Topographic Map Production: An Introduction

Amber Bethell, John Grammer

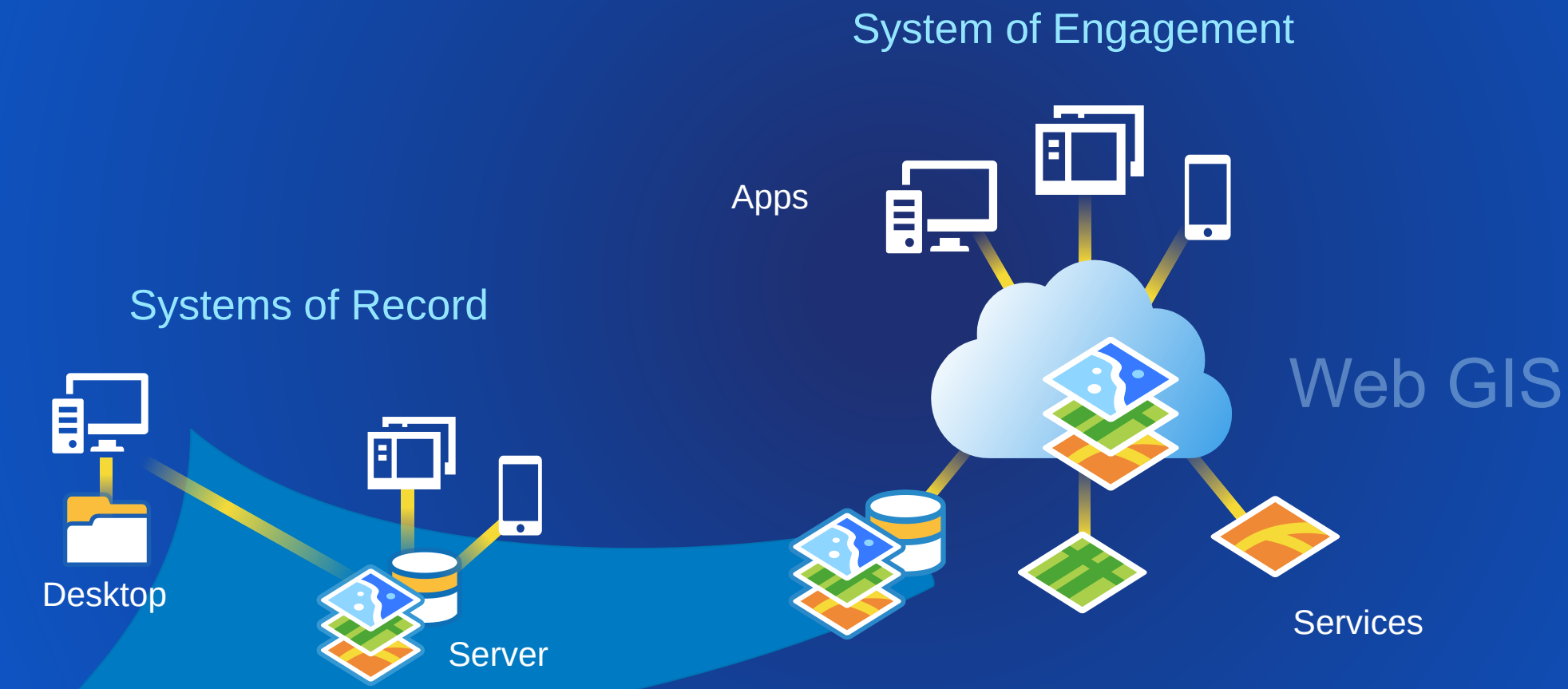
SEE WHAT OTHERS CAN'T

Topographic Map Production: Agenda

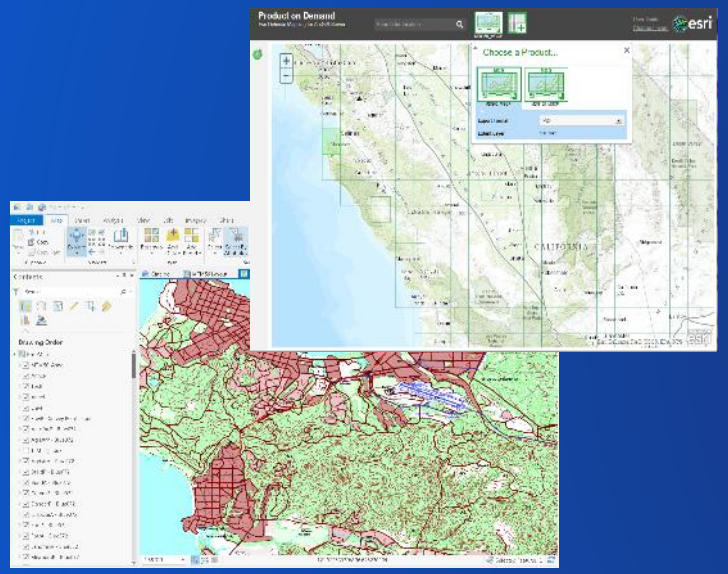
- Overview
- Production Management / Workflows
- Data Collection / Data Quality
- Multiscale Mapping
- Road Ahead

Topographic Map Production

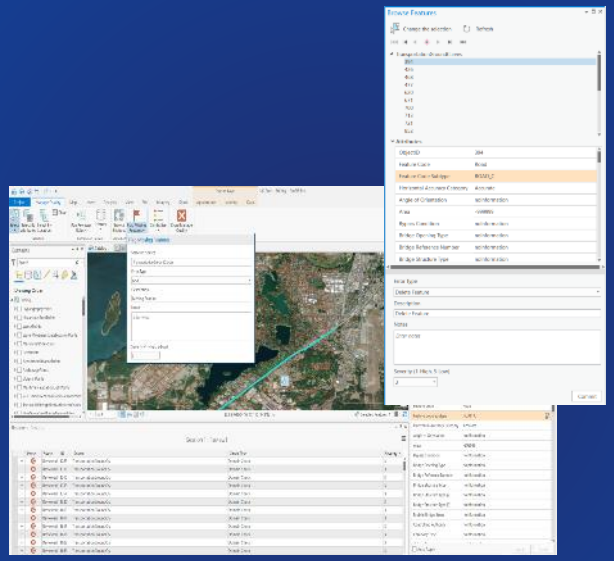
Produce, Manage, and Share Authoritative Content



