



Esri International Developer Summit
Palm Springs, CA

Building Apps with the ArcGIS for the Military Solution

Ben Conklin

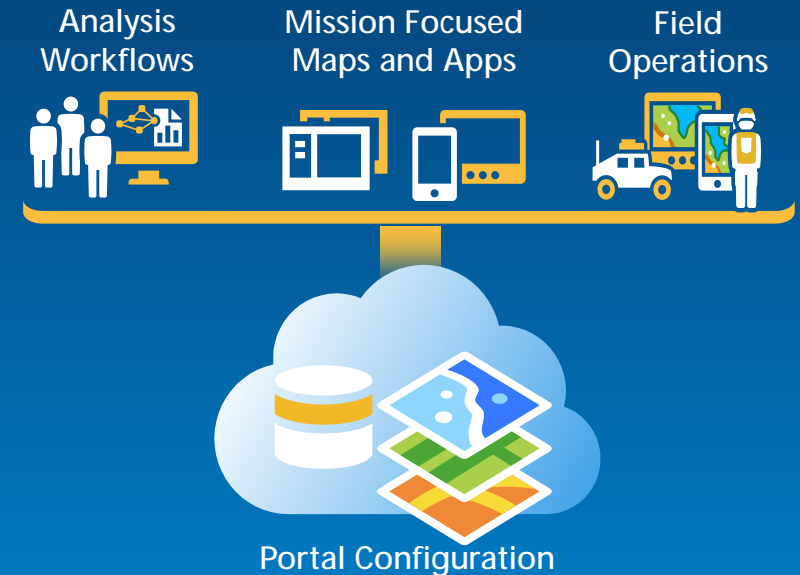
Chris Moore

Patrick Hill

ArcGIS for the Military

Solution templates for military operations

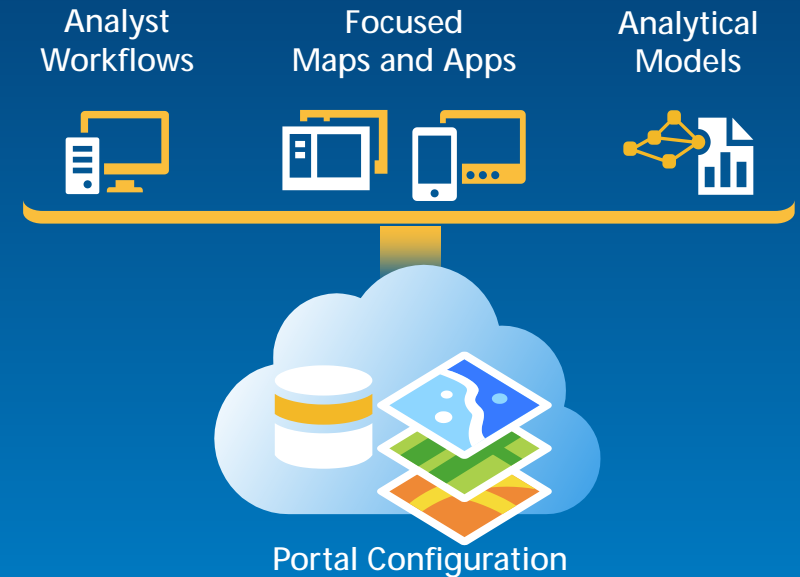
- Current offering
 - Includes more than 50 maps and apps
 - Key workflows for Intelligence Analysis, Understanding the Operational Environment, Planning, and Operations
- Focused around Military Force types
 - Land Operations
 - Maritime Operations
 - Domestic Operations
- Coming in 2014
 - New maps and apps for Target Package, Intelligence Summary, Aoristic Analysis, Submarine Operations, Real Time Weather Feeds
 - Expanding to support Air Operations



