

Esri Developer Summit

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esri.com/events/devsummit



Extending Mosaic Datasets in C#

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A decorative graphic at the bottom of the slide. It features a curved orange border at the top. Below the border is a semi-transparent image of a satellite map. Overlaid on the map is a semi-transparent blue box containing white C# code. The code is partially obscured by the map's colors and the blue box's opacity.

```
esri.symbol.SimpleLineSymbol  
new dojo.Color([0, 0, 0, 1])  
polySymbol.setColor([0, 0, 0, 1])  
feature.setSymbol(polySymbol);  
}  
else if(f == 1) {  
    var polySymbolGreen = new esri.symbol.SimpleLineSymbol(  
        esri.symbol.SimpleLineSymbol.STYLE_SOLID, new dojo.Color([0, 0, 0, 0.5]), 1);  
    polySymbolGreen.setColor(new dojo.Color([0, 0, 0, 0.5]));  
    feature.setSymbol(polySymbolGreen);  
}  
else if(f == 2) {  
    polySymbolBlue = new esri.symbol.SimpleLineSymbol(  
        esri.symbol.SimpleLineSymbol.STYLE_SOLID, new dojo.Color([0, 0, 0, 0.5]), 1);  
    polySymbolBlue.setColor(new dojo.Color([0, 0, 0, 0.5]));  
    feature.setSymbol(polySymbolBlue);  
}
```

Overview

- **Overview**
- **Mosaic datasets**
- **Extending Raster functions**
- **Extending Raster types**
- **Resources**
- **Conclusion**
- **Q & A**

Please fill out the feedback forms.

Mosaic Datasets

- **Data management solution**
- **Seamless mosaic of imagery from multiple sources**
- **On-the-fly processing**
- **Metadata**
- **Image services**

Raster Functions

- **Mechanism to perform on-the-fly processing**
- **Can be applied to**
 - **Raster datasets**
 - **Mosaic datasets**
 - **Items in a mosaic dataset**
- **Can be used as a template**
 - **Raster type**
 - **Server functions**

Raster Type

- **Sensor specific template**
 - **Metadata**
 - **Processing**
- **Raster type components**
 - **File filter**
 - **Product type**
 - **Processing templates**
- **Raster product**

Mosaic Dataset

Demo

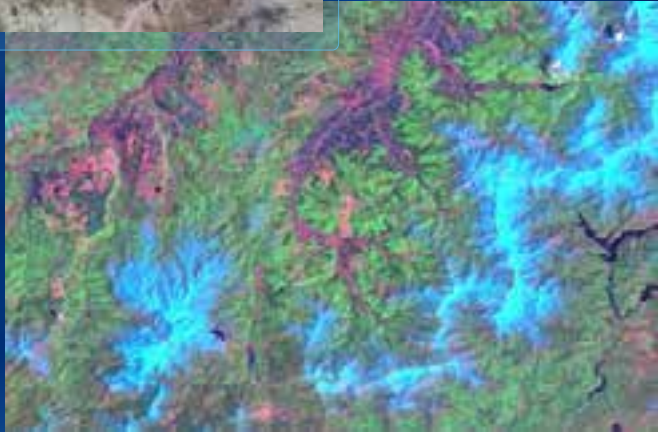
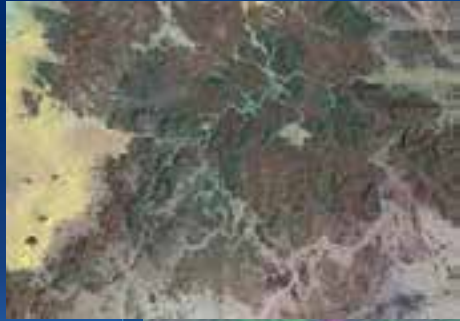