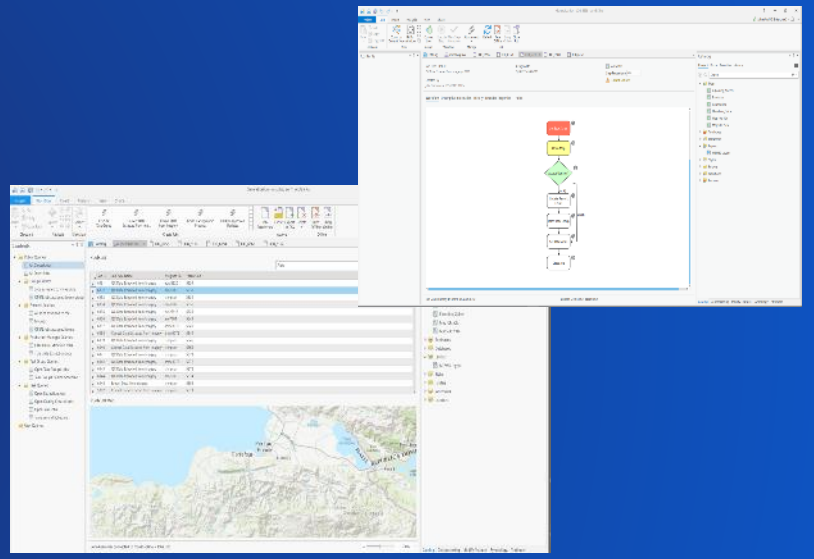
Topographic Map Production: Extensions



Production / Defense Mapping



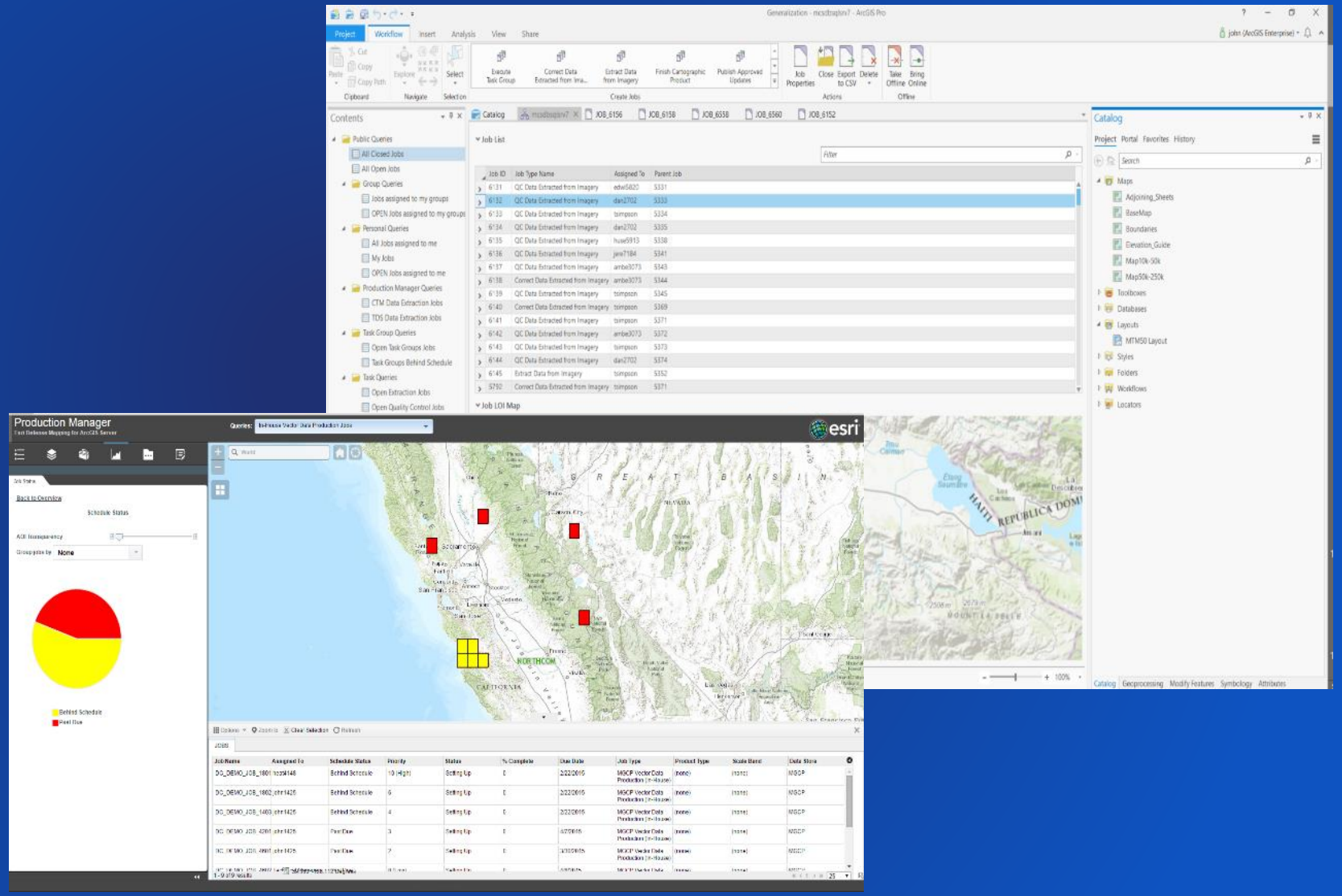
GIS Data Reviewer



Workflow Manager

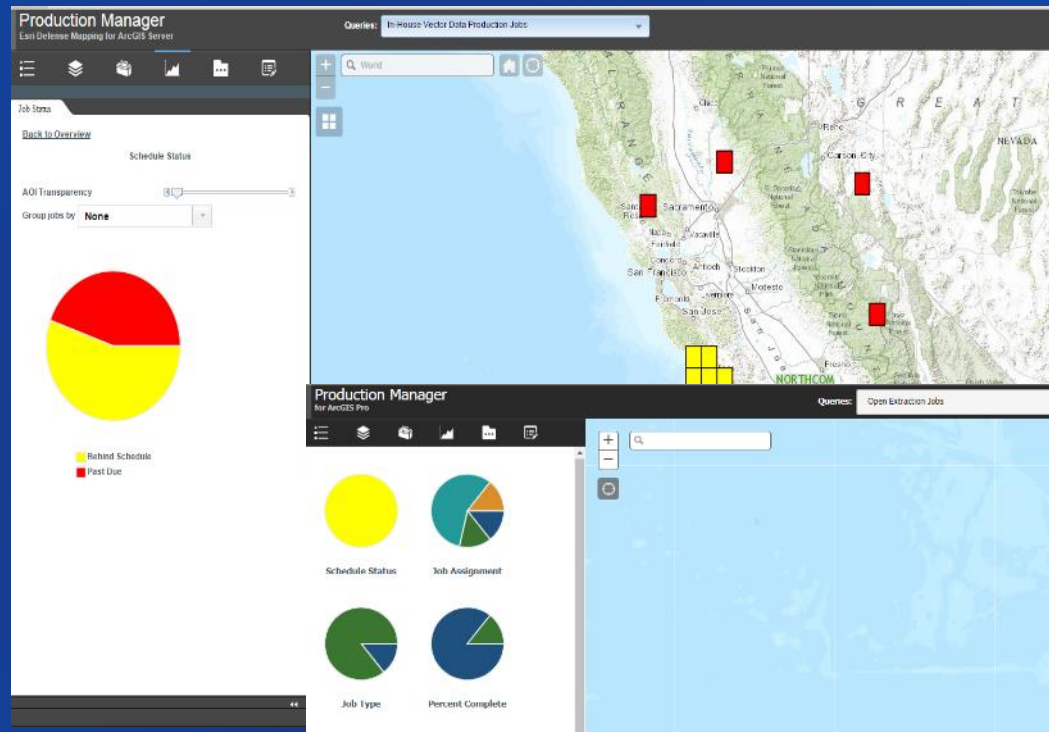
Topographic Map Production: Production Management

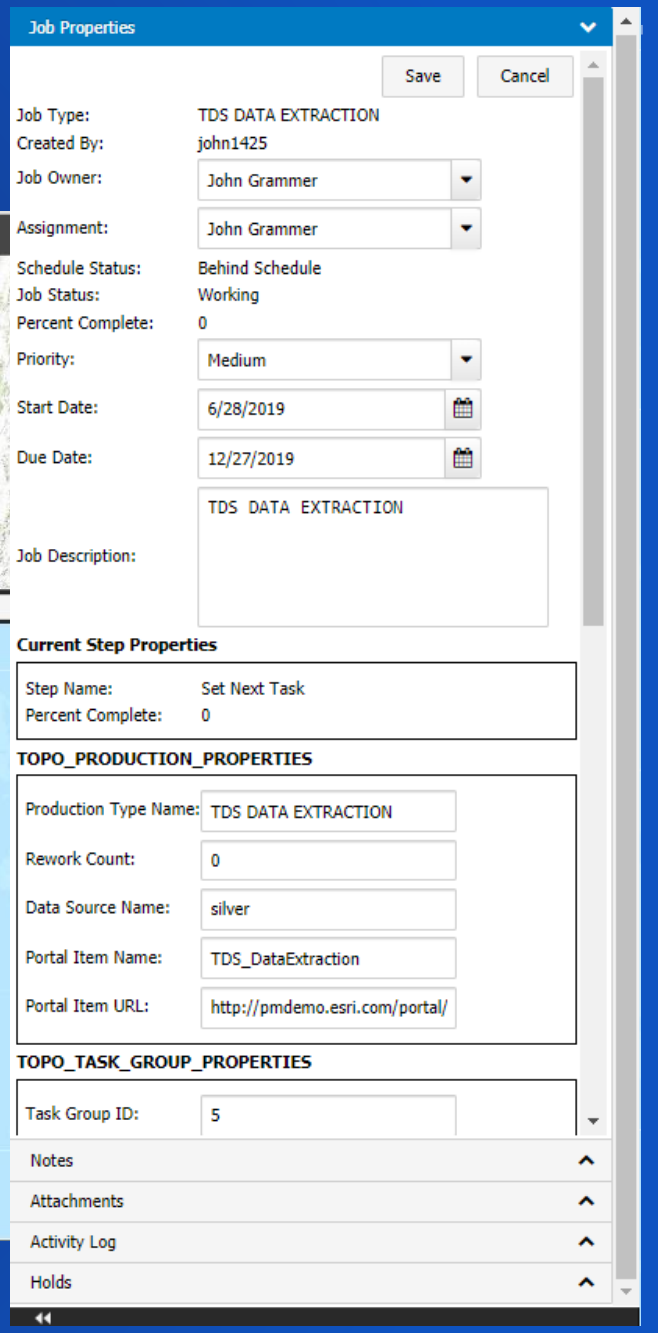
- **Production Manager**
- **Workflows**



Production Manager

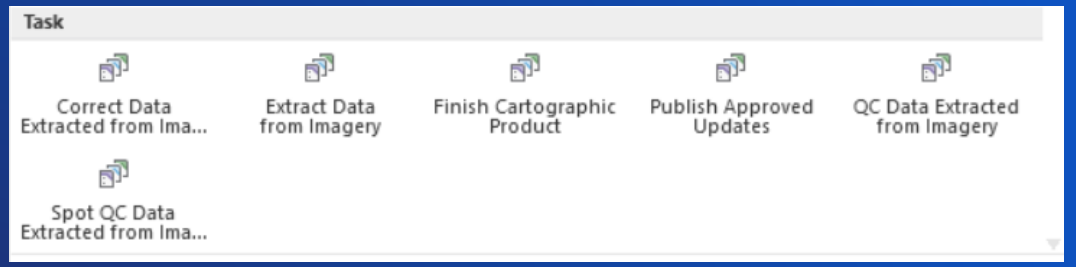
- Create Jobs
- Manage Jobs
  - Job status
  - Job Assignment
  - Percent Complete
- Job Details
  - Job Properties

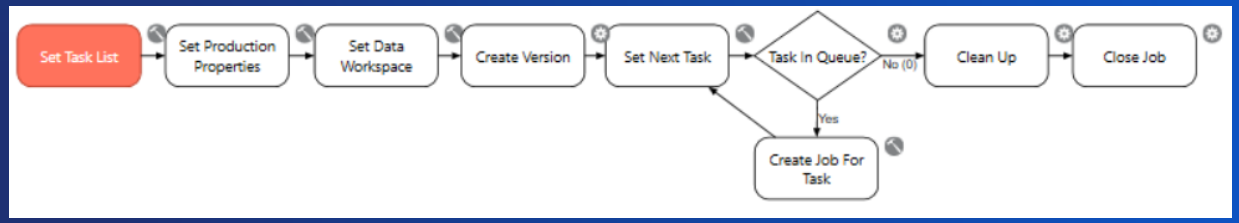


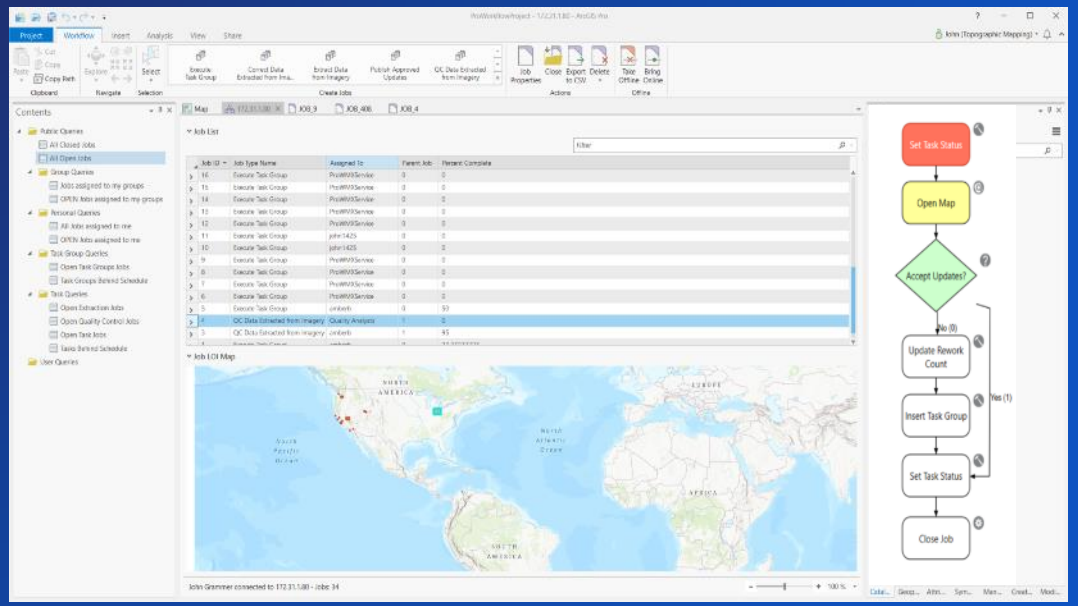


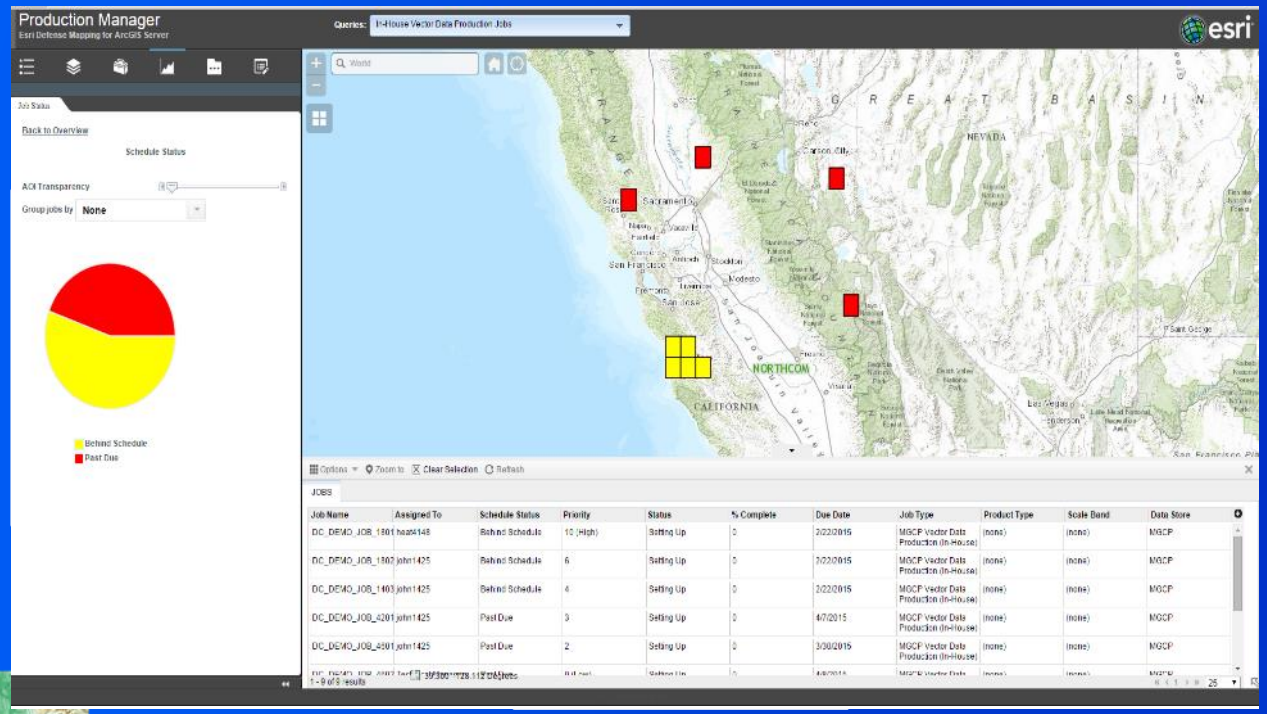
Workflows

- Using workflow driven systems
  - Increase productivity through:
    - Preconfigured and repeatable processes
    - Simplification and automation
  - Build in quality through:
    - Process control/configuration management
    - QA/QC process enforcement
    - Accountability
  - Manage the workforce







