Science

Modeling
Real-Time
Spatial
Spatiotemporal Analytics
Open Science
Data Science
Digital Exploration

Data
Web
Cloud
Mobile
Distributed

GIS Technology Is Advancing Rapidly

Integrating and Leveraging Many Innovations



Colombia

COTS Land Administration

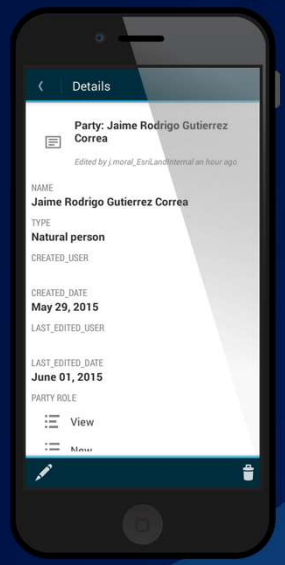
Peace process with FARC began 2012, Ratified 2016

- Population 48 Million (between Spain and S. Korea)
- Parcels 15 Million
  - Urban 11.6 Million
  - Rural 3.5 Million
- Area 25th 441,000 sq. mi. (between South Africa and Ethiopia)
- Population Density 105 per sq. mi. (~ Tennessee)

Cadastre is a Necessary Precondition to Sustainable Peace…..

