

# ArcPad – An Introduction

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# ArcPad Sessions at the UC

- **Demo Theatre**
  - Using Mobile Devices with ArcPad and ArcGIS – Tech Support Demo Theatre
  - Preparing and Deploying Data to ArcPad – Apps Demo Theatre
  - Customizing ArcPad without code – Wednesday 9:30am
  - Customizing ArcPad with Jscript, Python and VBScript – Thursday 11:30am
- **User Group Meeting - Room 26A– Wednesday – 5:30pm**

# Release Status

- **ArcPad 10.2.3**

- Improved sync of lines and polygons
- Better handling of z values
- Support symbology based on unique values many fields
- Improved 2 point offset with rangefinder
- New ArcPad System Camera for Windows 7 or later
- Memory improvement on startup and during sync
- Fixed check out failure when connecting to enterprise geodatabase using a non admin windows authenticated user

## SHA-1 certificate support will be deprecated November 2016

- Secured feature services and ArcPad Packages hosted in ArcGIS Online will continue to be available to users on devices that support SHA-2 certificates. This security type is available on **Windows (XP, 7, 8.1, 10) and Windows Embedded HandHeld 6.5** devices that have been **patched by the manufacturer**.
- Devices with operating systems **older** than Windows Embedded HandHeld 6.5 **cannot be patched**. Devices that only support SHA-1 certificates, can only be supported by ArcGIS Online until **November 2016** and will need to run ArcPad 10.2.3 as of December 2015.
- This is an industry wide action to improve internet security. The following article describes Microsoft's position. <https://support.microsoft.com/en-us/kb/2986556>. Esri has made contact with many hardware manufacturers who already provide, or are working on SHA-2 patches for Windows Embedded HandHeld 6.5 models. If you have questions about the availability of the SHA-2 patch for your Windows Embedded Handheld 6.5 device we encourage you to contact the manufacturer.

# The Road Ahead

- Stable and mature
- Minor releases and critical fixes only

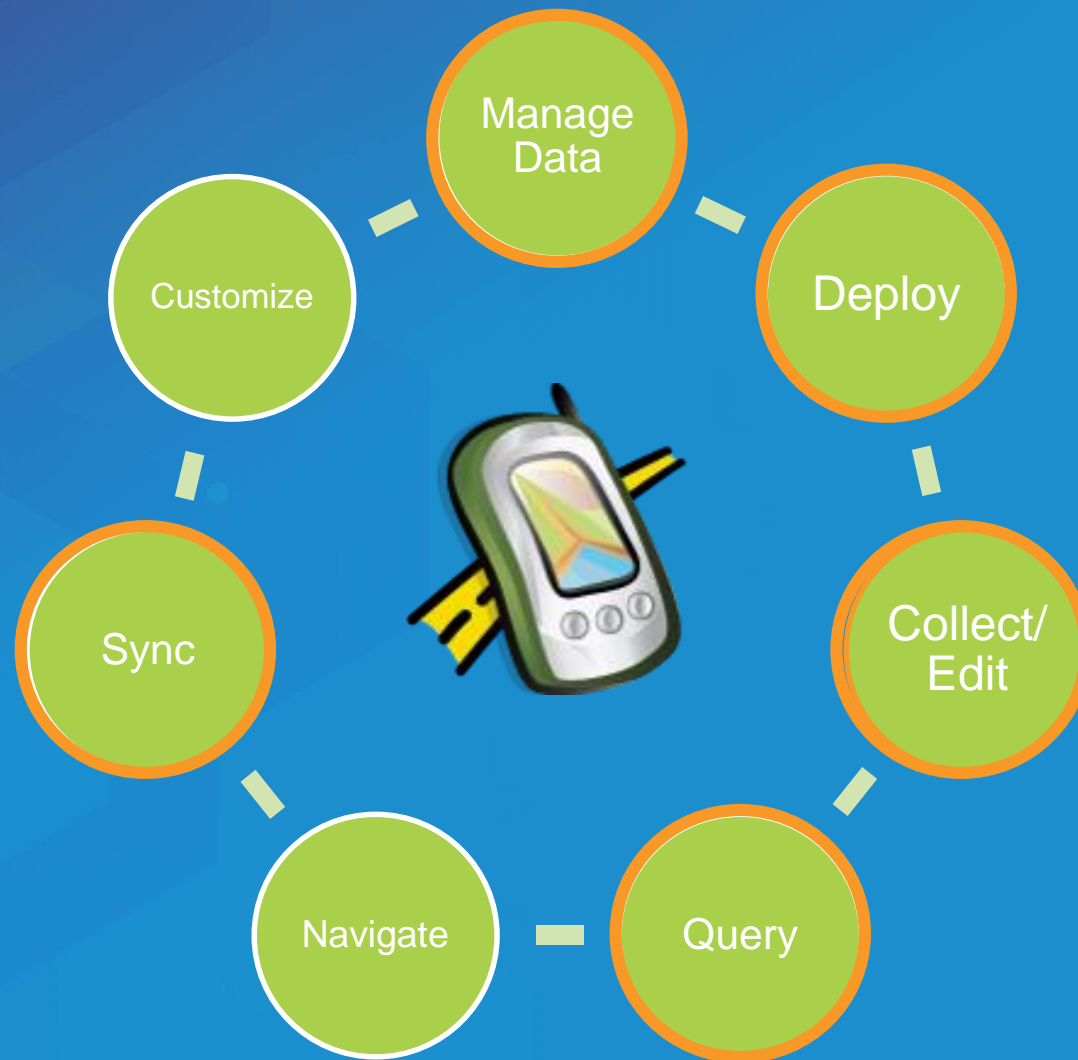
## Session Outline

- What is ArcPad?
- What can you do with ArcPad?
- Who uses ArcPad?

# What is ArcPad?

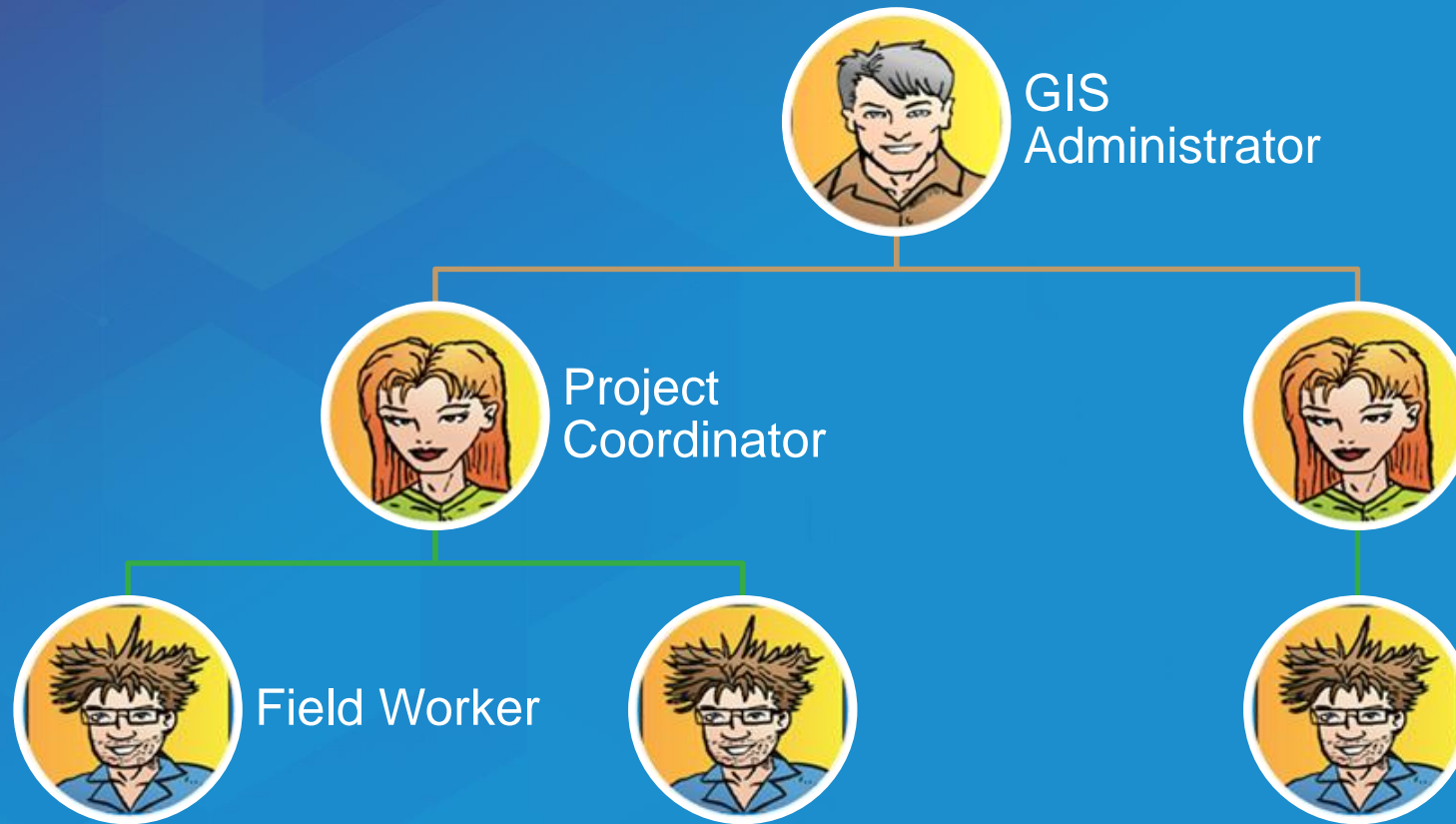
- A **single product** that covers a **wide range** of customer mobile GIS requirements
- Is the '**do-all**' **companion** product to the **foundation apps**, that ensures they remain focused.
- Can be **white labelled** (or OEM'ed) so that you can brand it as your own.
- Supports traditional **disconnected in-field** workflows that include the **creation** and management of projects, data and **customization**, as well as online workflows.
- Empowers customers and partners to incorporate business logic, custom user interfaces and specialised functionality into their projects – with
  - **configuration without code, and or**
  - **scripting, and or**
  - **building extensions**

