



Modeling the Operational Environment... Maturing the Digital Twin through Data Fusion

*Randall Billy
Director, International Government*

rbilly@esri.com

A world map with a dark blue background and a grid. Numerous glowing points in shades of purple, cyan, and yellow are scattered across the continents, representing Esri's global footprint. The points are most densely clustered in North America, Europe, and Asia.

esri
Global Footprint

Growing, Strong and Impactful





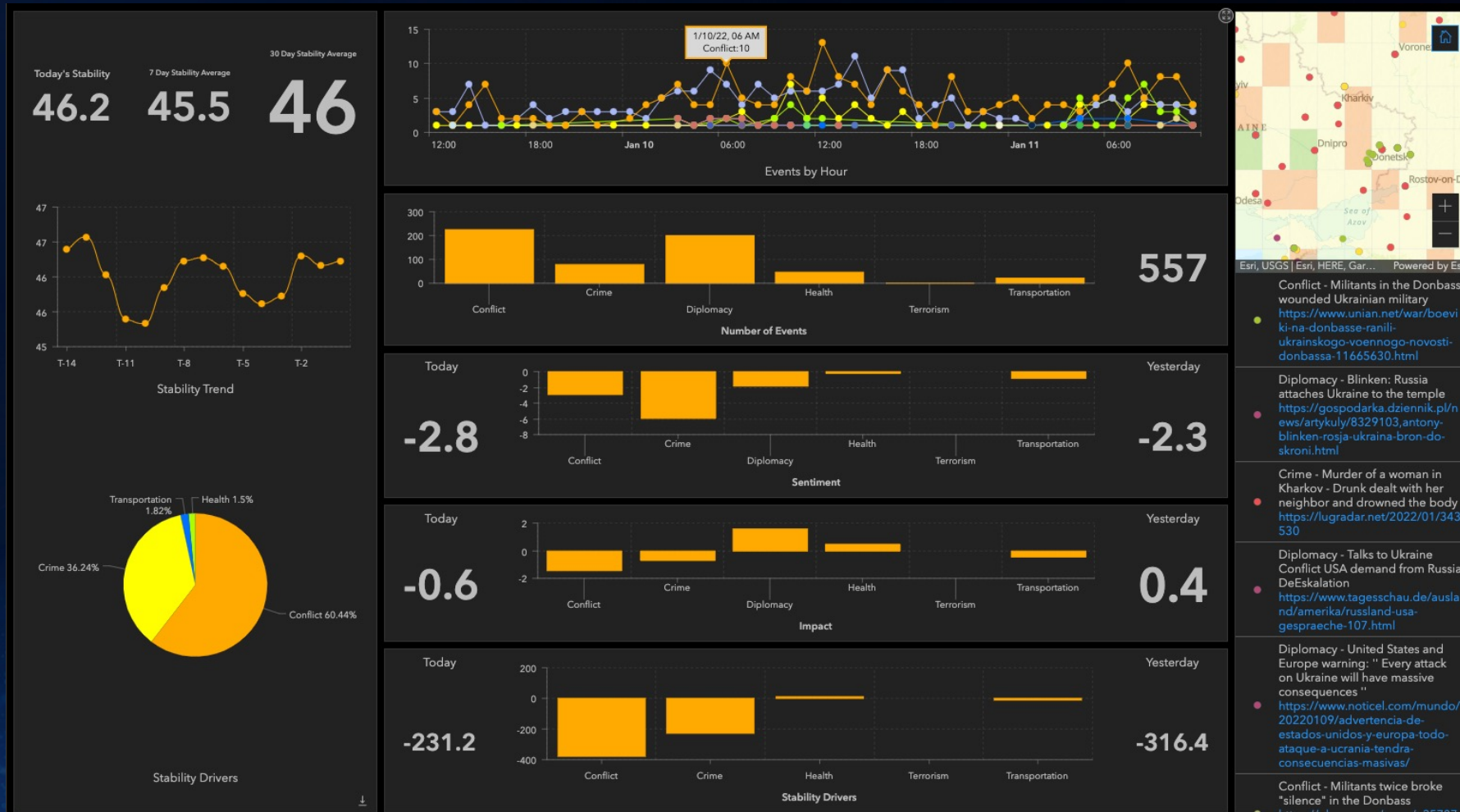
Digital Twin of the Port of Rotterdam

Europe's busiest port utilizes a digital twin to track over 80 ships a day and 460 million tons of cargo per year, generating 3% of Dutch GDP.