Extending Mosaic Datasets

- **Source data – raster types**
 - Different sensors
 - Metadata
 - Processing

- **Processing – raster functions**
 - Copyrights
 - Secure environment

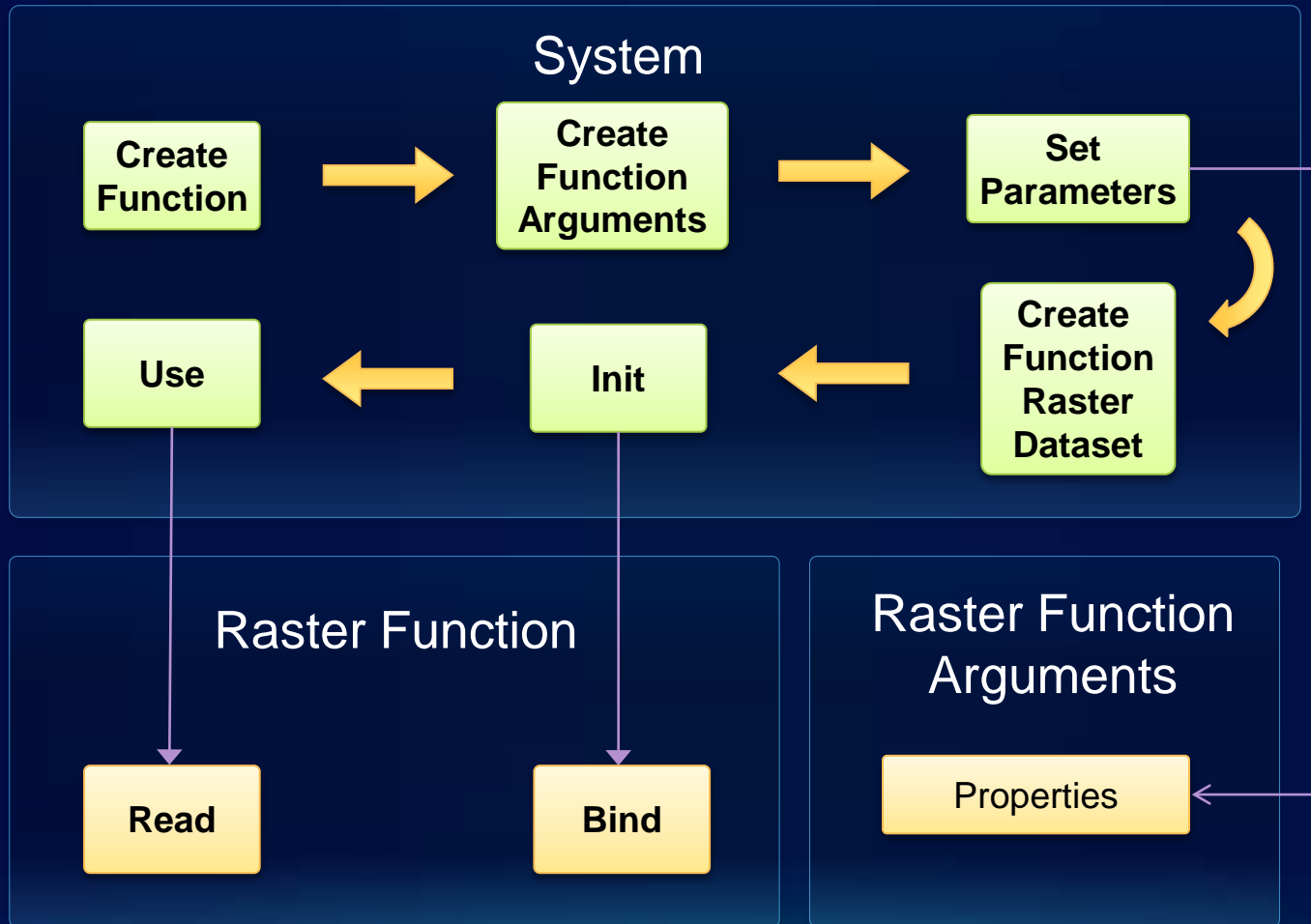
Extending Raster Functions



Object Model

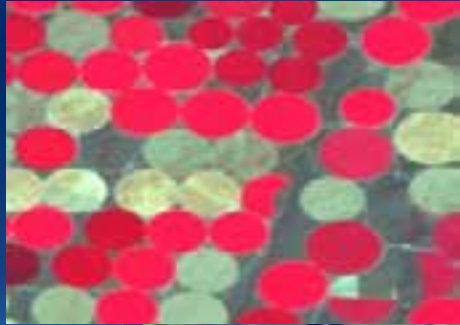
- **IRasterFunction**
- **IRasterFunctionArguments**
- **IPersistVariant, IDocumentVersionSupportGEN**
- **IXmlSerialize, IXMLVersionSupport**
- **IFunctionRasterDataset**
- **IRasterFunctionTemplate**
- **IRasterFunctionVariable**

Flow



Custom Functions

Demo



Implementation

- **Raster function object**
 - **Name, PixelType, RasterInfo, Description**
 - **Bind**
 - **Read**
- **Raster function arguments object**
 - **Properties**
 - **De-referencing**
 - **Wrapper functions**
 - **Resolve**
 - **Update**

Implementation Persistence

- **IPersistVariant (binary persistence)**
 - **UID**
 - **Load**
 - **Save**
- **IXmlSerialize (xml persistence)**
 - **Serialize**
 - **Deserialize**

Implementation UI

- **IComPropertyPage**
 - **Applies**
 - **SetObjects**
 - **Activate**
 - **Apply**

Tips & Tricks

- **Decide what your function will change**
 - Pixel values
 - Bits
 - Bands
- **Know the difference between input properties and output properties**
- **Know the limitations**
- **Optimize to be as fast as possible**

