Field Data Collection, Drones, and Monitoring Operations
Exploration Team

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Context

• Goals

- Check the inventory of trees for the Jardin Botanique
- Learn how to integrate desktop, web, and mobile GIS applications
- Go outside and enjoy the beautiful day!
Preparation

• Basemap generation (Drone2Map)

• Field work monitoring dashboard (Operations Dashboard)

• Tree inventory field application (Collector for ArcGIS)
Drone2Map for ArcGIS
Drone Imagery Processing

- Desktop application
- Turn Drone imagery into ArcGIS
Drone Imagery processing

- Create 2D and 3D products

Orthomosaics

Digital Surface Models DSM & DTM

Point Clouds & 3D Meshes

Smart Inspection & 3D PDF
Plan your flight for the right product type

- **2D Imagery products**
  - Side overlap
  - Forward overlap

- **Inspection and 3D products**
Processing

- Geolocated images
- Keypoints and matches
- GCP (Optional)
- Clip area (Optional)
GIS ready products

- Open in ArcGIS Pro
- Share
Share Drone Imagery
Orthomosaic

Jardin Botanique
Flight specifications

- Jardin Botanique area
- 62,000 m²
- Drone type
  - Albris, SenseFly
  - Quadcopter
- Pilot
  - Joshua Lyons, Human Right’s Watch
- Altitude
  - 55m
- Flight date
  - 14th April 2018
Create a project
Preview the images and the flight path
Processing options
Output result

- Processing time: 1 hour
- 16-core machine – 128GB RAM

- High resolution orthomosaic
- 2.8cm resolution
Operations Dashboard
Operations Dashboard for ArcGIS | Overview

- Included within ArcGIS Online organization
- Works with new *Dashboard* item type
  - Author and view in web browser
- Offers many **ready-to-use data visualizations**
- Enables display of key performance indicators (KPIs)
- Interactive dashboard user experience
  - Actions and selectors
- Re-engineered and redesigned new app
Dashboards

- Can be broadly categorized into 2 general types
  1. Interactive → End user interacts with the dashboard to obtain more info
     - Can apply actions and selectors for an interactive UE
     - E.g., Click one element, affects changes in other element(s)
  2. Unattended display → Designed to provide updates, no interactivity with end user
     - Typically consume data sources that update, elements would reflect updates
     - E.g., Real-time data, IoT
Getting Started with Operations Dashboard

• Several ways to open the app
  1. App Launcher
  2. Map Viewer
     - Share > Create app > Operations Dashboard
  3. Content page
     - Create > App > Operations Dashboard
  4. Dashboard item page
Collector for ArcGIS
Field Data Collection
Collector for ArcGIS

- Prepare your data
  - Documentation
- Webmap Settings & Capabilities
  - Sample
    - Layer Template
    - Documentation
- Track where Collectors go in the field
  - Documentation
- Extra GPS information

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