# What can you do with ArcPad?

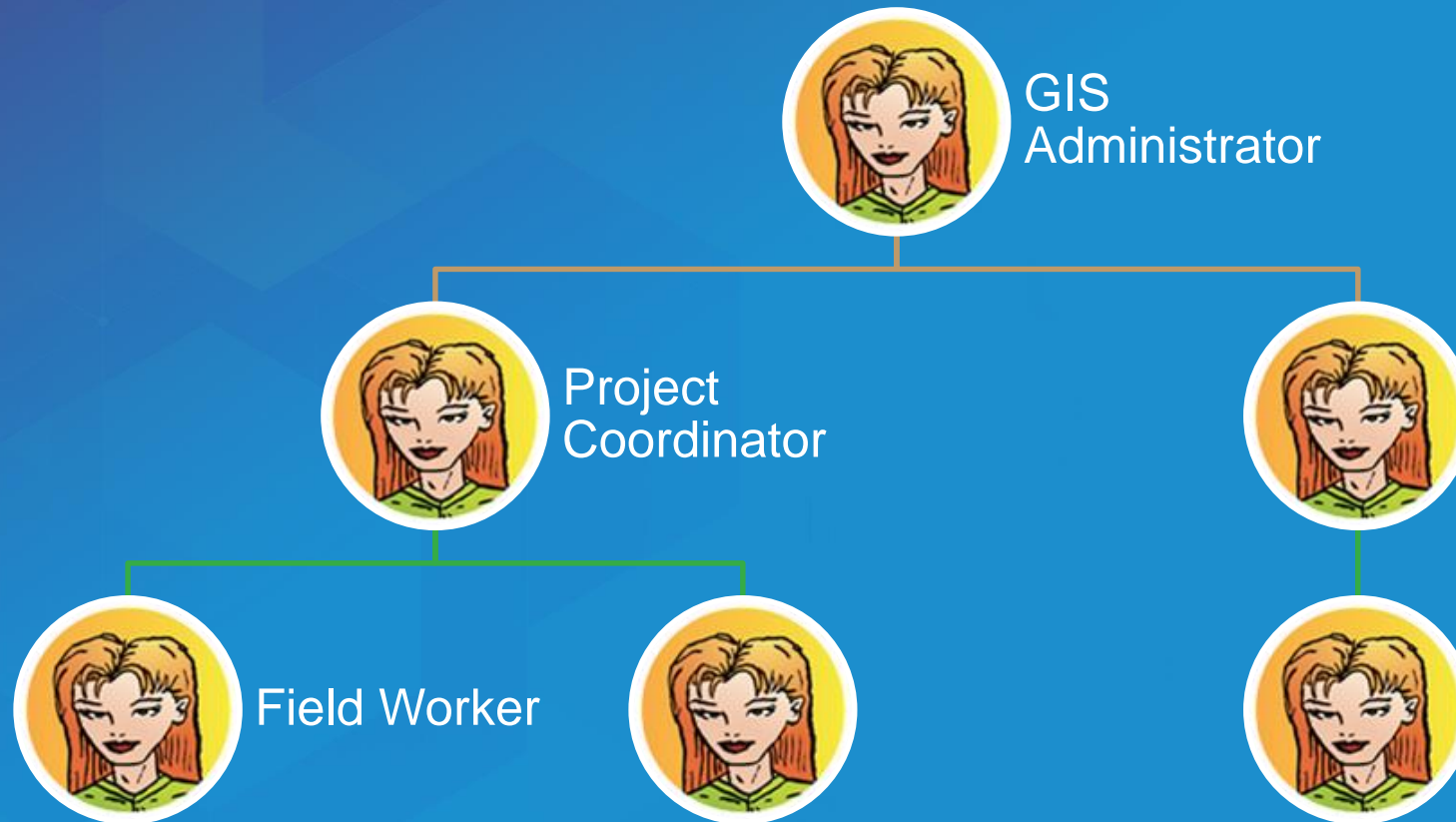




# Who uses ArcPad?



# Who uses ArcPad?









# ArcPad Data Manager



# ArcPad Data Manager Compatibility

- **ArcGIS 9.3.1**

- ArcPad 8 Data Manager is installed
- Limited to ArcPad 8 Data Manager features
- Can deploy to ArcPad 8 and ArcPad

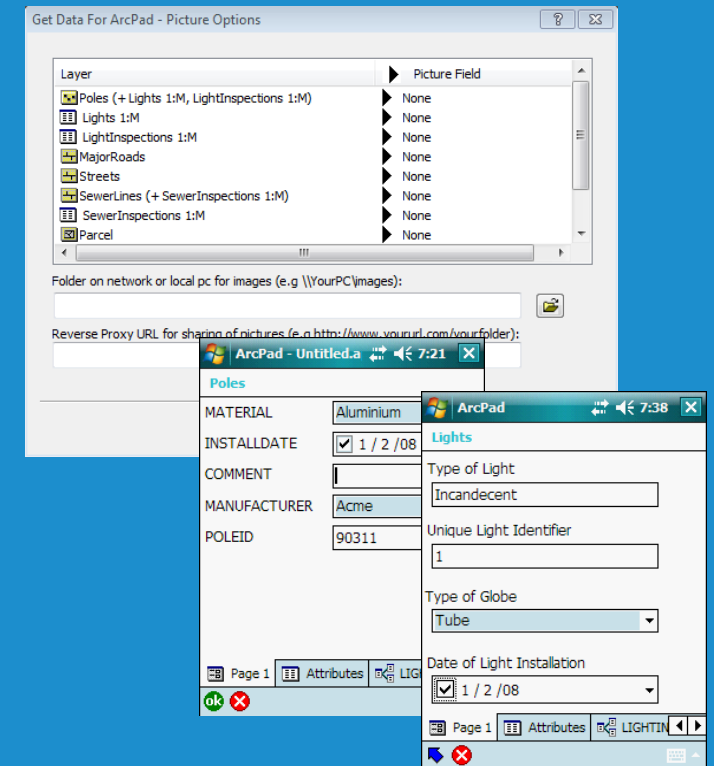
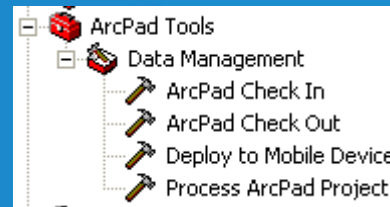
- **ArcGIS 10 and later**