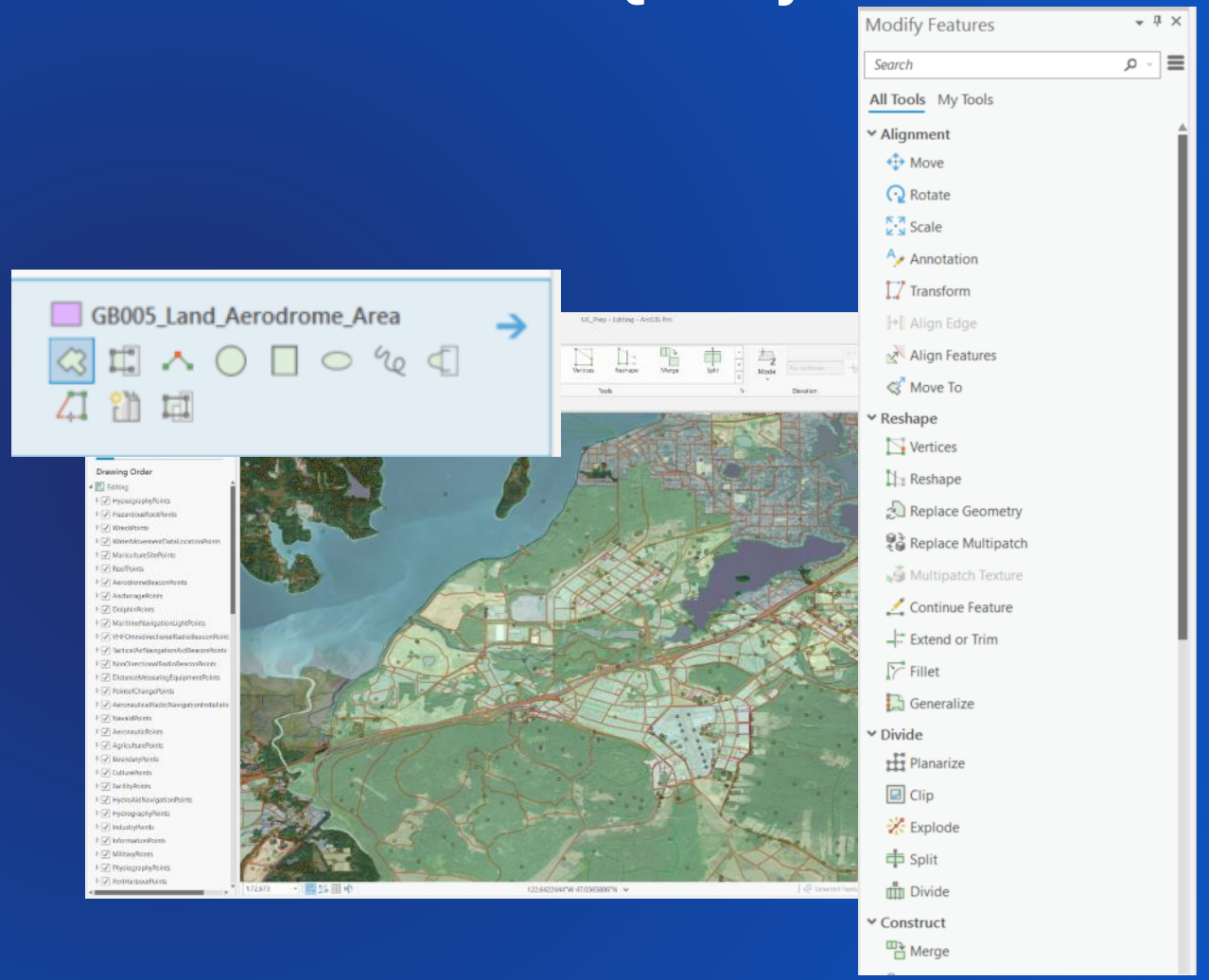


Production Management / Workflows

Presenter(s)

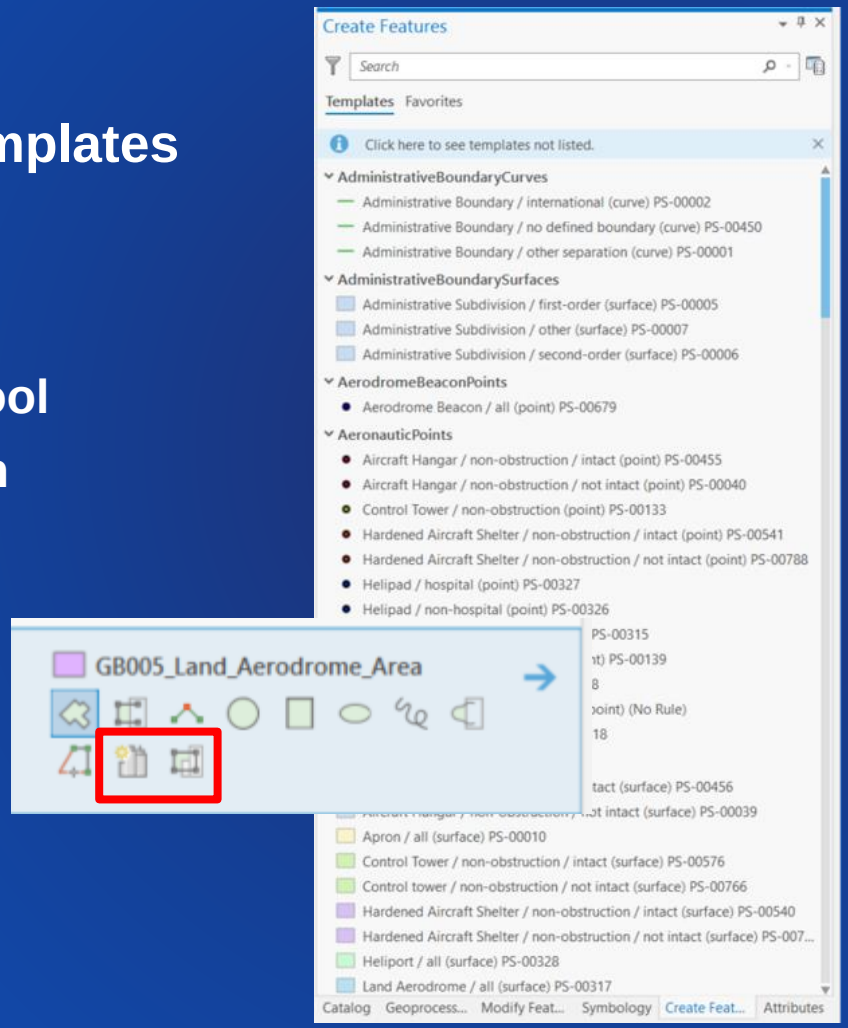
Topographic Map Production: Data Collection / Data Quality

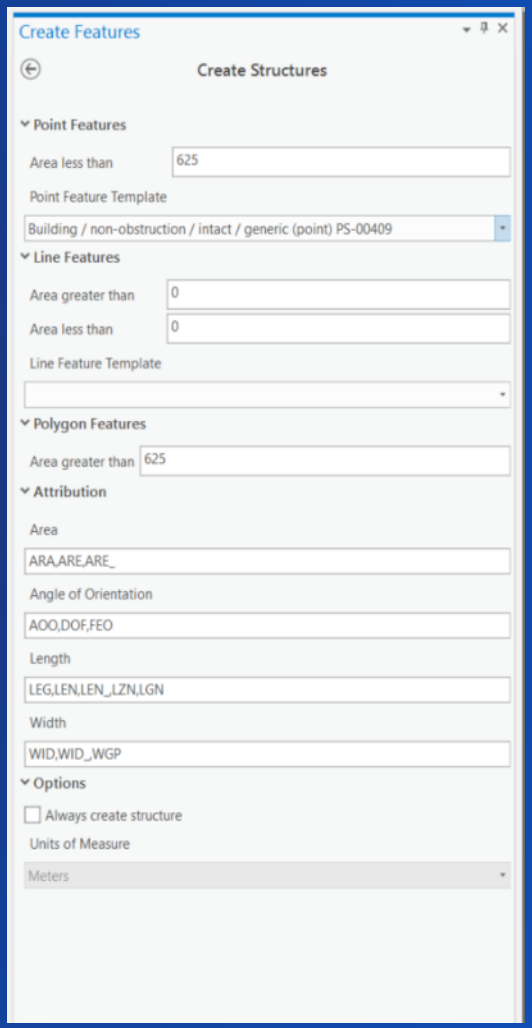
- Common editing tools
- Common modify tools
- Data Reviewer
  - Rule-based automated validation
  - Semi-automated workflows
  - Track and report quality

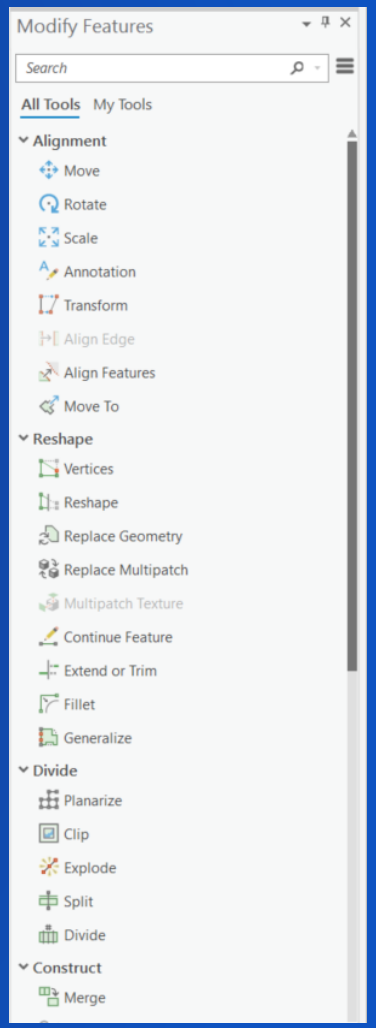


Topographic Map Production: Data Collection

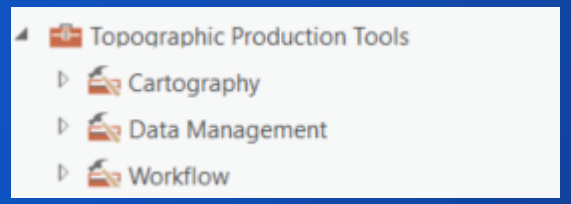
- **Predefined Edit Templates**
- **Construction Tools**
  - **Create Structure tool**
  - **Difference Polygon**
- **Modify Tools**

