Esri International User Conference | San Diego, CA
Technical Workshops | 13th July 2011

ArcGIS for Android
Will Crick
Archana Agarwal
What we will cover today

• The ArcGIS system and mobile products
• What is ArcGIS for Android?
• ArcGIS for Android application
  - Concept
  - Usage scenarios
  - Supported workflows
  - Tips and tricks
• ArcGIS Runtime SDK for Android
  - What do you get?
  - What do you need?
  - What can you do?
About me, you and this session

• Me…

• Session aims
  - Platform focus
  - What you get with ArcGIS for Android

• You…
The ArcGIS System

ArcGIS Online

Server
Applications
- ArcGIS Server, ArcGIS Viewers
ArcGIS APIs
- Javascript, Flex, Silverlight...

Desktop
Applications
- ArcGIS Desktop, ArcGIS Explorer
ArcGIS SDKs
- WPF, Java, C++

Mobile
Applications
- ArcGIS
ArcGIS SDKs
- iOS, Android, Windows Phone, Windows Mobile

Pervasive across computing platforms...
# Lightweight Applications and Runtime SDKs

Configurable COTS applications and Native ArcGIS Runtime SDKs

<table>
<thead>
<tr>
<th>Platform</th>
<th>Applications</th>
<th>Runtime SDK</th>
</tr>
</thead>
<tbody>
<tr>
<td>iOS</td>
<td>ArcGIS</td>
<td>Objective C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Android</td>
<td>ArcGIS</td>
<td>Java</td>
</tr>
<tr>
<td>Windows Phone</td>
<td>ArcGIS</td>
<td>Silverlight</td>
</tr>
<tr>
<td>Windows Mobile</td>
<td>ArcGIS</td>
<td>.NET</td>
</tr>
<tr>
<td>Windows</td>
<td>ArcGIS Explorer*</td>
<td>WPF, Java</td>
</tr>
<tr>
<td>Linux</td>
<td>None</td>
<td>Qt, Java</td>
</tr>
</tbody>
</table>
Esri Mobile Technologies

Mobile capabilities of the ArcGIS system

Apps and APIs

Platforms
- iOS
- Windows Phone
- Linux
- Windows Mobile
- Android
- Windows 7

Form Factors

Functionality
Esri Mobile Products

ArcGIS running on ...

Windows / Windows Mobile

iOS

Microsoft Windows Phone

Android

Rugged Devices

Smartphones and Tablets
What is ArcGIS for Android?
ArcGIS for Android overview

- **SDK & Application**

- **Mapping**
  - Layers: Tiled, Dynamic, Graphic, Feature

- **Tasks**
  - Identify, Query, Locator, Geoprocessor

- **Editing**
  - Template-based, similar to other web APIs
  - Connected, through feature layer
Why ArcGIS for Android?

- Native app or web app?
- **Esri supports both**

- It depends on…
  - Your users & their devices
  - Required features/functions
  - Your technology constraints
  - Your skills
Android in the Enterprise

• Why Android?
  - Open
  - Almost any device
  - Good default behaviors
  - Appears to work

• Challenges
  - Security / Privacy
    - Push Cloud-to-device
  - Private deployment
ArcGIS for Android application
End user application

The knowledge worker

The Consumer
Connected
Connected

- Maps
  - ArcGIS Online
  - ArcGIS Server Mobile Content Servers

- Map services
  - ArcGIS Server
    - Tiled, dynamic, feature, image
  - Bing

- Location services
  - GPS
Localized

- 9 languages
  - English (american)
  - Chinese
  - Japanese
  - Russian
  - Italian
  - Spanish
  - Portuguese
  - German
  - Korean
Supported Workflows
Workflow overview

- Mapping
- Map Tools
- Data Collection
Mapping workflows

• Viewing Maps
  - Authored intelligent maps
    - ArcGIS Online / Mobile Content Servers

• Sharing maps
  - Groups, favourites

• Search
Finding maps demo

Archana Agarwal
Map tools workflows

- Queries
  - Popups/identify
  - Reverse geocoding
  - Location searches

- Tools
  - GPS
  - Measure tools
Map Tools demo

Archana Agarwal
Data collection workflows

- Authored maps
  - ArcGIS Server Feature layers
- Attributes
  - Types / Domains
  - Attachments
  - Date fields
- Features
  - Template based
- Updates server
Usage Scenarios
Usage Scenarios

• Information awareness
  - Recent earthquakes/floods
  - Diners/drive ins and dives

• Volunteered Geographic Information
  - Local incidents

• Asset inspection
  - Asset inspection

• Field survey
  - On screen feature collection
  - GPS point collection
Tips and Tricks
Tips and Tricks

• Screen navigation & exiting
  - Map is first screen
  - Exit from find maps page

• Using mobile content servers
  - Not individual services
  - No images in the Android list
  - Use instance name

• Memory issues
  - Memory limited, be careful
  - Number of layers, features, scale thresholds
Drivers....

ArcGIS Online

iOS
Win phone

ArcGIS Server

Mobile workflows
Future features

• Tablet support
• Map information
  - Scale bar
  - Legend
• Collaboration
  - Bookmarks
  - Sharing maps
• Routing / Navigation
ArcGIS Online features

- More open
  - OSM, WMS, CSV, GPX, KML
- For organizations
  - Portal support
Disconnected use...

Replacing paper based workflows in disconnected scenarios…
ArcGIS for Android Runtime SDK
What is it?

- Developer SDK for native Android development
- Basis for ArcGIS for Android Application
  - (eat, dog, food)
- Java based API
- Build native applications
  - For consumer markets (Google, Amazon, etc)
  - For enterprise deployment (Custom)
  - For local deployment
What do you get?

- **ArcGIS for Android Runtime SDK**
  - API
  - Eclipse plugin
  - Samples
  - Doc
What do you need?

• Eclipse – 3.5 or 3.6
• Android SDK – 2.2+
• Android device
What is in the SDK demo

Archana Agarwal
What can you do now?

- **Maps**
  - ArcGIS Online, Mobile Content Servers, ArcGIS Server (inc. Secure Services), Bing,

- **Tasks**
  - Query, Identify, Geocode, Geoprocessor

- **Analysis**
  - Geometry Engine, Geoprocessing

- **Location**
  - GPS
What’s in the final release?

- Performance/scalability enhancements
- Popups
- Map Notes
- Compact Cache support
- 2525 Military symbology support
How are they licensed?

**ArcGIS Application**
- Free and available via online marketplaces

**Runtime SDKs**
- Free for Enterprise and Store** Deployments
- Attribution is Required for all Apps!
  - Esri Attribution for ArcGIS Online map layers
  - Bing Attribution for Bing map layers
  - About Box Attribution
- Cost with Esri if:
  - App generates revenue and is in a store
  - Not licensed for server (commercial)
- Cost Basis:
  - Percentage of sales, yearly subscription
Further information

- [http://resources.arcgis.com/content/arcgis-android/api](http://resources.arcgis.com/content/arcgis-android/api)
- [arcgis4android@esri.com](mailto:arcgis4android@esri.com)

- **Web Courses to be available in 2011**
  - Getting Started with the ArcGIS API for Android
  - Creating Data Collection Applications using the ArcGIS API

- Please fill out the online session review form!
  - [www.esri.com/sessionevals](http://www.esri.com/sessionevals)
Questions…

• Over to you…