- ArcPad 10 Data Manager is installed
- Can deploy to ArcPad 8, ArcPad 10, ArcPad 10.2

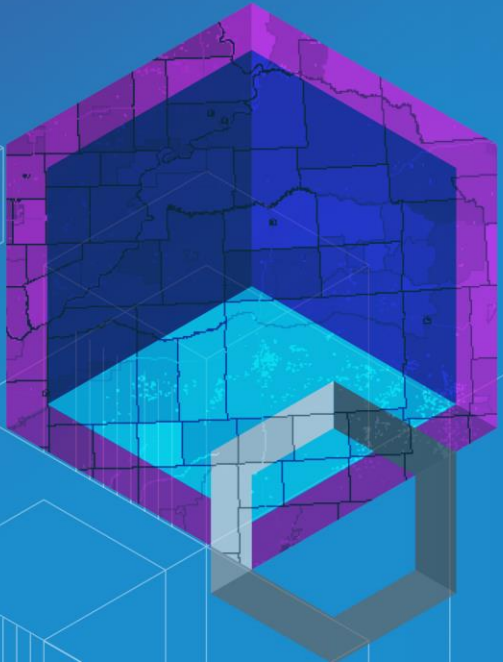


# ArcPad Data Manager for ArcGIS Desktop

- Supports enterprise and local geodatabase workflows
- Includes
  - ArcMap toolbar
  - Tools for ArcToolbox
- Model Builder or Python to automate



# Get Data for ArcPad Demo

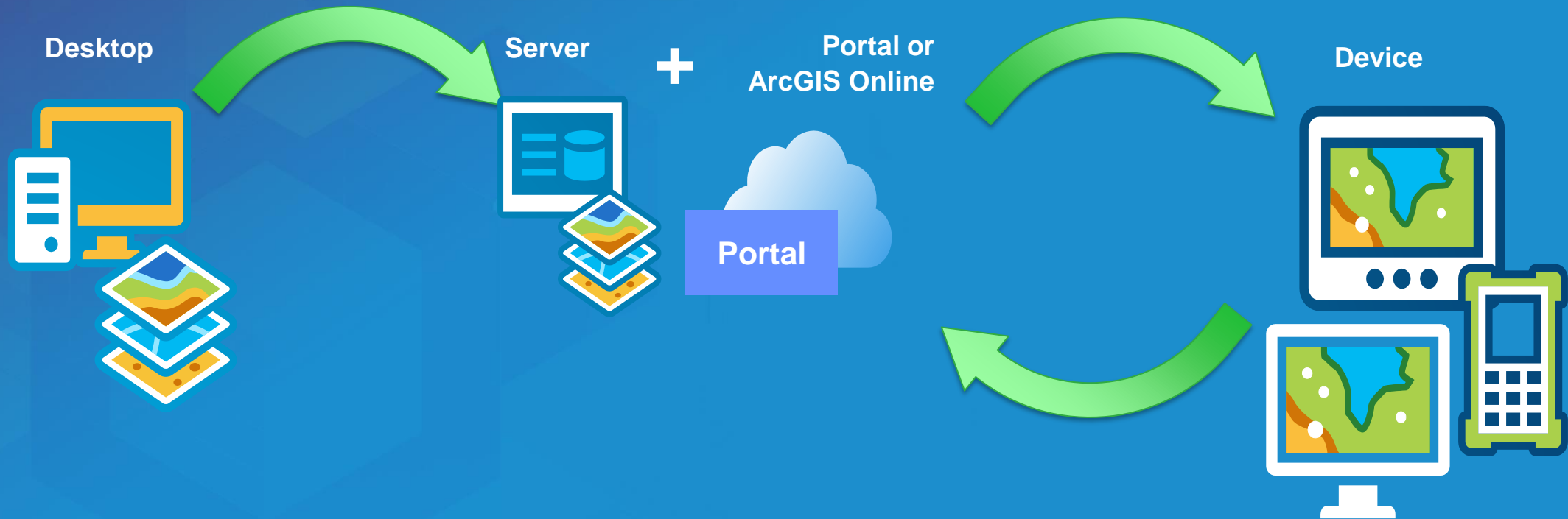




# ArcGIS Server data sync

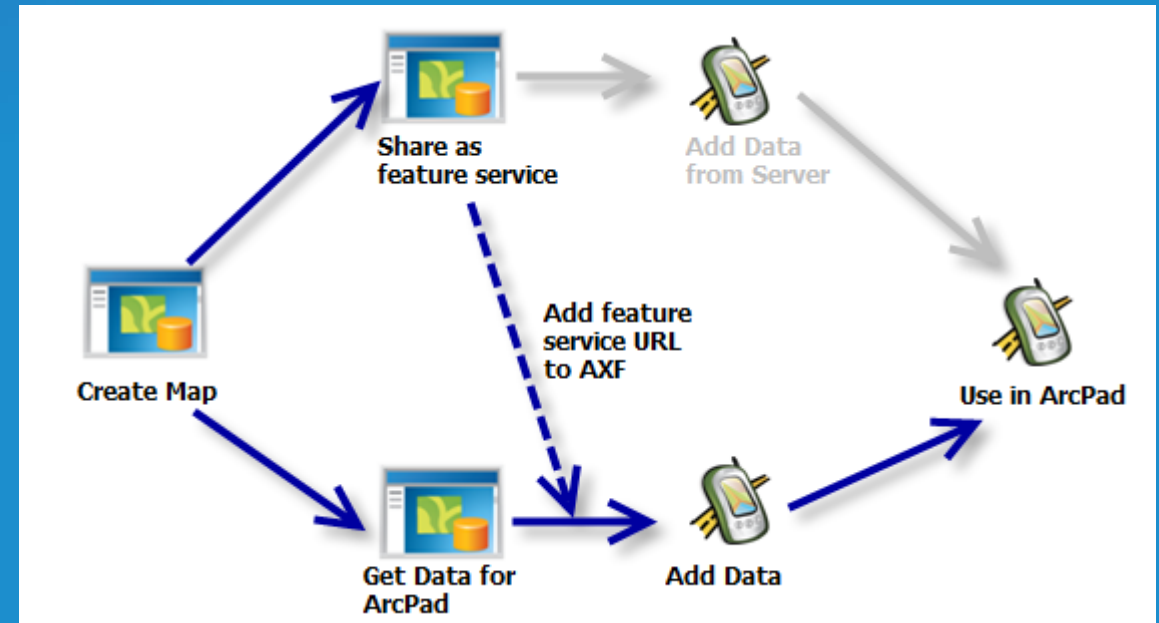


# Feature service synchronization



## Prepare for server synchronization

1. Create map in ArcGIS
2. Get Data for ArcPad
3. Share as feature service
4. Add feature service url to AXF
5. Either
  - a) Use as a template
  - b) Use AXF directly in ArcPad



