Introductions
Who we are and what we care about

Joe Bayles - Military Symbology Geek
“Military Symbology Standards (and why you should care)”

Lyle Wright - Analyst
“Creating and sharing Intel Products with military symbology”

Kerry Robinson - Developer
“Incorporating military symbology into your apps”
Military Symbology

Joe
Multitude of Military Symbology Standards

- MIL-STD-2525 (A-D)
  - FM/ADRP 1-02
- APP-6 (A-D)
Evolution of Standards

Version A
SEP 1994
DEC 1999
- 15-character alphanumeric SIDC
- Symbols organized by appendix
- Icons provided as full symbols, including frames

Version B
MAR 2007
JUN 2008
- Additional modifiers
- ~100 symbol changes
- 3D Appendix

Version C
NOV 2008
- Added Emergency Management Appendix
- Changed frames for Space/Pending/Assumed/Civilian
- Numerous changes/additions to each appendix

Version D
JUN 2014
OCT 2017
- 20-digit numeric SIDC, with 10 more optional
- Icons provided as components
- Added Dismounted Symbol Set and Frame (NATO Only)
SIDC Evolution – Versions A-C
Anatomy of a Symbol
SIDC Evolution

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01
A Digital Version of the Standard(s)
https://github.com/Esri/joint-military-symbology-xml/

- Joint Military Symbology Markup Language (JMSML)
  - Unsupported, Open-Source Repository for both DOD and NATO standards
- Codes in XML format, with tools to export
- Images in SVG format
Military Symbology in ArcGIS Desktop

Lyle
Esri Support for Military Symbology
Support over the years

MOLE
- ArcMap
  - 8.0-9.3.1

Military Features
- ArcMap
  - 10.0 – 10.6.1

Military Symbology
- ArcGIS Pro
- ArcGIS Enterprise

Moving support for Military Symbology to core for full platform support
Military Symbol Editor
How to easily create Military Symbology

- Addin for ArcGIS Pro
- Quickly and easily search, modify attributes, and preview multilayer military symbols using ArcGIS Pro
- Add created symbols to the map through clicking/drawing or by typing in coordinates
- Save frequently used symbols to Favorites and share these with others
Military Overlay Information Model

- A schema that matches the military standard

  - Layer Package
    - Geodatabase Schema
    - Feature Templates

  - Schema contains multiple dictionary fields (the “keys”)
  - “Values” are used to identify specific symbol element
  - Schema-driven symbology
Military Overlay Template
Create and Share Overlays using Military Symbology

- ArcGIS Pro Project Template
- Combines the Military Overlay Information Model and Dictionary Renderer
- Includes tasks that outline these workflows:
  - Create military standard symbols using Feature Templates.
  - Create a military overlay with dictionary renderer symbology.
  - Share the overlay as either a static image or an editable web map.
- Also included is Military Symbol Editor Add-in
Dictionary Renderer for ArcGIS Pro

- Dynamically update symbol based on attributes

- Included in ArcGIS Pro
- Optimized for fast search and retrieval of given symbol
- Rule-based
- Configurable Symbology and Text fields
- Takes elements of Information Model and “combines” them to create a displayed symbol
Military Symbology
ArcGIS Desktop
Military Symbology in ArcGIS for Developers

Kerry
Military Symbology in ArcGIS Runtime

- Runtime uses similar Stylex File + Dictionary Renderer (as shown in ArcGIS Pro)
- Works with either Graphics Layer or Feature Layer

1. Create the DictionarySymbolStyle

```csharp
DictionarySymbolStyle symbolDictionary = await SymbolStyle.OpenAsync(styleXLocation) as DictionarySymbolStyle;
```

2. Search the SymbolStyle or create the DictionaryRenderer:

```csharp
// create a new feature layer, pass the service feature table to the constructor
FeatureLayer incidentsLayer = new FeatureLayer(incidentsFeatureTable);

// create dictionary renderer and apply it to the layer
DictionaryRenderer dictionaryRenderer = new DictionaryRenderer(symbolDictionary);
incidentsLayer.Renderer = dictionaryRenderer;
```
Military Symbology Styles
Latest styles for use in ArcGIS Runtime

Overview
The Military Symbology Styles give you access to the latest style files for use in ArcGIS Runtime. These files contain the data that the dictionary renderer uses to display military standard symbology in custom native applications using the ArcGIS Runtime SDKs.

Style files are currently provided for the following standards:
- MIL-STD-2525D
- MIL-STD-2525C
- MIL-STD-2525B w/CHANGE 2
- APP-6(B)
- APP-6(D)

You may be interested in:
- related solutions that can be configured for your organization:
  - Military Overlay
  - Military Symbol Editor

https://solutions.arcgis.com/defense/help/military-symbology-styles/
Demo
ArcGIS for Runtime
Road Ahead
Kerry
Road Ahead for Military symbology

Currently looking at enhancing, to include:
- Customizable style files
- More flexibility
- Full support across ArcGIS Platform

Same workflow that you use now, but better:
1. Author in Pro
2. Publish with map/feature service or as a web style
3. Include in Web or Native applications
Demo
Kerry