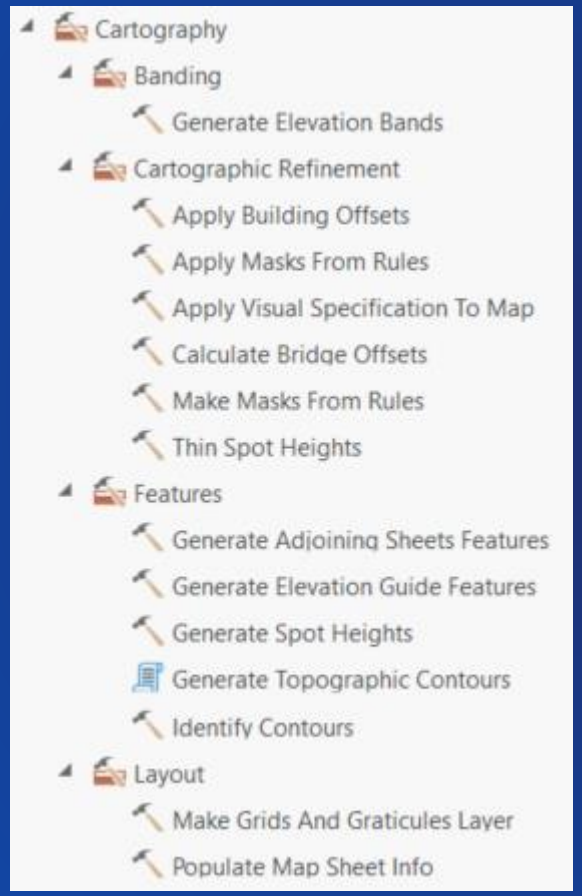


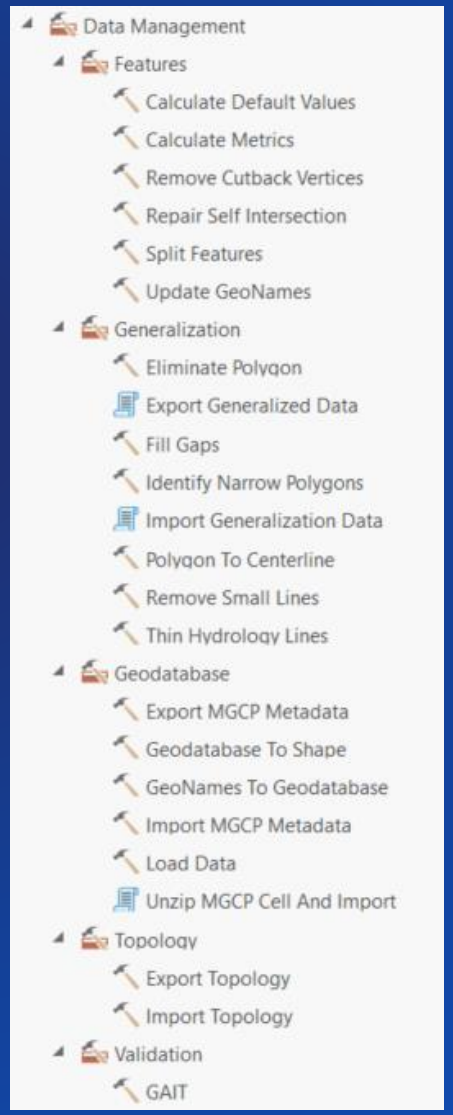


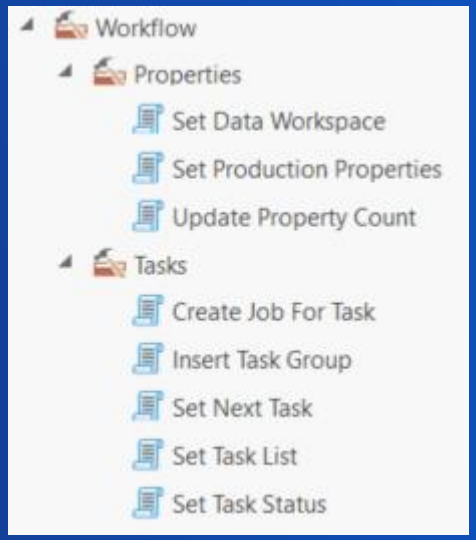


Topographic Map Production: Geoprocessing Tools



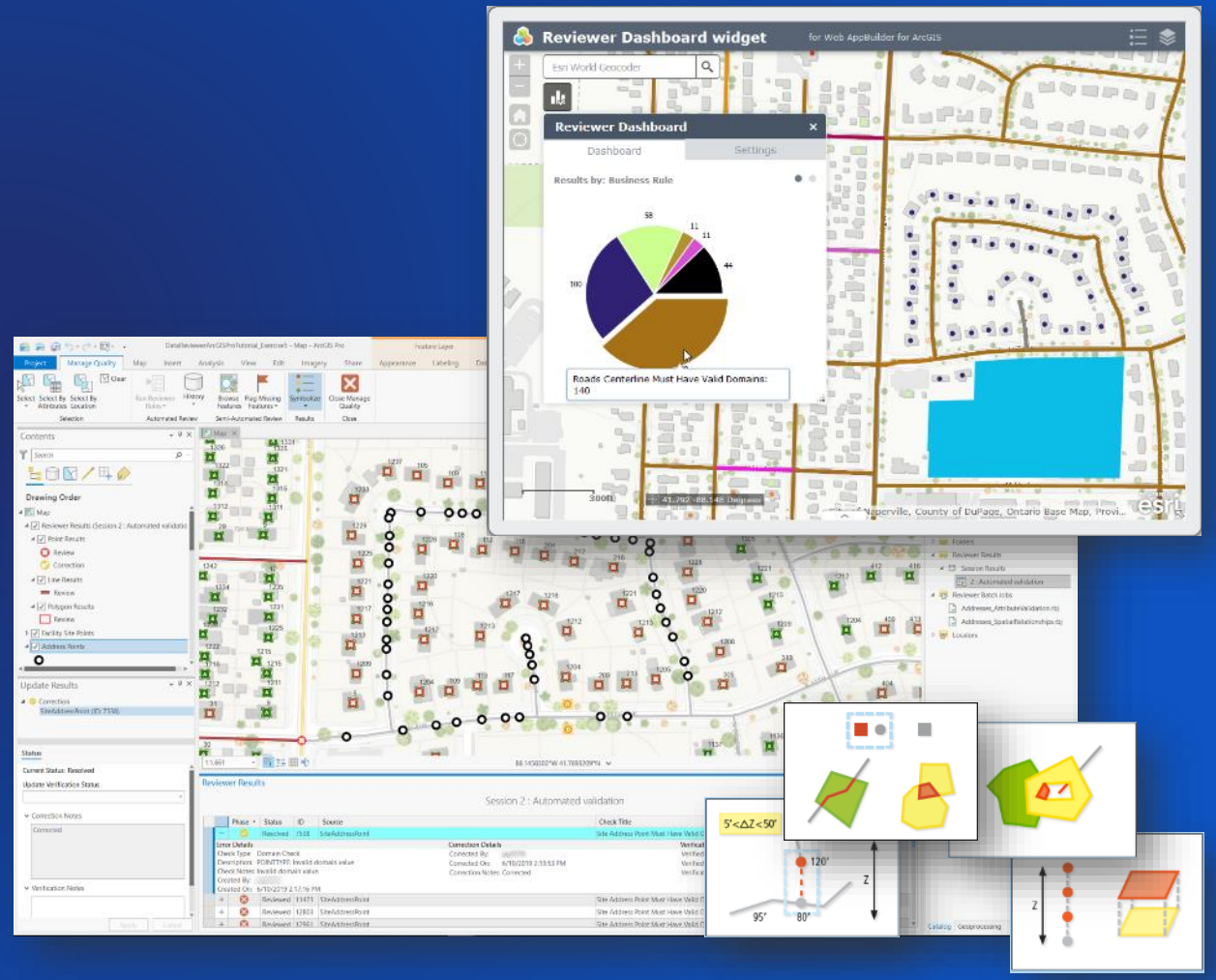






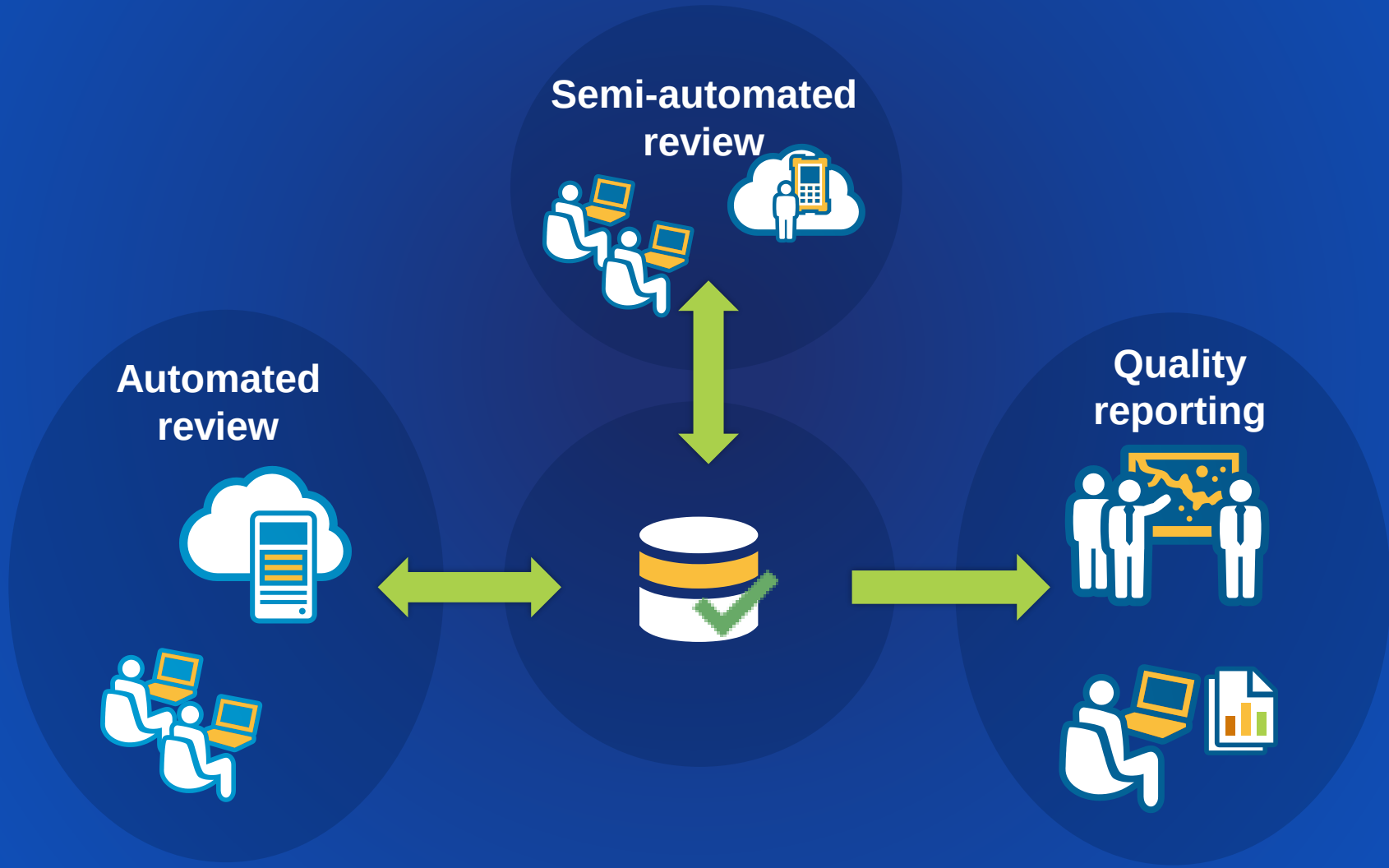
Topographic Map Production: Data Quality

- Provides
  - Rule-based automated validation
  - Semi-automated workflows
  - Track and report quality
- For individuals and enterprise
  - Saves time/money
  - Less rework
- For multiple domains
  - Configurable
  - Extendable