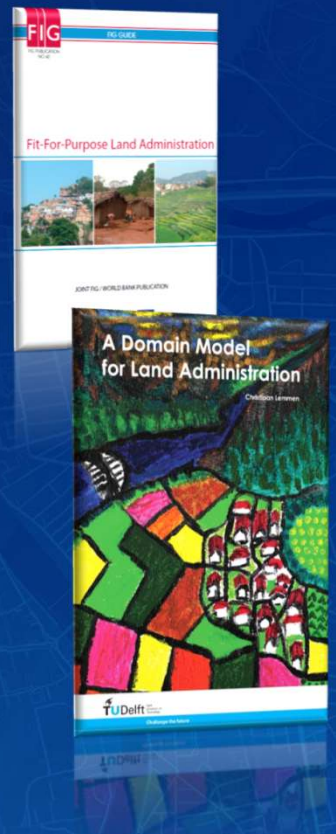
Simple Data Collection

Use what we use everyday……

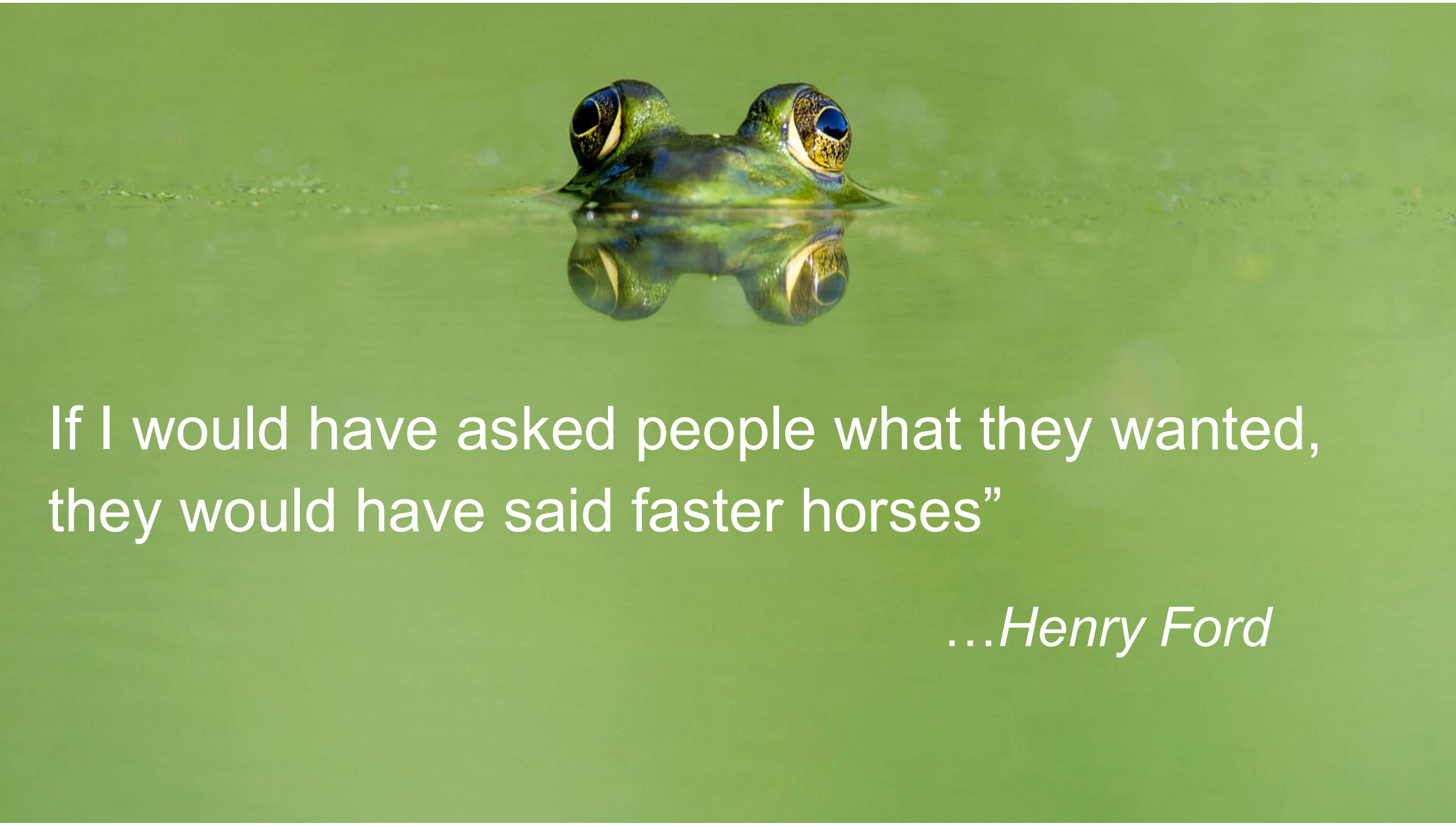


- Fast-to-Implement
- Standards-based
- Low Cost
- High Accuracy
- No Software Development
- Secure

- Leverages External Data
- Uses Many Devices
- Future Proof
- Scalable
- Repeatable
- Works Disconnected



Leapfrog Land Administration …..



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

…*Henry Ford*

Collaborative

Partnering for the Future of Colombia

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

Mobile

High Accuracy

Open Standards

WMS GML WCS KML
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

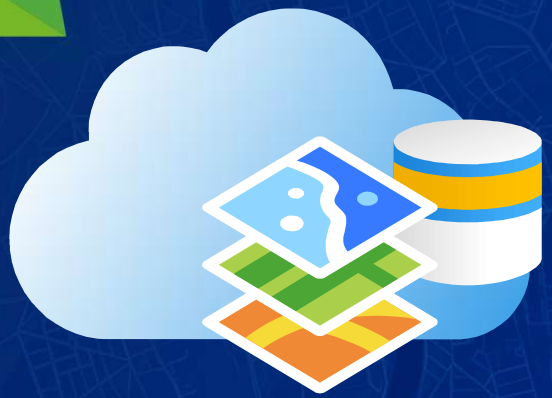
ISO

TRUSTe CERTIFIED PRIVACY

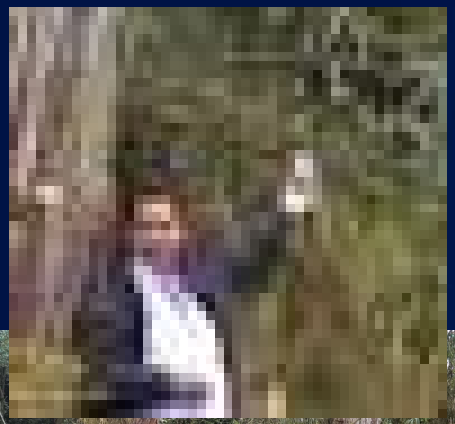
ISO 19152:2012
Geographic information -- Land Administration Domain Model (LADM)

