

2011 Esri China
Developer Summit

2011Esri中国开发者大会

ArcGIS API for Windows Phone 进阶

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分享地理价值

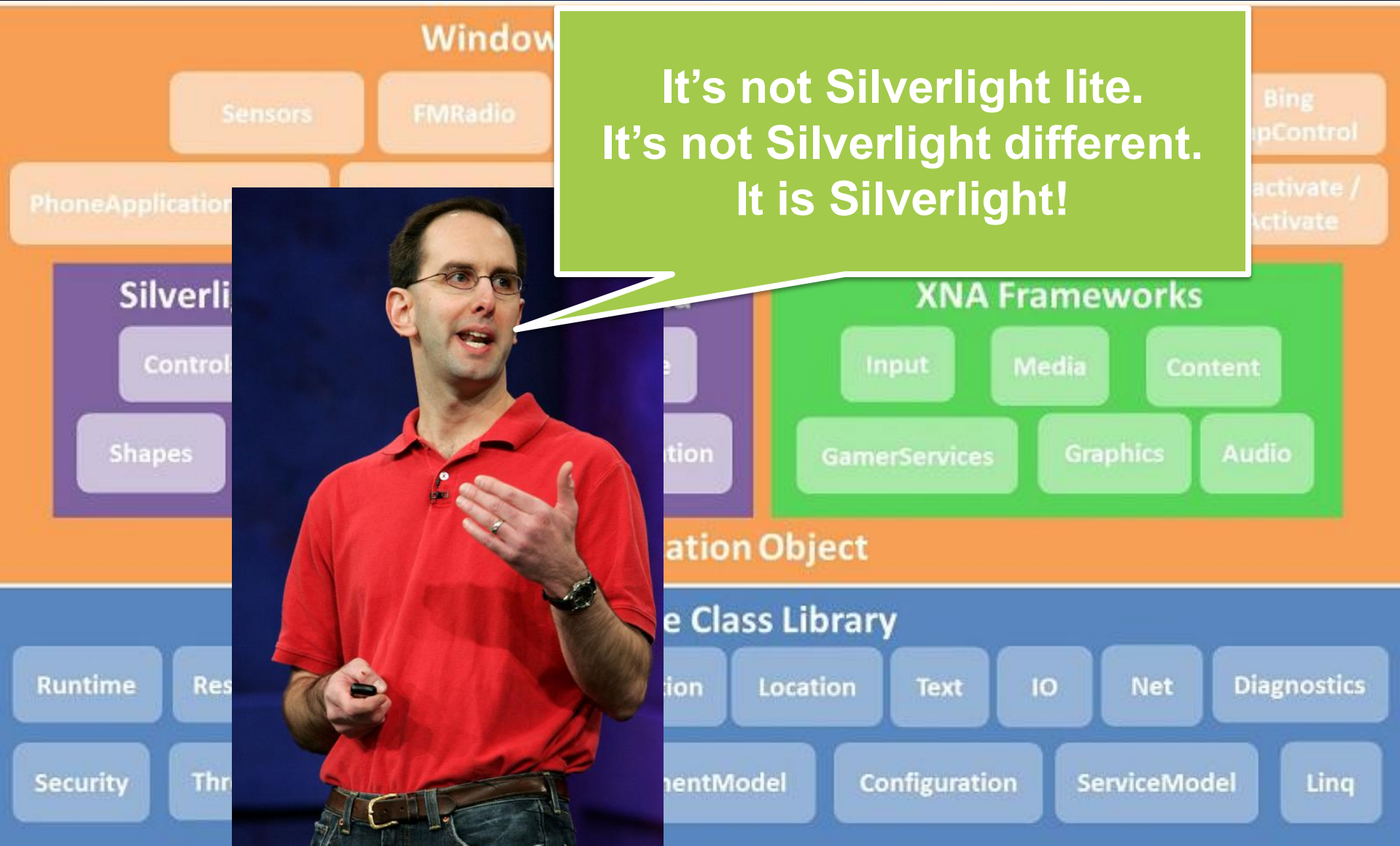
内容简介

- ArcGIS API for WP概览
- 快速入门
- 界面设计
- 触摸 & 手势
- 应用程序执行模型 (Execution Model)
- 位置服务
- 离线应用



Windows Phone开发

It's not Silverlight lite.
It's not Silverlight different.
It is Silverlight!