## ArcGIS Server Feature Services

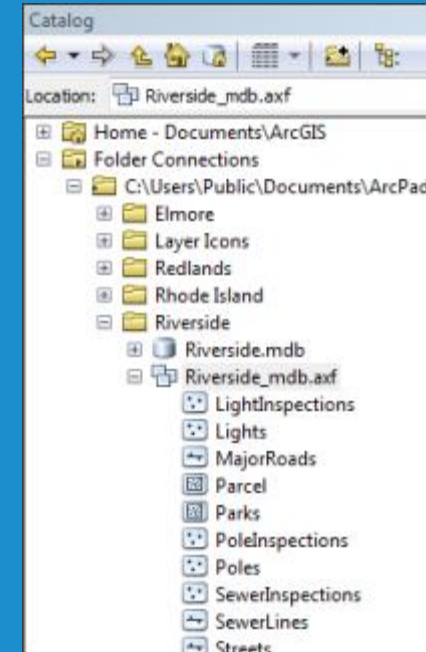
	<b>ArcGIS Server 10.0</b>	<b>ArcGIS Server 10.1 and later</b>	<b>Hosted feature services</b>
<b>Related tables</b>	No	Yes	Yes
<b>Map extent</b>	Full	Map	Map
<b>Editor tracking</b>	No	Yes	Yes
<b>Incremental download</b>	No (always full download)	* Yes (With editor tracking only)	No
<b>Incremental upload</b>	Yes	Yes	Yes

# AXF Reader for Data Interop



# ArcPad AXF Reader

- View or import AXF data any other format
- Included in
  - ArcGIS 10.1 and later Data Interoperability Extension
  - FME Desktop 2011 SP4 (Windows 32-bit)
  - FME Desktop 2012 (Windows 32-bit)





# ArcGIS Online



# What is ArcGIS Online?

- **Cloud based content management system for your geographic information**

What can you do with ArcGIS Online?	What does this mean for ArcPad projects?
<b>Manage &amp; store geospatial content</b> <b>Collaborate across &amp; beyond organizations</b>	Upload zipped projects prepared locally using ArcGIS Desktop or ArcPad. <ul style="list-style-type: none"><li>• templates</li><li>• projects</li></ul>
<b>Find relevant &amp; useful base maps, data, configurable GIS resources</b>	Selection of Esri hosted base maps available in ArcPad
<b>Host feature service</b>	Synchronize field edits with hosted feature services



# Hardware choices



# Devices were not all built equally

Windows Mobile



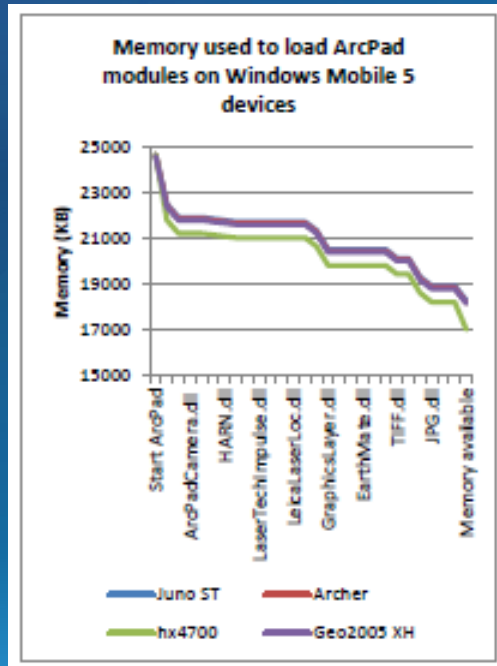
- Slower CPU
- Fixed memory
- ArcPad only uses 32MB of memory
- Screen resolution can impact on speed and memory
- No graphic CPU (GPU)
- Great battery life
- Usually internal GPS

Windows PC

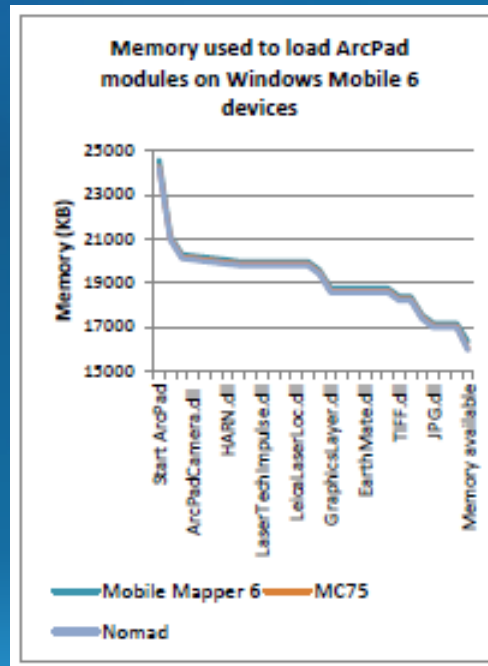


- Fast CPU
- Virtual memory (Limited by disk space)
- ArcPad can use all memory
- Screen resolution has minimal impact
- Very fast graphics (GPU)
- Sad battery life
- Outdoor screen?

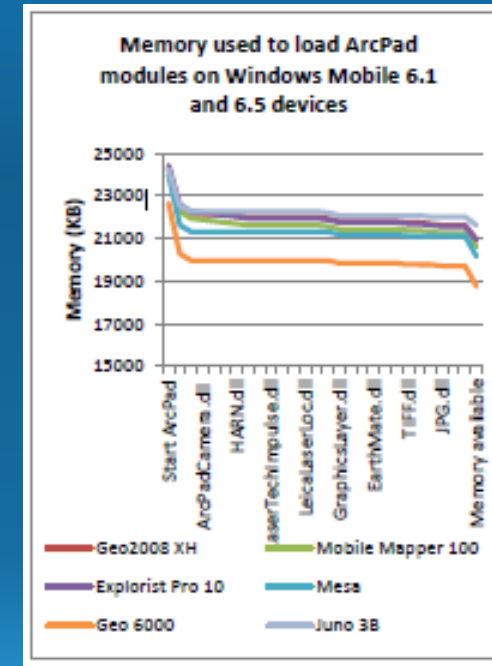
# Memory management between different versions of Windows Mobile



Windows Mobile 5

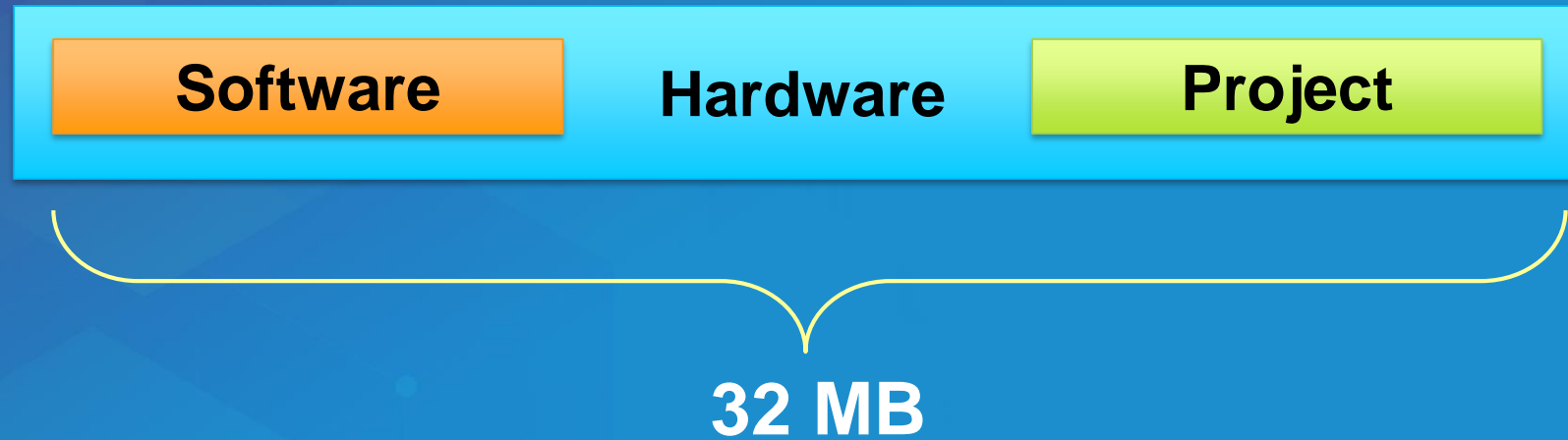


Windows Mobile 6



Windows Mobile 6.1 and 6.5

## Memory used to Launch ArcPad



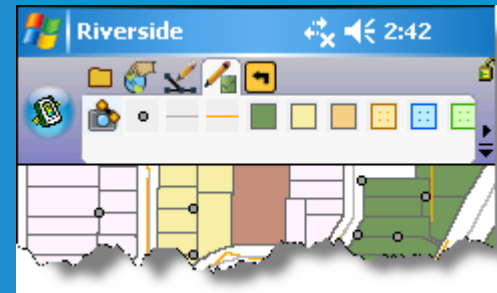
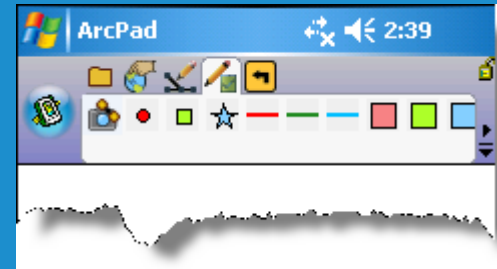
- 8MB to launch ArcPad
- 3-8MB to load DEFAULT ArcPad Modules
- 3-10MB to load ALL ArcPad Modules
- disabling modules mean more memory for projects