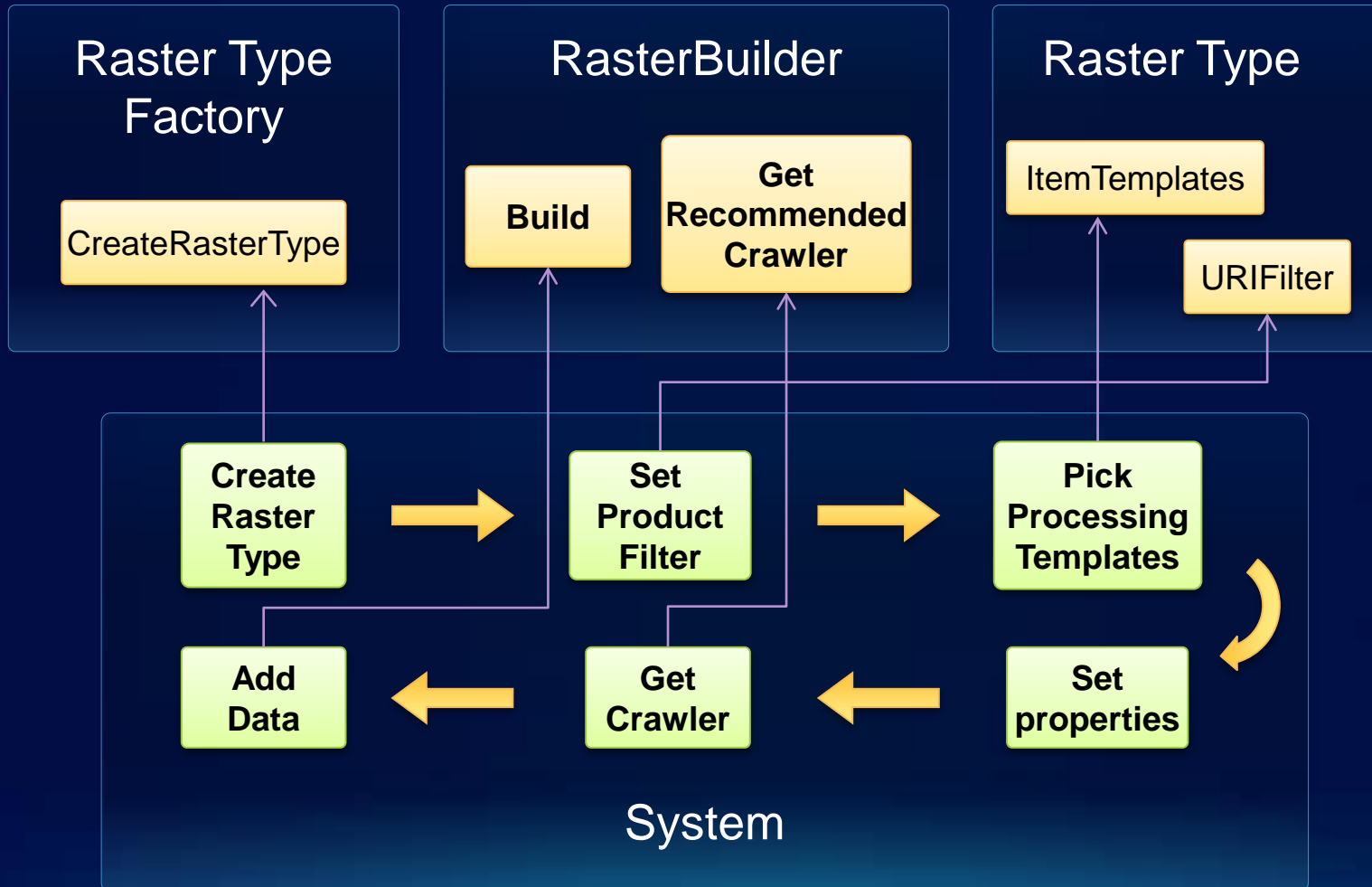
Extending Raster Types



Object Model

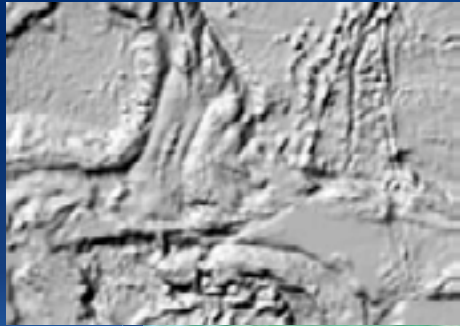
- **IRasterTypeFactory**
- **IRasterType**
 - **IRasterTypeProperties(2)**
 - **IRasterTypeOperation(2)**
 - **IItemTemplateArray, IItemTemplate(2)**
- **IRasterBuilder(2)**
 - **IRasterBuilderItem**
 - **IItemURIArray, IItemURI(2)**
- **IRasterBuilderInit(2)**
