



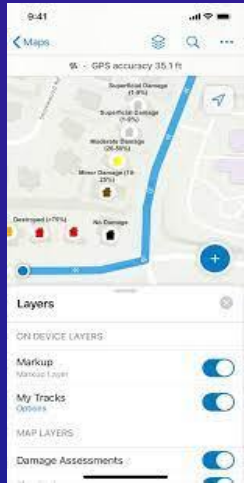
ArcGIS Field Maps: Automating and Integrating Mobile Workflows

OKSCAUG

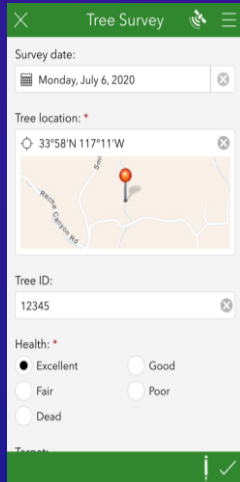
September 26, 2023

ArcGIS supports Field Operations

Field Efficiency, Empowered Workforce, & Enterprise-wide Integration



ArcGIS Field Maps



ArcGIS Survey123



ArcGIS QuickCapture

Capture

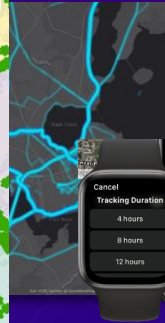
Easy to Use

- High Accuracy
- Smart Forms
- Mobile Capture Experiences
- Highly Configurable

Awareness

Up to Date access to System of Record

- Rich Map Tools
- Location Aware Notifications
- Location Sharing
- Powerful Pop Ups
- Navigation



Plan & Coordinate

Optimize Operations

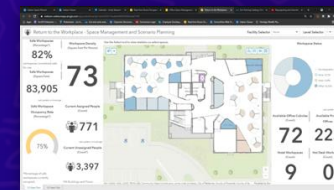
- Digital To Do Lists
- Status & Progress Updates

New & Improved

- Location Sharing
- Camera Assistants
- Sensor and Smart Card Support
- Geofencing / Alerts
- Calculations
- Windows 11 Support
- Enhanced Designers

Integration

Office and Field Synchronicity



- Report & Analyze
- Business Systems & Workflows
- App linking
- Automation



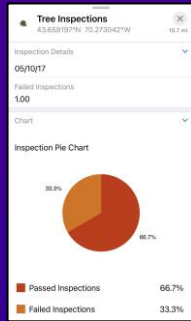
Transforming Mobile Workflows . . . Across the Enterprise

ArcGIS Field Maps

A comprehensive mobile GIS solution for field operations

Advance Awareness

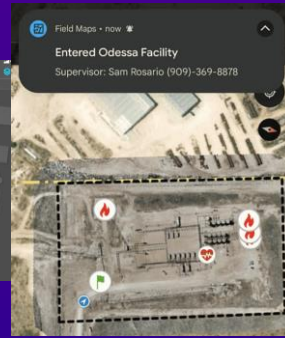
Up-to-date information when you need it, where you need it



