



Introducing the ENVI Ecosystem: Making the Benefits of Imagery Accessible

David Burrridge & Zach Norman

ENVIS
GEOSPATIAL

BEFORE WE BEGIN



The webinar is being recorded!

- Slides & on-demand version of the webinar will be available tomorrow morning



Questions?

- Please post any questions in the Questions box

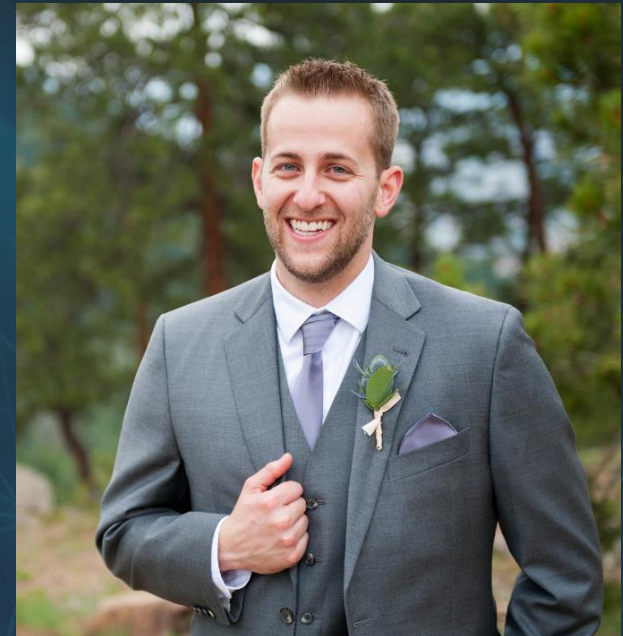
TODAY'S SPEAKERS



David Burridge

Director of Enterprise Solutions

david.burridge@nv5.com



Zach Norman

Product Manager

zachary.norman@nv5.com

AGENDA



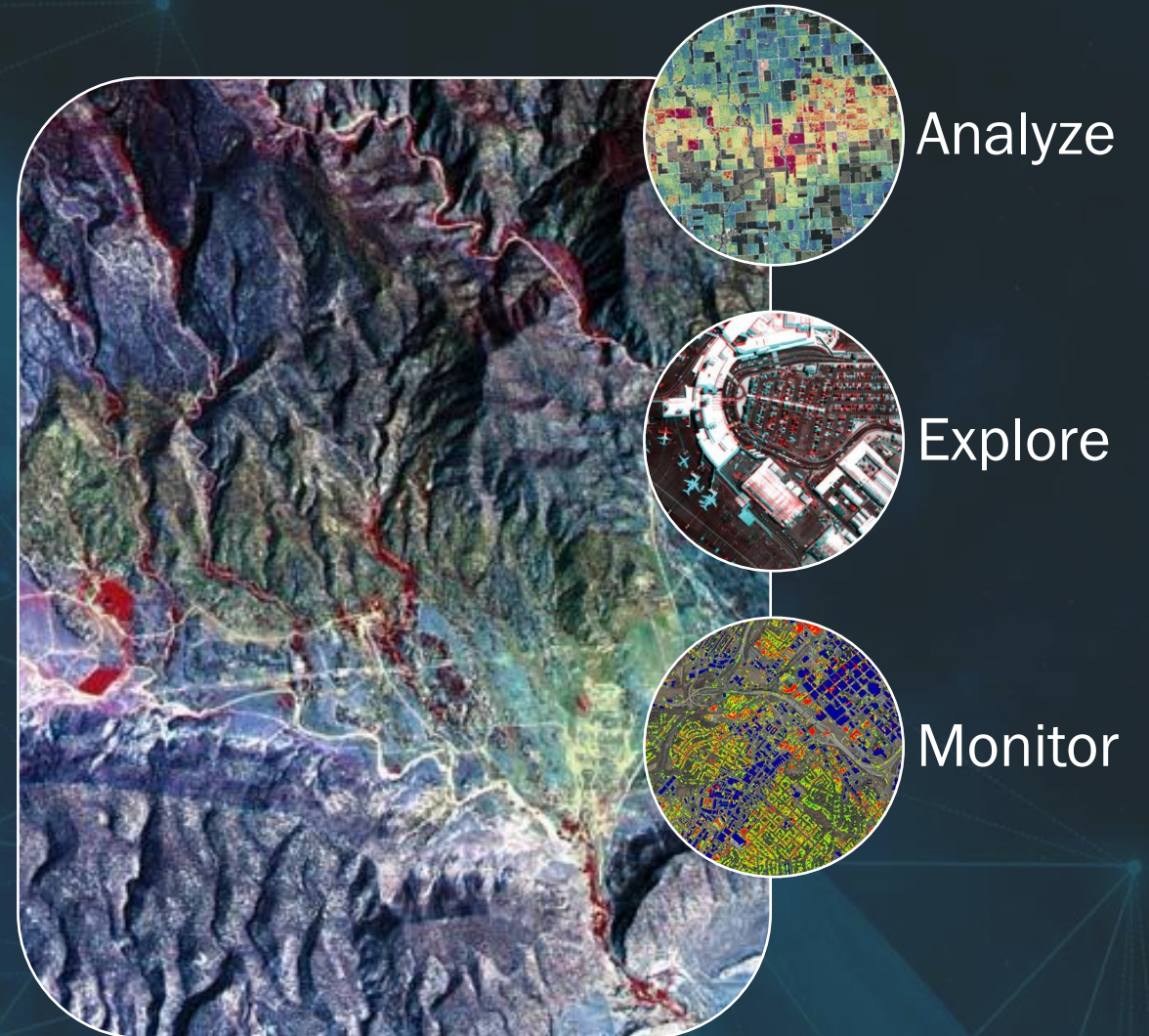
Today's Scenario

What is the ENVI Ecosystem?

The ENVI Ecosystem for Disaster Response

Summary

Q & A



ENVI ECOSYSTEM IN ACTION: DISASTER RESPONSE



The ENVI Ecosystem allows organizations to work together to accomplish common goals, such as monitoring damage extent, providing humanitarian relief, and enabling leaders to make informed decisions



WHAT IS THE ENVI ECOSYSTEM?