# Rapid capture



# Quick Capture Toolbar

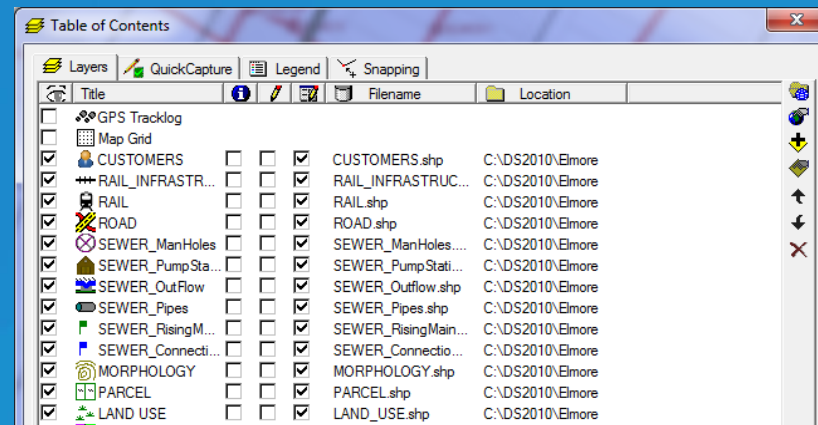
- Dynamic toolbar
  - Map Legend Driven
- Configure in Table of Contents
- Quick Photo capture
  - Geotagged, or
  - Tap on Map





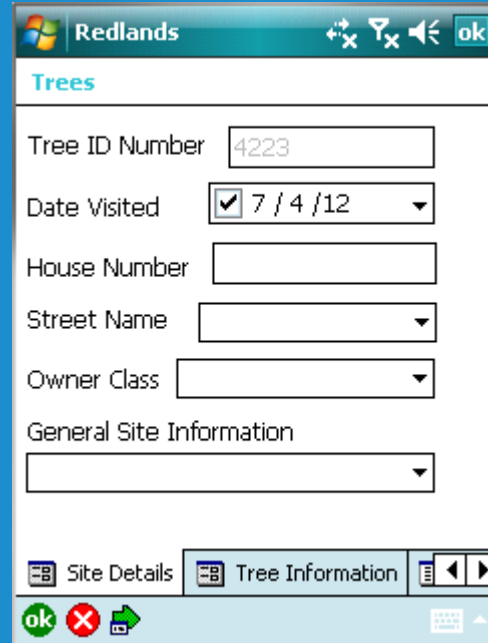
# Rapid Capture Data Forms

- Enables 1-Click Data Entry
- Optionally turn off form
- Attribute filled in by Quick Capture tool
- Force form to be 'required' in ArcPad Studio



# Repeat Attributes

- Button is on edit form
- set for each feature type collection



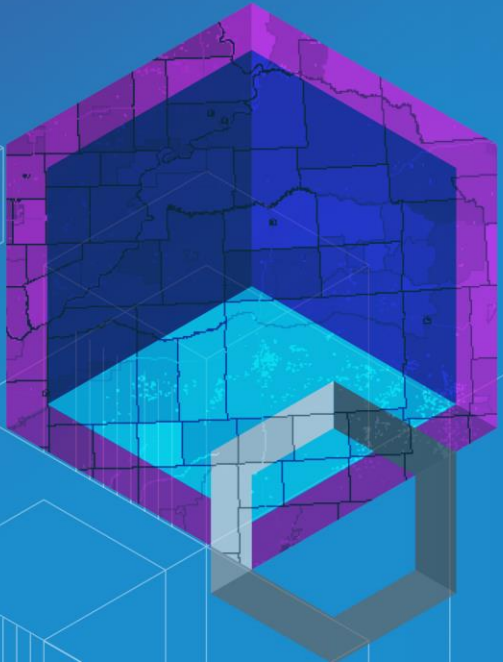
The screenshot shows a software window titled 'Redlands' with a standard Windows-style title bar. Below the title bar, the word 'Trees' is displayed in a blue font, indicating the current data collection. The form contains several input fields: 'Tree ID Number' with the value '4223', 'Date Visited' with a checked checkbox and a date selector showing '7 / 4 /12', 'House Number', 'Street Name', 'Owner Class', and 'General Site Information'. Each of these fields is followed by a small downward-pointing arrow, suggesting they are dropdown menus. At the bottom of the form, there are two tabs: 'Site Details' and 'Tree Information', with 'Tree Information' currently selected. The bottom-most bar of the window contains standard window controls: a green 'ok' button, a red 'X' button, and a green arrow button, along with a small help icon and a scroll bar.



## QuickFields

- define how attributes are automatically populate
- build definition with an expression
- common expressions supplied in a JScript file
- covers (almost) all the automatic field questions
- you can add your own by
  - 1) write your script
  - 2) add to QuickField\_Functions.xml

# Repeat attributes and Quick Fields Demo

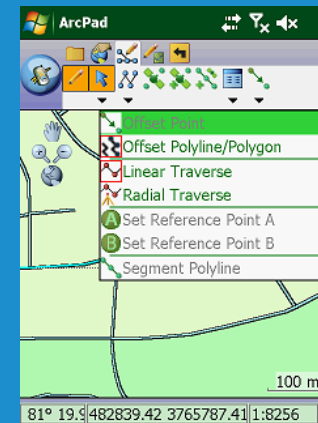
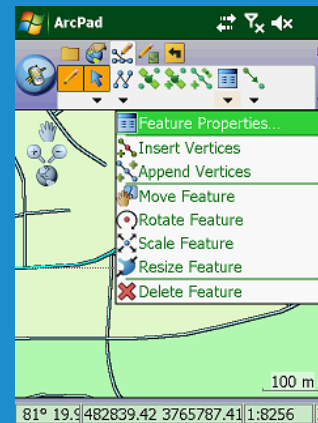
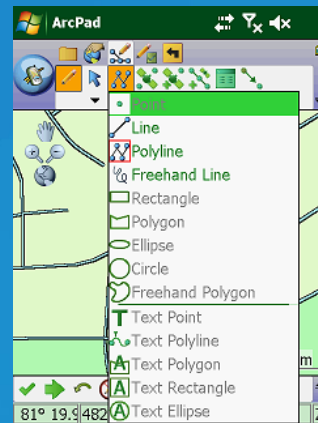
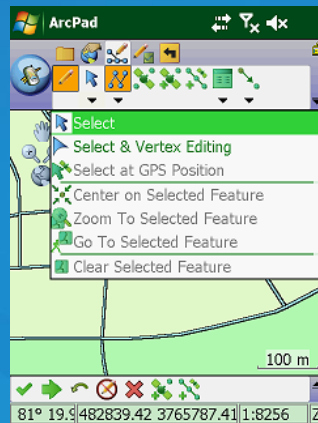