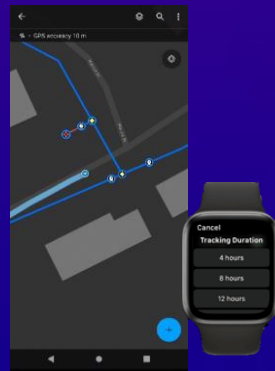
Configurable Pop-ups



Utility Networks
Viewing & Tracing



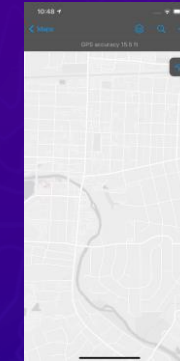
Location-Aware Notifications



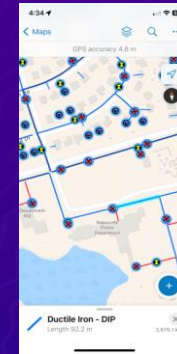
Location Sharing

Data Capture

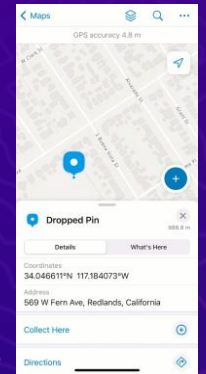
Intuitive and powerful collection tools



Indoors & Outdoors

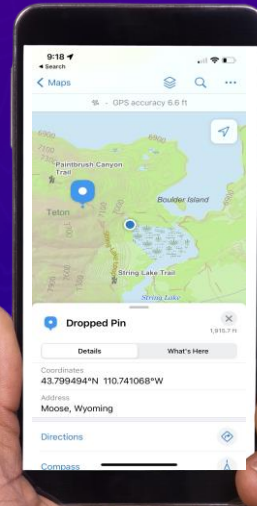


Optimized mobile capture modes



Dynamic Smart Forms

Rich, Interactive Maps



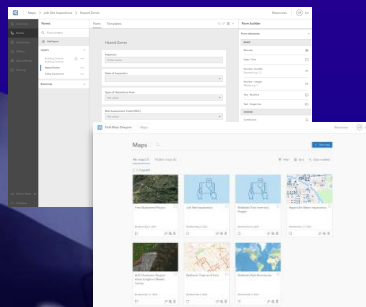
Integration

Location providers
Work Management
Automation

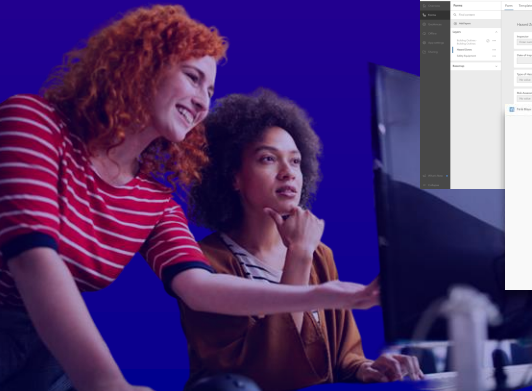


- Easy to Use
- Connected and Offline
- Streamlined Data Collection
- Data Informed Decisions
- Flexible Configuration
- Scalable Deployment
- Integrate with business systems