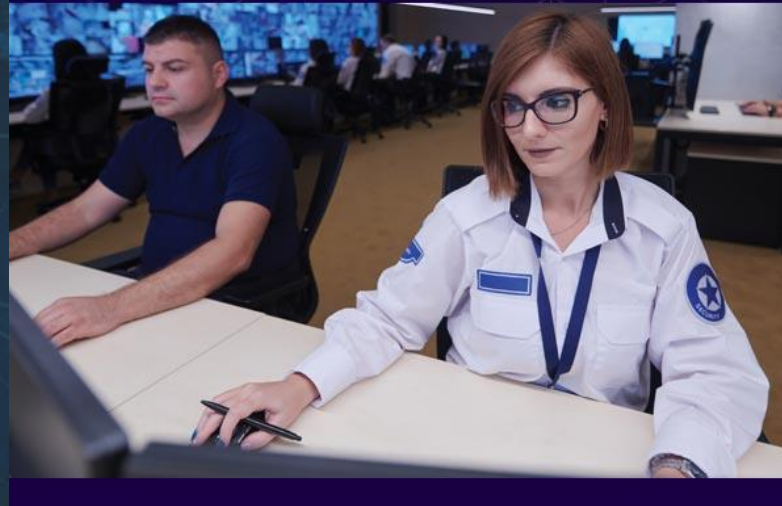


The ENVI Ecosystem is a family of imagery solutions that's optimized to deliver value where it counts and enable collaboration across your organization

Imagery Experts



Analysts



Decision Makers



ENVI ECOSYSTEM: CAPABILITIES



Data Management



Data Preparation



Multi Modality
Visualization



Processing &
Exploitation



Analytics &
Automation

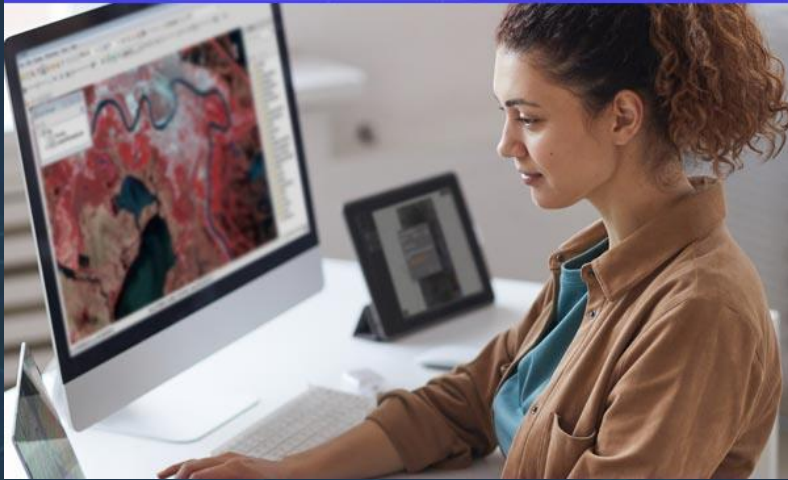


THE ENVI ECOSYSTEM PRODUCTS



The ENVI Ecosystem is comprised of three, interoperable products that come together to maximize the value you get from imagery

ENVI®



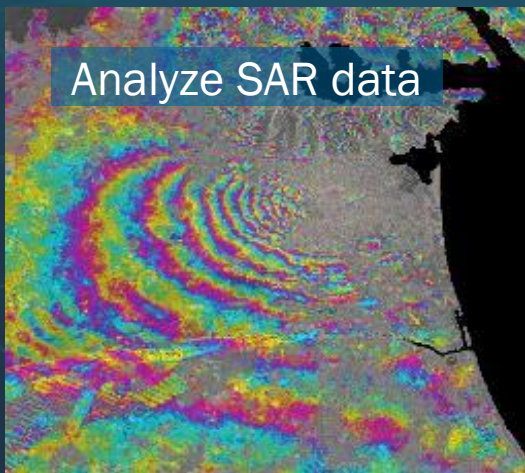
ENVI® Connect




ENVI® Inform



THE ENVI ECOSYSTEM: ENVI



ENVI®



Create. Develop. Analyze.

Use ENVI® to Extract Timely, Reliable, and Accurate Information From Geospatial Data.



Generate reports

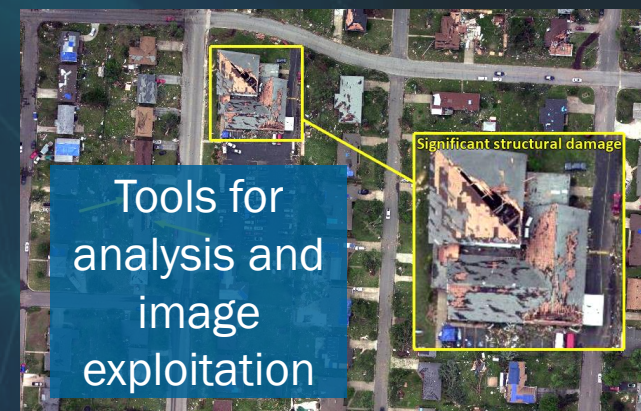
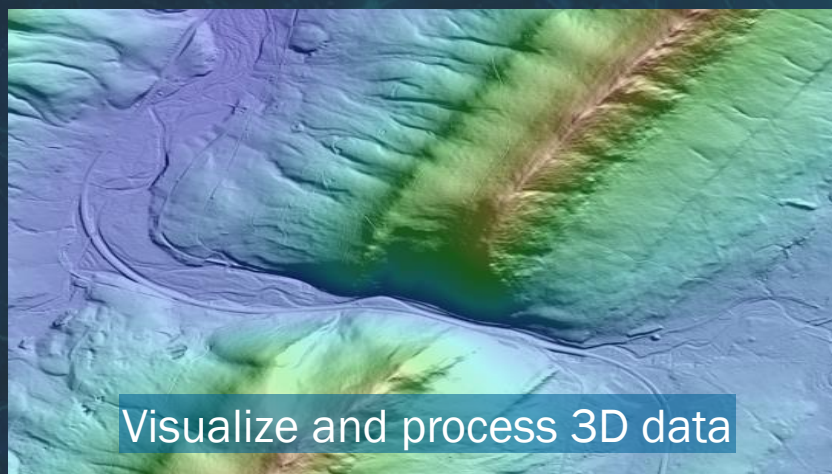
Stories from Above

Glacial runoff in Greenland.
Mosaic of two Sentinel-2 scenes captured in the summer months.

