



Presented at the FIG Working Week 2023,  
28 May - 1 June 2023 in Orlando, Florida, USA

# FIG WORKING WEEK 2023

28 May - 1 June 2023 Orlando Florida USA

Protecting  
Our World,  
Conquering  
New Frontiers

## Today's Technology Enables Multipurpose Cadastral

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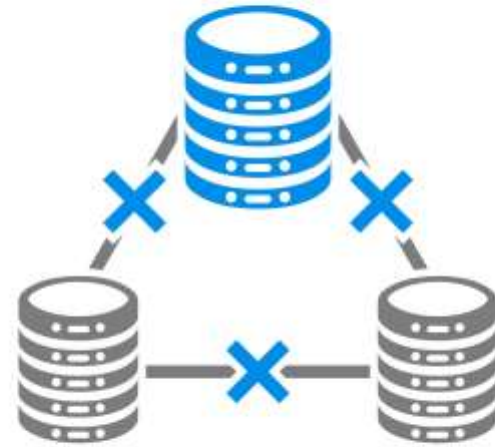


# The Vision of a Multipurpose Cadastre (MPC)

- 1980 – U.S. National Research Council publishes "Need for a Multipurpose Cadastre" report
- Global vision – spatial representation of land rights, restrictions, and responsibilities
- Straightforward concept ≠ easy implementation [40+ years]

# Why?

- Organizational silos
- Data inconsistencies
- Technological maturity
- Lack of capacity



# Is the Vision Nearing Reality?

- Yes!



## What has Changed?

- Technological Advancement = Enhanced GIS Capabilities
- Accelerating demand for land information

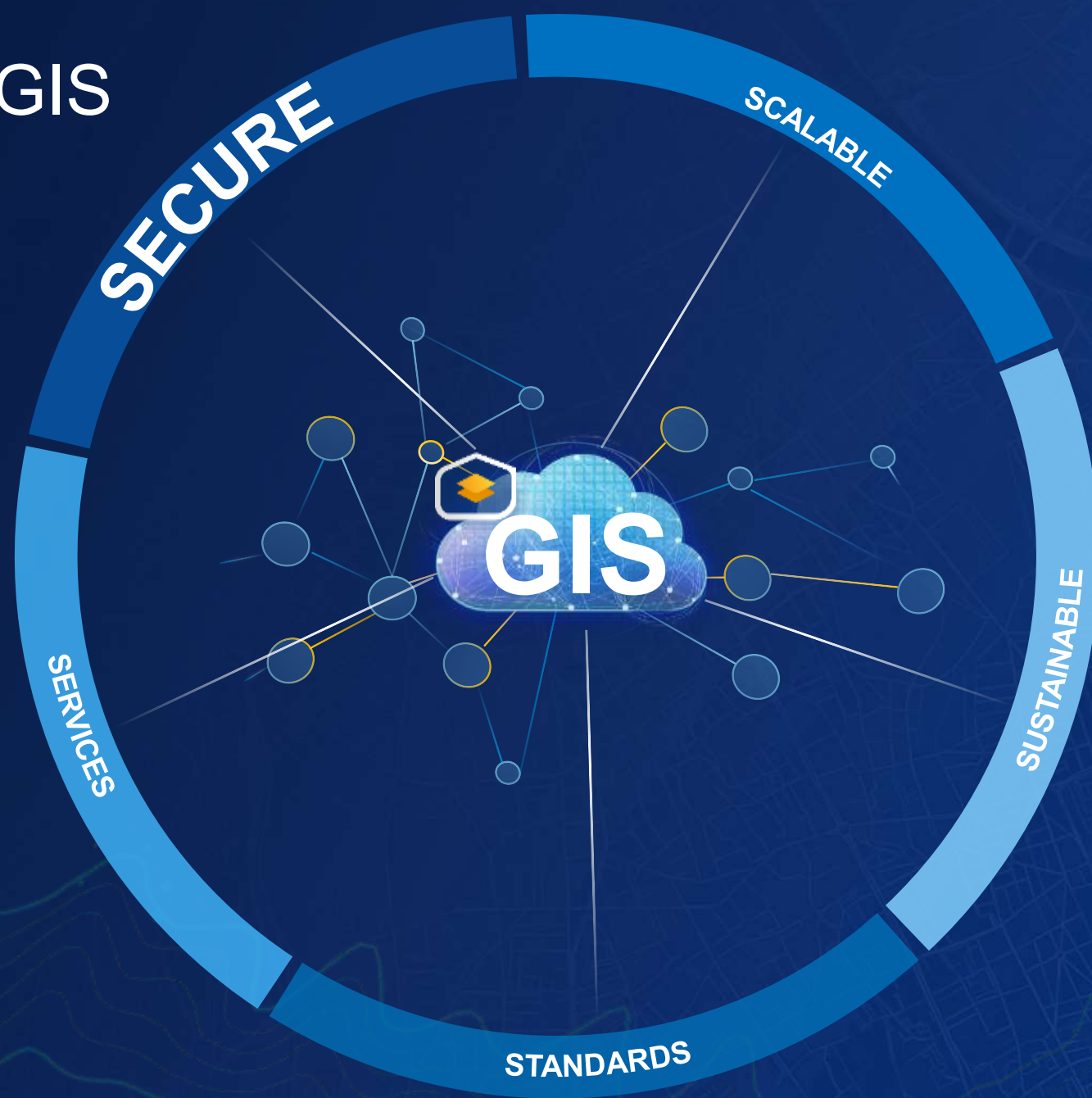
# How?