Plan & optimize maps for the field



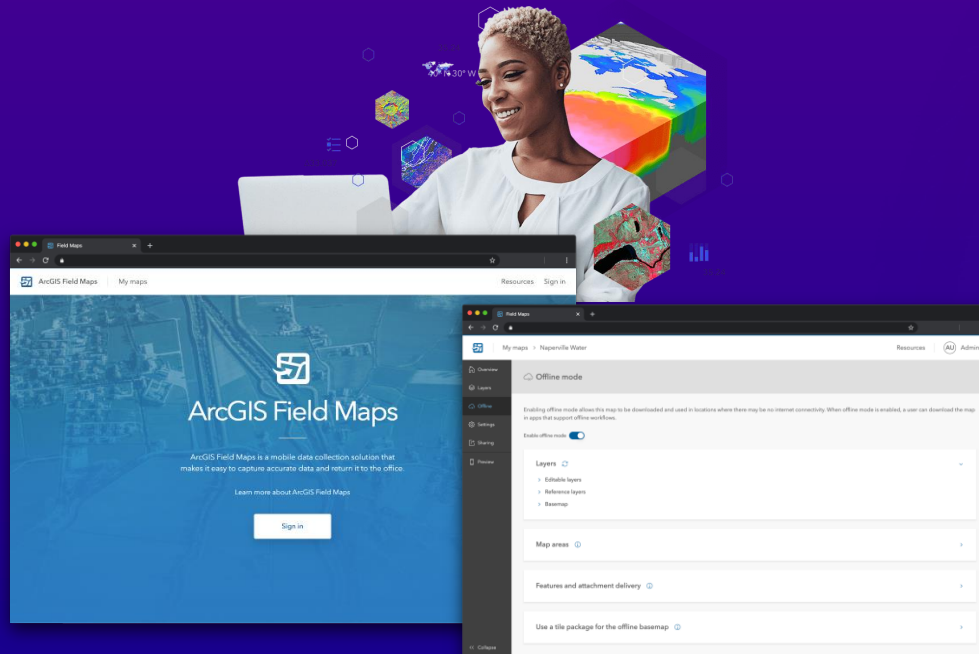
Field Maps Designer



Field Maps Components

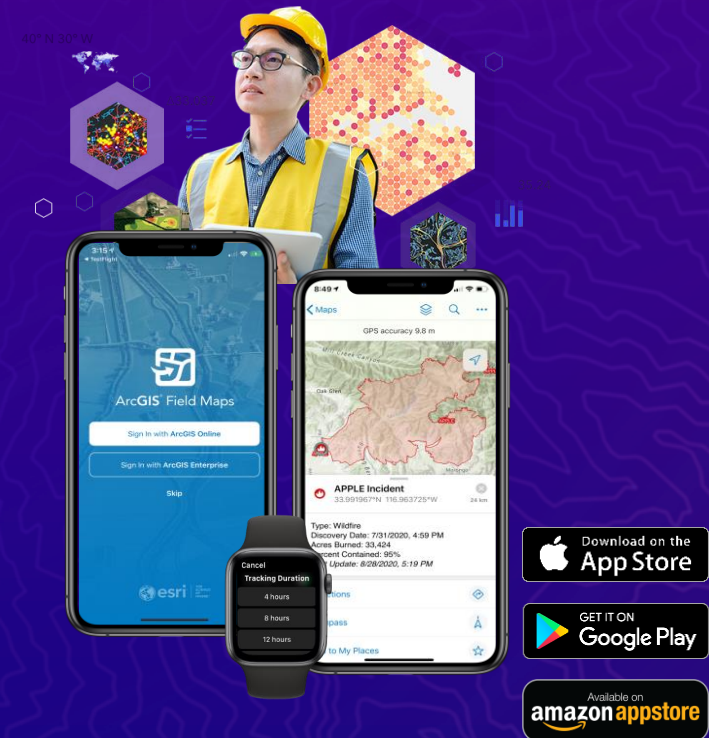
Prepare Maps for the Field

Field Maps Designer



Do Work in the Field

Field Maps mobile app



Field Maps Mobile App

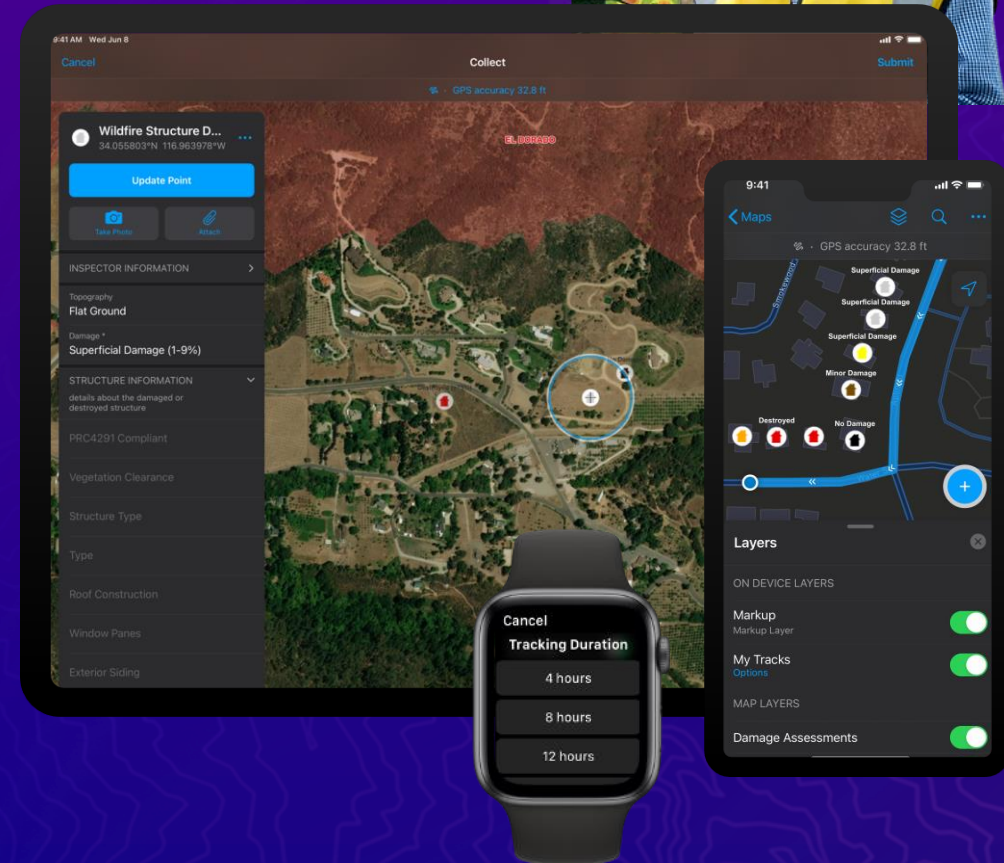
For Mobile workers

Key Capabilities

- View and search maps
- Capture data
- Capture location with high accuracy GNSS
- Complete smart forms
- Record and share location
- Location aware notifications
- View and trace utility networks
- Indoor and outdoor maps
- Works connected or offline