FISMA Authorization & Accreditation

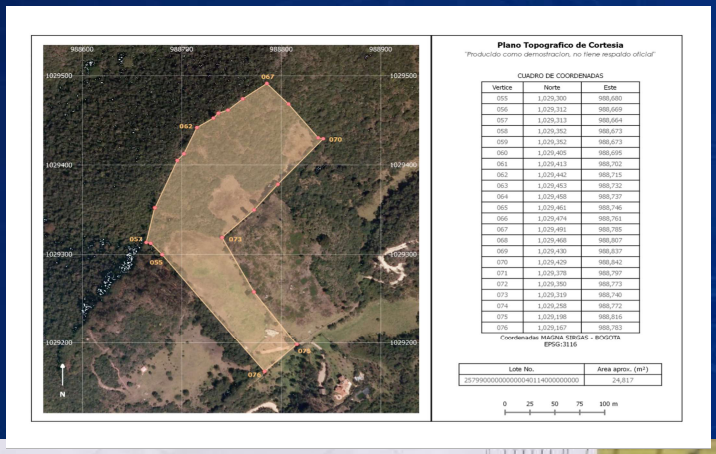
Global Content



Cloud Operations



STREAM


Plano Topografico de Cortesia
"Producido como demostracion, no tiene respaldo oficial"
CUADRO DE COORDENADAS
Vertice | Norte | Este
055 | 1,029,300 | 988,680
056 | 1,029,312 | 988,669
057 | 1,029,313 | 988,664
058 | 1,029,352 | 988,673
059 | 1,029,352 | 988,673
060 | 1,029,405 | 988,695
061 | 1,029,413 | 988,702
062 | 1,029,442 | 988,715
063 | 1,029,453 | 988,732
064 | 1,029,458 | 988,737
065 | 1,029,461 | 988,746
066 | 1,029,474 | 988,761
067 | 1,029,491 | 988,785
068 | 1,029,468 | 988,807
069 | 1,029,430 | 988,837
070 | 1,029,429 | 988,842
071 | 1,029,378 | 988,797
072 | 1,029,350 | 988,773
073 | 1,029,319 | 988,740
074 | 1,029,258 | 988,772
075 | 1,029,198 | 988,816
076 | 1,029,167 | 988,783
Coordenadas MAGNA SIRGAS - BOGOTA
EPSG:3116
Lote No. | Area aprox. (m²)
25799000000000040114000000000 | 24,817
0 25 50 75 100 m

Fit-for-Purpose Land Administration

http://go.esri.com/fit4purposekenya

Community-based Solutions…..