ArcGIS API for Windows Phone 概览

```
function init() {  
    var map = new esri.Map("map");  
    var tl = ledmapServiceLayer = new  
    esri.layers.ArcGISDynamicMapServiceLayer("http://www.esri.com/arcgis/rest/services/ESRI_Imagery/MapServer/0");  
    map.addLayer(tl);  
}  
  
function getDriveTimePolys(results) {  
    var features = results(0).features;  
    for (var f=0; f<features.length; f++) {  
        var feature = features[f];  
        var poly = feature.attributes["poly"];  
        var polysymbol = new esri.Symbol("poly", new esri.PolylineSymbol({color: "red", width: 2}));  
        polysymbol.setColor("red", 0, 0, 0, 0.5);  
        polysymbol.setWidth(2);  
        feature.setSymbol(polysymbol);  
    }  
}
```

ArcGIS API for Windows Phone概览

- 简单易用，功能强大
- 为Windows Phone设计
 - 与ArcGIS API for Microsoft Silverlight/WPF代码相同
 - 与ArcGIS API for Microsoft Silverlight/WPF功能相同*
- 可使用ArcGIS Server/Online, Bing Maps服务
- 全面支持触摸/手势
- 充分利用微软各种开发工具



快速入门

```
function init() {  
    var map = new esri.Map("map");  
    var tl = ledmapServiceLayer;  
    var layers = new esri.layers.ArcGISLayer({url: "http://esri.com/arcgis/rest/services/Esri_Imagery/MapServer/0",  
        noTile: true, opacity: 1});  
    map.addLayer(tl);  
    map.addLayer(layers);  
    map.setExtent(new esri.Extent({xmin: -120, xmax: 120, ymin: -80, ymax: 80}));  
    map.centerAndZoom(new esri.LatitudeLongitude({latitude: 0, longitude: 0}), 10);  
    map.on("click", function(evt) {  
        function getDriveTimePolys(results) {  
            var features = results[0].features;  
            for (var f=0, l=features.length; f<l; f++) {  
                var feature = features[f];  
                if (feature.geometry.type === "Polygon") {  
                    var polys = feature.geometry.rings;  
                    var polySymbol = new esri.PolySymbol({color: "#0000FF", width: 2});  
                    map.dojo.Color(Color.fromRGB(0, 0, 0.5));  
                    polys.forEach(function(ring) {  
                        map.dojo.Color(Color.fromRGB(0, 0, 0.5));  
                        new esri.Symbol(polySymbol, Color.fromRGB(0, 0, 0.5));  
                        map.addLayer(new esri.SymbolLayer(polySymbol, polys));  
                    });  
                }  
            }  
        }  
        getDriveTimePolys(results);  
    });  
}
```

快速入门

- 开发环境
 - Visual Studio 2010
 - Windows Phone Developer Tools (Vista或Windows 7)
 - ArcGIS API for Windows Phone (最新2.2 Beta)
 - Expression Blend 4 (可选)
 - Windows Phone Mango SDK* (可选)
- 在线示例

演示：快速入门

- 新建WP工程
- 使用ArcGIS API
- 添加缩小地图功能
- 页面方向

界面设计

```
function init() {  
  var map = new esri.Map("map");  
  var tl = ledmapServiceLayer = new  
  esri.layers.ArcGISLayer({url: "http://services.esri.com/arcgis/rest/services/ESRI_Imagery_Series/ImageServer",  
    map: map, addLayer(tl ledmapServiceLayer)});  
}
```

```
function getDriveTimePolys(results) {  
  var features = results(0).features;  
  for (var f=0; f<features.length; f++) {  
    var feature = features[f];  
    var poly = feature.geometry;  
    var polys.push(poly);  
  }  
}
```

```
esri.Symbology.setColor(  
  new dojo.Color(0, 0, 0, 0.5),  
  polysymbolid, stroke,  
  feature.sectid);  
esri.Symbology.setColor(  
  polysymbolid, stroke,  
  feature.sectid);
```

```
esri.Symbology.setColor(  
  polysymbolid, stroke,  
  feature.sectid);  
esri.Symbology.setColor(  
  polysymbolid, stroke,  
  feature.sectid);
```

```
esri.Symbology.setColor(  
  polysymbolid, stroke,  
  feature.sectid);  
esri.Symbology.setColor(  
  polysymbolid, stroke,  
  feature.sectid);
```

```
esri.Symbology.setColor(  
  polysymbolid, stroke,  
  feature.sectid);  
esri.Symbology.setColor(  
  polysymbolid, stroke,  
  feature.sectid);
```

```
esri.Symbology.setColor(  
  polysymbolid, stroke,  
  feature.sectid);  
esri.Symbology.setColor(  
  polysymbolid, stroke,  
  feature.sectid);
```