Topographic Map Production: Managing quality control

Quality control processes

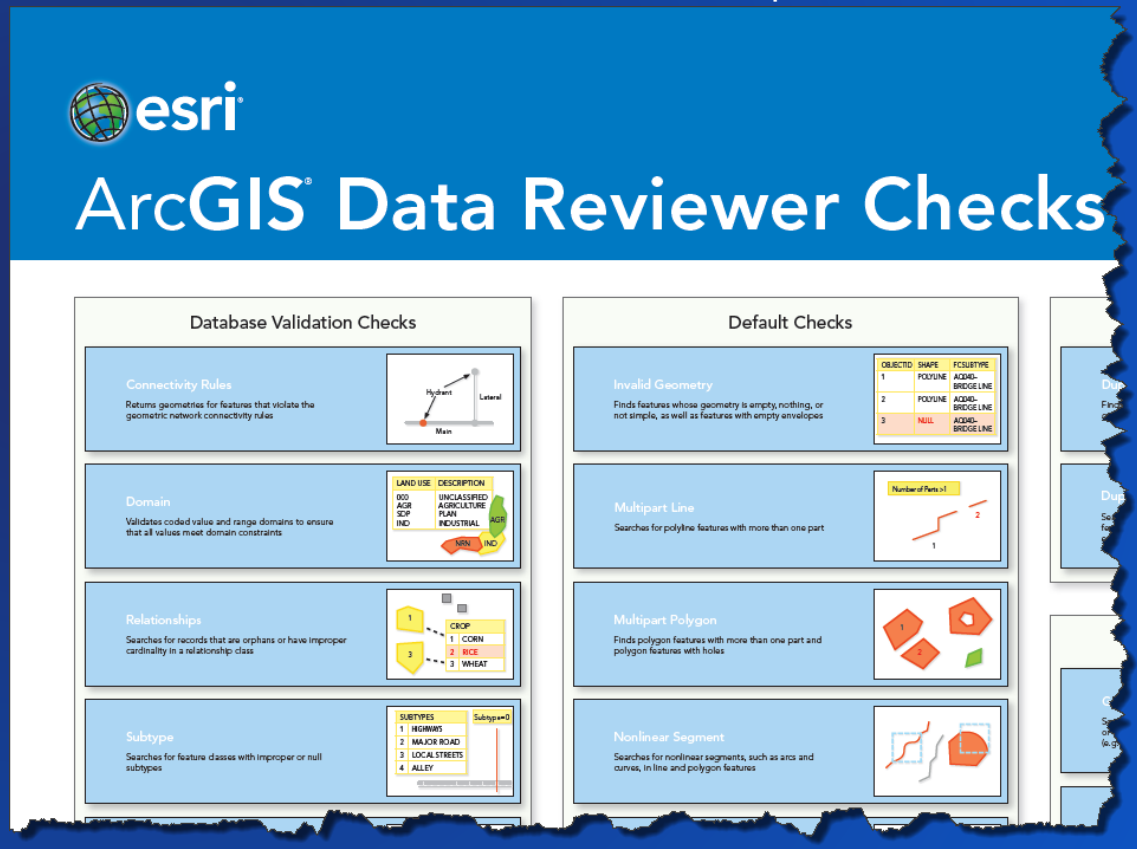


Automating data validation

Implementing quality requirements

- **40+ configurable checks**
- **Feature integrity**
  - Collection rules
- **Attribution**
  - Feature and table values
- **Spatial**
  - Spatial relationships

http://esriurl.com/12379

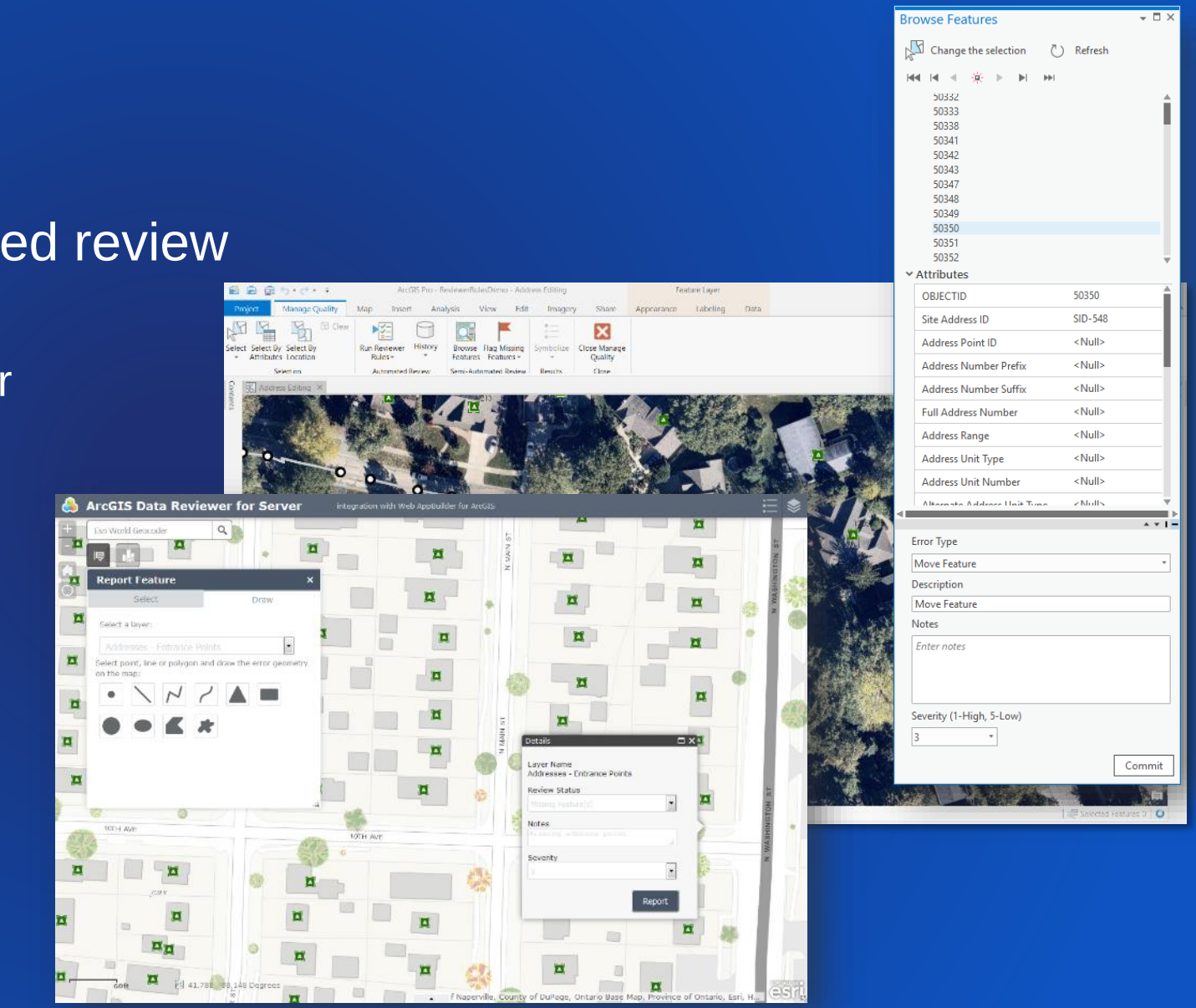


Semi-automated review

Leveraging ArcGIS Desktop

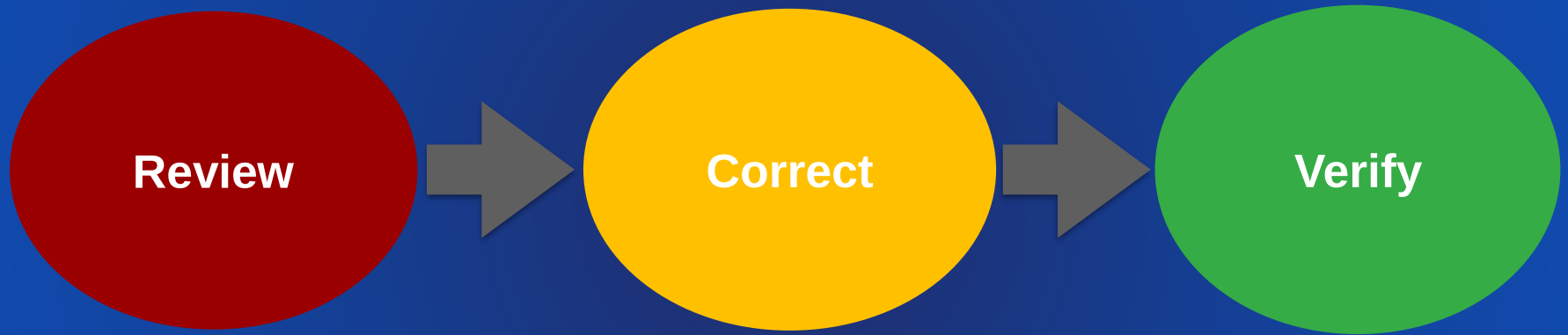
Tools supporting semi-automated review

- Redlining missing features
- Flagging existing features in error
- Random sampling