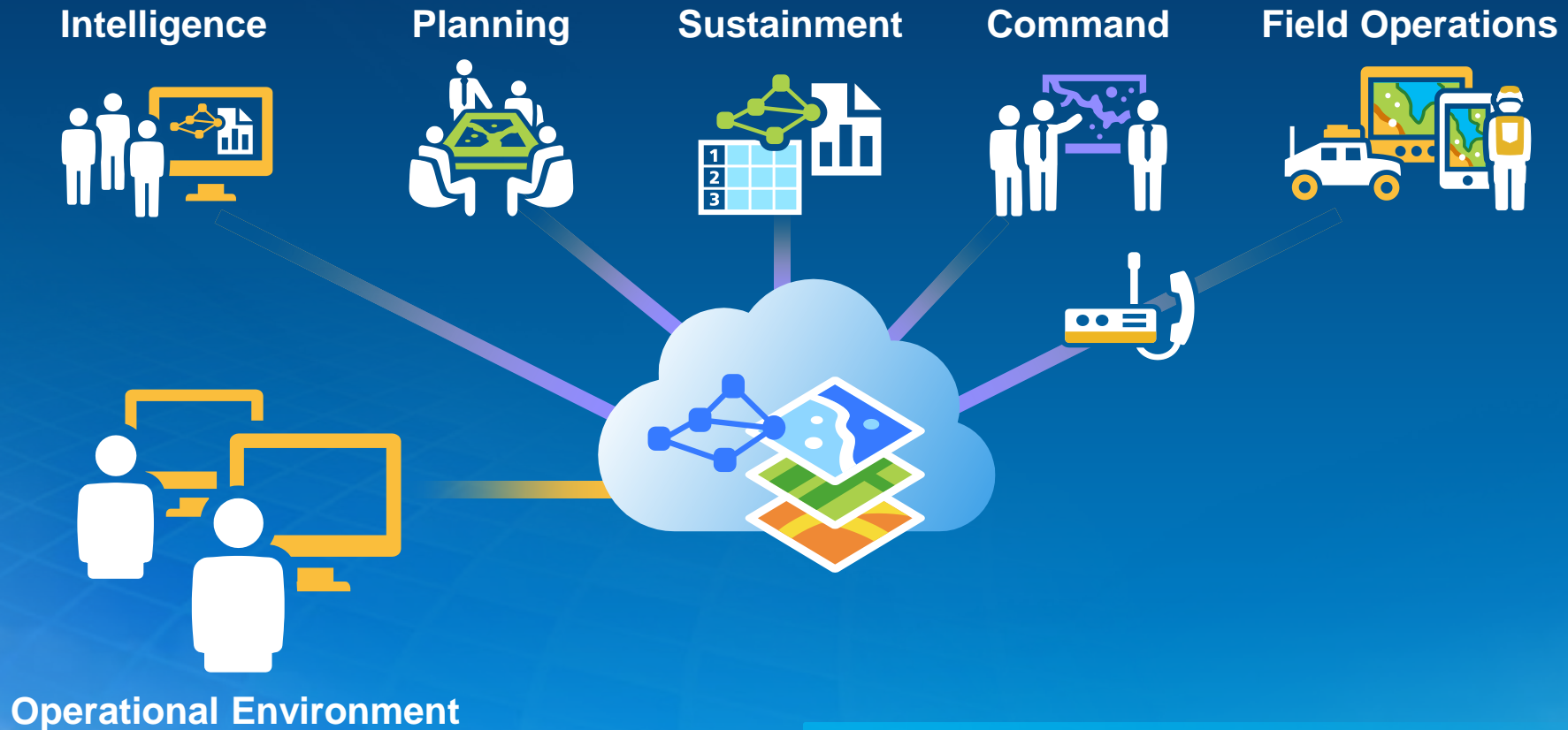
ArcGIS for Intelligence

Solution templates for the national intelligence community

- New Solution Area
 - Includes 10 maps and apps
 - Key workflows in Source Management, Analysis and Fusion and Information Sharing
- Coming in 2014
 - New maps and apps for Predictive Analysis Tools, Country Book, Daily Briefing, Route Analysis, Change Detection, IDP Tracking



ArcGIS for the Military – Land Operations



Information Sharing enables Decisive Action

Transforming the Role of GIS

Demo

Solution Website

the Military
ons



ArcGIS Full Motion Video
Template



Compound Map

t used in the ArcGIS for the Military and Intelligence solutions. Member
er having it reviewed the content will be deployed with the operation

Resources for Developers

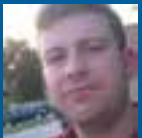


Military Solutions on Github

Chris Moore (“C-Moore”)