界面设计

- Metro Design
 - Clean , Light , Simple , Fast
- Application Bar
 - ApplicationBarIconButton
 - ApplicationBarItem
- 考虑显示效果
- 考虑手机方向



演示：界面设计

- 按钮和菜单
- 符号尺寸
- 屏幕方向

触摸 & 手势

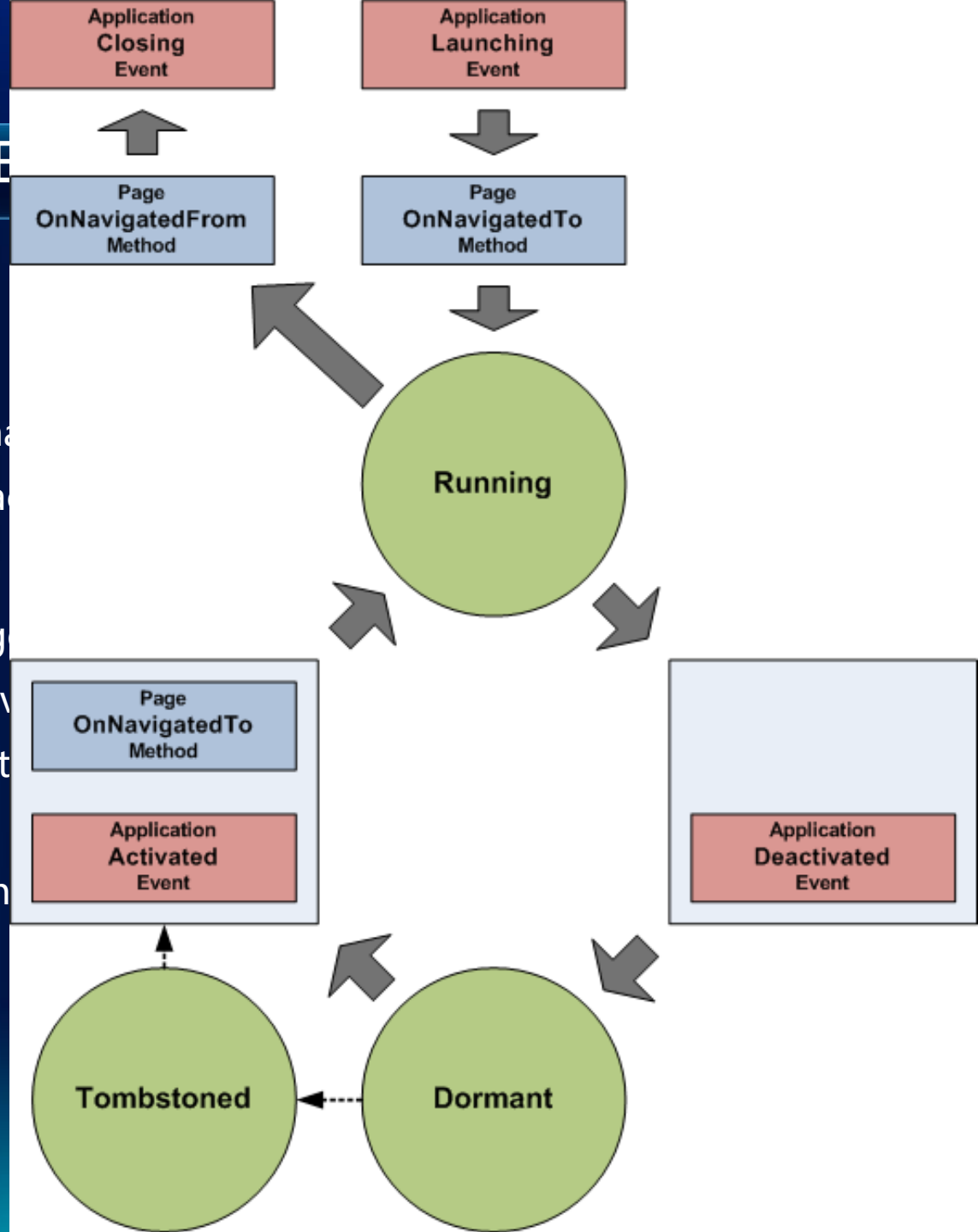
- 始终考虑尺寸问题
- 手势相关事件
 - Raw touch events – Touch.FrameReported
 - UIElement.Manipulation...
 - XNA touch panel
 - WP Toolkit Gestures
- ESRI.ArcGIS.Client.Map
 - 对Touch.FrameReported进行了封装
 - MapGesture事件
- 如何在Panorama或Pivot程序中使用Map？