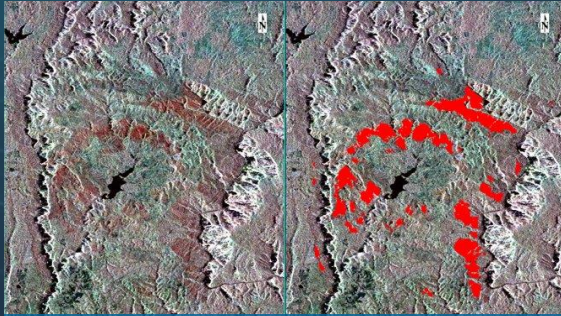


Center: 66.851978°N - 50.896756°W

Source: Placeholder Copyright: Placeholder



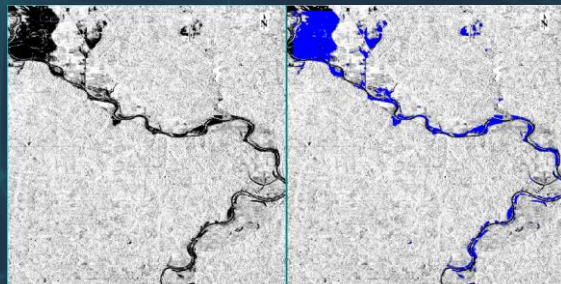
ENVI FOR DISASTER RESPONSE



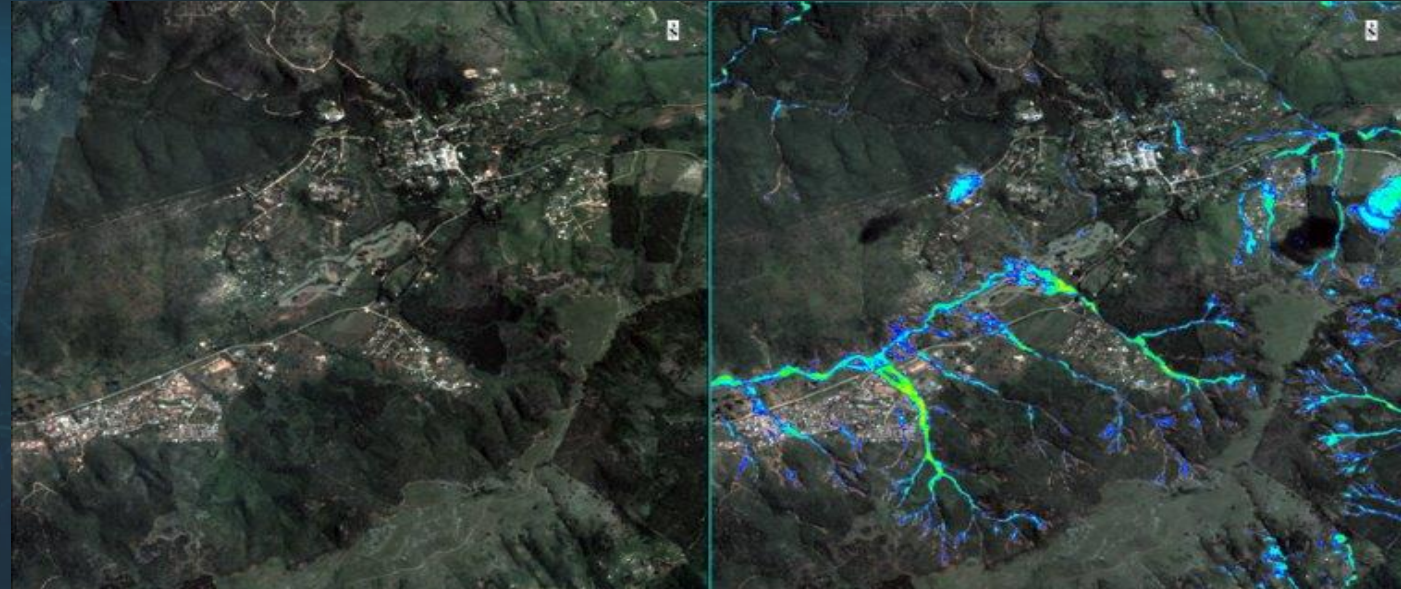
Severe burn using SAR



Building damage



Flood detection using SAR



Landslides after heavy rain

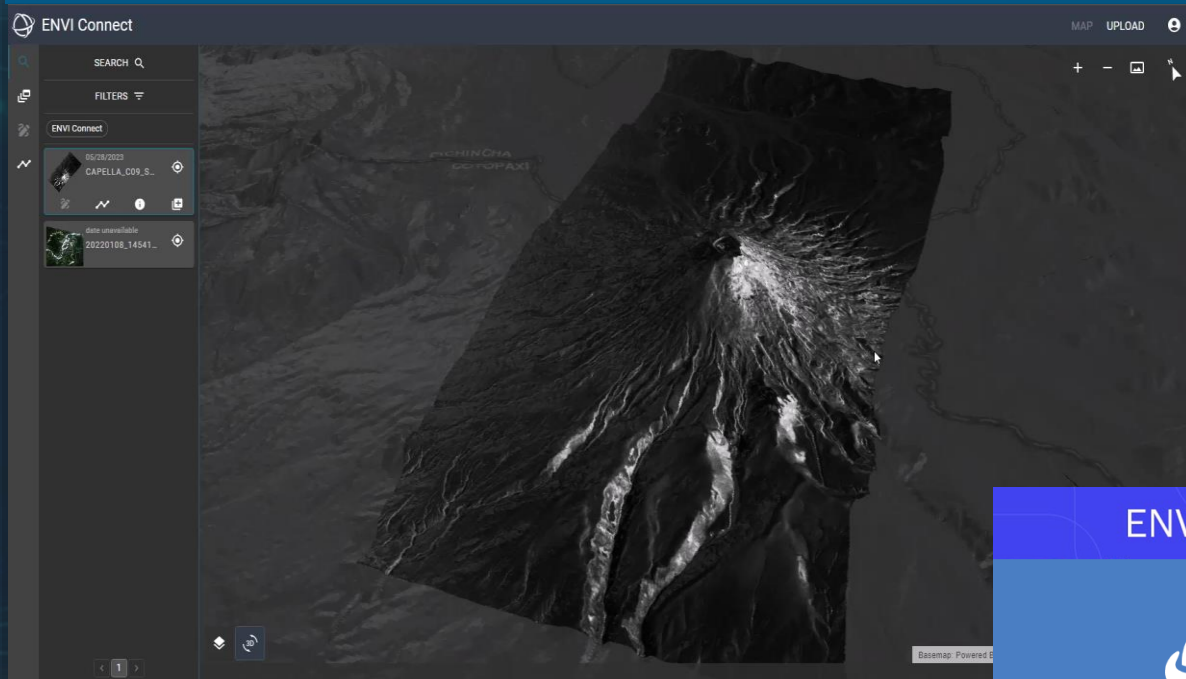


Tornado path from building damage

THE ENVI ECOSYSTEM: ENVI CONNECT



Native support for MSI, HSI, PAN, SAR data with 2D and 3D visualizations



Generate products to share your findings



ENVI® Connect



View. Collaborate. Solve

ENVI® Connect Is a Web Application That Enables Users To Easily Work Together and Solve Geospatial Problems.

ENVI CONNECT FOR DISASTER RESPONSE

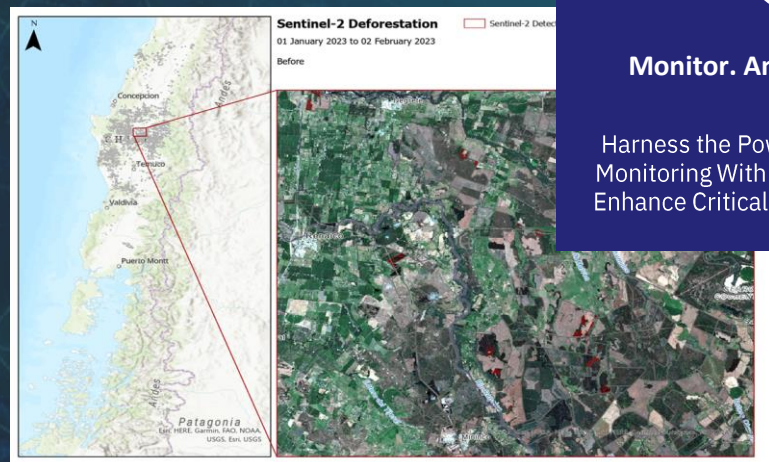
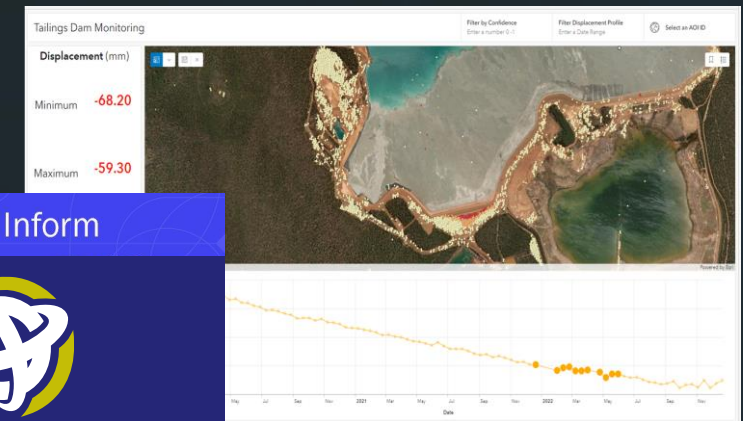
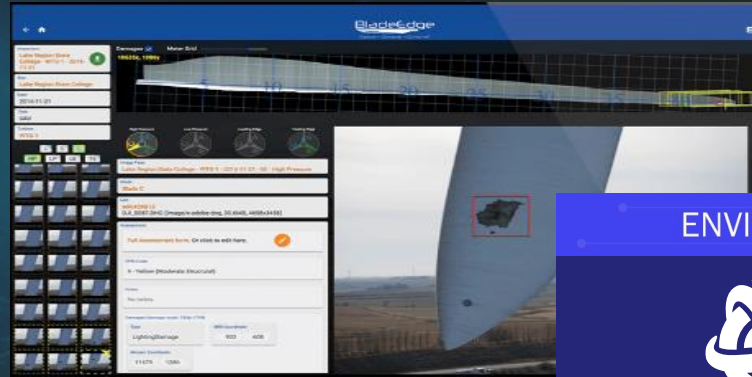


The screenshot displays the ENVI Connect software interface. The top left shows the 'ENVI Connect' logo and 'Technical Preview' status. The top right has 'MAP' and 'UPLOAD' buttons. The left sidebar contains an 'ANNOTATIONS' panel with a search icon, a list of annotations (one with 'date unavailable'), and icons for adding, pointing, and deleting. Below this are sections for 'GENERAL' (Text, Point, Polygon), 'MEASUREMENT' (Total: 0, Linear, Area), and 'FEATURE COUNTING' (Total: 71, Building Damage). The main map area shows an aerial view of a residential area with several annotations: a pink box labeled 'Destroyed' over a damaged building, and several yellow boxes labeled 'Blue Tarps' over various structures. The bottom of the interface features a navigation bar with four colored arrows pointing right, labeled 'Data Discovery', 'Visualization', 'Image Analysis', and 'Collaboration'. The bottom right corner shows coordinates: 'Lat: 30.16482739, Lon: -93.38210943 WGS84'.

