Field Operations

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Field Operations | Location-enable all phases of field work

Plan
Use location to assign and coordinate field activities

Navigate
Route to your work using your roads, your GIS data – even while offline

Coordinate
Act on real-time conditions in the field to update worker tasks

Understand
See what's happening around you with maps

Monitor
Know where workers are and see the progress of work in real-time

Capture
Perform data collection and send it back to the office from anywhere

Field Operations | Location-enable all phases of field work

Serving Public Works

ArcGIS apps help you serve public works organizations:

- Maintain an authoritative inventory of public assets
- Reduce the cost of field operations and maintenance activities
- Improve operational awareness and response to a storm, natural disaster, special event, or an incident

Collecting Critical Infrastructure | Improve Accuracy and Currency

Take Maps to the Field:

- Collect Infrastructure data
- Ground-truth As-Built designs
- Inspect existing asset data

Field Edits

Maps

Downtown Washington Street Bridge Replacement Project

Frequently Asked Questions (FAQs)

Why is the bridge being replaced?
The bridge foundation was constructed in 1928, widened in the 1970s and renovated in 2004. The bridge components have reached the end of their effective service life. The bridge has a special weight load limit of 15 tons which prohibits use of the bridge by nearly all trucks. Replacing the bridge also provides the opportunity to improve the existing roadway geometrics, the functionality of the Riverwalk and overall aesthetics.

Is the existing bridge safe to use now?
Yes, the existing bridge is inspected regularly to confirm public safety. However, there is a 15-ton weight limit posted for this bridge in order to reduce damage from heavy loads like trucks.

How will the community be involved?
Input from the community is very important to make this project successful. The City hosted a

EMAIL UPDATES

Receive news and updates about this project (and a variety of other topics) right in your email inbox, free of charge!

LEARN MORE

Collector for ArcGIS

Accurate data collection made easy

Capture
Perform data collection and send it back to the office from anywhere

Efficient data collection

Works anywhere, anytime

High accuracy location capture

Get it from Microsoft

Download on the App Store

GET IT ON Google Play

Collector for ArcGIS

Accurate data collection made easy

Capture
Perform data collection and send it back to the office from anywhere

Q2 2019
- Parity release bringing Collector in line with Collector Classic
- Referenced basemaps, using the Files app, new transformations, more…

Q4 2019
- Snapping
- Bulk Attribute Update
- Parcel Construction
- Locate
- PKI support

Q1 2020
- Introducing support for Smart Forms
- Android support for new generation of Collector
- Simplifying field deployments
- Utility Network support

Improve Project Delivery

Manage project work:

- Invite sub-contractors to your ArcGIS organization
- Organize tasks
- Dispatch work
- Complete site surveys

Workforce for ArcGIS

Plan and coordinate field work

Plan
Use location to assign and coordinate field activities

Plan and coordinate field work

Use location awareness to improve efficiency

Receive & manage field assignments

Download on the App Store

GET IT ON Google Play

Workforce for ArcGIS

Plan and coordinate field work

Plan
Use location to assign and coordinate field activities

Q1 2020 release including:

- Support for offline workflows
- New, improved UX
- Ability to display local tracks from Tracker

V.Next:

- Push notifications
- Pick up work
- Sequencing work

DEMO: Workforce & Collector

Micah Callough

ArcGIS QuickCapture

Rapid data collection

Capture
Perform data collection and send it back to the office from anywhere

A “big button” mobile app

Simplest way to capture field observations

At-speed data collection workflows

Windows

Download on the App Store

GET IT ON Google Play

Synchronized release across all supported platforms
iOS, Android, Windows
Continuous Early Adopter Program /GeoNet
Updates every 3-4 weeks for QuickCapture Designer

June | September | … (Before 2020) | 2020

1.0

- Mobile app. English only.
- Designer Beta. English only.