# Rich capture and editing



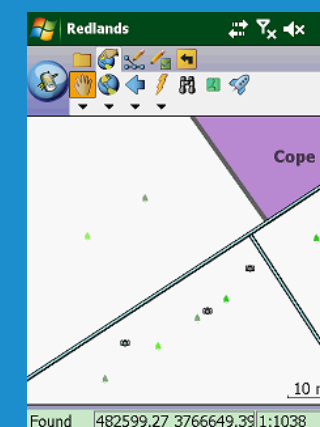
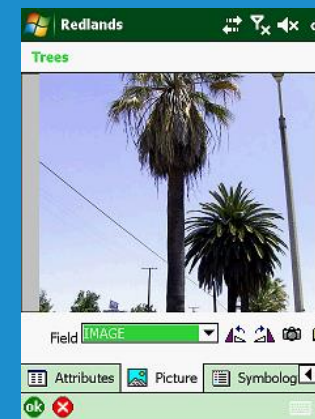
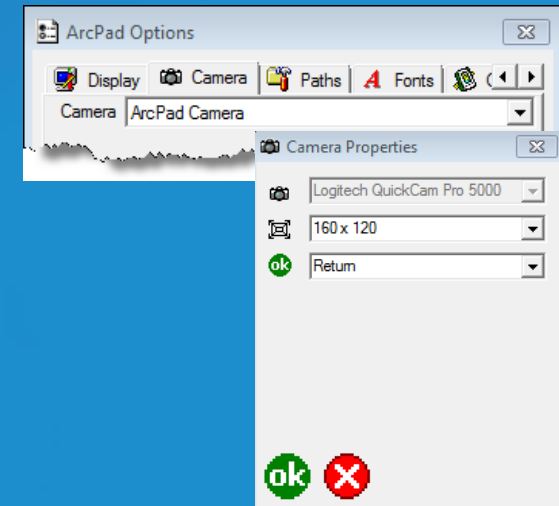
# Rich editing tools

- Insert, append, move vertices
- Move, rotate, scale, resize features
- Snapping
- Undo
- Offsets
- Segmented line features



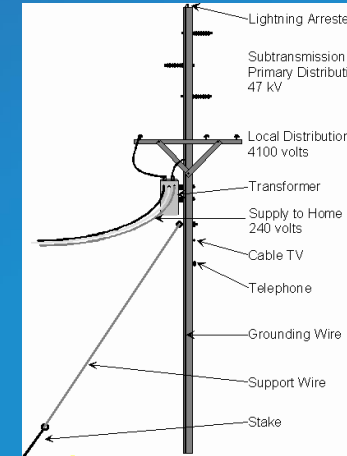
# Photo and Camera Experience

- Capture in photo layer, or as feature attribute
- Photo fields nominated at check out mean photos 'checked in' with data
  - Photos page supported in related table eg: use for 1- Many photos



# Related tables

- 1 to many relationships
  - Each feature can support multiple sets of attributes in separate tables
- Forms generated ArcPad Data Manager can be customized



PoleID	Type	Built
123	Wood	8-Oct-99
124	Steel	5-Jul-87
125	Wood	7-Jun-99

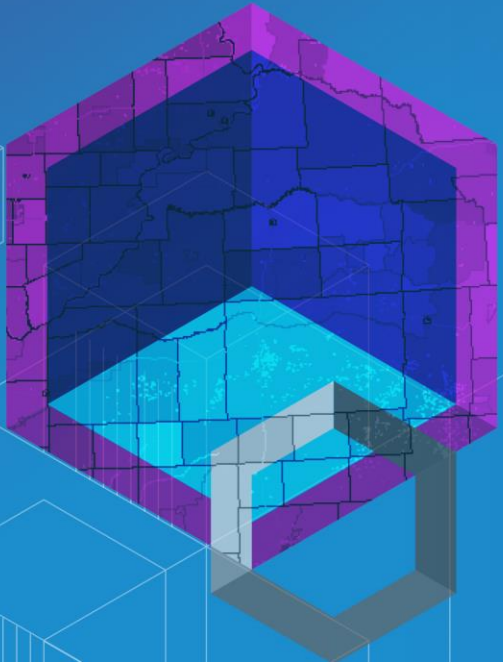


PoleID	Insulator #	Type
123	1	200kv
123	2	400kv
123	3	200kv



PoleID	Insulator#	Inspector	Date
123	1	Jian	1-Jan-00
123	1	Elvin	5-Feb-04
123	1	Craig	10-Jun-06

# Photos and related records Demo





# Customization





# Common areas of customization

- **Toolbars**

- modify existing toolbars
- create new toolbars and tools

- **Forms**

- modify existing forms
- Create new forms

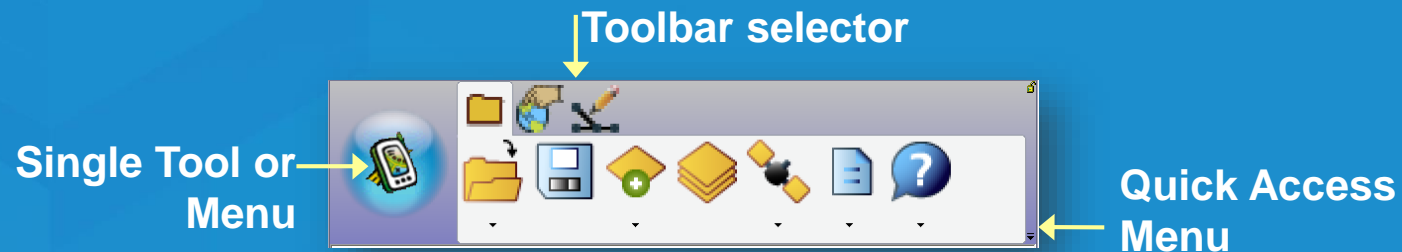
- **Projects**

- Modify ArcPad preference and configuration files
- Create ArcPad Apps

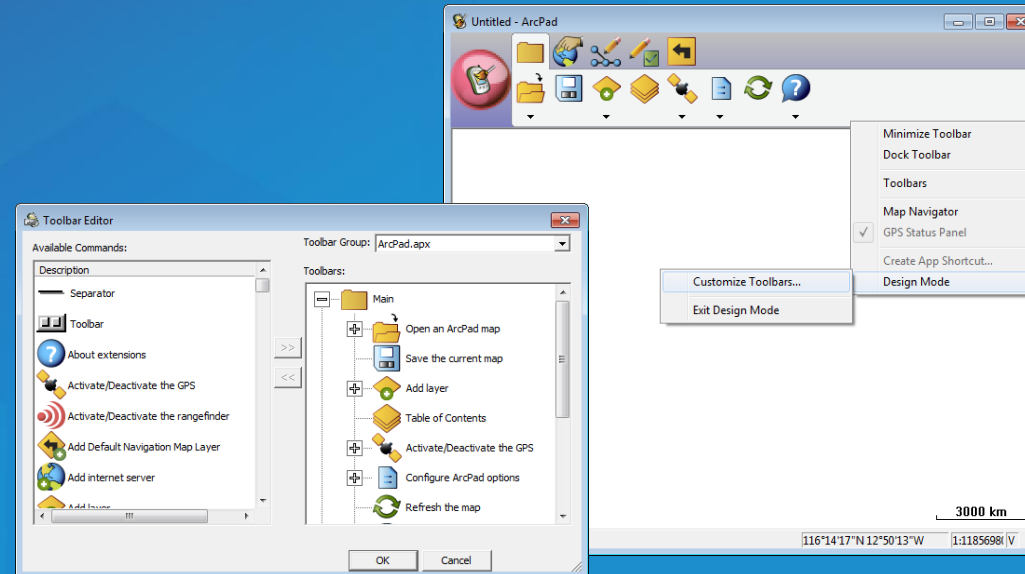
# Toolbar customization

- **Favourites Toolbar**
- **Add/remove tools from ArcPad toolbars**
- **Create your own toolbars containing ArcPad tools for different projects.**

<b>When you want a custom toolbar,</b>	<b>you should store your toolbars in,</b>
for all projects	ArcPadFavorites.apx
or appended tools upon the default toolbars for one project	ArcPad.apm
or appended tools upon the default toolbars for many projects	Applet.apa
or appended tools upon the default toolbars for all projects	ArcPad.apx