演示：触摸 & 手势

- Panorama & Map
- MapGesture

Windows Phone 7 Execution Model

- Execution Model
 - 状态：Running/Dormant/Tombstoned
 - 事件：Launching/Deactivating/Activating
- 数据存储
 - PhoneApplicationPage
 - PhoneApplicationService
 - IsolatedStorage (Settings)
 - SqlAzure
 - Local Database (Managed)



演示：Execution Model

- 应用程序事件
- 应用程序状态
- 存储
- 导航
- NonLinearNavigationService

位置服务

```
function init() {  
  var map = new esri.Map("map");  
  var tl = ledmapServiceLayer = new  
  esri.Layers.ArcGISLayer("ces/esri_imagery");  
  map.addLayer(tl);  
}
```

```
function getdriveTimePolys(results) {  
  var features = results[0].features;  
  for (var f=0; f<features.length; f++) {  
    var feature = features[f];  
    if (feature.attributes.driveTime) {  
      var polySymbol = new esri.PolySymbol(feature.attributes.driveTime, {color: "#ff0000", size: 2});  
      var polySymbolInfo = new esri.PolySymbolInfo(polySymbol);  
      map.addLayer(new esri.Layers.FeatureLayer(feature.attributes.location, polySymbolInfo));  
    }  
  }  
}
```

```
new dojo.Color(0, 0, 0, 0.5);  
esri.Symbol.Stippled, {color: "#ff0000", size: 2});  
var polySymbolInfo = new esri.PolySymbolInfo(polySymbol);  
feature.attributes.location, polySymbolInfo);  
esri.Symbol.Stippled, {color: "#ff0000", size: 2});  
var polySymbolInfo = new esri.PolySymbolInfo(polySymbol);  
feature.attributes.location, polySymbolInfo);
```

```
esri.Symbol.Stippled, {color: "#ff0000", size: 2});  
var polySymbolInfo = new esri.PolySymbolInfo(polySymbol);  
feature.attributes.location, polySymbolInfo);  
esri.Symbol.Stippled, {color: "#ff0000", size: 2});  
var polySymbolInfo = new esri.PolySymbolInfo(polySymbol);  
feature.attributes.location, polySymbolInfo);
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feature.attributes.location, polySymbolInfo);
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var polySymbolInfo = new esri.PolySymbolInfo(polySymbol);  
feature.attributes.location, polySymbolInfo);  
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var polySymbolInfo = new esri.PolySymbolInfo(polySymbol);  
feature.attributes.location, polySymbolInfo);
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esri.Symbol.Stippled, {color: "#ff0000", size: 2});  
var polySymbolInfo = new esri.PolySymbolInfo(polySymbol);  
feature.attributes.location, polySymbolInfo);  
esri.Symbol.Stippled, {color: "#ff0000", size: 2});  
var polySymbolInfo = new esri.PolySymbolInfo(polySymbol);  
feature.attributes.location, polySymbolInfo);
```

Windows Phone设备能力

- Multi-touch input
- Accelerometer
- Camera
 - Photos & videos
- Contacts and messaging
- Web browser
- Location (A-GPS)
- Microphone
- Compass

使用Windows Phone的位置服务

- GPS + WiFi + 基站信号
- System.Device.Location.GeoCoordinateWatcher
- ESRI.ArcGIS.Client.Toolkit.DataSources.GpsLayer
 - In v. 2.2 of the API
- [Windows Phone GPS Emulator](#) VS Location Sensor Simulator
- 需要考虑的问题
 - 始终考虑电量消耗问题
 - 同步的频率
 - ESRI.ArcGIS.Client.Projection.WebMercator