MI

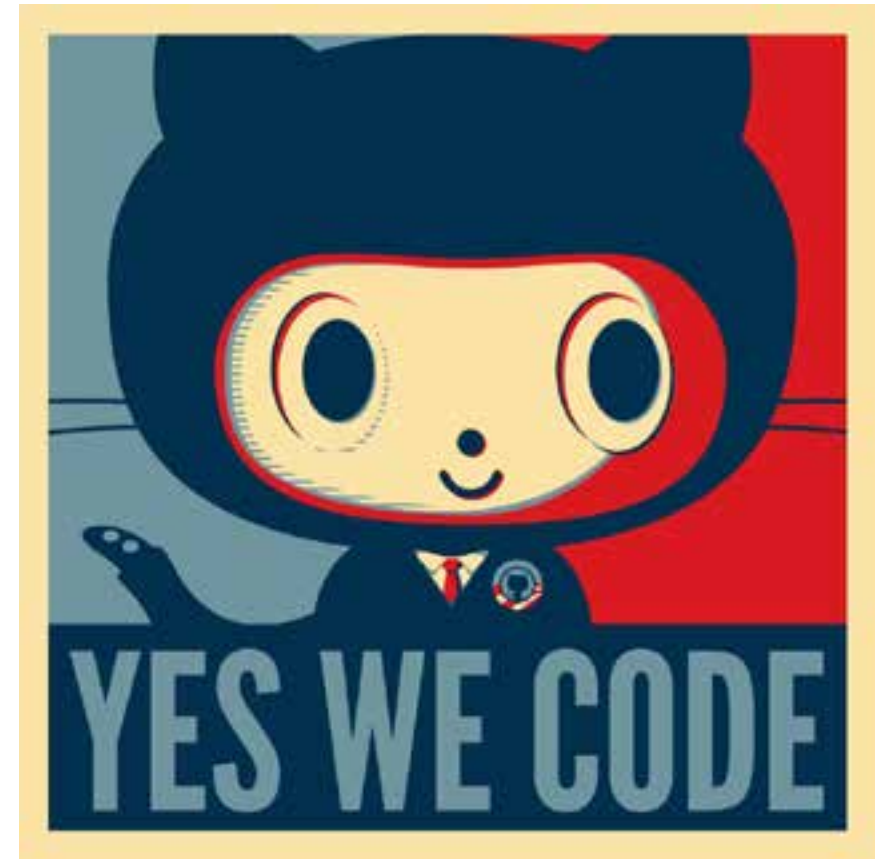
Ben Conklin - <https://github.com/conklinbd>



Patrick Hill - <https://github.com/pHill5136>



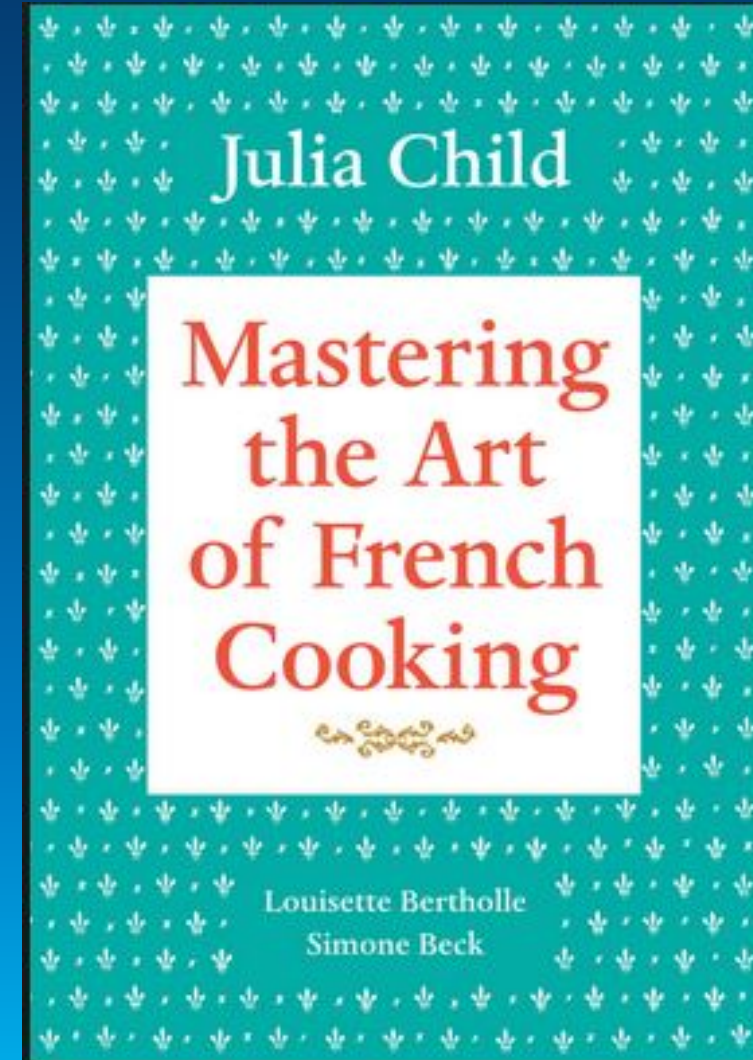
Chris Moore - <https://github.com/csmoore>



<http://octodex.github.com/>

Seeking Inspiration from Great Chefs

- **Great chefs give away their recipes**
 - So they can make other people great chefs too
- **In Solutions, we ask ourselves**
 - What have we learned?
 - What can we share & help others?
 - What are our recipes? Our cookbook?
- **Github is where we store and share our recipes / cookbooks**
 - This is where we want to be able to
 - Share everything we know
 - Seek input + collaborate with the community
 - Make our solutions better
 - ... and become better chefs/developers



Lessons from Open Source

- **Intrinsic motivation**
 - People work on projects they like (“love vs. money”)
- **Transparency / Repeatability / Accountability**
 - Its all out in the open for all to see
 - Others must be able to reproduce your build
 - Easier to see who is contributing
- **Communication & collaboration**
 - Anyone interested in helping can (because repeatable & all in the open)
 - Asynchronous / a-spatial - don't have to be working at the same time / place
 - Ideas are exchanged in writing / recorded
- **Github adds a few additional benefits:**
 - Activity Feeds- see what's happening (or not) with the people / projects you follow
 - Simple Code Review mechanism – comment on any line of code
 - Many others...