Requirements

- Android 8.0+
- iOS 14.5+
- Windows 11



Do Work in the Field

Download on the
App Store

GET IT ON
Google Play

Available on
amazon appstore

Field Maps Designer

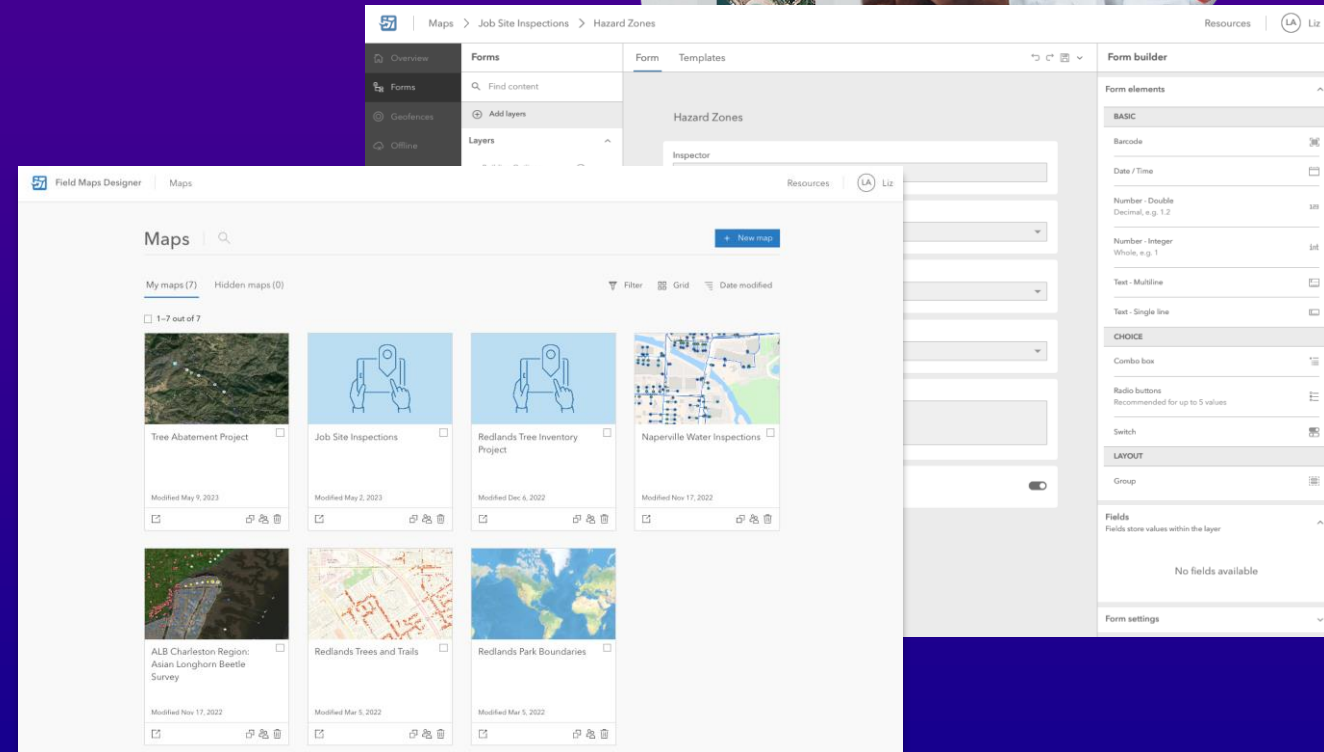
For Map Authors

Key Capabilities

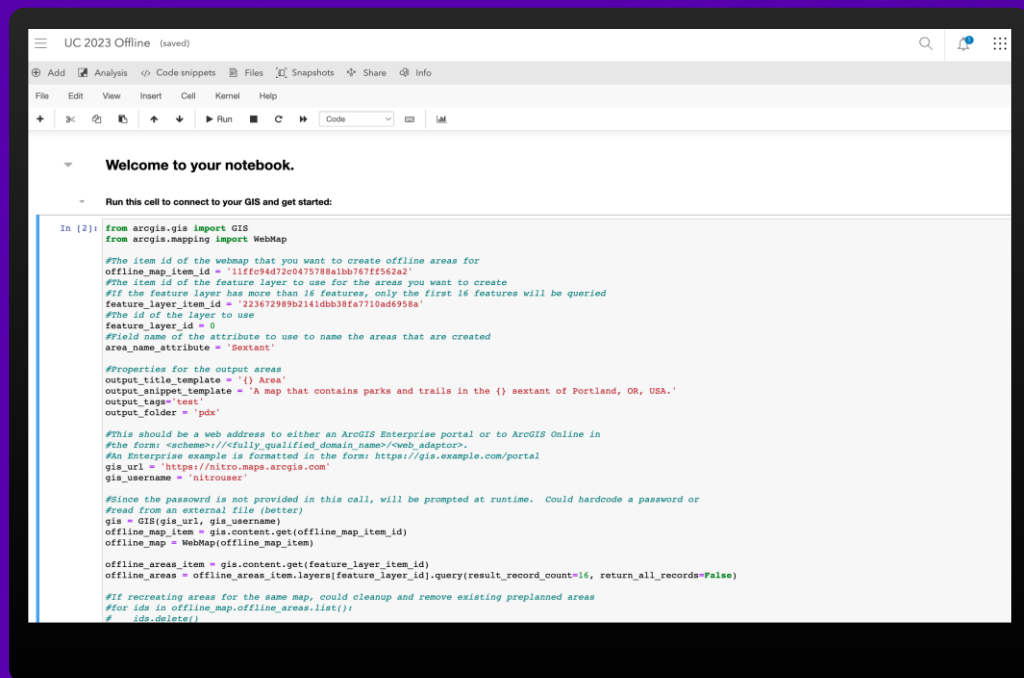
- Create new maps and map layers
- Configure map properties & settings
- Configure your content (layers, tables)
- Manage feature templates
- Design smart forms
- Create geofences
- Share and deploy maps
- Manage offline areas