Managing quality control

QC lifecycle management



Find and
record errors

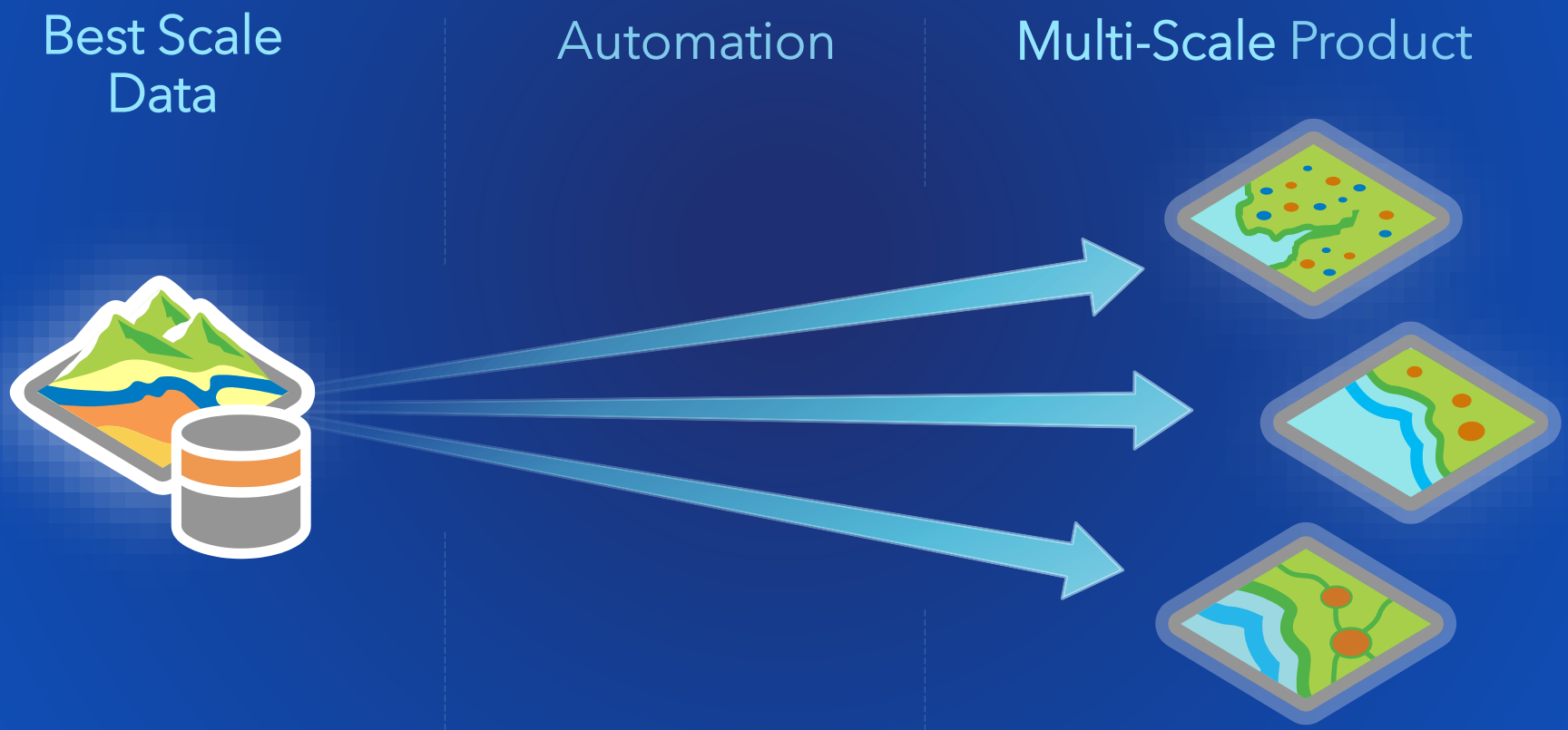
Perform edits
or
Note exceptions

Acceptable
or
Unacceptable

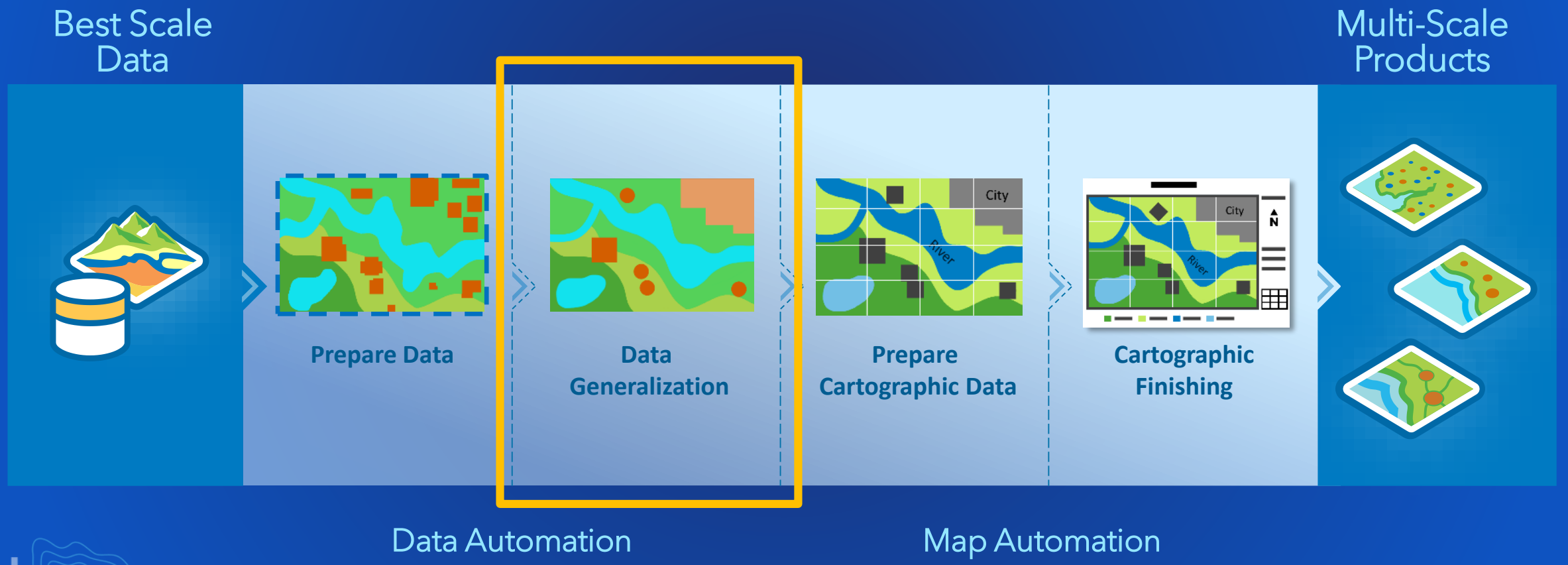
Data Collection / QC

Amber Bethell

Topographic Map Production: Multi-Scale Mapping



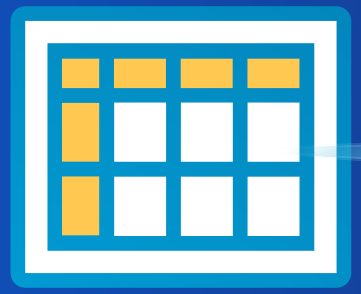
Multi-Scale Mapping workflow

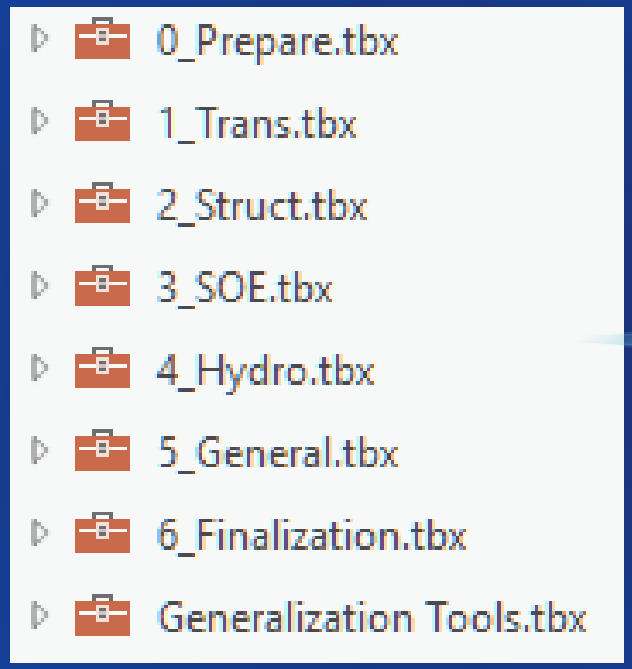


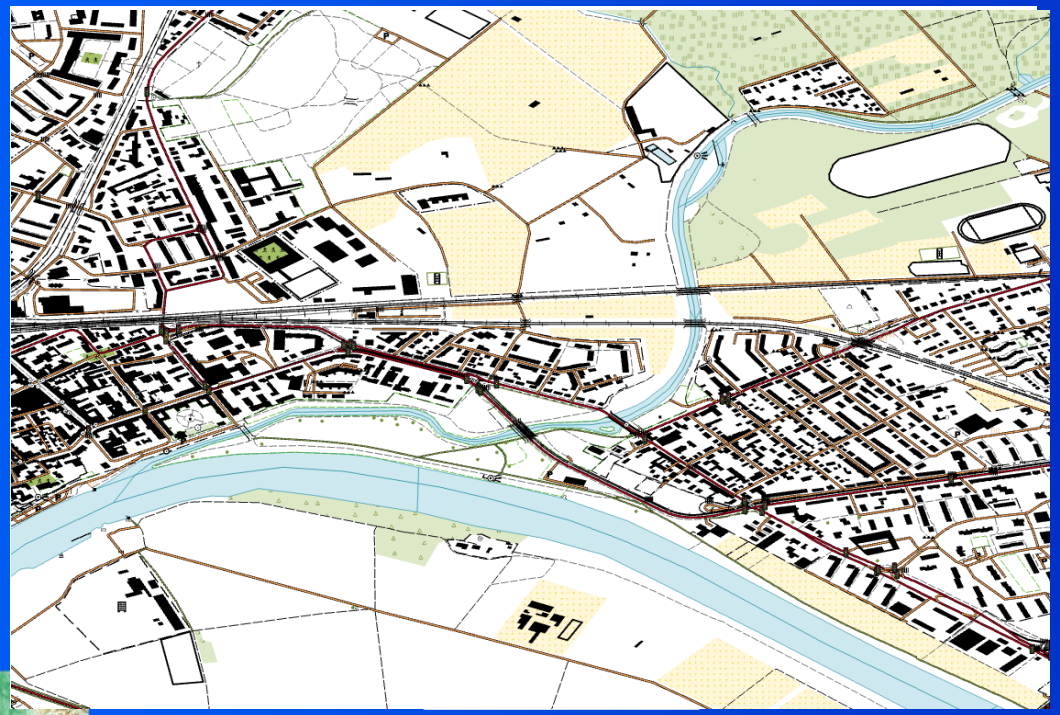
Generalization Themes

Transportation	Structures	Skin-of-the-Earth (SOE)	Hydrology	General
• Road and Rail Networks • Transportation structures (bridges, culverts, etc)	• Create Built-up Areas • Thin individual point and polygon buildings	• Maintains topology of landcover features (hydro, vegetation, bare ground, etc.)	• Maintains hydrology network • Natural and Man-made hydro features	• Basic simplification and conversion of other types of features