Yeah, But Are You *Really* Open Source?

- **Most Templates, Addins, etc. do have dependencies on the ArcGIS Platform**
- **Most software in general has dependencies on *something***
 - Build/runtime requirements: libraries, web connectivity, web APIs, etc.
 - Our dependencies listed in Readme “Requirements”
- **We believe the use of Apache V2 License offers the most flexibility**
 - Apache V2 License = “gimme credit” & “no guarantees + don’t sue me”
 - But you can pretty much do anything else with the software without restriction
 - Meets US DOD guidelines of approved licence

Defense Solutions on Github - esri.github.io/#Military

vehicle-commander

Java

The Vehicle Commander template demonstrates best practices for building in-vehicle military applications with ArcGIS Runtime. The Vehicle Commander template contains source code for an in-vehicle application.

4.0 ★ 7

defense-and-intel-analysis-toolbox

Python

Scripts, and tools that provide specialized workflows in ArcGIS Desktop.

4.0 ★ 7

vehicle-commander-qt

C++

The Vehicle Commander Qt template demonstrates best practices for building in-vehicle military applications with the ArcGIS Runtime SDK for Qt.

4.5 ★ 5

solutions-geoprocessing-toolbox

Python

Models, scripts, and tools for use in ArcGIS Desktop and Server to support defense and intelligence workflows.

4.0 ★ 1

squad-leader-android

Java

The Squad Leader template demonstrates best practices for building handheld military applications with ArcGIS.

4.2 ★ 1

position-analysis-js

JavaScript

Position Analysis Web template

4.0 ★ 2

defense-and-intel-basemaps-misc-toolbox

Python

A set of tools and models for use in ArcGIS Desktop. These tools provide specialized processing and workflows for defense and intelligence mapping and other miscellaneous tasks.

4.0 ★ 2

military-apps-library-java

Java

A common, SDK-agnostic Java library for building military-oriented apps, especially for ArcGIS for the Military.

4.0 ★ 2

solutions-widgets-wpf

C#

Solutions Widgets for use in the ArcGIS WPF Operations Dashboard.

4.2 ★ 0

defense-image-observables-viewer

JavaScript

Image Observable application. Supports measurement, mensuration and digitization of features from image services. Image services can also be adjusted (brightness, contrast, channels).

4.0 ★ 0

patrol-data-capture-toolbox

Python

The Patrol Data Capture template demonstrates best practices for importing GPS exchange Format (.gpx) files into ArcGIS Desktop. The template also contains specialized tools for analyzing and processing this data.

4.3 ★ 2

military-features-data

Java

Source data for Esri defense and intelligence feature templates. This data is used to create features and derived data products using military symbology.

4.5 ★ 1

image-discovery-app-js

JavaScript

JavaScript Image Discovery Web Application. Use to search, discover, filter, and manipulate imagery.

4.3 ★ 2

military-feature-toolbox

Python

The Military Feature Toolbox is a set of tools, scripts, and applications that provide specialized processing for ArcGIS Military Features and Military Symbology.

4.5 ★ 0

solutions-geoevent-java

Java

Custom processors, adapters and transports for geoevent server.

4.5 ★ 1

Defense Solutions on Github

- [Esri.github.io/#Military](https://github.com/Esri/Esri.github.io/#Military)
- Several flavors of Solutions Repos available:
- ArcGIS Runtime
 - [squad-leader-android](#)), [vehicle-commander-java](#), [vehicle-commander-qt](#)
- Geoprocessing Tools/Models
 - [solutions-geoprocessing-toolbox](#), [patrol-data-capture-toolbox](#), etc.
- Web Apps
 - [position-analysis-js](#), [image-discovery-app-js](#), [defense-image-observables-viewer](#)
- GeoEvent / Dashboard
 - [solutions-geoevent-java](#), [solutions-widgets-wpf](#)
- Data (Military Symbology)
 - [military-feature-data](#), [joint-military-symbology](#), [military-feature-toolbox](#)