Kenya

Citizen Assisted Surveying

http://go.esri.com/fit4purposekenya

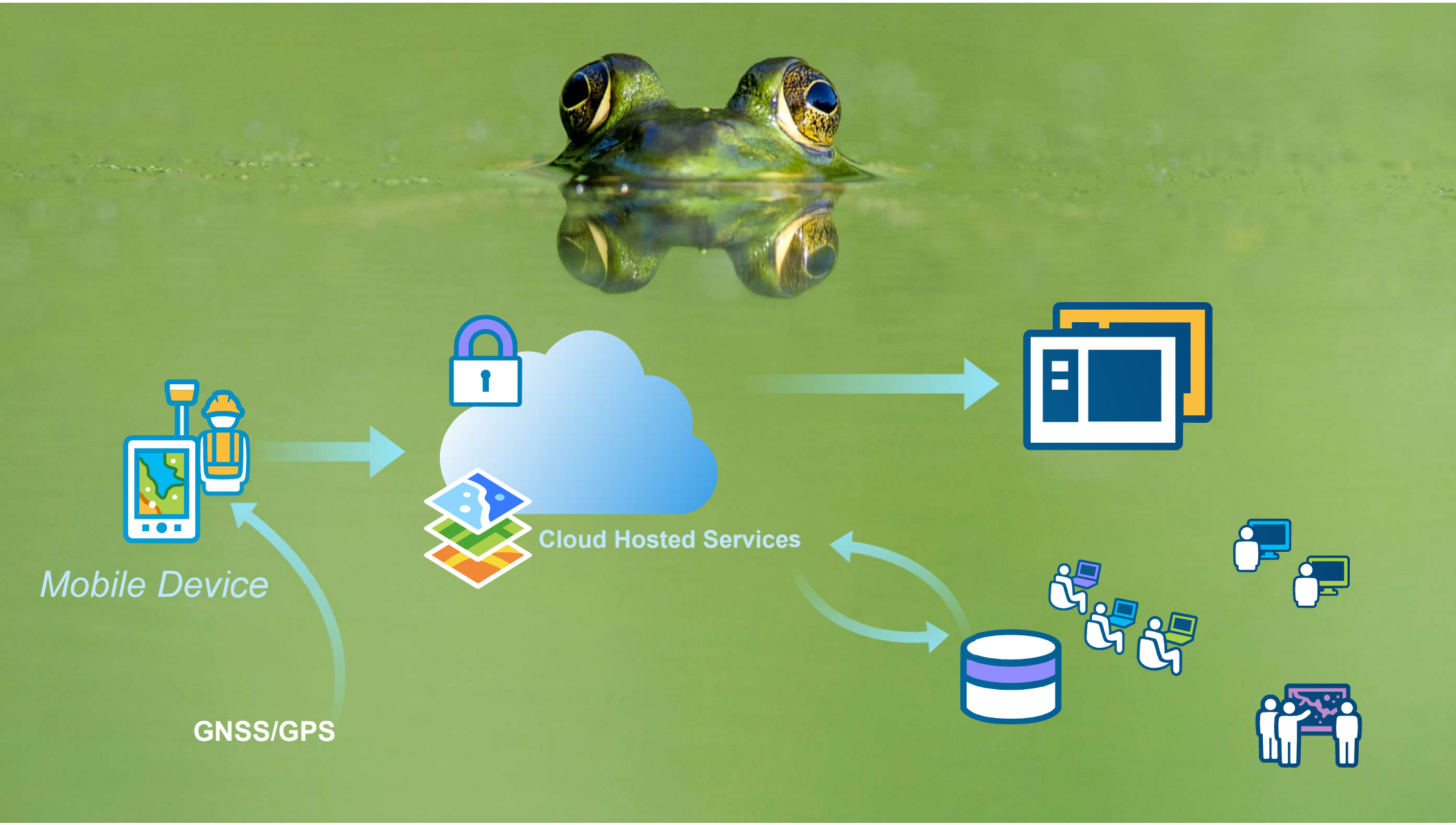
Community Driven Solutions…..