- **IDataSourceCrawler**

Flow



Custom Raster Type

Demo



Implementation

- **IRasterTypeFactory**
 - List of supported Raster Types
 - Creates new Raster Type
- **IRasterBuilder**
 - GetRecommendedCrawler
 - ConstructURIs
 - GetNextURI
 - Build
- **IRasterBuilderInit**
 - Parent Mosaic Dataset object
 - Raster Type object

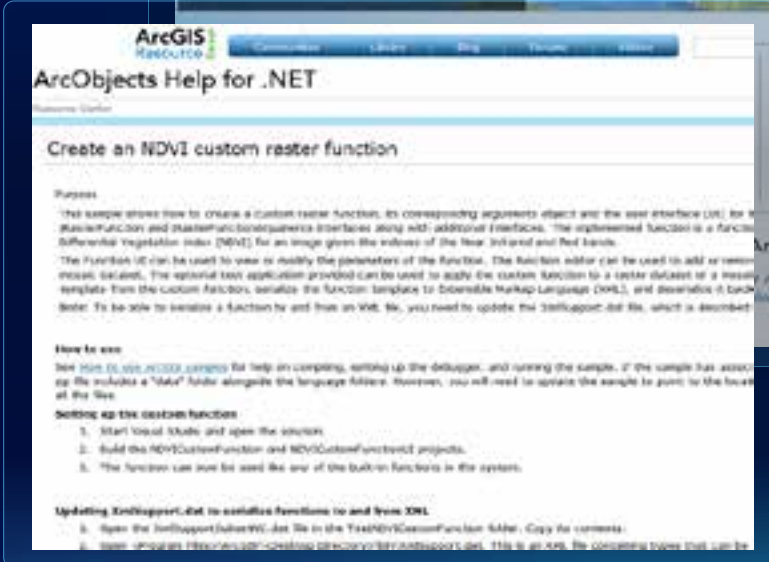
Implementation (contd.)