Defense Solutions Github Goals

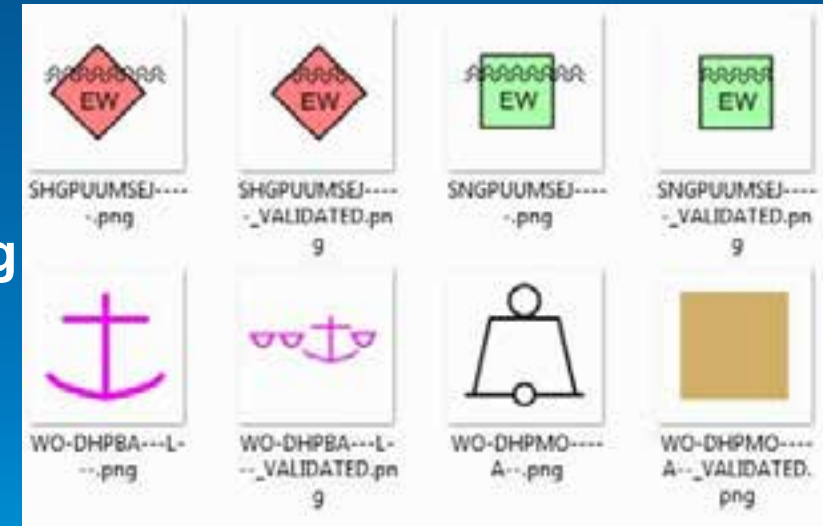
- ü **Move all of our solutions templates, tools, and source, etc. to GitHub**
- ü **Develop repeatable/continuous build, integration, and test process**
 - ü **Include unit/auto test drivers**
 - ü **Automate builds, config, and running of tests**
 - ü **Daily builds/test/check with Jenkins build server**
- ü **Better Issue Tracking and Change Management**
 - ü **Require submitted issue/stories prior to making changes**
 - ü **Tie changes to issues**
 - ü **Ensure quality through code review, test**
- ü **Other**
 - ü **Standardize Readmes, file organization, builds, dev tools, etc.**
 - ü **Separation of data and application code**

Getting Started Using Defense Solutions on Github

- **Using**
 - esri.github.io/#Military
 - Simply go to Esri Github and download a repo that interests you
- **Contributing / Collaborating**
 - Get a Github account (can be done in 30 seconds)
 - Follow repo + users that interest you = your community
 - Add issues you find (& good reproduction cases)
 - Suggest new features
 - Contribute to the code
- **Even better**
 - Fork a repo, fix an issue, and make a pull request
 - If an issue is a high priority to you, this is the best way to get it fixed quickly

Tour of Sample Military Repos (Military Symbology)

- Our Military Symbology Solutions/Data are all open source
- The data created, the test drivers used to validate, etc. are all publically available
- (Except for bug fixes), the work on previous symbology standards is complete
 - github.com/Esri/military-feature-data
- However, the development for the next standards is happening now
 - github.com/Esri/joint-military-symbology-xml
- Now is your chance to influence how this data and associated tools get built
- Get involved!



military-feature-data validation app

Demo

Github Tour

Ben Conklin

GitHub!

out helping developers build and share
our open source code and get started
ArcGIS platform.

THIS

Start developing today for free.

keyword

Military x

Commander

Commander template

practices for building in-
tegrations with ArcGIS
Commander template
for an InVehicle

defense-and-intel-analysis-
toolbox

Python

scripts, and tools that provide specialized
workflows in ArcGIS Desktop.

40 57

vehicle-commander-qt

C++

The Vehicle Commander Qt template
demonstrates best practices for building in-
vehicle military applications with the ArcGIS
Runtime SDK for Qt.

45 52

analysis-js

Web template

defense-and-intel-
basemaps-misc-toolbox

Python

A set of tools and models for use in ArcGIS
Desktop. These tools provide specialized
processing and workflows for defense and
intelligence mapping and other
miscellaneous tasks.

40 52

military-apps-library-java

Java

A common, SDK-agnostic Java library for
building military-oriented apps, especially for
ArcGIS for the Military.