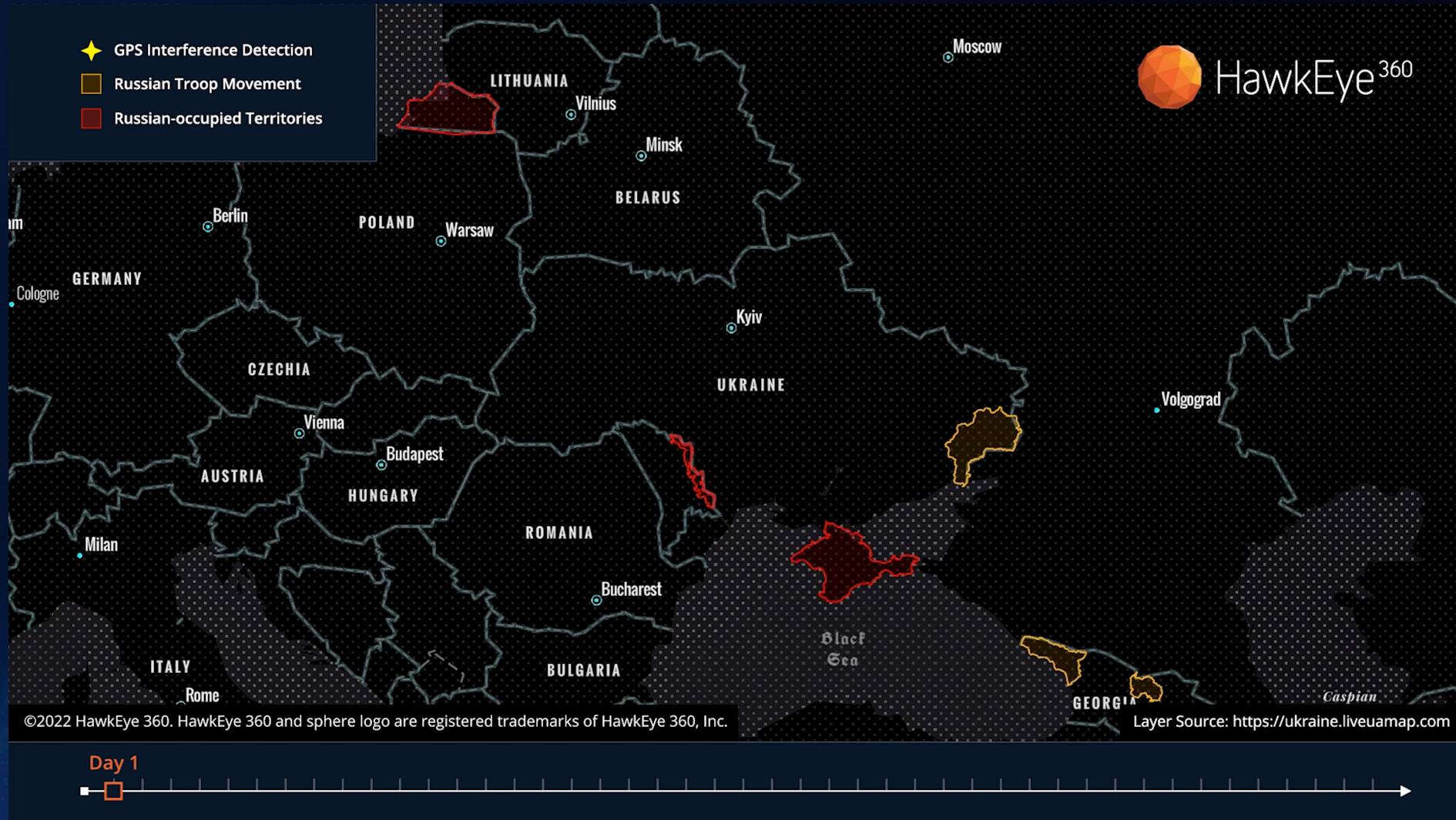
Assessing the Operating Environment



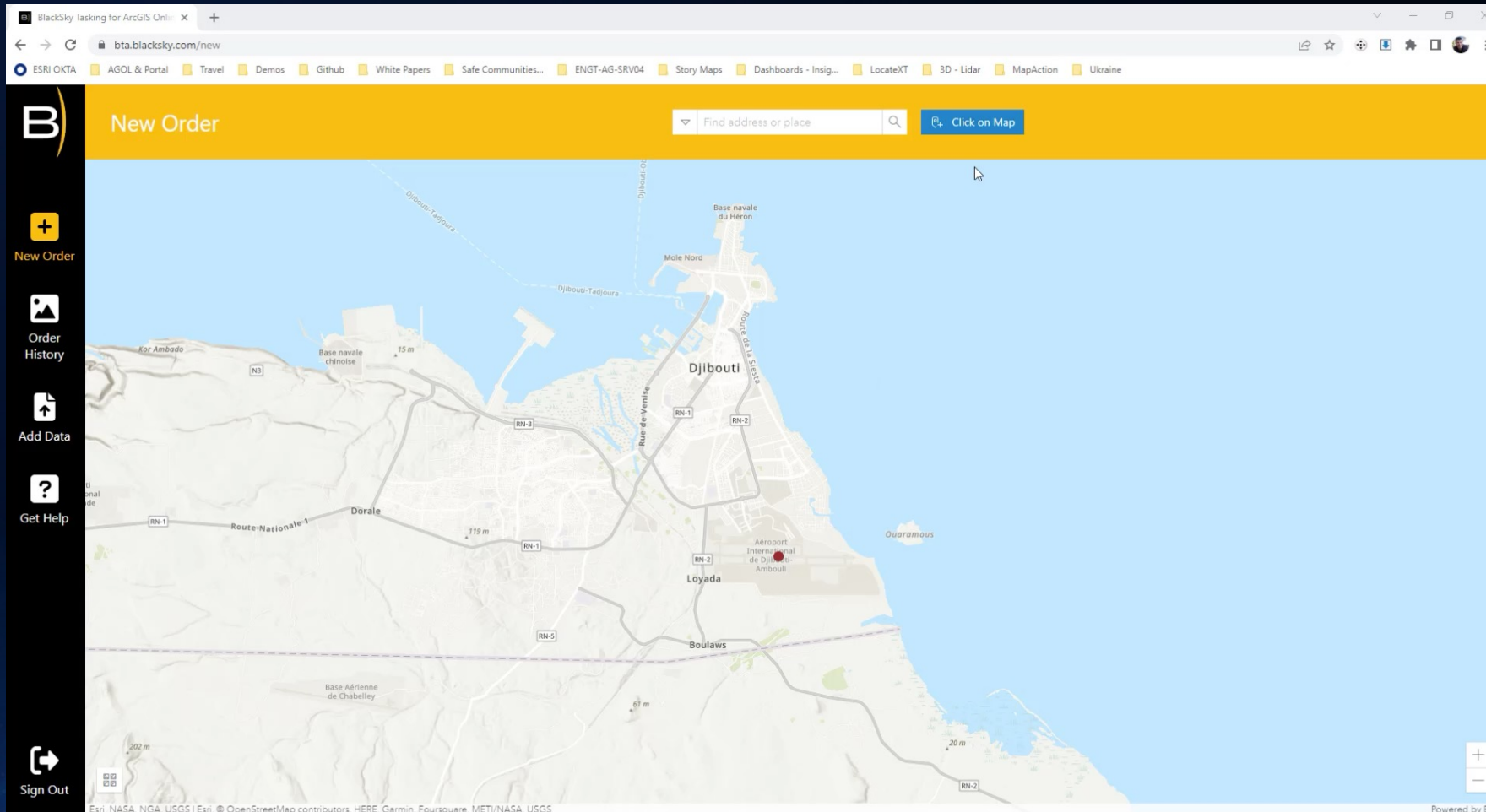
SEERIST



Dynamic Sensor Data Integration



Satellite Tasking for Data Currentcy



The GEOINT Process Flow