Requirements

- ArcGIS Online or ArcGIS Enterprise 10.8.1+



Prepare Maps for the Field



```
In [2]: from arcgis.gis import GIS
from arcgis.mapping import WebMap

#The item id of the webmap that you want to create offline areas for
offline_map_item_id = "11fc94d720475788a1bb767f9562a2"
#The item id of the feature layer to use for the areas you want to create
#If the feature layer has more than 16 features, only the first 16 features will be queried
feature_layer_item_id = "223672989b214dbb38fa7710ad6958a"
#The id of the layer to use
feature_layer_id = 0
#Field name of the attribute to use to name the areas that are created
area_name_attribute = "sextant"

#Properties for the output areas
output_title_template = "{} Area"
output_snippet_template = "A map that contains parks and trails in the {} sextant of Portland, OR, USA."
output_tags = "test"
output_folder = "pdx"

#This should be a web address to either an ArcGIS Enterprise portal or to ArcGIS Online in
#the form: <scheme>://<fully_qualified_domain_name><web_adapter>.
#An Enterprise example is formatted in the form: https://gis.example.com/portal
gis_url = "https://nitro.maps.arcgis.com"
gis_username = "nitrouser"

#Since the password is not provided in this call, will be prompted at runtime. Could hardcode a password or
#read from an external file (better)
gis = GIS(gis_url, gis_username)
offline_map_item = gis.content.get(offline_map_item_id)
offline_map = WebMap(offline_map_item)

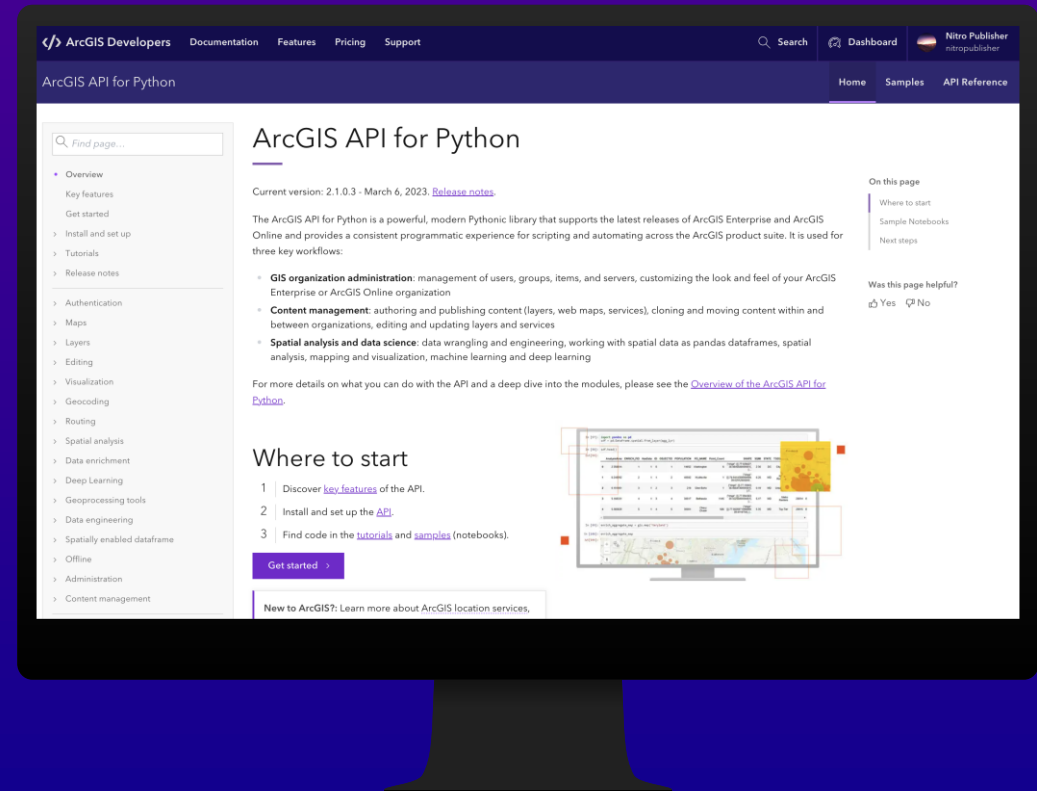
offline_areas_item = gis.content.get(feature_layer_item_id)
offline_areas = offline_areas_item.layers[feature_layer_id].query(result_record_count=16, return_all_records=False)

#If recreating areas for the same map, could cleanup and remove existing preplanned areas
#for ids in offline_map.offline_areas.list():
#    ids.delete()
```

Automating Offline Area Creation with Python

Python Summary

- ArcGIS API for Python
 - GIS organizational administration
 - Content management
 - Spatial analysis and data science
- What Field Maps tasks can be automated?
 - Download attachments locally
 - Data quality testing
 - Configure feature layers
 - Generate reports
 - Manage offline areas
 - Even more!

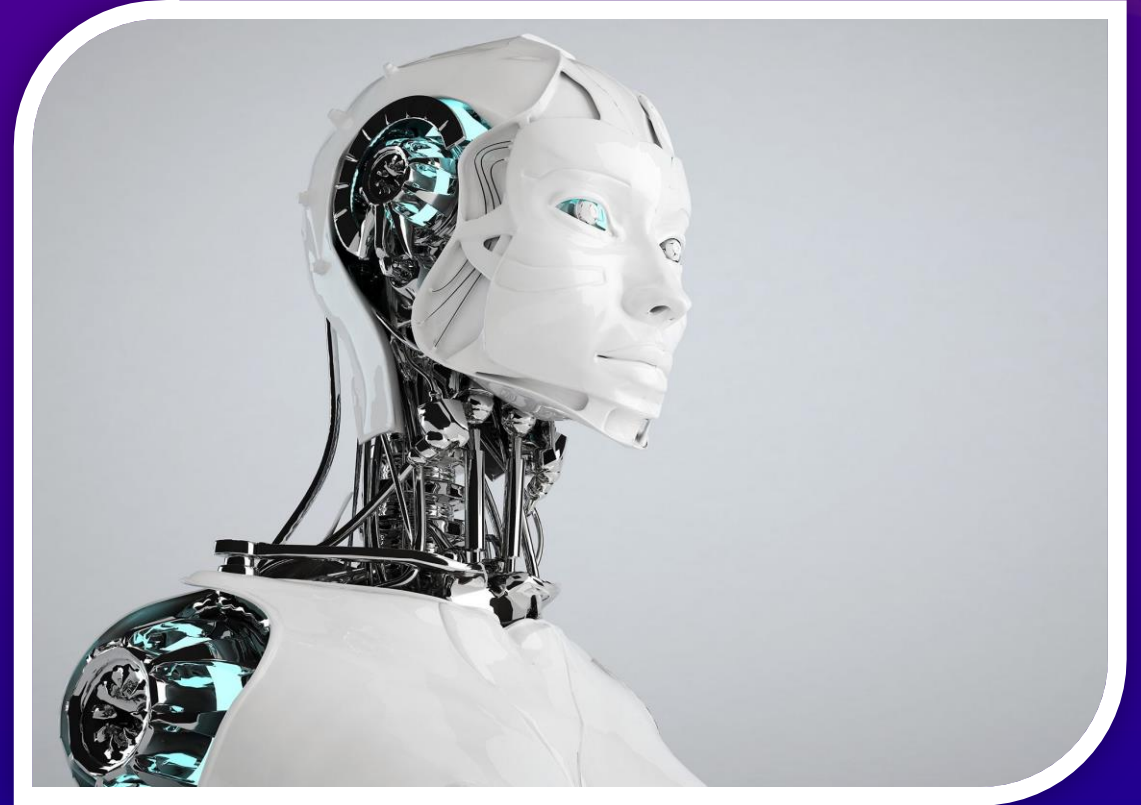


Robotic Process Automation

The background features a dark blue gradient with vibrant, multi-colored light trails in shades of purple, blue, and orange. These trails are curved and dynamic, suggesting motion and technology. In the lower right, a faint, light-colored grid pattern is visible, resembling a city street map or a technical layout.