40 52

capture-toolbox

Desktop template

practices for importing
shapefile (.shp) files into
the template also contains

military-features-data

Java

Source data for Esri defense and intelligence
features. This data is used in

image-discovery-app-js

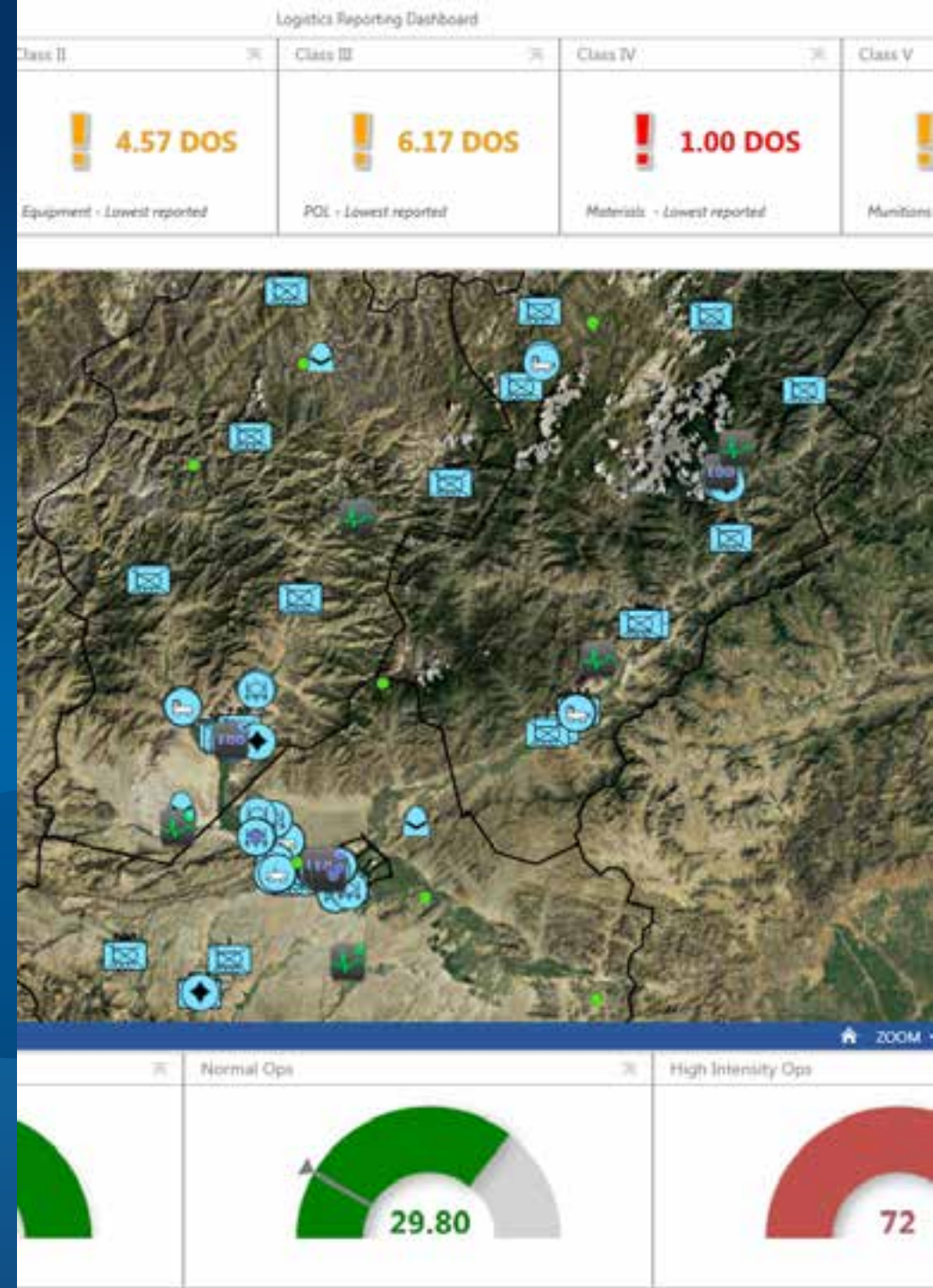
JavaScript

JavaScript Image Discovery Web
Application. Use to search, discover, filter,
and manipulate imagery.