Creating the Digital Twin for the Operational Environment

Source Data



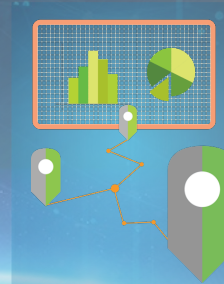
Ingest



Normalize



Analytics



All-Source Analysis



Digital Transformation of Intelligence

Sequential Workflows
And Stove-piped Datastores



Digital
Automation

Digital
Transformation

Simultaneous

Integrated
Operations

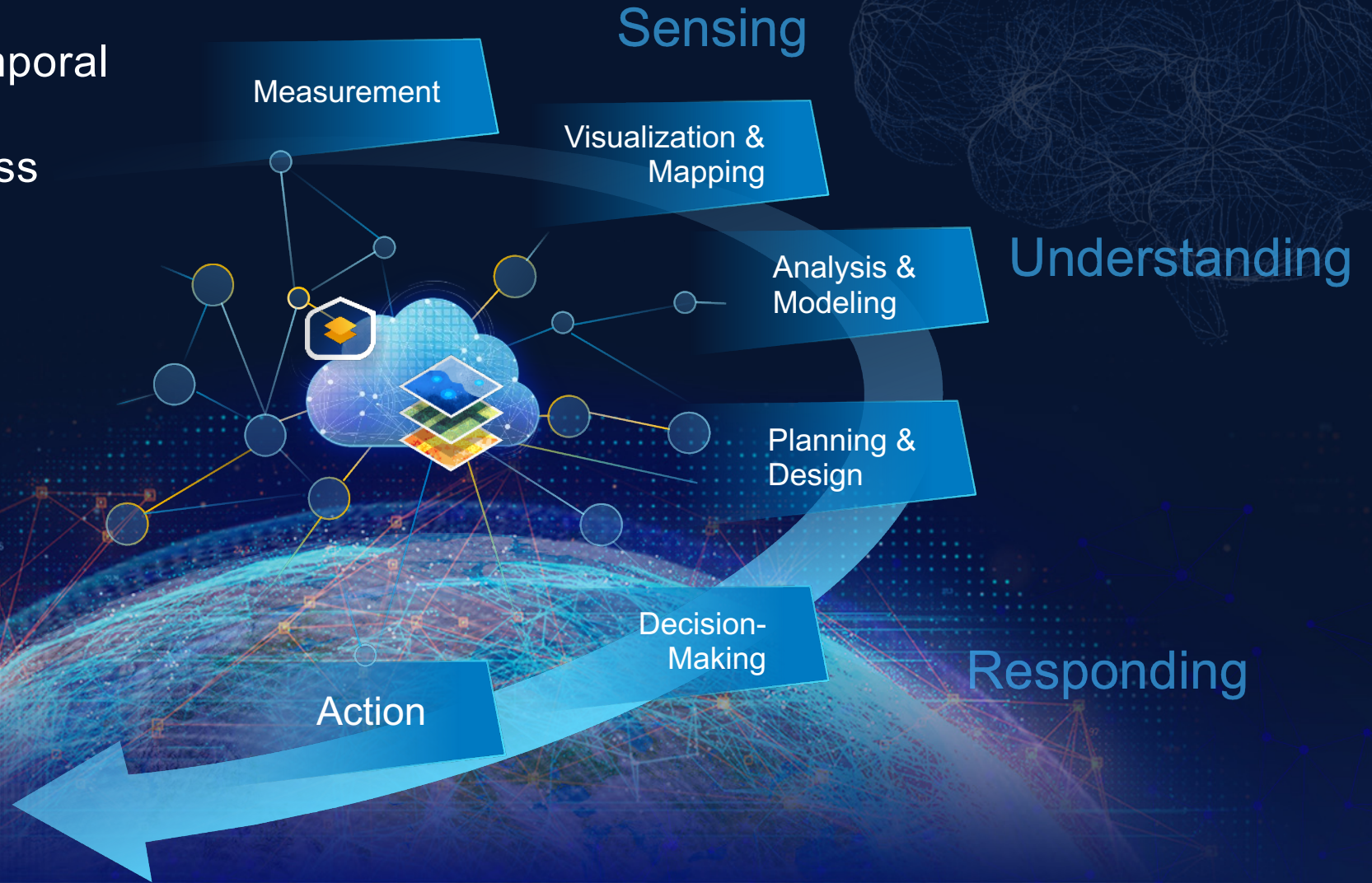
....Requires Intelligence Organizations to transform

What is A GIS?