THE ENVI ECOSYSTEM: ENVI INFORM



- Automated processing at scale
- Cloud hosted platform
- Deploy ENVI workflows
- Automated data discovery
- Publishing to multiple destinations
 - Shared cloud file storage
 - Reports
 - Online dashboards
 - GIS (e.g., ArcGIS)



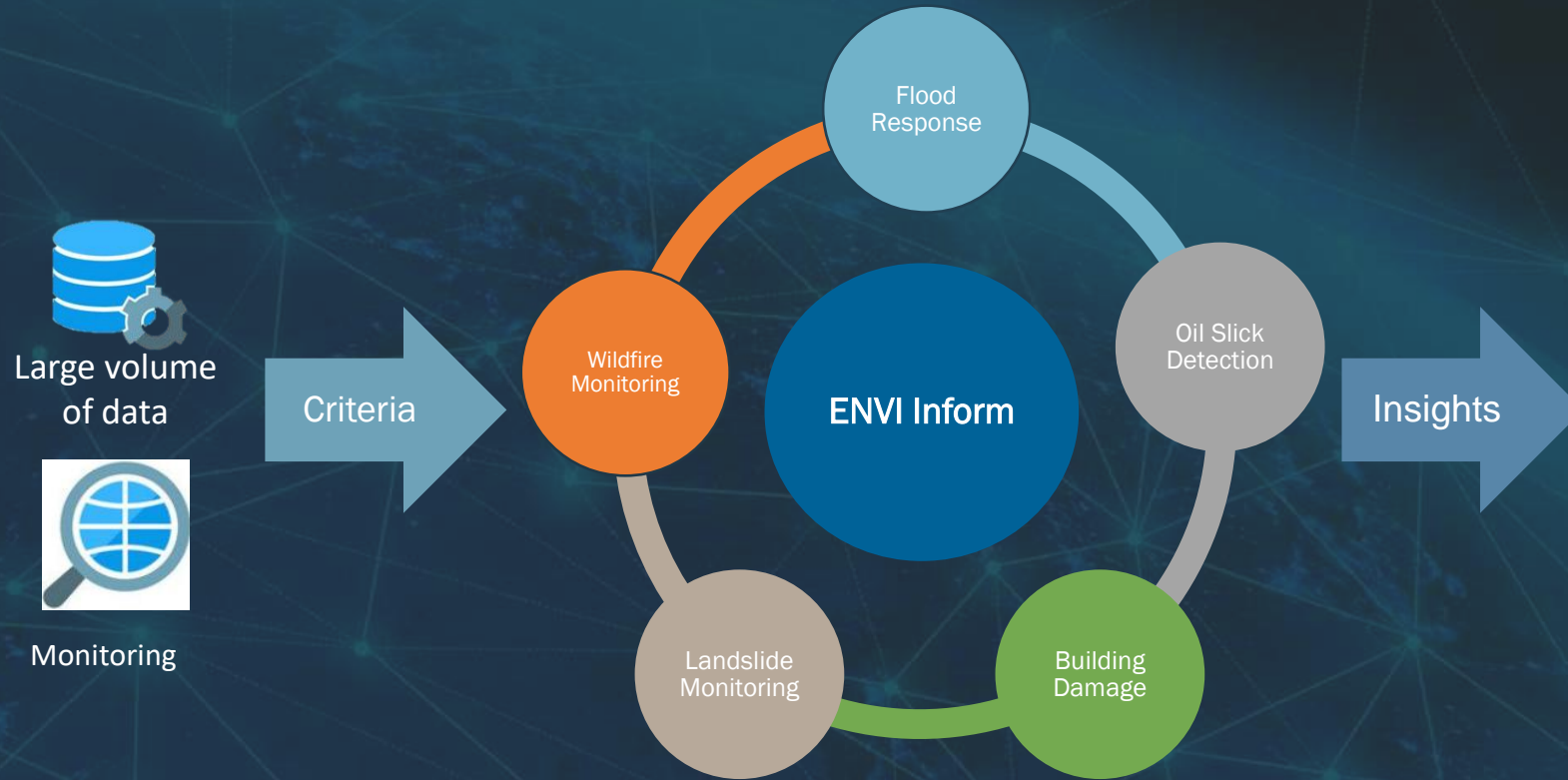
ENVI® Inform

Monitor. Answer. Scale.

Harness the Power of Persistent Monitoring With ENVI® Inform to Enhance Critical Decision Making.



ENVI INFORM FOR DISASTER RESPONSE



Customer Deliverables

Customer Deliverables include:

- A monitor displaying a map with statistics: Total 239.2k Damage Detections and In View 39.4k Buildings Damaged.
- External system; for example, ArcGIS Online.
- Report (represented by a document icon with a bar chart and pie chart).
- Shape file or other data in S3 (represented by a cloud icon with a database cylinder).

TODAY'S SCENARIO



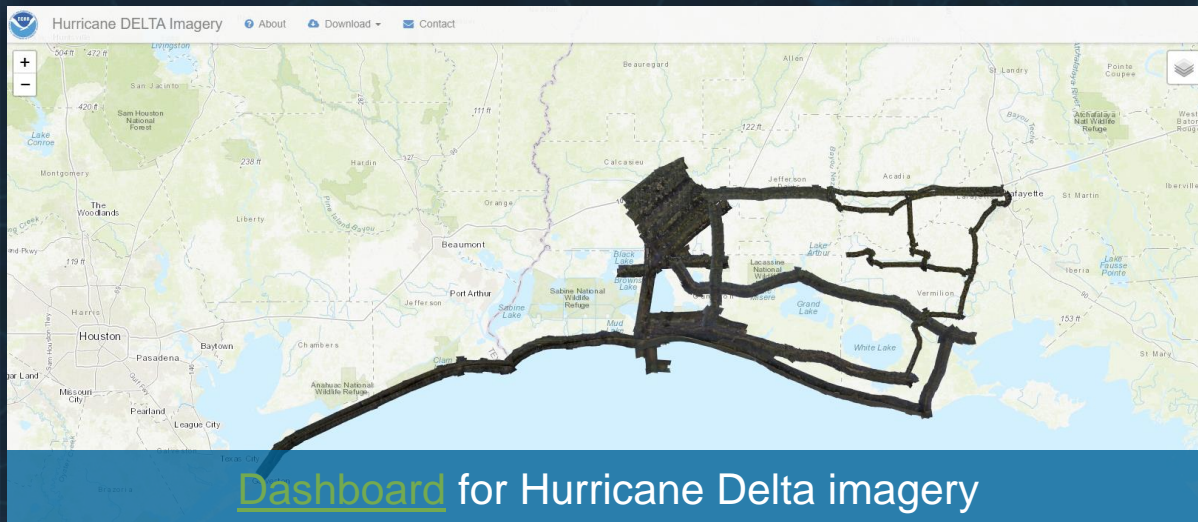
- You're an analyst who has been tasked with identifying damaged buildings after a major hurricane
- You have thousands of images to look at in order to determine the most severely hit areas
- You need to create a map from your findings and deliver those to your superiors to help direct where time-critical aid is sent