Demo

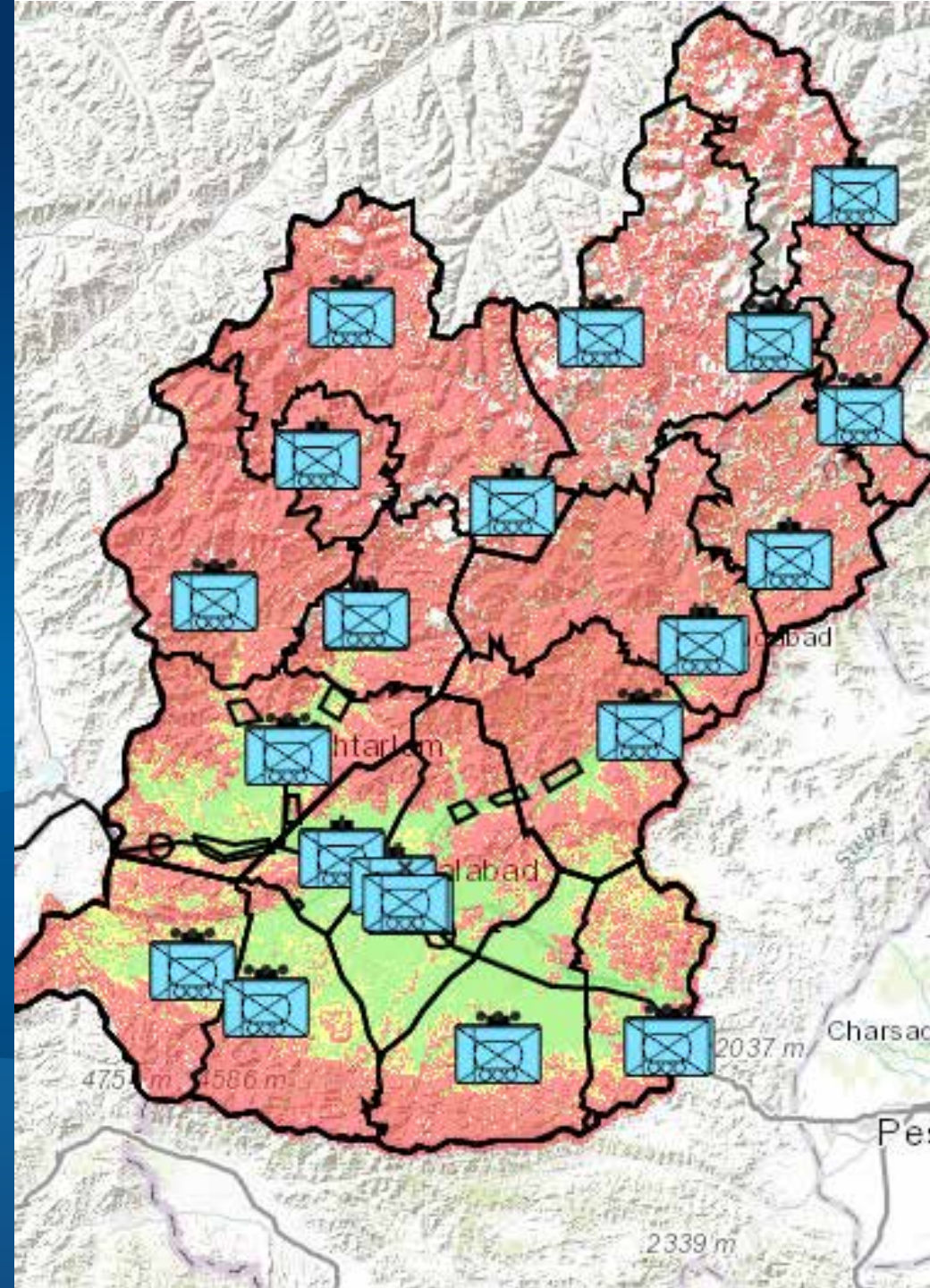
Using with ArcGIS for Server

Patrick Hill



Military Symbology

Road-Ahead



Working with Military Features in ArcGIS

Desktop/Engine

- Using Military Features
- Supports sketching/editing
- Tools for importing/exporting data