A System for Managing and Applying Information

Provides the Spatial-Temporal
Framework . . .
. . . And Process

**THE
SCIENCE
OF
WHERE**



GIS

is a SYSTEM for organizing, modelling and exploiting the world's knowledge

Creating a digital twin of the operational environment enabling understanding



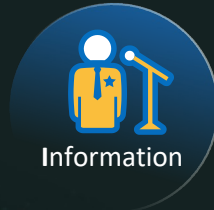
Time



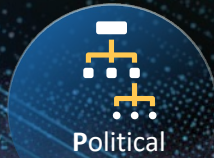
Physical Environment



Military



Information



Political



Economic



Social



Infrastructure

PMESII-PT
/ASCOPE
Framework

*All data linked based on geography
and managed in 3D space and across time*

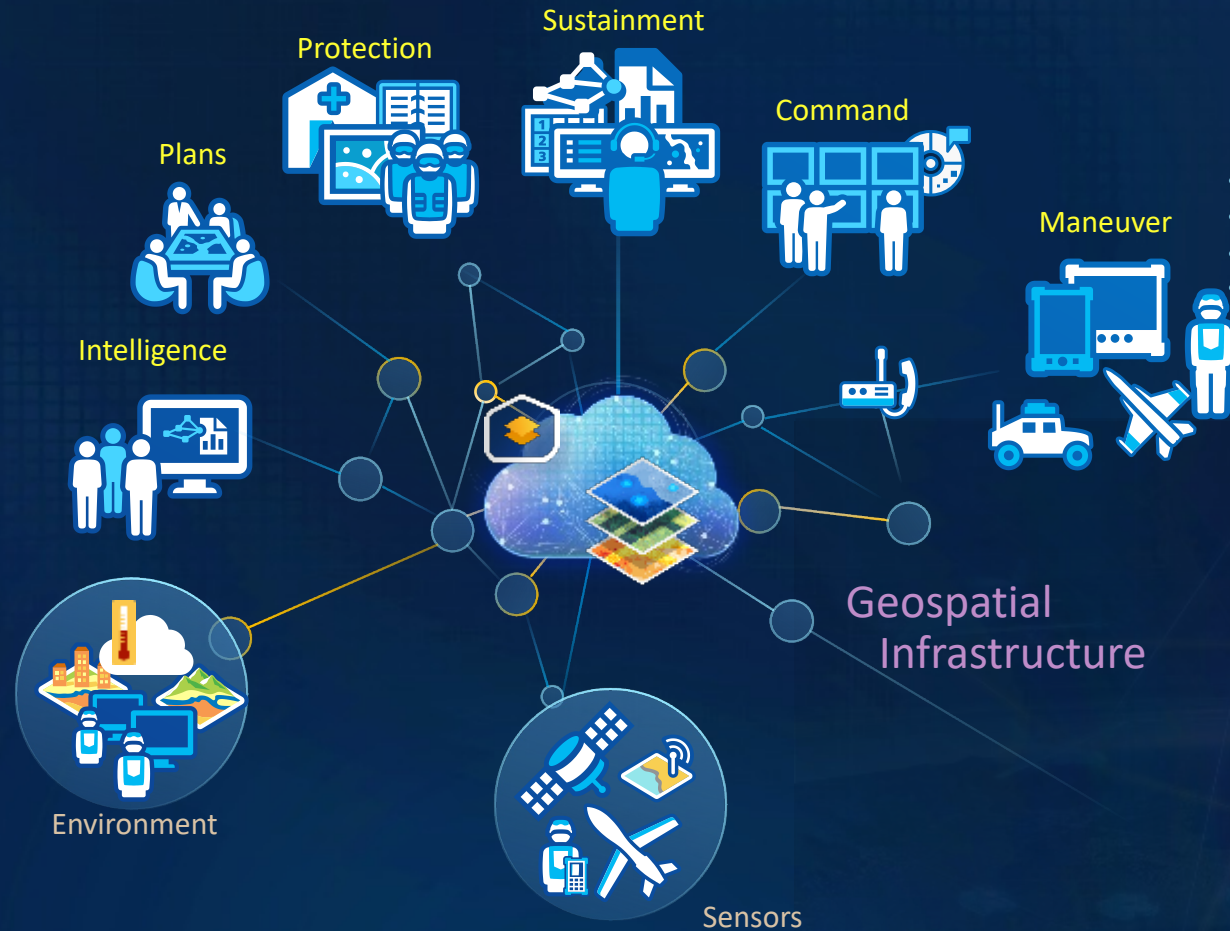
GIS enables a common understanding

... for people and organizations
... Across All Functions and All Domains

Land
Sea
Space
Air
Cyber

Provides a Single Pane of Glass

- Role Based
- Rich Context for Data
- Knowledge Management
- Dynamic Information Environment
- Real Time