Topographic Map Production: Data Generalization

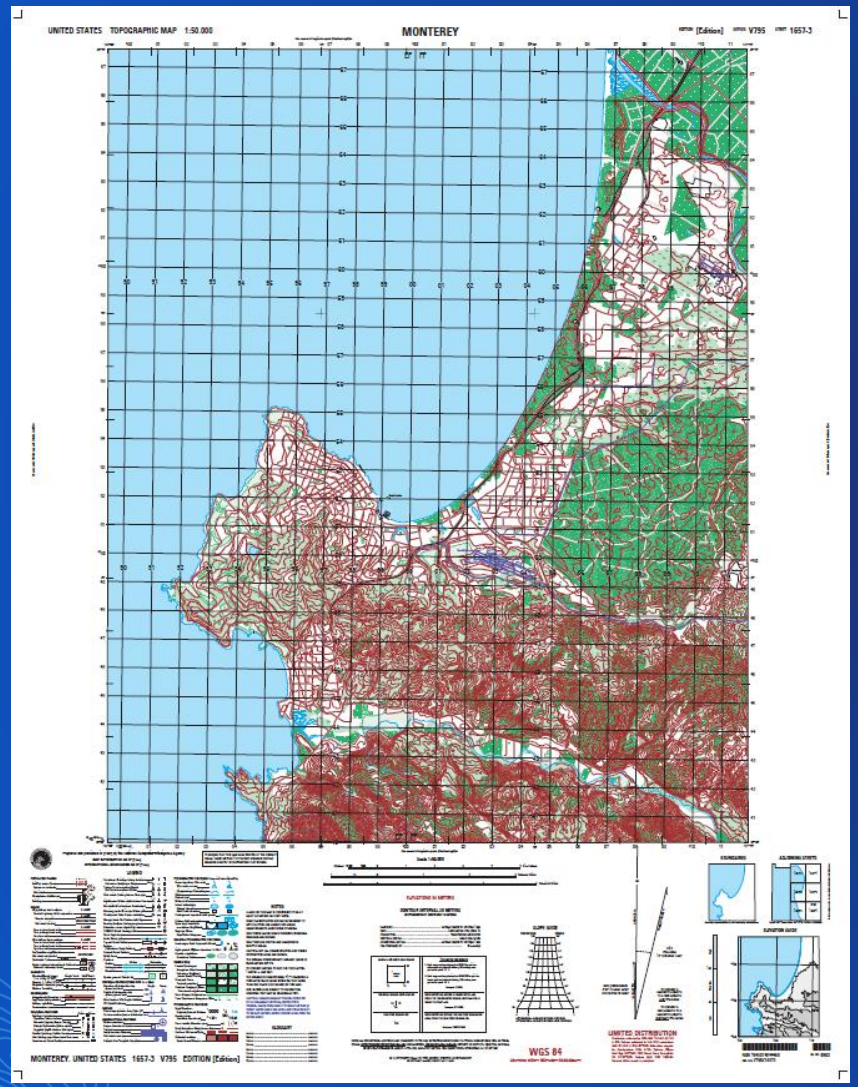




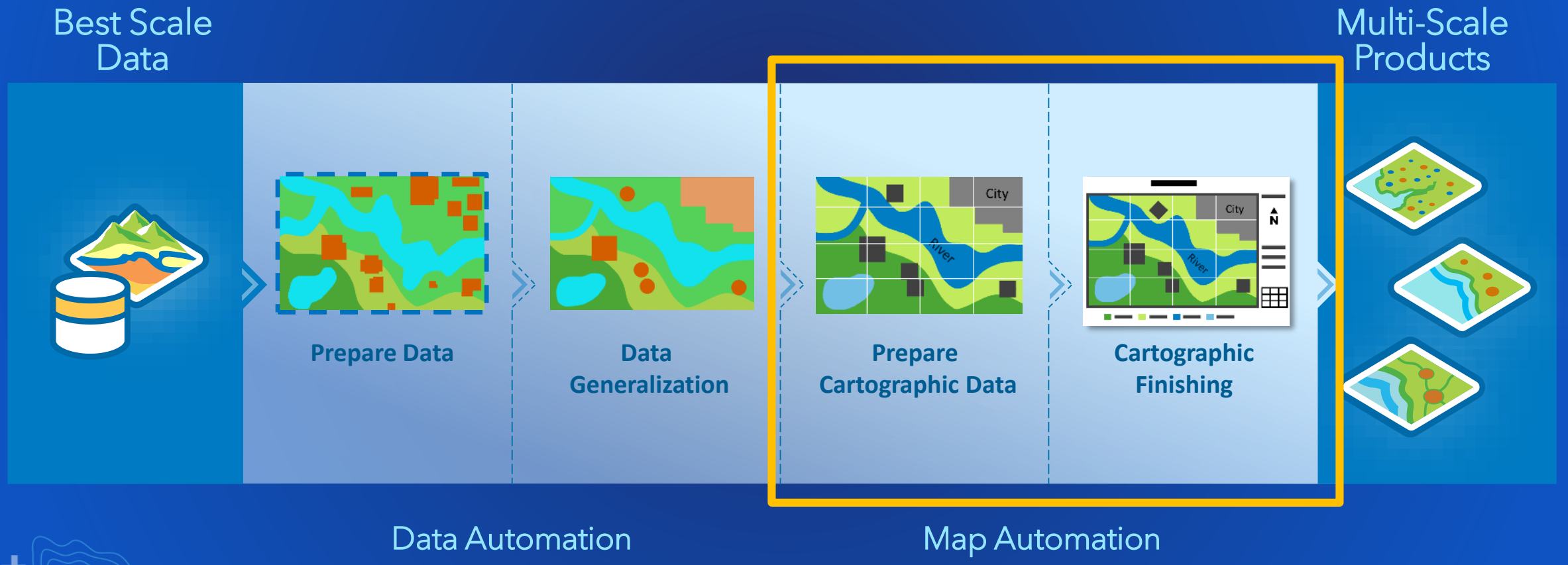


Data Generalization

Topographic Map Production: Cartography

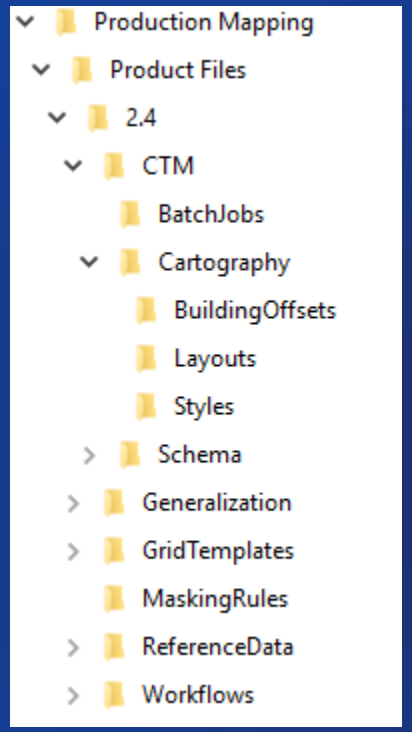


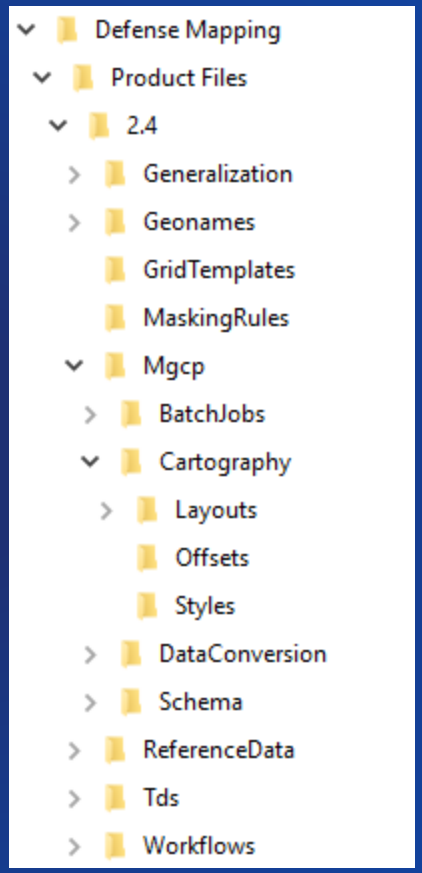
Multi-Scale Mapping workflow



Topographic Map Production: Cartography Product Files

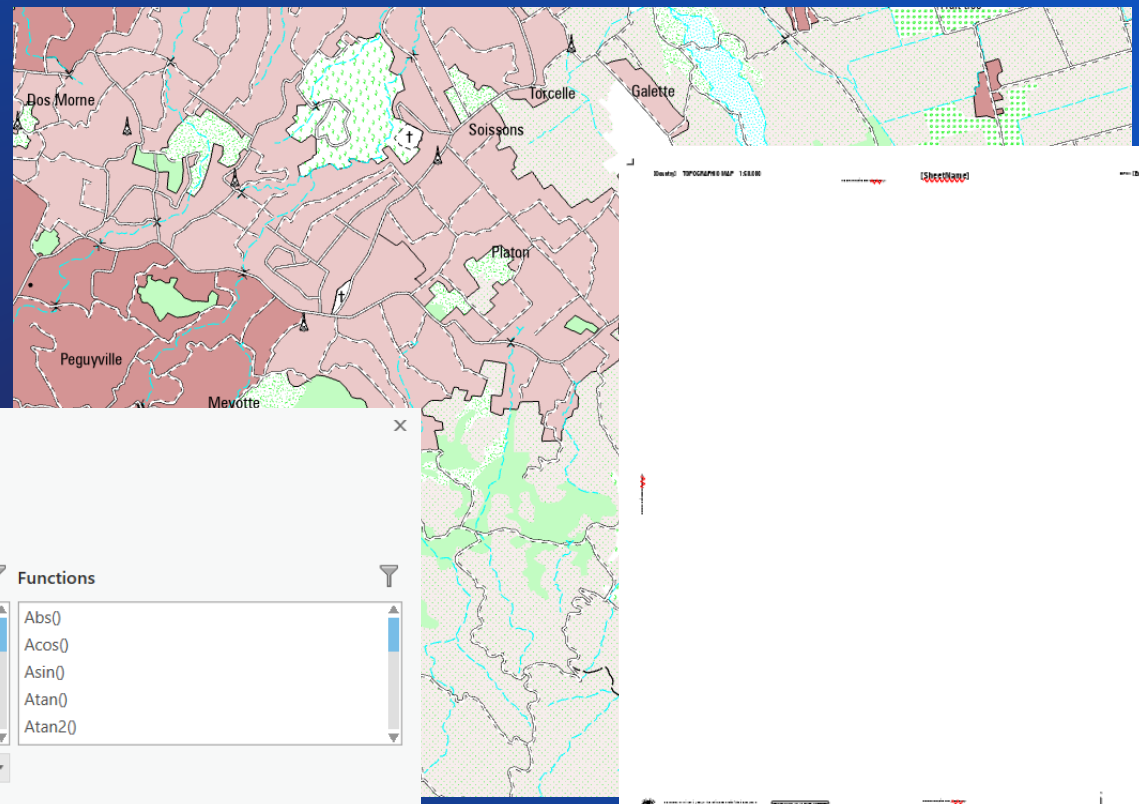
- Layout file (pagx)
  - Maps
  - Symbology
- Offset files
- Grids
- Masking rules
- Schemas
- Reference Data

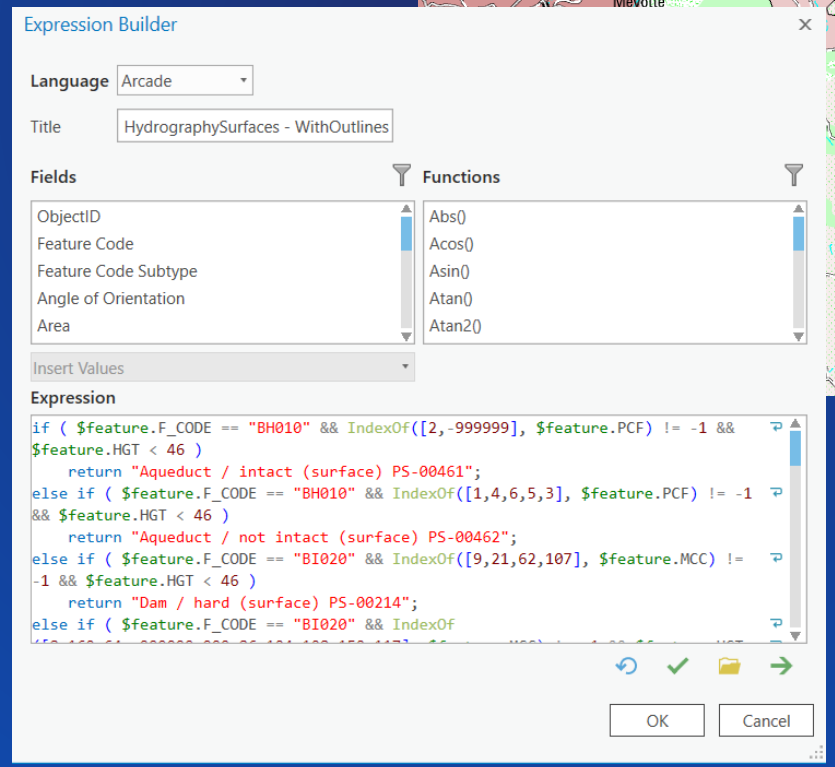


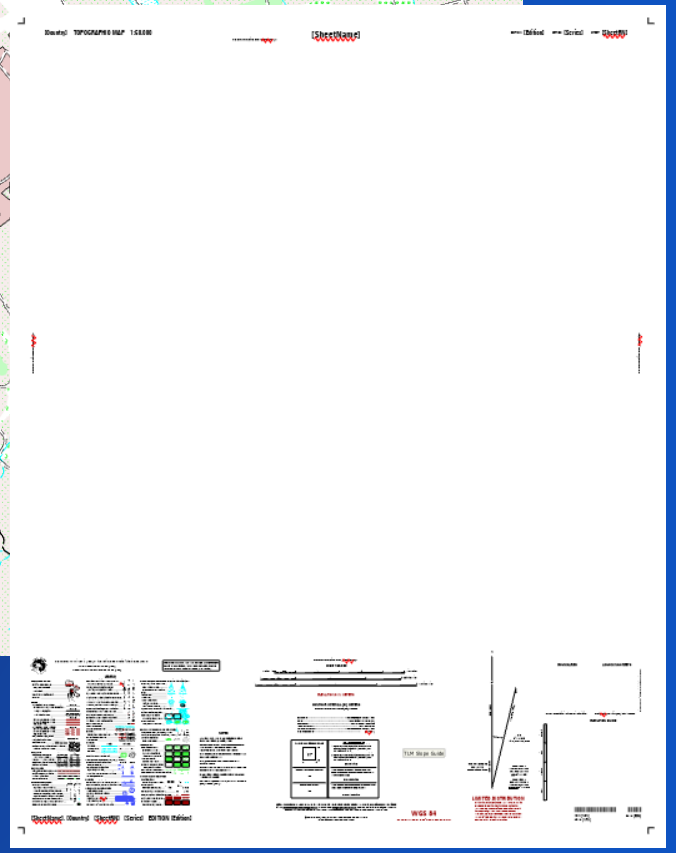


Topographic Map Production: Preparing the Data

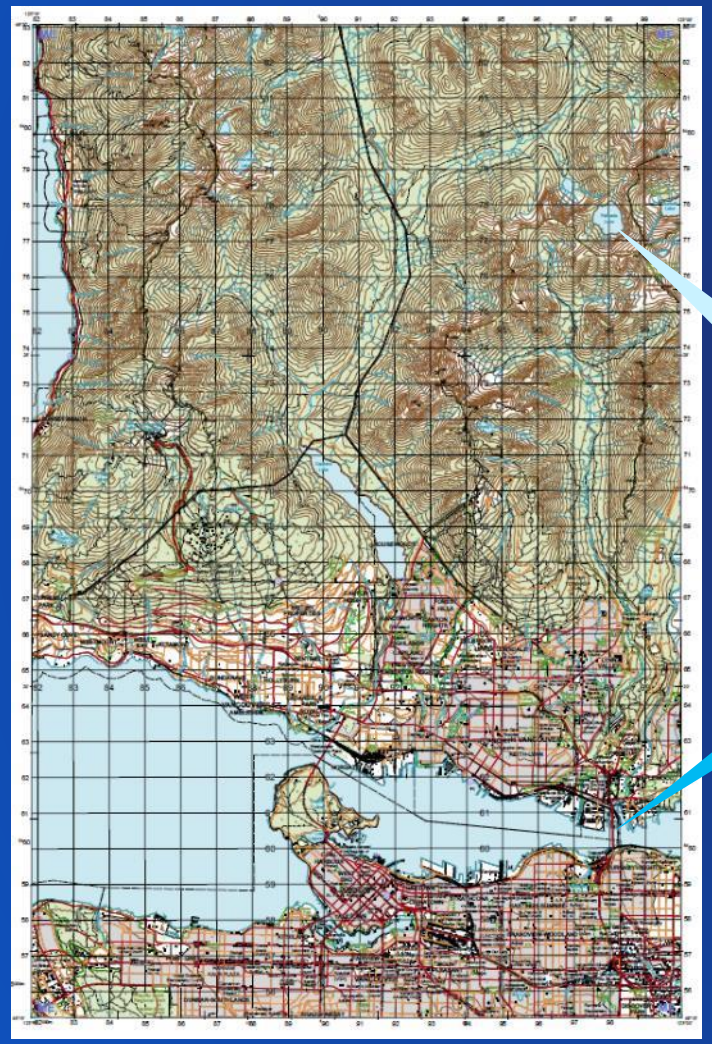
- Layout
  - Symbolize
  - Maps
- Create Grids
- Create Annotation