- **IRasterBuilder2**
 - **CanBuild: Function to support Raster Products**
 - **CanMergerItems, MergelItems**
- **Binary persistance (IPersistVariant)**
 - **UID**
 - **Load**
 - **Save**

Tips & Tricks

- **Adding multiple sources per row**
 - **Composite URI**
 - **When multiple images make up the MS image**
- **Adding multiple rows per source**
 - **Pansharpened**
 - **Construct a 'Pan' Uri and a 'MS' URI**
 - **Construct a 'Pan' builder Item and an 'MS' builder item**
 - **Make sure both have the same group**

ArcGIS Resource Center



Resources 10.1

- **Resource Center**

- <http://resourcesbeta.arcgis.com>

- **Mosaic datasets**

- http://resourcesbeta.arcgis.com/en/help/arcobjects-net/conceptualhelp/#/Working_with_Mosaic_datasets/000100000m9500000/

- **Raster functions**

- http://resourcesbeta.arcgis.com/en/help/arcobjects-net/conceptualhelp/#/Sample_Create_a_custom_raster_function/000100000477000000/

- http://resourcesbeta.arcgis.com/en/help/arcobjects-net/conceptualhelp/#/Sample_Create_an_NDVI_custom_raster_function/000100000p18000000/

Resources 10.1

- **Raster types**

- http://resourcesbeta.arcgis.com/en/help/arcobjects-net/conceptualhelp/#!/Sample_Create_a_custom_raster_type_from_the_grund_up_for_DMCII_data/000100000p11000000/

- **Function raster datasets**

- http://resourcesbeta.arcgis.com/en/help/arcobjects-net/conceptualhelp/#!/Sample_Create_a_Function_Raster_dataset/00010000041s000000/

- **Raster function templates**

- http://resourcesbeta.arcgis.com/en/help/arcobjects-net/conceptualhelp/#!/Sample_Create_a_Raster_Function_template/000100000143000000/

Resources 10.0

- **Resource Center**

- <http://resources.arcgis.com/>

- **Mosaic datasets**

- http://help.arcgis.com/en/sdk/10.0/arcobjects_net/conceptualhelp/index.html#/Working_with_Mosaic_datasets/000100000m95000000/

- **Raster functions**

- http://help.arcgis.com/en/sdk/10.0/arcobjects_net/conceptualhelp/index.html#/Sample_Create_a_custom_raster_function/000100000477000000/

- **Raster types**

- http://help.arcgis.com/en/sdk/10.0/arcobjects_net/conceptualhelp/index.html#/Sample_Create_a_custom_raster_type/0001000001nt000000/

Conclusion

- **Mosaic datasets**
- **Extending Raster functions**
- **Extending Raster types**
- **Resources**

Q & A

```
esri.symbol.SimpleLineSymbol({
  color: [0, 0, 255],
  width: 2
});
feature.setSymbol(new dojo.Color([0, 0, 255], 2));
feature.setSymbol(new esri.symbol.SimpleLineSymbol({
  color: [0, 0, 255],
  width: 2
}));
feature.setSymbol(new esri.symbol.SimpleLineSymbol({
  color: [0, 0, 255],
  width: 2
}));
```



esri