BACKGROUND: HURRICANE DELTA



- October 4-10, 2020
- \$3.09 billion in damage
- After the hurricane, data was collected
 - Made available as an OGC service
 - ~1200 image tiles in total



Hurricane Delta as it made landfall over Louisiana

09 Oct 2020 22:01Z NOAA/NESDIS/STAR GOES-East ABI GEOCOLOR

ENVI ECOSYSTEM: DISASTER RESPONSE WORKFLOW



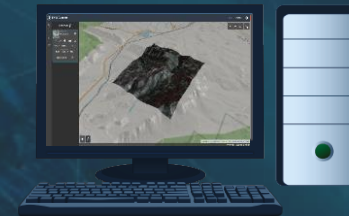
1. Imagery Expert creates operational workflows to support disaster response



ENVI Inform



ENVI Connect



2. Hurricane event

3. Automatic imagery discovery and creation of building damage layer

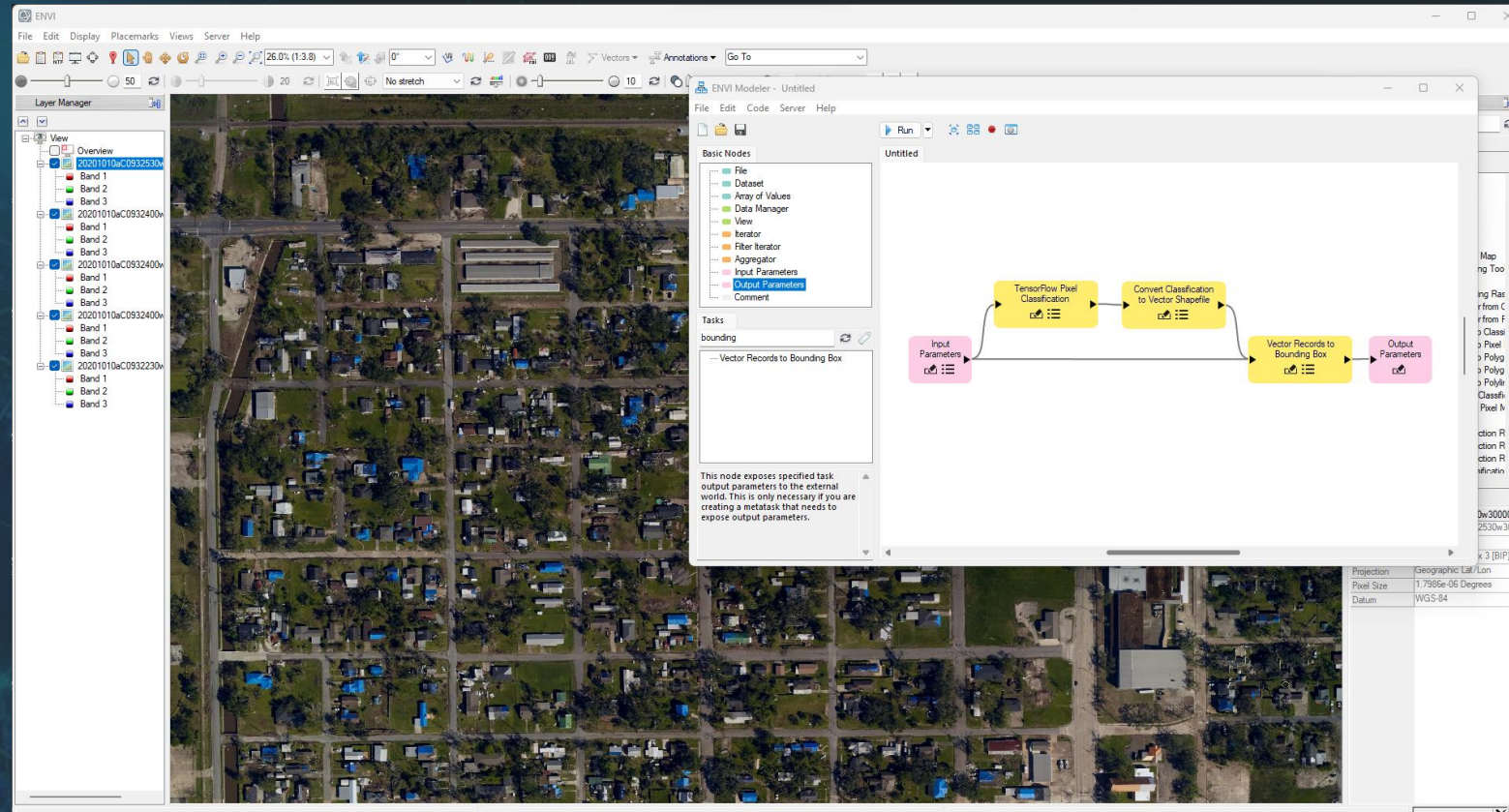
4. Analysts review imagery and building damage to create situation reports