From HQ to Service Member

- Supports All Computing Platforms
- Ready to Use Apps
- Modern Flexible Low/No Code
- Integrates into Programs of Record



GIS Integrates All Types of Data

Making Information Usable and Widely Available

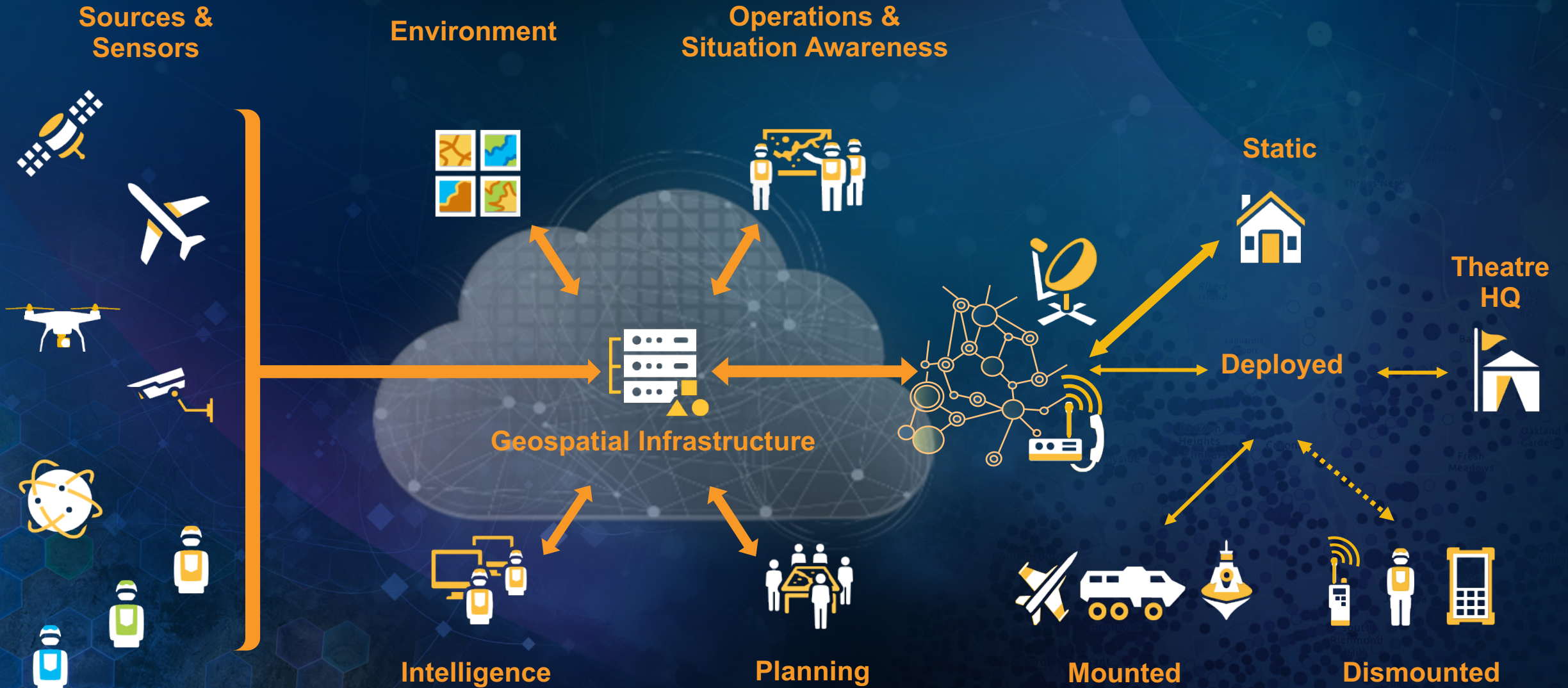


Delivering Powerful Capabilities Across Defense Enterprise

*Building a responsive system configuring
low code/no code applications*



Geospatially Enabling the Defense Enterprise



Geospatial Infrastructure Is the foundation for the Digital Twin

