GeoReadiness Enterprise and SPIDERS 3D Interoperability
Systems of Record to Systems of Engagement
Systems of Record

- Systems of Record
  - Authoritative Data Should be maintained in Mission Focused Systems of Record
  - Business processes, policy, and personnel in place and working together to ensure Navy-wide enterprise compliance and coverage
  - “Integration” of Data from systems of record is many times a manual operation performed by Subject Matter Experts
  - Examples include iNFADS, MAXIMO, SPIDERS, E-Projects, etc.
Systems of Insight

- Geospatial Technology serves as an integration engine, presenting System of Record data on a spatial canvas
  - GRX and SPIDERS have existing database links to iNFADS and Maximo
  - Geospatial Platforms enable purpose built applications to leverage enterprise data to address challenges such as climate change, mission planning, and energy resiliency
GeoReadiness Explorer

Provides a Navy Enterprise spatial platform

• Not just a “pretty picture” or a viewer
• Provides enterprise geospatial capability to the US Navy through Esri’s Portal for ArcGIS
• Provides tools and processes for data collection, aggregation, publishing, dissemination and analysis
• Provides platform for purpose-built applications to address challenges such as flood inundation, energy resiliency, audit readiness, etc.
SPIDERS 3D

Describing spatial scenarios that demand the 3\textsuperscript{rd} dimension
SPIDERS 3D

• Reducing costs with simplicity
• Integrated Product Support
  – Describing issues with new weapon platforms and how they interface with new and old infrastructure
SPIDERS 3D
3D briefings made easy

Timelines & Presentation Mode
- Create 3D Slides
- Invite hundreds of users to your 3D briefing
- Describe a sequence of events
- Adjust the story on the fly
Data Labels

- Recent R&D Efforts have allowed data labeling
  - Click on a facility or component
  - Browse available data and apply a label
Interoperability

- **SPIDERS 3D - Query and Request GeoReadiness Enterprise Data**
  - Portal to Portal authentication
  - SPIDERS leverages the NAVFAC Portal SSO Process from ArcGIS Server 10.5.1
  - Utilized HTTP GET request for the REST Service

- **Application driven transformation**
  - Application transformed JSON and UTM returned spatial data into X3D nodes.
  - JavaScript converted raw coordinates into objects rendered by x3dom

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**From SPIDERS 3D:**

**Left:** A portion of the Kings Bay scene.

**Right:** The same portion with the Water Feature service rendered within the scene.
The first link, “Sign In”, opens a CAC authentication window for RSIMS Portal.
• This is Required for all RSMIS Services

The second link, “Load Data”, builds and submits the request.
• The application converts the polygons into X3D nodes and renders them on top of the scene.
Interoperability

- Basically, a 2 Step Process for Conversion
  - Convert X3D to VRML97
  - Utilize OOTB Geoprocessing tool to Import the .wrl file

- Converted files can be utilized as any GIS File would
  - Files can be opened in ArcMap, ArcScene, ArcPro
  - Scene’s can be published as REST Services from ArcPro
• Pier from Yokosuka, Japan in ArcPro

• SPIDERS 3D transformation not applied in this example
What Data can be Shared?

- **GIS Data**
  - CIP Layers
    - Geometry (ESRI points, polygons, polylines, etc.)
    - Feature attributes (tabular data)
  - Topo, Bathy, and Imagery
    - X3D can be derived from source data

- **SPIDERS 3D**
  - Facilities
    - Users can drop in various facilities
  - Ships, Planes, equipment
  - Plans & CONOPS
What’s Next?

- **Identifying Use Cases**
  - Other Line of Sight Analysis where outside the fence line impacts inside

- **Identifying Requirements**
  - What services should SPIDERS 3D be digesting?
  - What business tools (new and old) do they support
  - What X3D data should be made available to GRX
  - R&D is done & capabilities are identified
  - With data reuse comes new process requirements
    - How can we enhance current processes to assure data is shared to all applications that need it?
Thank You!!

Anthony Scardino, Technical Architect
GISinc
Anthony.Scardino@gisinc.com

Tom Cowan
Synergy Software Design
Tom@ssdllc.biz