Today's GIS is:

- Secure
- Scalable
- Sustainable
- Standards-friendly
- [Web] Services-capable



# How Today's GIS Changes the Dialogue



*The Five "S's"...*

FedRAMP

NIST 800-53

USGCB



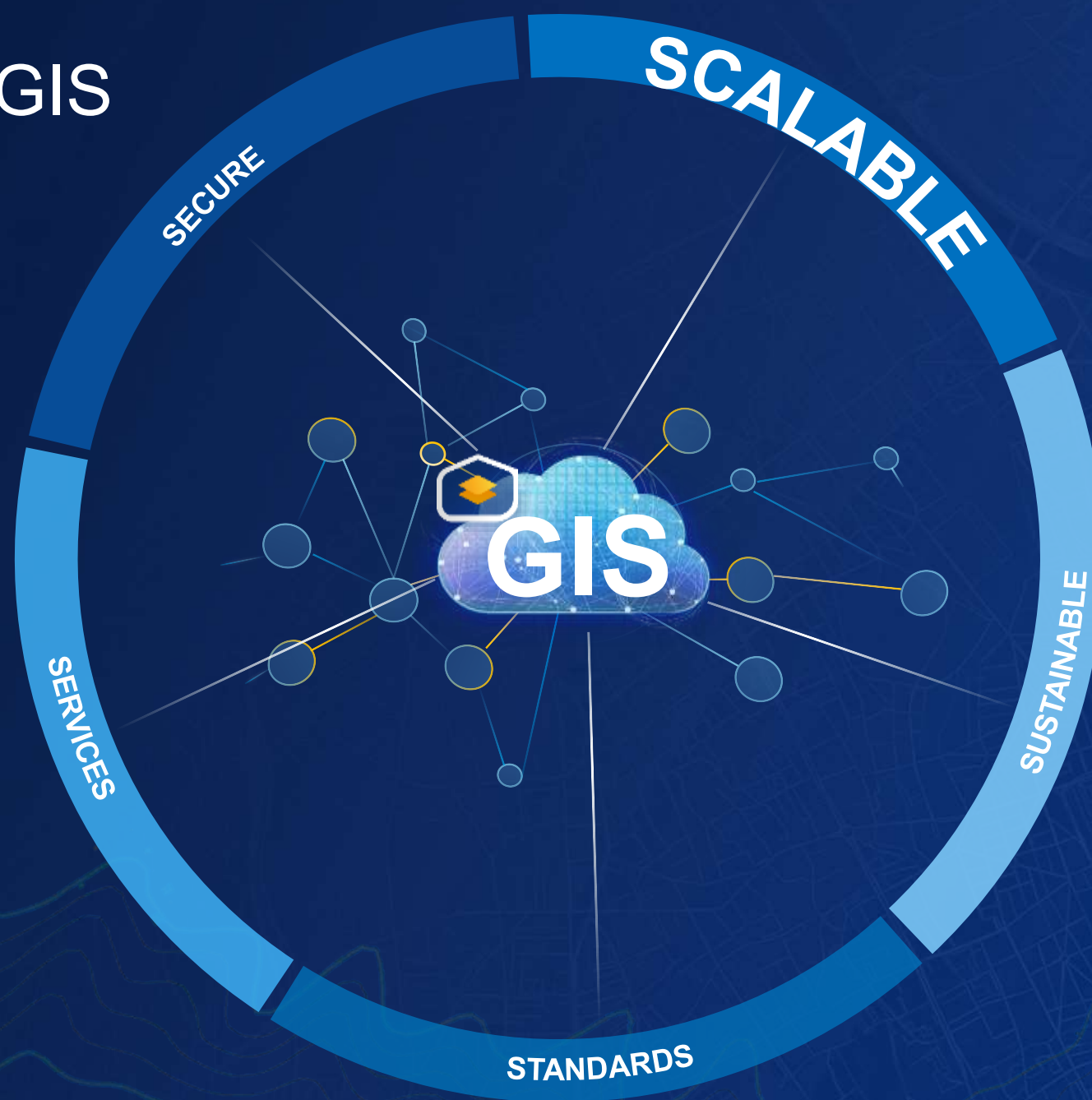
CCPA

STIG

GDPR