5. Reporting used to inform response

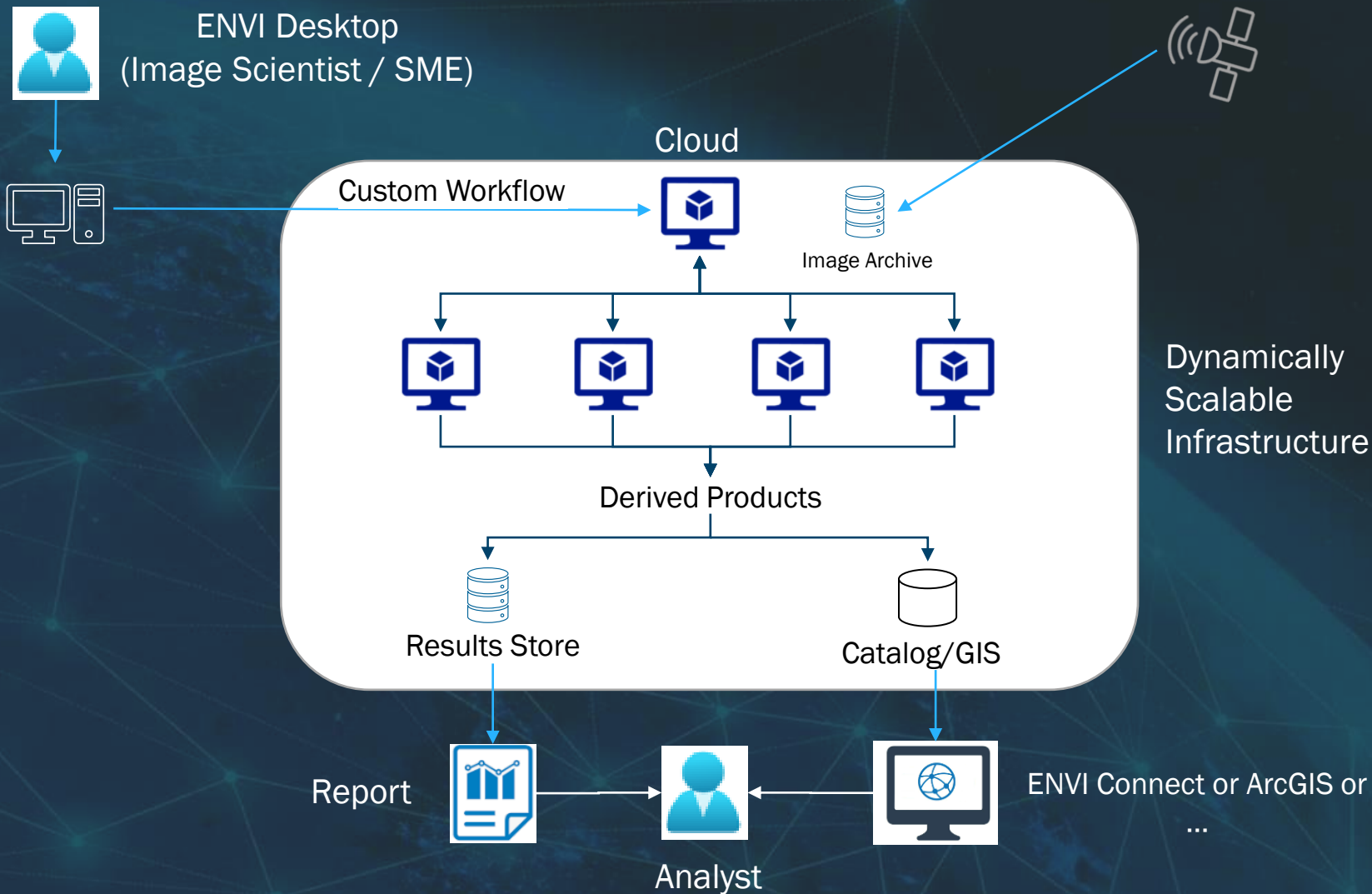
1. BUILDING DAMAGE ASSESSMENT USING ENVI



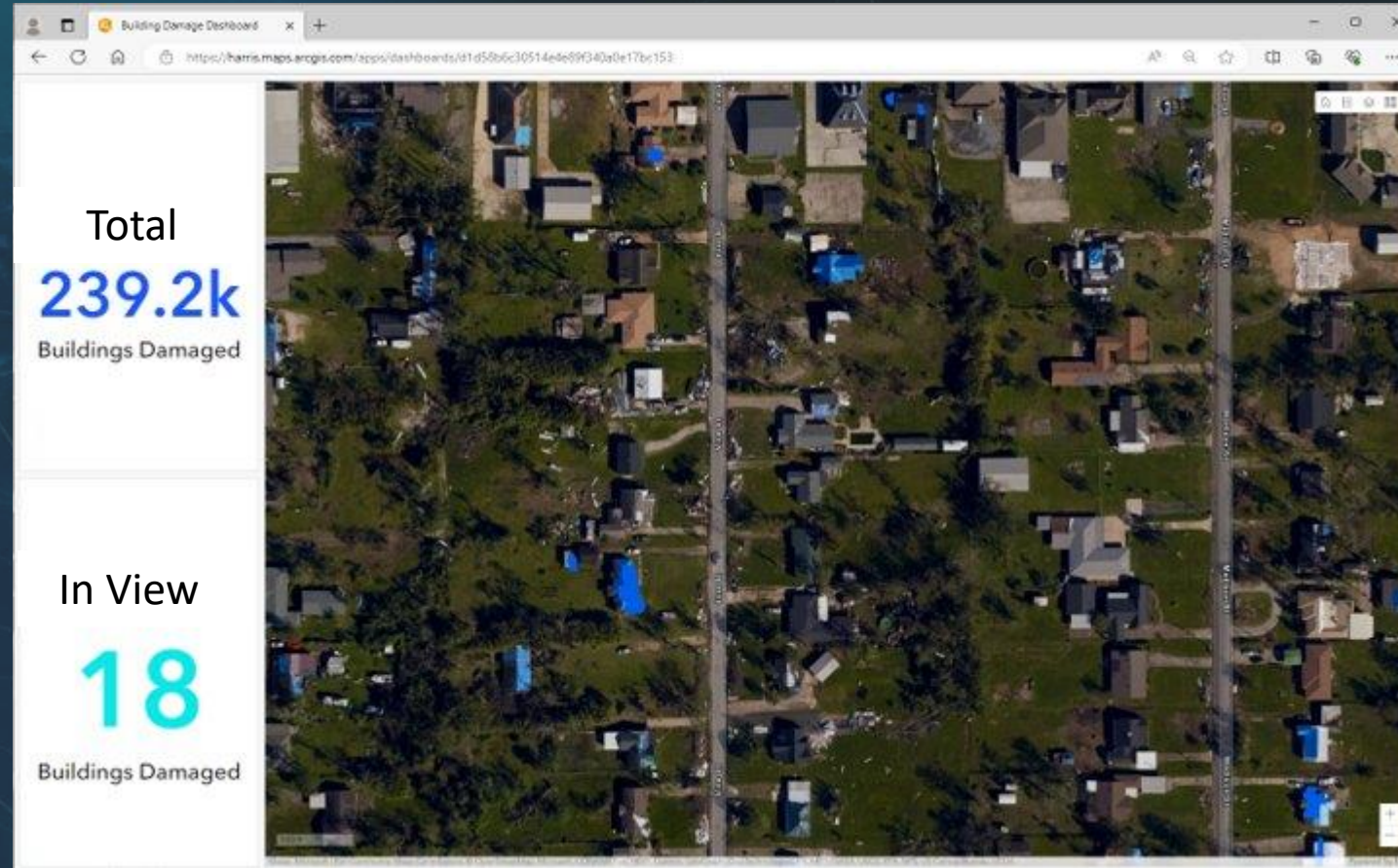
- Imagery expert uses ENVI Deep Learning to create a model that detects building damage
- This workflow can be automated and deployed to run in different environments
- This includes the cloud where it can run at scale