Integrating Legacy and Next Generation



Understanding the Operational Environment

Requires an underpinning Geospatial Infrastructure

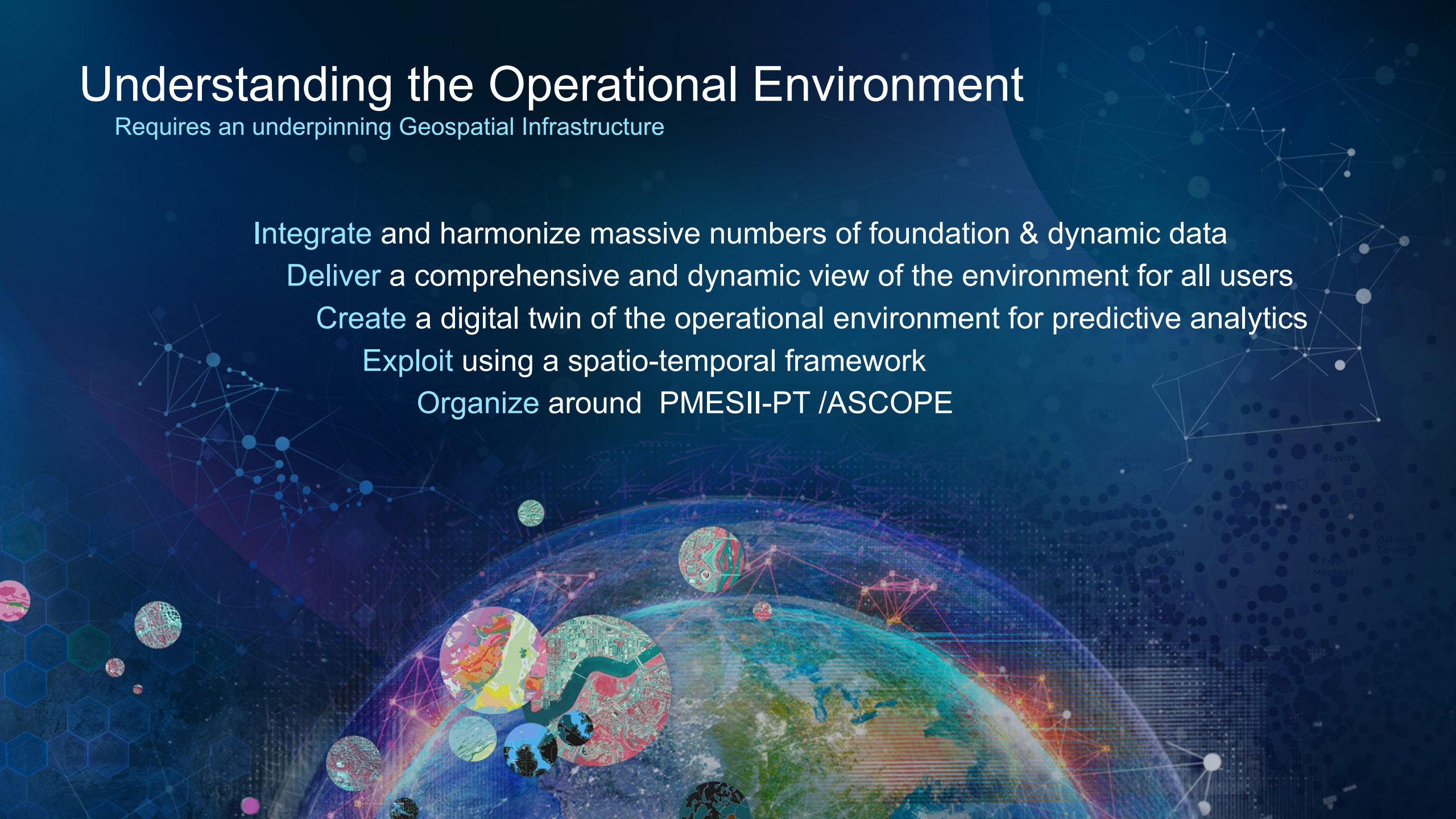
Integrate and harmonize massive numbers of foundation & dynamic data

Deliver a comprehensive and dynamic view of the environment for all users

Create a digital twin of the operational environment for predictive analytics

Exploit using a spatio-temporal framework

Organize around PMESII-PT /ASCOPE





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**THE
SCIENCE
OF
WHERE**[®]