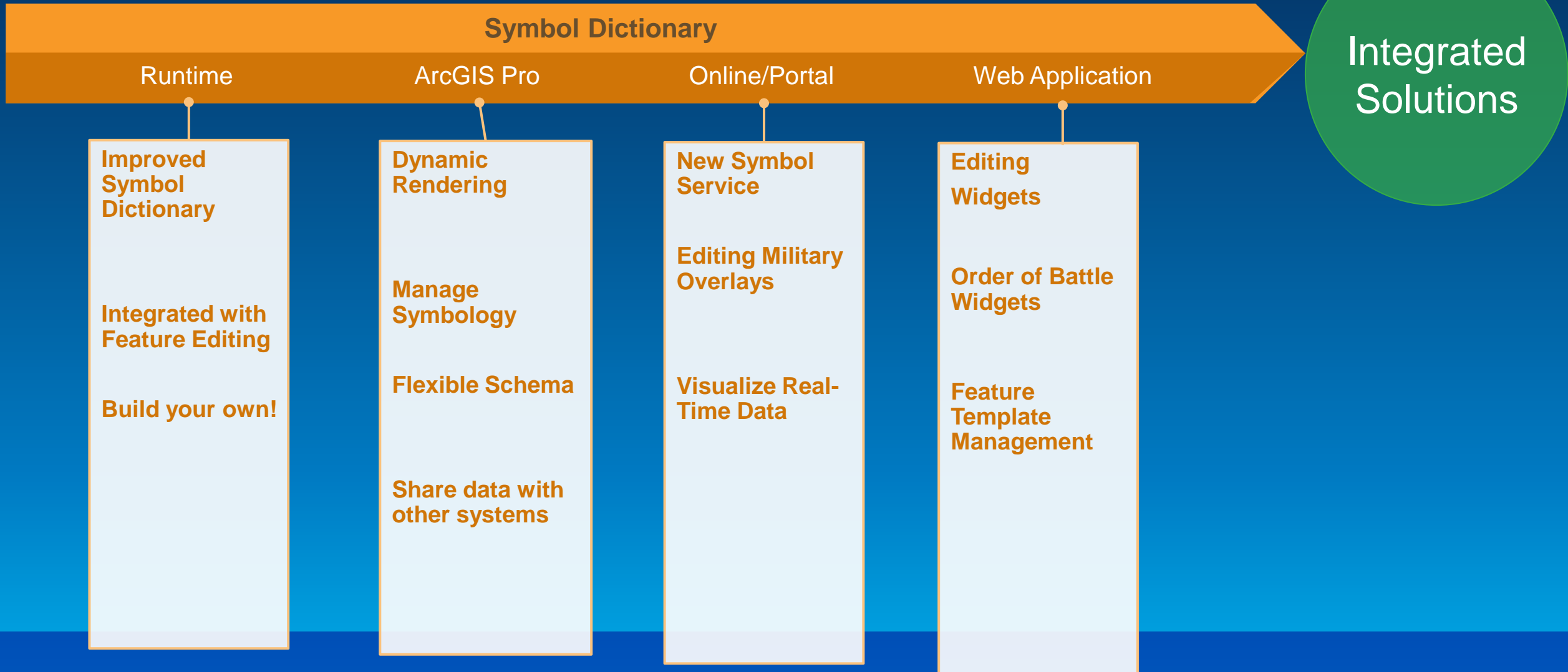
Server/Online

- Publish Maps created in desktop
- Edit Using Feature Services (Points)
- Visualize using Map Services
- Use GeoEvent Processor to push updates to feature services

On Devices

- Using Dictionary Renderer
- Capable of displaying any symbol on the fly
- Editing through graphics layers

Military Symbology – Road Ahead

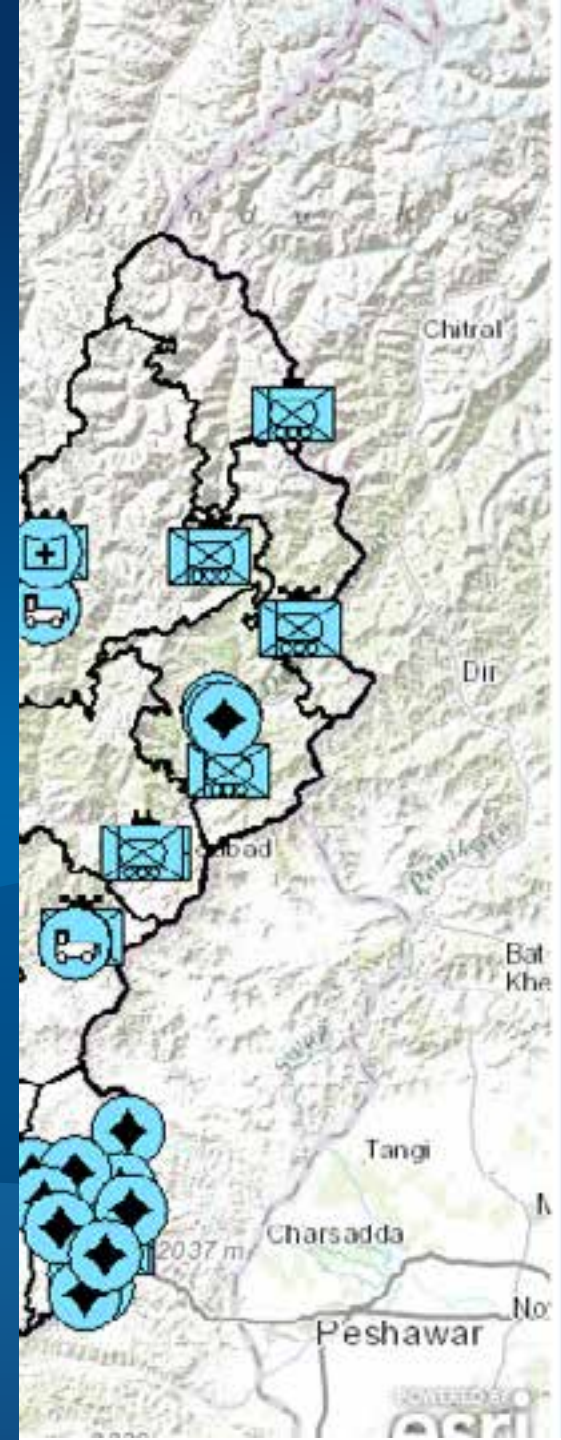


Supporting new Symbology standards (2525D and App-6C) and custom

Demo

Web Widget Demo

Ben Conklin



Friendly Site

Friendly U

- Antitar
- Survei
- Survei
- Survei
- MI Ae
- CBRN
- MI Sig
- Recon
- Field A
- Engine
- Signal
- Psyop
- SPT U
- Infant
- Rifle C

Questions?



Understanding our world.