Robotic Process Automation

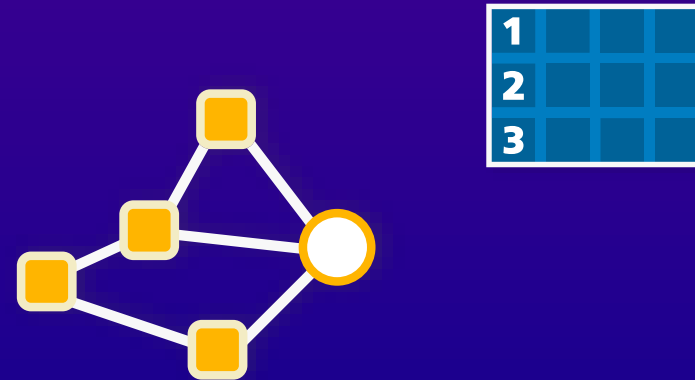
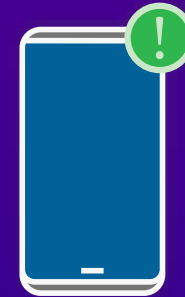
- Low Code/No-Code
- Collection of configurable components
 - Business system
 - Data connections
- Business-defined processes
- Execute on a schedule or trigger



Reduce Human Error Faster Time to Value

Many commonly automated workflows

- Receive an alert when a feature is changed
 - Email, SMS message, Teams alert
- Transfer feature data
 - Google Sheets, Excel, Box, OneDrive, Google Drive
- Reporting
 - Generate custom reports
- Data enrichment
 - Easily use other APIs
 - Image recognition



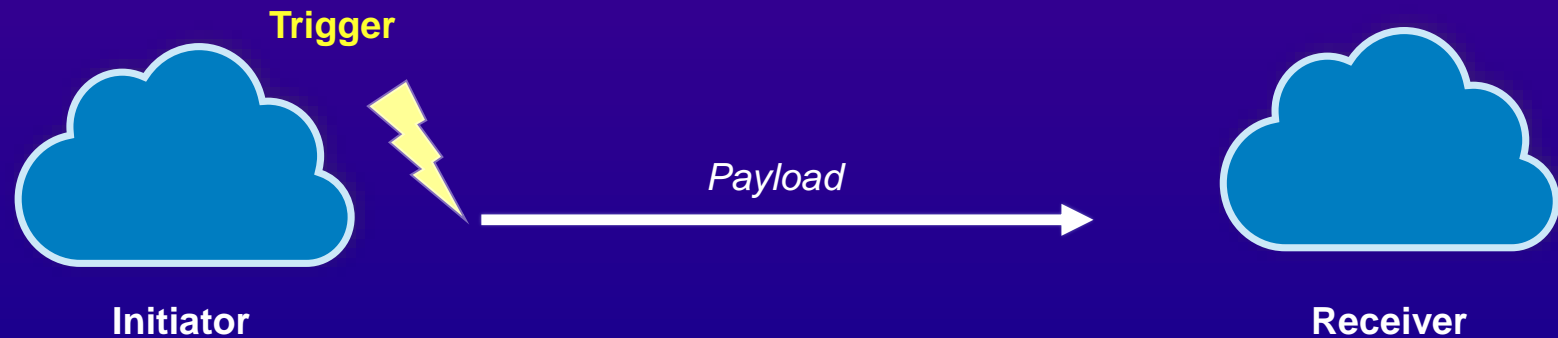
Workflow automation

- Multiple third-party software options
 - Microsoft Power Automate
 - Make (formerly Integromat)
 - Zapier
 - Tray.io
- You can also create your own webhook



Webhooks

- Automated message sent from an app when something happens
- Event trigger
- Payload
- Payload URL
- Receivers