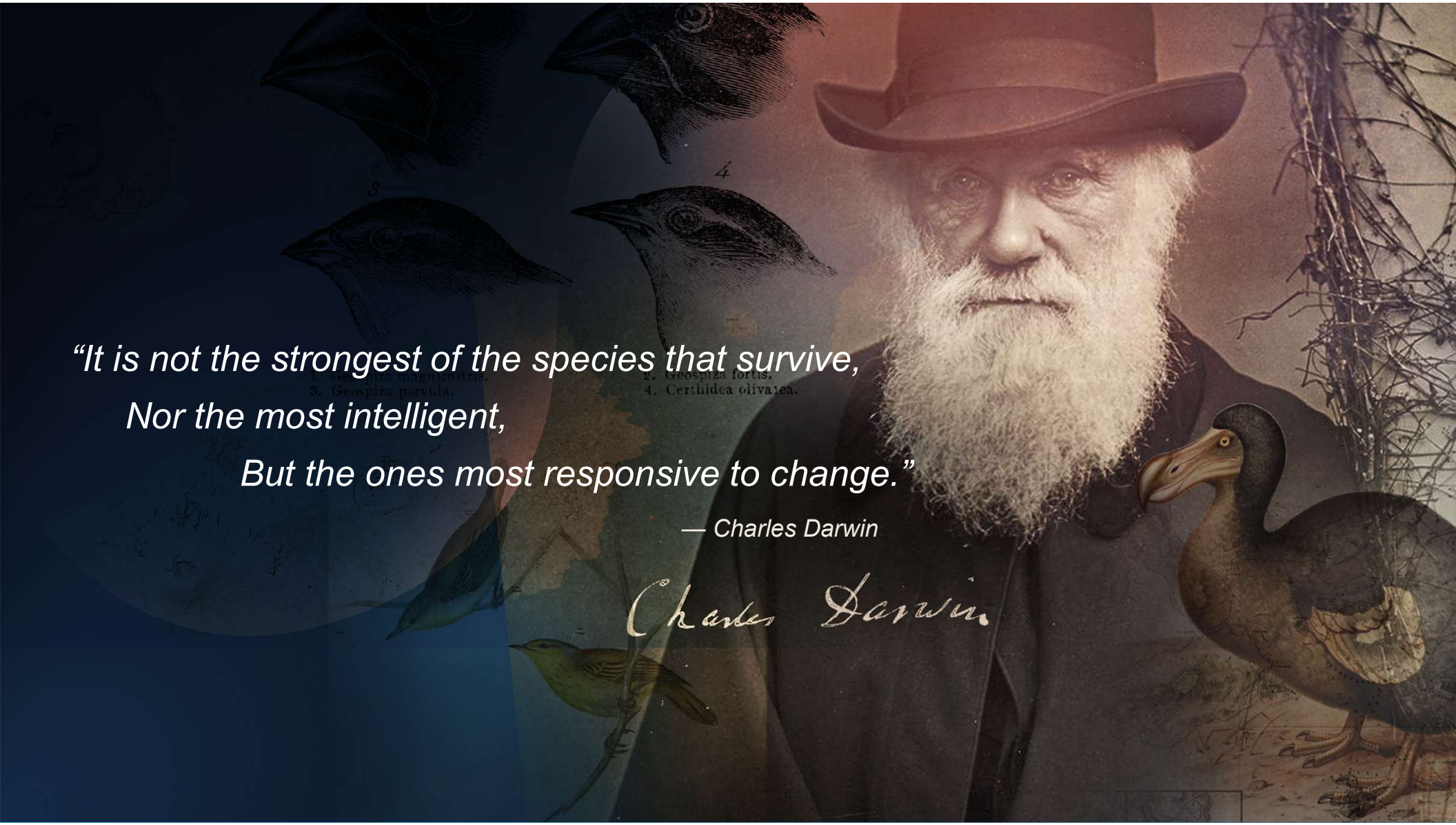
Kenya

Community Adjudication

http://go.esri.com/fit4purposekenya

Community Driven Solutions…..


Mobile Device
GNSS/GPS
Cloud Hosted Services


“It is not the strongest of the species that survive,
Nor the most intelligent,
But the ones most responsive to change.”
— Charles Darwin
Charles Darwin

The most relevant SDGs related to the presentation and theme of this session

1st relevant SDG

2nd relevant SDG

3rd relevant SDG

SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals

STEP 1: SELECT HERE THE THREE MOST RELEVANT SDGs
STEP 2: COPY THE SDG INTO PREVIOUS SLIDE