*The Five "S's"...*

# How Today's GIS Changes the Dialogue



*The Five "S's"...*



# Scalable



Projects  
(Individuals or Small  
Groups)



Systems  
(Organization-Wide)

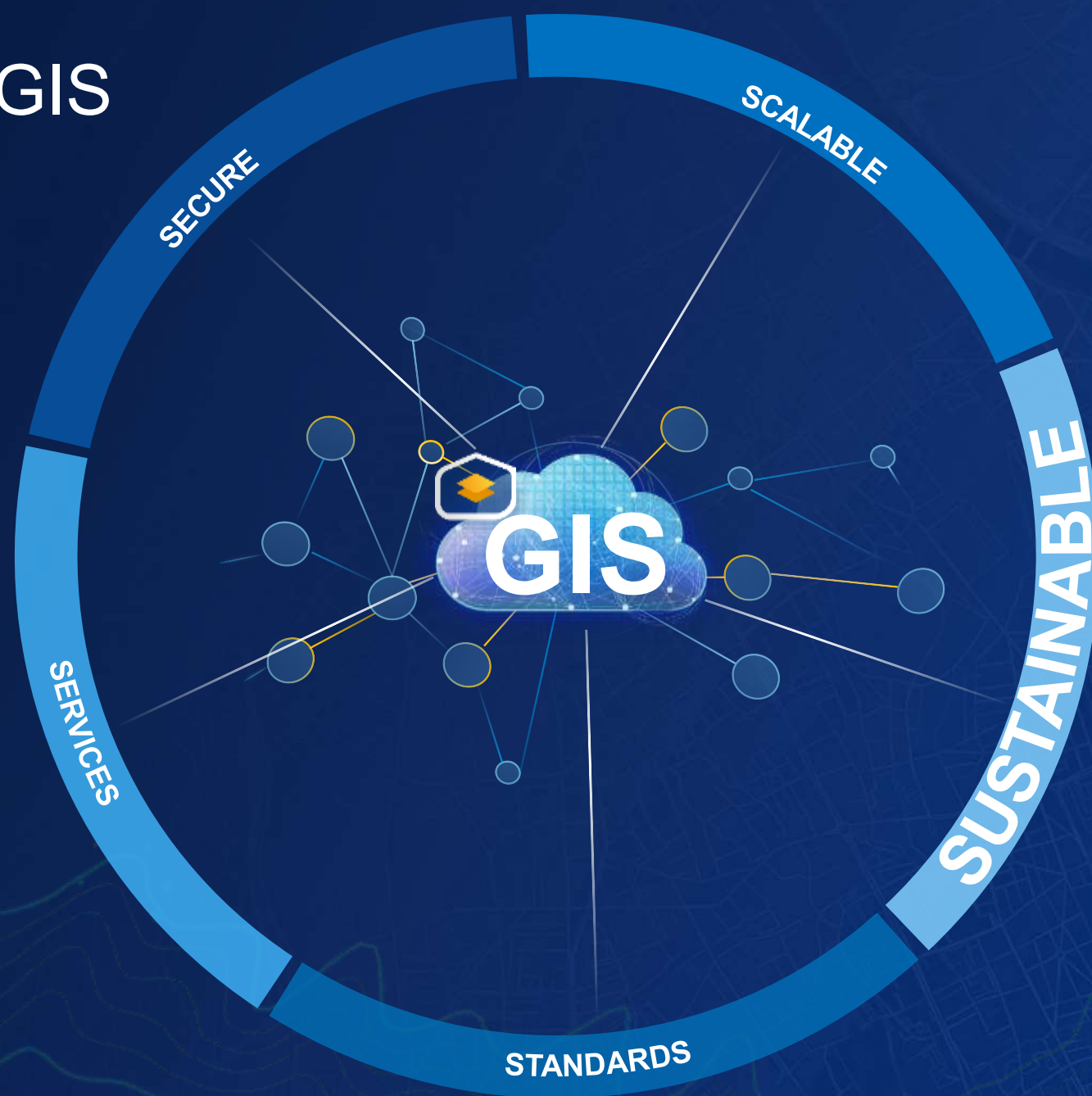


Cloud Services  
(Individuals to  
Organizations)