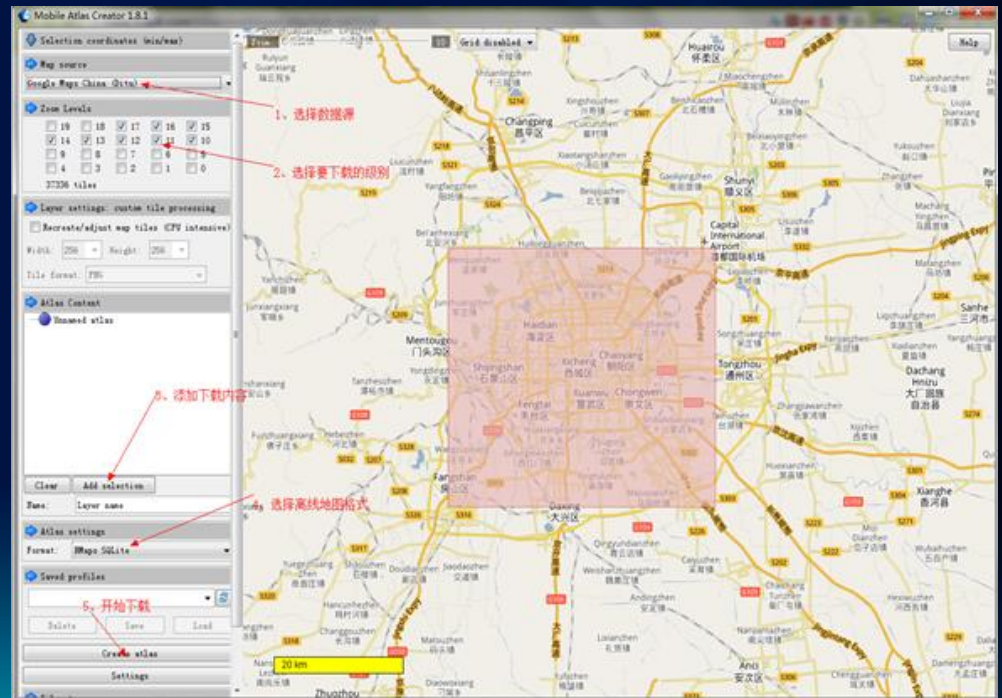
离线应用

```
function init() {  
    var map = new esri.Map("map");  
    var tl = ledmapServiceLayer = new  
        esri.layers.ArcGISDynamicMapServiceLayer("http://www.esri.com/arcgis/rest/services/ESRI_Imagery_Series/MapServer/3");  
    map.addLayer(tl);  
}
```

```
function getDriveTimePolys(results) {  
    var features = results(0).features;  
    for (var f=0, fLen=features.length; f < fLen; f++) {  
        var feature = features[f];  
        if (feature.type === "Polygon") {  
            var polys = feature.geometry.paths;  
            for (var p=0, pLen=polys.length; p < pLen; p++) {  
                var poly = polys[p];  
                polys[p].forEach(function(coords) {  
                    var x = coords[0];  
                    var y = coords[1];  
                    if (x < 0 || x > 100 || y < 0 || y > 100) {  
                        return;  
                    }  
                    new dojo.Color(0, 0, 0, 0.5);  
                    polys[p].forEach(function(coords) {  
                        var x = coords[0];  
                        var y = coords[1];  
                        if (x < 0 || x > 100 || y < 0 || y > 100) {  
                            return;  
                        }  
                        new dojo.Color(0, 0, 0, 0.5);  
                    });  
                });  
            }  
        }  
    }  
}
```

底图 (BasemapLayer) 离线

- TiledLayer
 - GetTileSource(int level, int row, int col, Action<System.Windows.Media.ImageSource> onComplete)
- Exploded缓存文件/第三方缓存/Compact缓存文件*
- Mobile Atlas Creator*
- Sqlite Client for WP



业务数据 (OperationalLayer) 离线

- 离线数据存储格式
 - JSON
 - Shapefile
 - Sqlite
 - Spatialite
- 离线业务需求
 - 数据展示 (属性表/Identify)
 - 数据编辑 (属性编辑/图形编辑)
 - 空间查询* (Envelope, Intersects方法/GraphicsLayer.FindGraphicsInHostCoordinates方法)
 - 属性查询*
 -

演示：位置服务 & 离线应用

- GPS模拟
- 离线底图
- 离线编辑
- 数据同步

Windows Phone Mango SDK (7.1)





分 享 地 理 价 值