# Toolbar editor in ArcPad

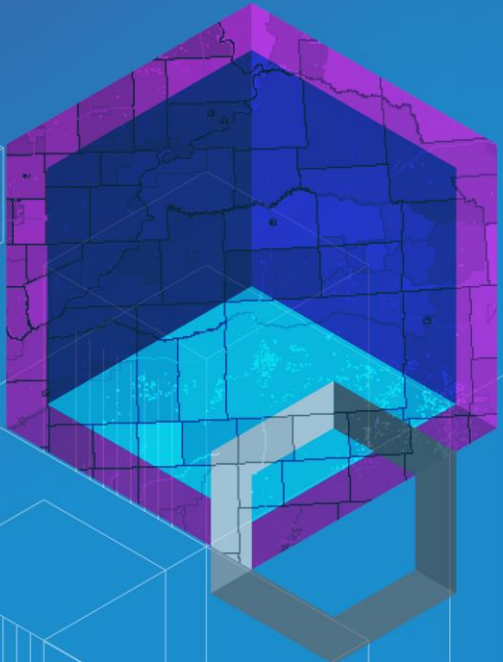


**Tip: Delete ArcPad.apx to restore default toolbar configuration**

# Types of forms

- **Edit**
  - Used for data capture and edit
- **Identify**
  - Used when identifying features.
  - If not present uses Edit form in read-only mode
- **Query**
  - Added to Find dialog
  - Search template, just fill in the boxes
- **“Other”**
  - Application specific forms

# Creating a custom toolbar



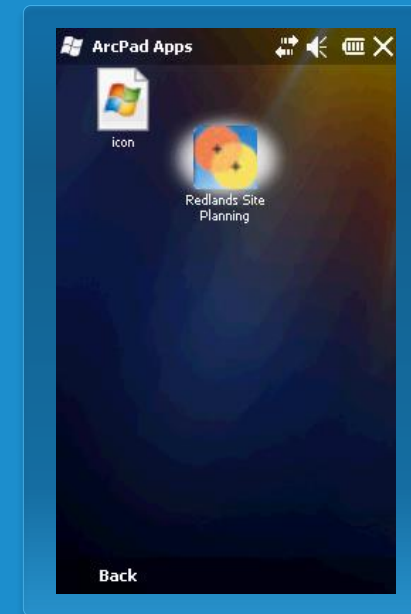
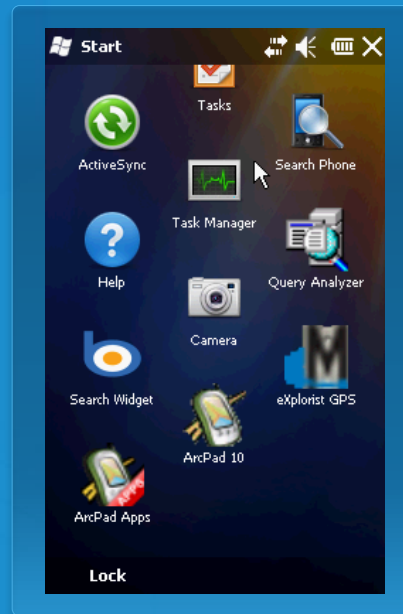
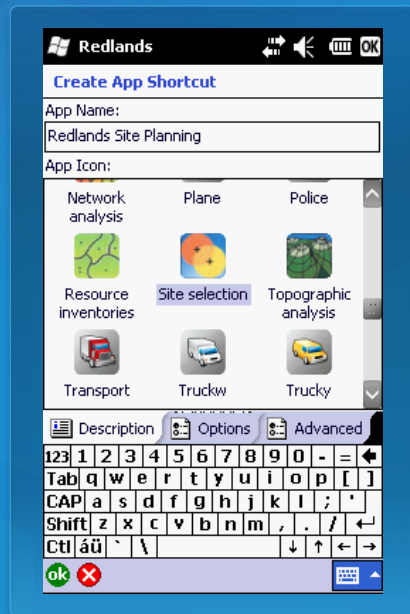


# ArcPad Shortcuts



# Using shortcuts

- organize your ArcPad projects
- launch ArcPad with your customization settings
- integrated with ArcPad Today screen



# What is an ArcPad App?

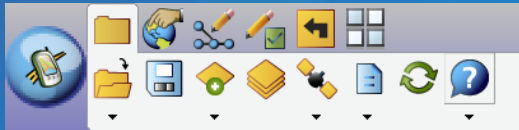
- A project focused solution built with and used by ArcPad



# Steps to make an App



- Step 1 – Prepare map



- Step 2 – Design a toolbar (customisation)