Webhooks in ArcGIS

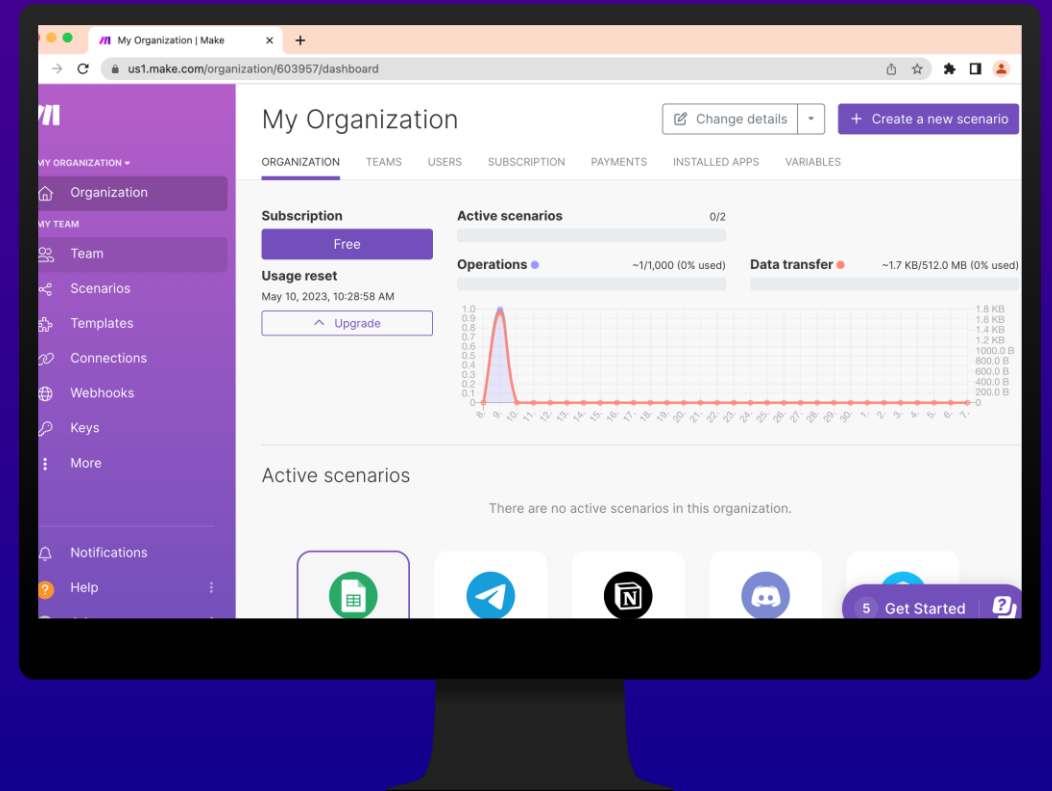
- Webhooks can be used in various parts of ArcGIS
- Feature service
 - Add, update and delete
- Portal for ArcGIS
 - Item, group and role
- Field apps
 - Survey123
 - QuickCapture



What is Make?

formerly Integromat

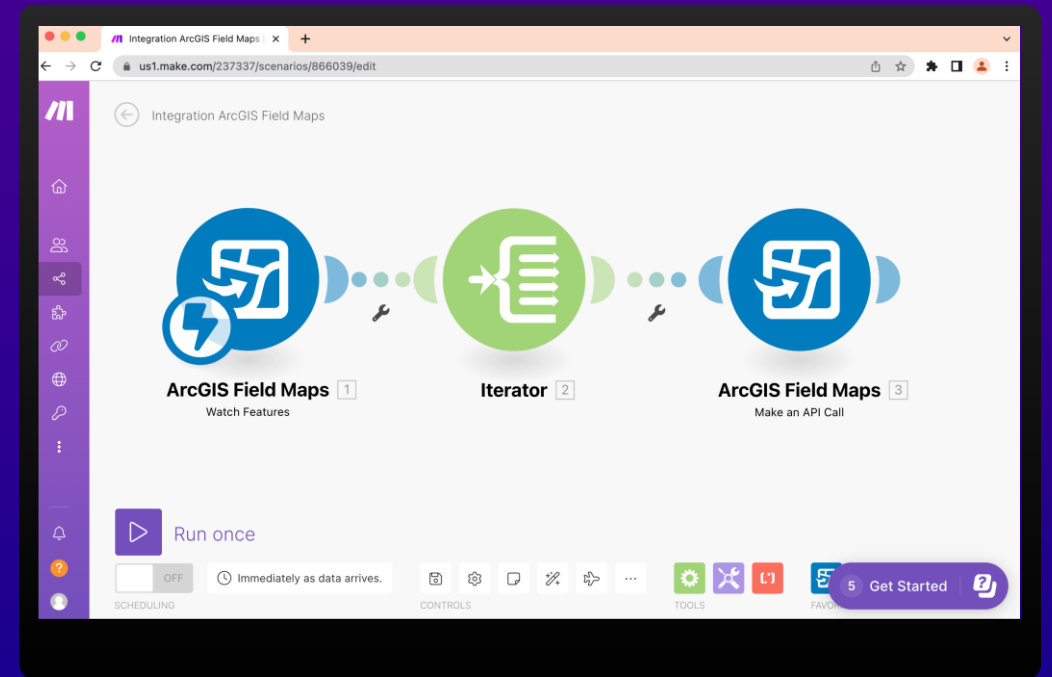
- Visually build scenarios
- Free tier available
- Many integrations and templates
 - Field Maps
 - Survey123
 - QuickCapture