Geospatial Infrastructure  
(System of Systems – Cross  
Department or Multiple Agency)

# How Today's GIS Changes the Dialogue



*The Five "S's"...*

COTS =



STABILITY

*The Five "S's"...*

# How Today's GIS Changes the Dialogue




*The Five "S's"...*

# Standards-based GIS (operational)

## LADM

### Open Standards and Formats

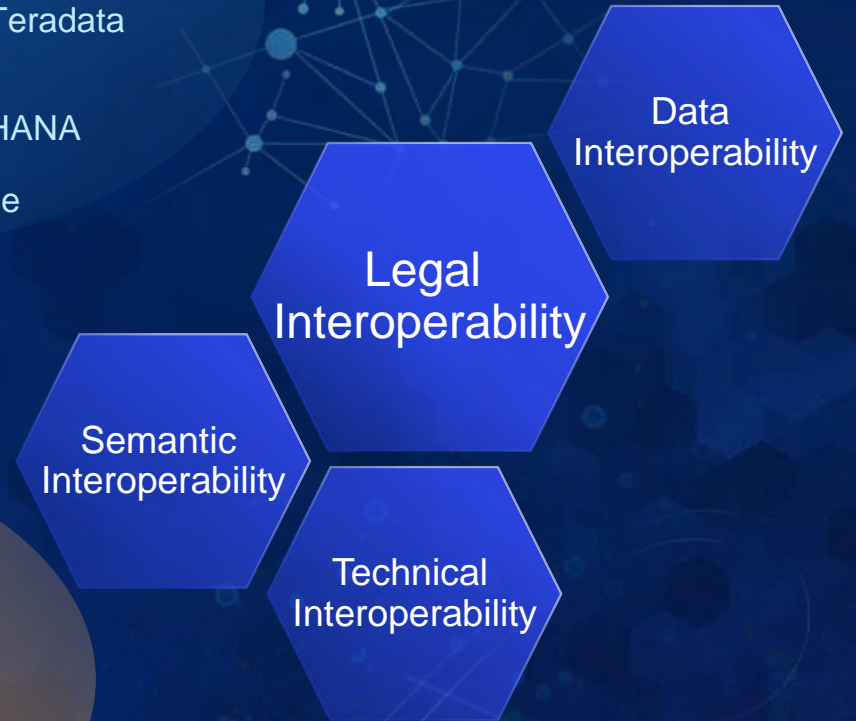
WMS GML WCS **WWW** KML XLSForm WFS  
IFC SQL Web Scene (I3S)  
OPeNDAP SLD SOAP WMTS  
LERC JSON LAS CSW WPS  
REST WaterML INSPIRE  
NetCDF Shapefiles  WPS  
ISO GeoPackage  
OneGeology  
CityGML  
Many OGC Certifications

### Systems Integration

MS Office  
Adobe Creative Cloud SharePoint  
SQL Server Azure Jupyter Notebooks  
Power BI Netezza Teradata  
AWS Python R  
AutoCAD SAP HANA  
IBM Cognos Oracle