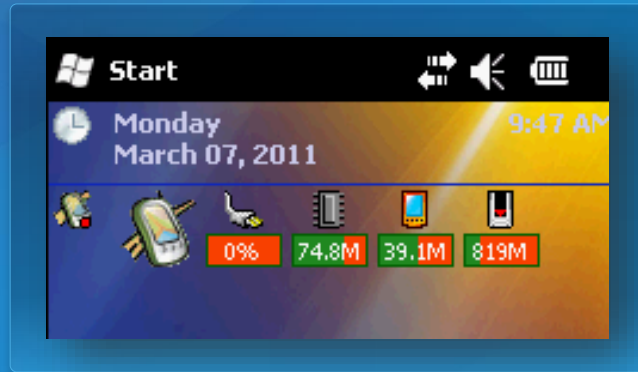
- Step 3 – Create an App shortcut



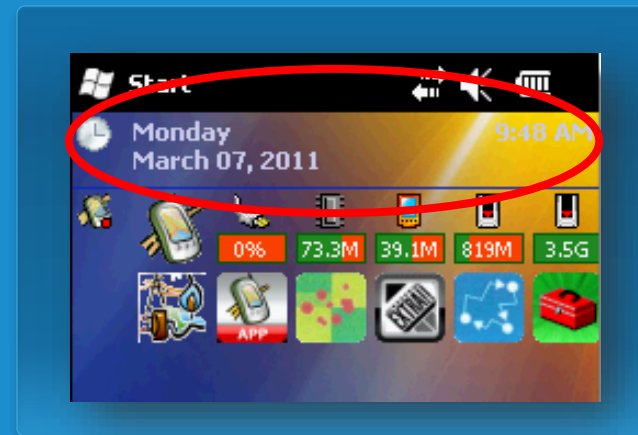
- Step 4 – Deploy

# ArcPad Today

- Magically looks for App shortcuts on your device or storage cards

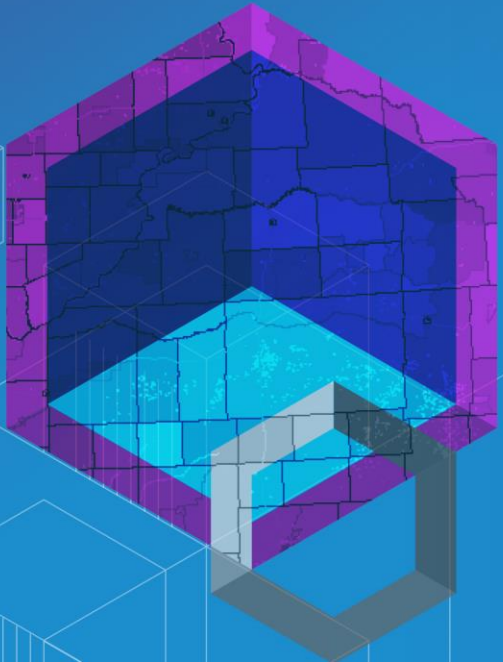


Before



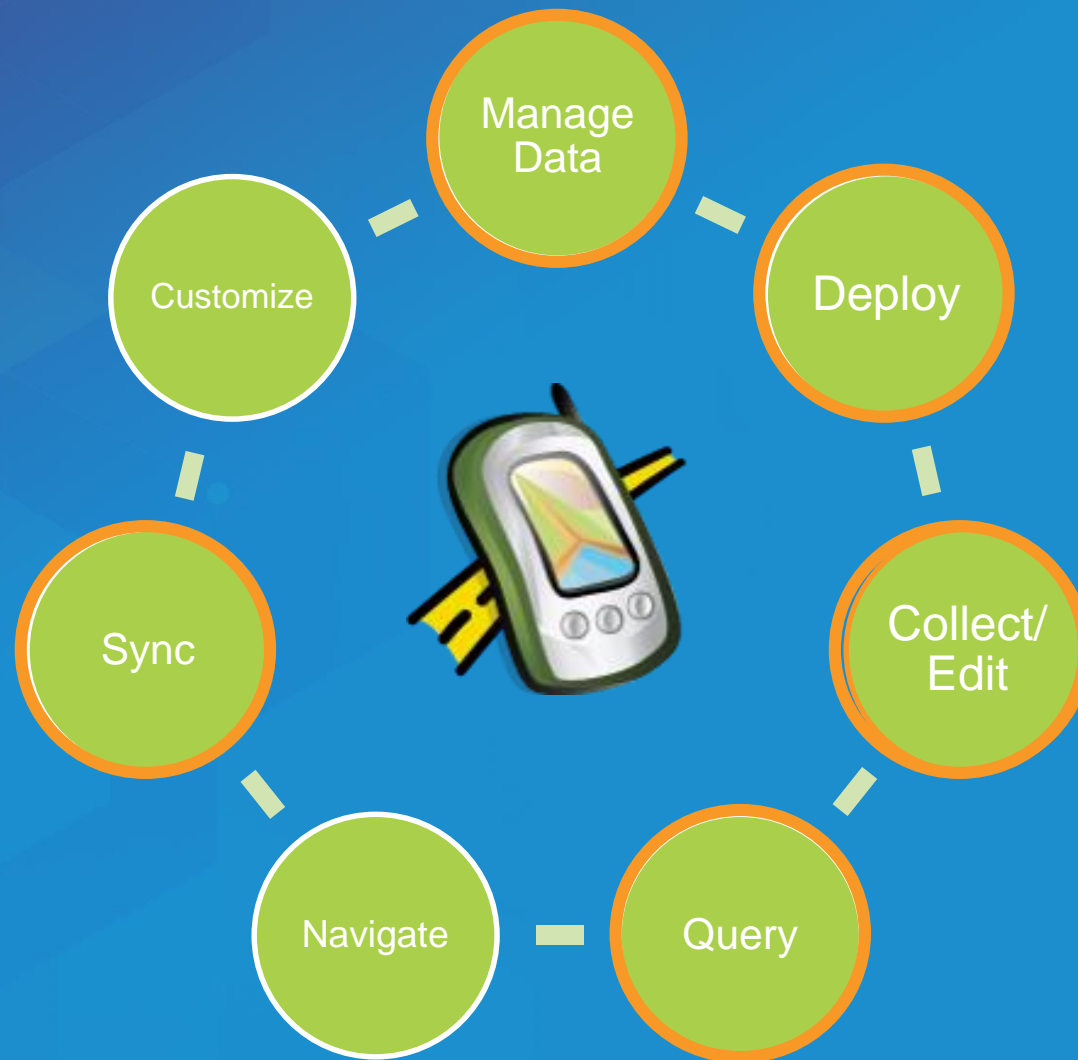
After

# Creating an ArcPad shortcut demo





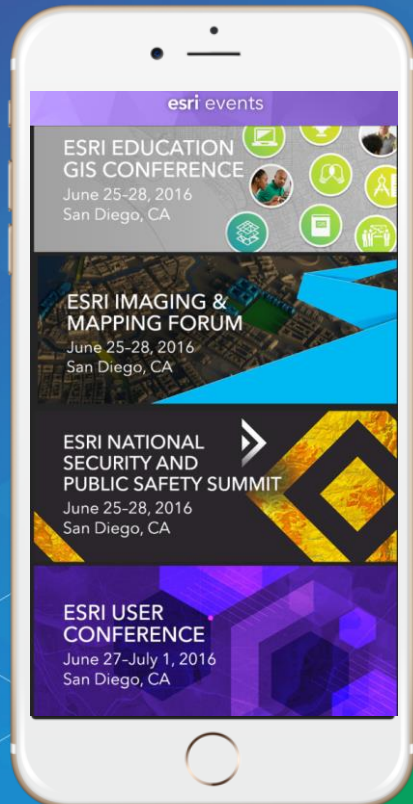
# What can you do with ArcPad?



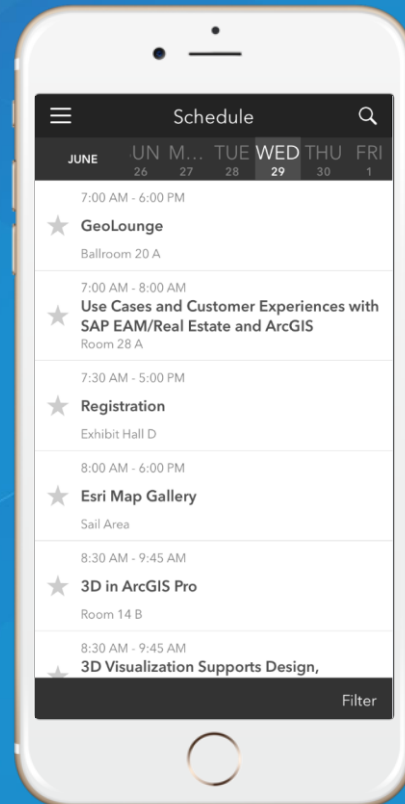
# Please take our Survey

Your feedback allows us to help maintain high standards and to help presenters

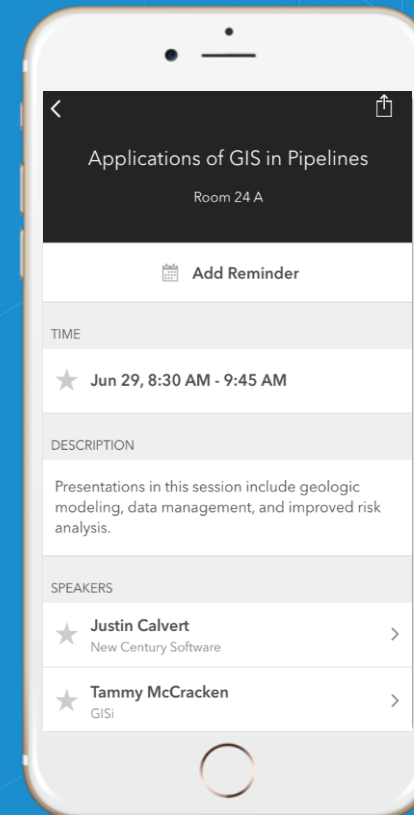
Find your event in the  
Esri Events App



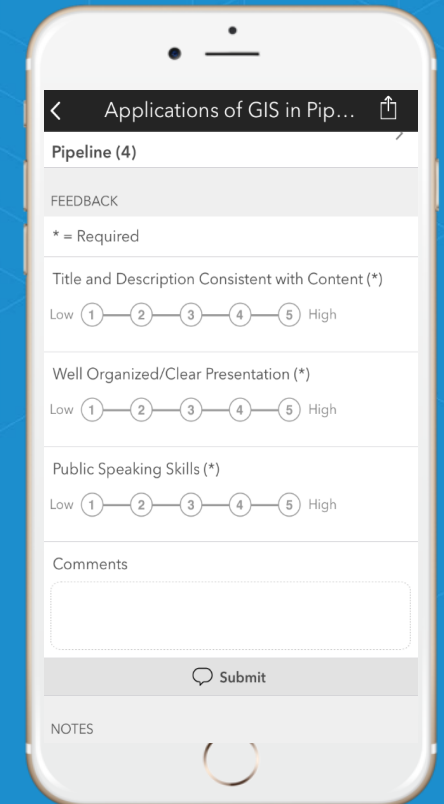
Find the session  
you want to review



Scroll down to the  
bottom of the session



Answer survey  
questions and submit





Understanding our world.