3. AUTOMATED DAMAGE ASSESSMENT IN ENVI INFORM



3. AUTOMATED DAMAGE ASSESSMENT IN ENVI INFORM



5. REPORTING TO INFORM DISASTER RESPONSE



Soldiers Preparing to Provide Aid *Photo Credit: U.S. Army*

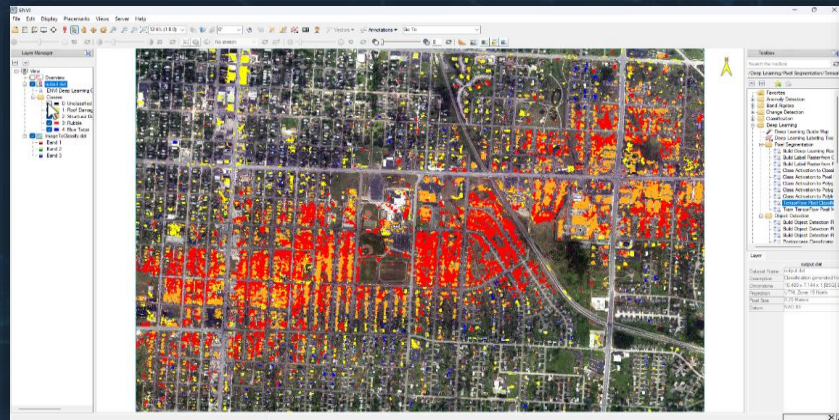


Command Post Computing Environment (CPCE) *Photo Credit: U.S. Army*

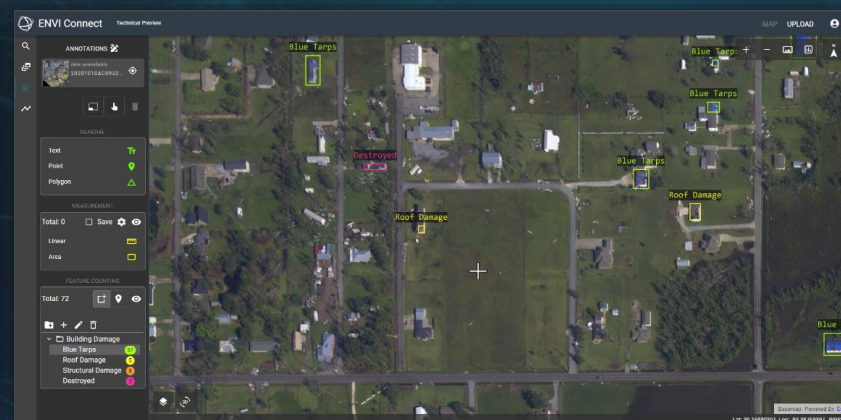
PUTTING IT ALL TOGETHER



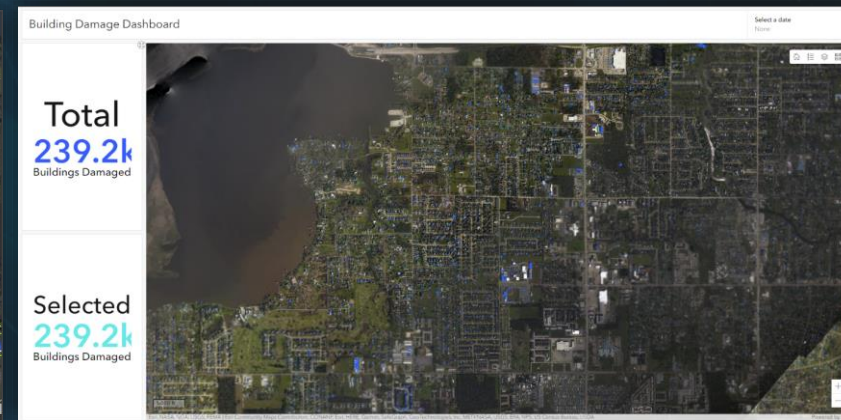
Through interoperability, the ENVI Ecosystem provides collaborative solutions for users across an organization



Automate workflows and deploy across the ENVI Ecosystem



Collaborate and efficiently perform image analysis at scale



Export data to populate GIS dashboards for decision makers

Questions and Discussion



David Burridge

Sales Lead

david.burridge@nv5.com

Zach Norman

Product Manager

zachary.norman@nv5.com

NV5 Geospatial

www.NV5GeospatialSoftware.com

geospatialinfo@nv5.com

303-786-9900