Make

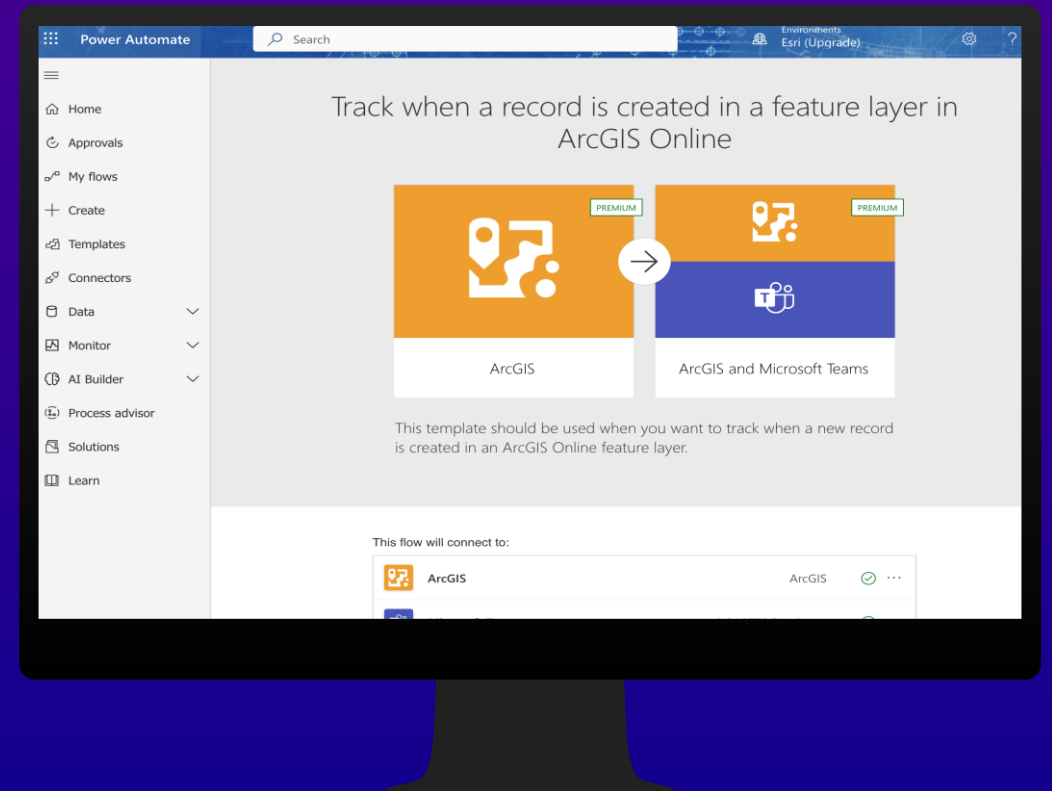
Field Maps Module

- Watch Features
 - Watches for new, edited, or deleted features
- Make an API Call
 - Allows you to make API requests to ArcGIS web services
 - Iterate through processes, query for certain criteria, and post results back to the web service



Microsoft Power Automate

- Low/no-code automation platform
- Subscription service – various pricing options
- Integrates nicely with Microsoft 365
- Hundreds of built-in connectors
- Templates to help you get started
- ArcGIS and Survey123 connectors from Esri



Microsoft Power Automate

ArcGIS Templates

The screenshot shows a search for 'arcgis' in Microsoft Power Automate. The search bar at the top contains 'arcgis' and a search icon. To the right of the search bar is a dropdown menu set to 'Sorted by popularity'. Below the search bar is a navigation bar with tabs: 'All templates' (selected), 'Top picks', 'Shared with me', 'Remote work', 'Approval', 'Button', 'Visio', 'Data collection', 'Email', 'Calendar', and 'Mobile'. The main area displays a grid of 11 template cards, each with a title, author, frequency, and popularity count.

Template Title	Author	Frequency	Popularity Count
Track when a record is created in a feature layer in ArcGIS Online	By Esri	Automated	536
Track when a record is updated in a feature layer in ArcGIS Online	By Esri	Automated	298
Get data from feature layer in ArcGIS Online and export it to a CSV file	By Esri	Instant	243
Create a feature layer in ArcGIS Online from a SharePoint list	By Esri	Instant	130
Sharepoint Locate Workflow	By Esri	Instant	120
Get data from feature layer in ArcGIS Online and export it to JSON	By Esri	Instant	91
Track when a record is deleted in a feature layer in ArcGIS Online	By Esri	Automated	19
Excel Worksheet - Update a row with XY data	By Esri	Instant	17
Point to point routing using a SharePoint list	By Esri	Instant	7
Sharepoint Locate and Enrich Workflow	By Esri	Instant	4

A few more automation ideas...

- ArcGIS Solutions
- Data Pipelines (beta)
- App links
 - Search and edit features
 - Location sharing
 - Embed portal URL
 - QR codes
- Field Maps can be administered with MDMs
 - AppConfig to specify settings
 - Settings include locationProfiles, portalURL



Resources for Workflow Automation

[ArcGIS Python API](#)

Install and setup help, tutorials, documentation, API reference for the ArcGIS Python API.

[ArcGIS Python Github repo](#)

Documentation and samples for ArcGIS API for Python

[Field Maps Scripts](#)

A set of scripts and notebooks to help administer maps and workflows for ArcGIS Field Maps.

[Make](#)

Make documentation for the ArcGIS Field Maps integrations

[Power Automate](#)

Power Platform documentation for the ArcGIS Connector

Resources for Field Maps

Esri Communities

Ask questions, find out about our latest release on the blog and share your ideas on what should be coming next in ArcGIS Field Maps.

ArcGIS Blog

Find out the latest news and capabilities from product experts

Documentation

Find out how to configure Field Maps for your organizations needs

Tutorials

New to Field Maps or want to learn new skills check out the tutorials

Early Adopter Community

Try out the newest capabilities and provide feedback before we release

Field Notes Podcast

Field Notes explores all things Esri Field Operations

Videos

See our capabilities in action



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