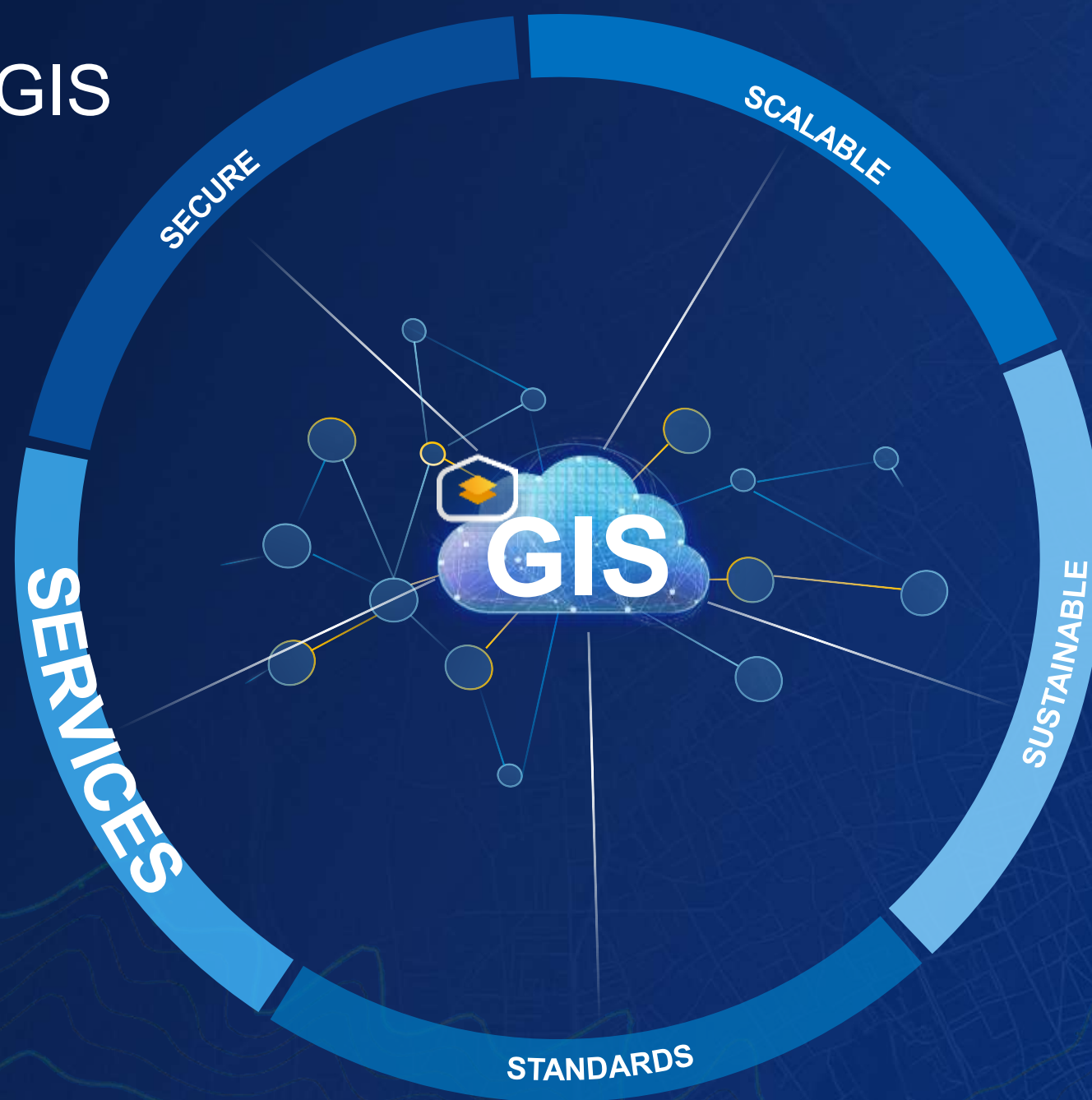
### Open Software

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



*Future-Proof Systems with Standards*

# How Today's GIS Changes the Dialogue



*The Five "S's"...*

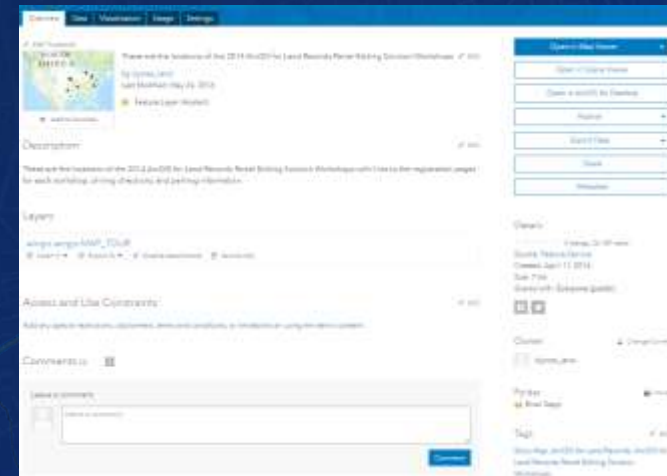
# Services (Web)

Organizes and Securely Shares Data.....

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

# https://

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



The Five “S’s”...

## In Conclusion:

- Widespread operationalized MPC not yet realized
- Conditions are prime
- In U.S. - statewide parcel aggregations, and FLAIR Act
- Signifies committment needed to achieve MPC





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## Thank you!

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