1.1, 1.2

- Mobile app all languages.
- Designer All Languages.
- URL scheme

Before end of 2020

- Web Maps, mmpks, VTPKs
- Designer Enhancements (UserInputs, ContinuousMode,…)

Q1 2020

- Side-by-side view for tablets
- Voice capture
- Auto-pilot mode

DEMO: Quick Capture

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Survey123 for ArcGIS

Location-aware smart forms

Capture
Perform data collection and send it back to the office from anywhere

Sophisticated smart form capabilities

Simple data collection experience

Web & Native

Windows

Download on the App Store

GET IT ON Google Play

Updates every 8-10 weeks
Synchronized release across all supported platforms
iOS, Android, Windows, Mac, Linux, Web
Continuous Early Adopter Program /GeoNet

September … (Before 2020) 2020

3.6

- Lines and Polygons
- Photo Watermarks
- Feature Reports

Before end of 2020

- Feature Report PDF output

Q1 2020

- Web Maps, mmpks, VTPKs
- On-Prem Rest API/Website setup
- Extensibility framework
- Project Update Notifications

Improving Operational Awareness

Monitor Field Work:

- Monitor field operations in real-time
- Create Summary Stakeholder views

View
Field Updates

DEMO
Survey123

Tracker for ArcGIS

Know what happens In the field

Monitor
Know where workers are and see the progress of work in real-time

Share your location

Know where everyone is

Detect Patterns

ANDROID APP ON Google play

Available on the App Store

Tracker for ArcGIS

Key Components

Monitor
Know where workers are and see the progress of work in real-time

Tracker Mobile app (iOS, Android)

- Simple, schedule-driven tracking experience
- Supports offline use
- Optimized for low battery consumption
- Requires an premium add-on license

Track Viewer Web app

- Display and manage users and their location history
- See only the users that you have access to (Feature Service views, OBAC)

New Organizational Capability

- Enable location tracking in their organization
- Single service for storing and managing location tracks
- Requires the **spatiotemporal big data store**

ANDROID APP ON Google play

Available on the App Store

ArcGIS in the Field

Critical Infrastructure

ArcGIS Online → Collector

Enabling Project Delivery

Workforce → Survey123 QuickCapture

Improve Operational Awareness

Operations Dashboard

AutoCAD Civil3D InfraWorks

esri

THE SCIENCE OF WHERE

Drone Collections

Drone Collection new!

Complete drone management solution

Capture

Perform drone based data collection and ensure data fits lifecycle

Flight Planning

Data Processing

Data Collaboration

3DR SITE SCAN

esri THE SCIENCE OF WHERE

The Science of Where

Integrates Dynamic Data About Everything

A Comprehensive View of the Imagery Platform

Seamless integration and analysis of imagery with all spatial data

Image Management

Visualization

Analysis

Map Production

Drone2Map for ArcGIS

PC Solution for Processing Drone Imagery

- Transforms imagery from drones into geospatial information
- Targeted toward the single-use drone operator
- Annual Subscription
- Limited scalability
- Requires powerful CPU for intensive 3D processing

Advanced Requirements

Flight Management

- Ensure proper collection of imagery for the type of mission
- Project-based
- Uses ArcGIS maps for flight planning

Elastic Processing (Cloud)

- System automatically scales to support workload
- Simplified workflows
- Transparent photogrammetry (System is the photogrammetrist, not the user)
- No system configuration requirements

3D Meshes & Modeling

- Structure from Motion
- DSMs & DTMs
- Creates high density point clouds
- Creates accurate and detailed 3D mesh products

ArcGIS Compatibility

- Integrated with ArcGIS
- Produces results that match Drone2Map
- Shared cloud storage

A Complete UAS Solution

ArcGIS Drone Collections

Drone Mapping

- *Drone Tasking App*
- *PC Processing*
- *Advanced 3D Visualization*
- *Update Feature Layers*
- *Web Maps & Dashboards*

Drone Mapping & Analysis

- *Drone Tasking App*
- *PC Processing*
- *Imagery Analysis*
- *Advanced 3D Modeling*
- *Update Feature Layers*
- *Web Maps & Dashboards*

Online Drone Mapping

- *Flight Management Software*
- *Multi-User Configuration*
- *Unlimited Elastic Processing*
- *Advanced 3D Visualization*
- *Update Feature Layers*
- *Web Maps & Dashboards*

Enterprise Drone Mapping & Analysis

- *Flight Management Software*
- *Multi-User Configuration*
- *Unlimited Elastic Processing*
- *Robust Image Management*
- *Raster Analytics & Analysis*
- *Advanced 3D Modeling*
- *Update Feature Layers*
- *Web Maps & Dashboards*

Intelligent Flight Modes

Map areas

Area Survey

Most efficient way to map an area. Camera is pointed nadir and the UAS flies in a “lawnmower” pattern.

Crosshatch Survey

Capture an area with vertical features by flying a crosshatch pattern. The camera is pointed at an oblique angle and the UAS flies a pattern that acquires all four sides of any vertical features.

Model objects

Perimeter Scan

Fly around a vertical feature at different elevations. Perfect for 3D modeling or automated inspection.

Vertical Scan

Fly up the vertical (or near vertical) face of a feature such as a dam, bridge, or cliff.

Share updates

Panorama

Create an interactive 360 photo automatically. This photo can be viewed on the iPad or the web browser.

Inspect

Take control of the UAS and capture images and video manually.

Complete UAS Program Solution- Optional Yuneec Drone

Yuneec
H520-G
Drone

The H520-G is built for inspection, law enforcement, government projects, security, construction, surveying, and mapping applications

The H520-G is a hexacopter that has been developed for commercial use:

- Long flight times- 25 min w/E90 camera
- Built for inspections- six-rotor systems that allow for stable, precise flight
- Exclusive flight speed control offers slowest speed above stall flight for maximum precision in challenging environments
- Landing gear retracts out of the way to give you a full, 360° view
- Hot-swap payload options
- Standard E90 camera provides 4K/2K/HD video or 20Mp still images
- Final assembly in the U.S. under TAA guidelines, and able to meet strict Government standards regarding security

Drone Image Products

2D Image Maps (Ortho Mosaics):

- Map Accurate Image Maps
- Seamless stitched for base mapping
- Digital Surface Models

3D Elevation Products:

- Point Cloud (LAS)
- 3D Mesh Models
- 3D Site Models (PDF)

Oblique Inspection Photos:

- Non-Distorted but Map Accurate
- Can provide basic 3D Measurements

Typical Information Products

Base Mapping

Orthomosaics (.TIFF & .TPK)

Digital Surface Model (DSM)

Digital Terrain Models (DTM)

Contours

Site Modeling

Point Cloud (Imagery derived)

3D Mesh

Scene Layer Package (.SLPK)

3D GeoPDF

Inspect & Measure

Annotate Images

Volumetric

Inspection Viewer

3D Measure*

THE COMPLETE WORKFLOW

3DR is an Autodesk portfolio company that makes Site Scan—the leading drone data platform for AEC professionals. With Site Scan, you can capture unlimited amounts of data on-site, then quickly process to the cloud on a private, secure platform where you can store, manage, and analyze results within hours. and more.

Plan & Design

Use up-to-date PDF overlays from BIM 360 to accurately plan flights.

Capture

View overlays from BIM 360 in the field to ensure that everything is being captured correctly the first time.

Process

Processed to cloud using trusted leading softwares, Pix4D & Autodesk ReCap Pro

Store

Unlimited and secure storage in 3DR Site Scan private cloud, hosted on AWS US-based servers

Manage & Analyze

Use Site Scan to measure features or calculate volumes. Push and pull data products to and from Site Scan to your Autodesk BIM 360 Organization.

Export & Collaborate

Site Scan Access Licenses allow users to share project data across teams. Export data files to use in your preferred design software such as Navisworks, Civil 3D, or Infraworks.

3DR Site Scan Flight Planning

DEMO: ArcGIS Drone Collection - 3DR Site Scan

Upload Raw Imagery to the Cloud as a Project

The processing system dynamically scales based on workload

Improved 3D Mesh Products for Visualization

System automatically creates and publishes tile cache and scene layer packages for ArcGIS Online

ArcGIS Drone Collection- *3D Mesh*

Learn More

- Contact your Account Manager to schedule a demonstration
- Visit: Esri Imagery and Remote Sensing site
  - https://www.esri.com/en-us/arcgis/products/imagery-remote-sensing/overview
- Visit: 3DR Site Scan
  - https://3dr.com/products/site-scan-platform-2/
- Imagery Contact:
  - Caroline Tyra, Global Imagery and Remote Sensing
  - ctyra@esri.com

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