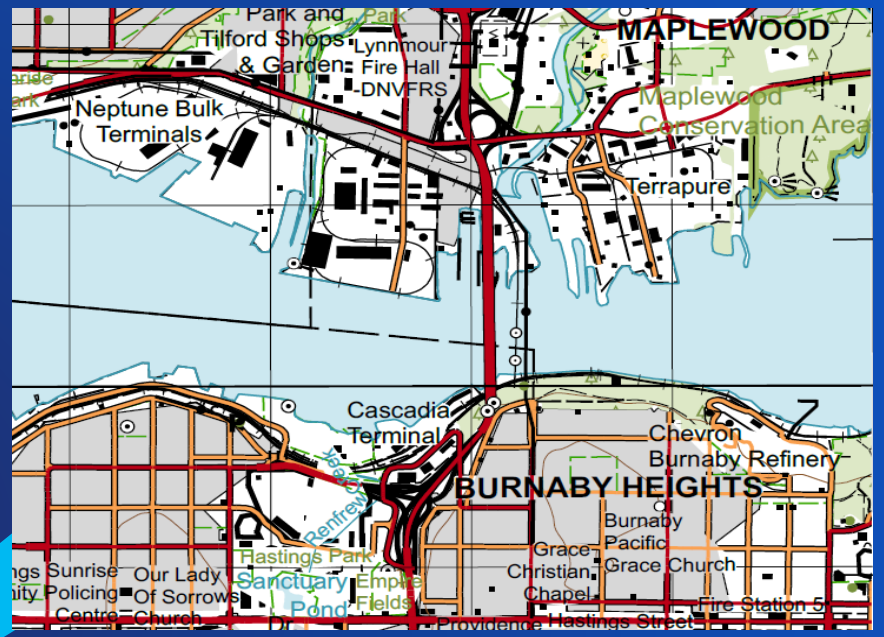


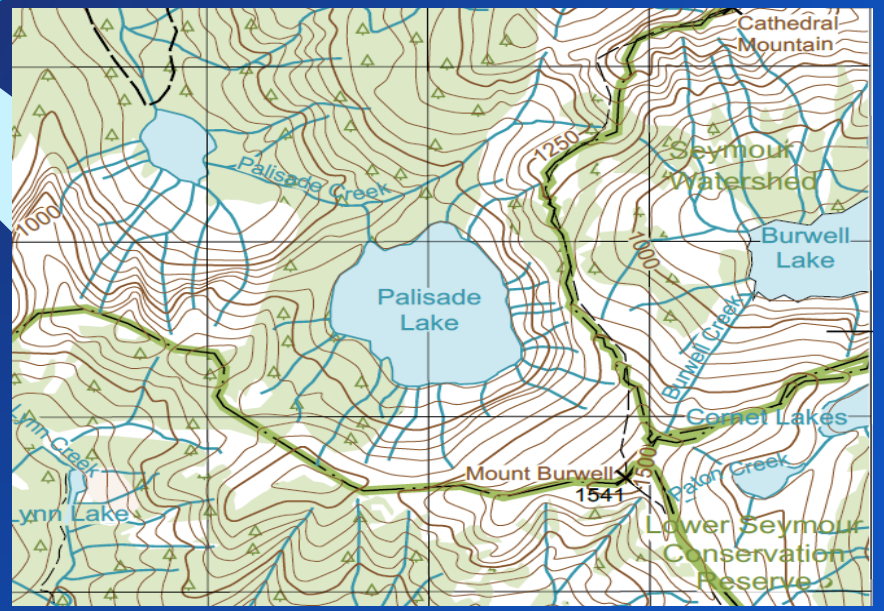




Topographic Map Production: Cartographic Refinement



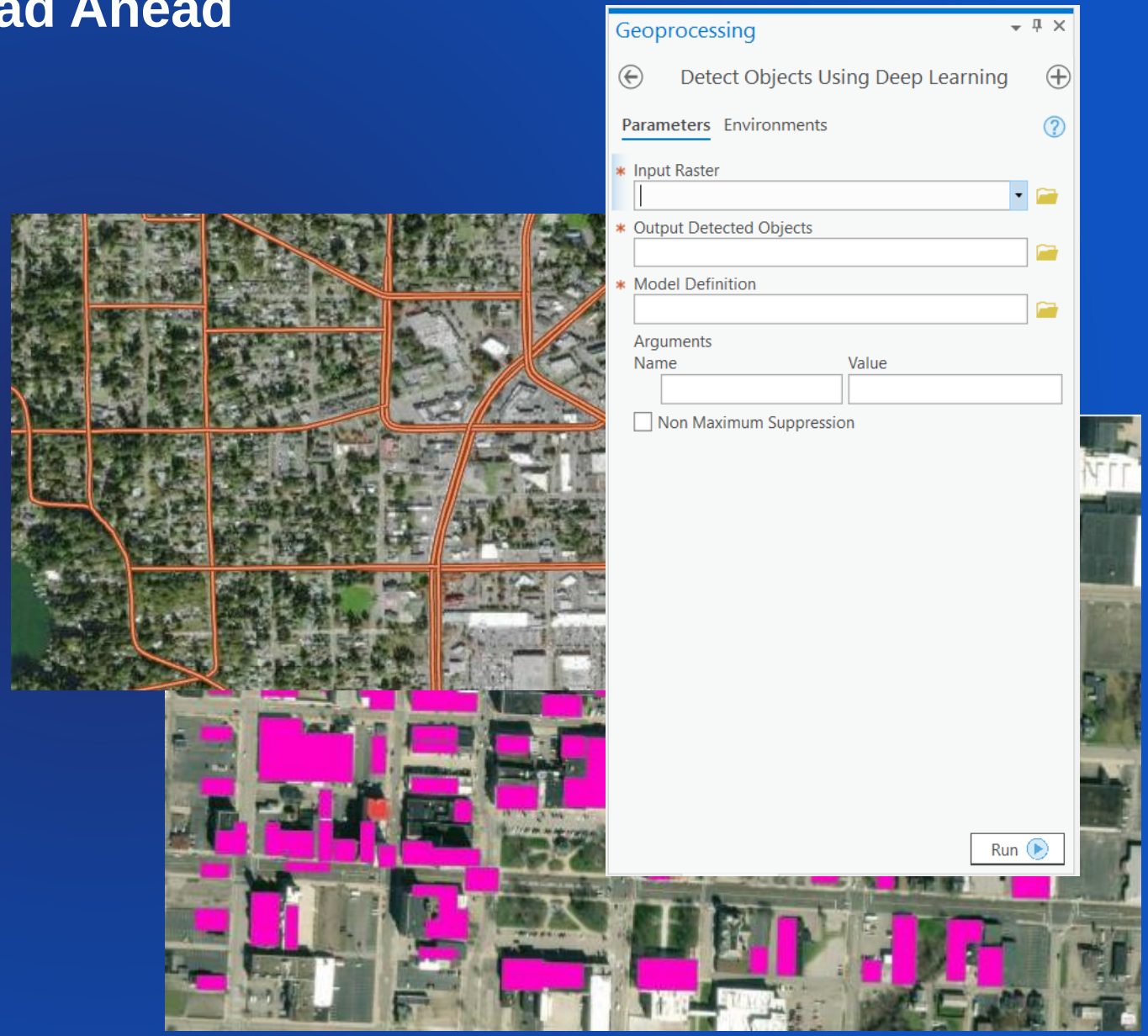




Cartography

Topographic Map Production: Road Ahead

- Geodatabase Replication
- Cartographic Automation
- Semi-automated feature extraction
  - Roads
  - Buildings



Questions

Thank You

Presentations

Tuesday

Topographic Data Generalization for Multi-scale Mapping	Room 30 E	04:00 PM– 05:00 PM

Wednesday

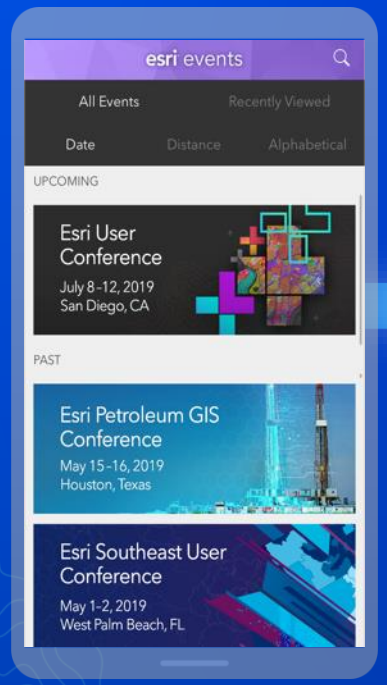
ArcGIS Server Extensions: Configuring Product-on-Demand for Topographic Map Production	Room 05 B	01:00 PM – 02:00 PM
Esri Defense Mapping: Cartographic Map Production	Room 05 A	02:30 PM – 03:30 PM
ArcGIS Data Reviewer: An Introduction (Offering #2)	Room 30 E	08:30 AM - 09:30 AM
ArcGIS Data Reviewer: Implementing Ready-to-Use Rules across the platform	Demo Theater 4	10:00 am - 10:45 AM
ArcGIS Data Reviewer: Deploying Data Quality Web Services	Demo Theater 5	11:15 AM - 12:00 AM
ArcGIS Data Reviewer: Validating linear-referenced events	Demo Theater 4	11:15 AM - 12:00 PM

Thursday

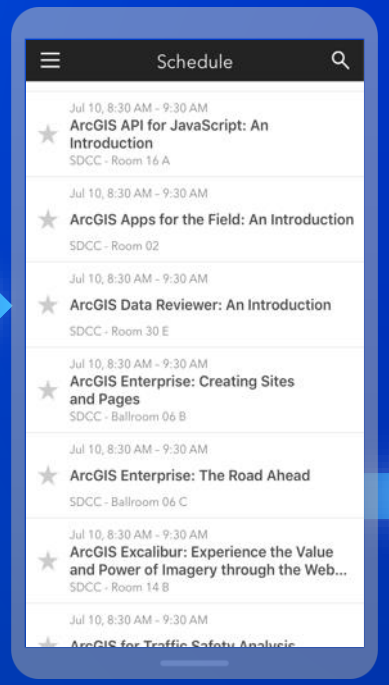
Esri Production Mapping : Advanced Cartography	Room 30 B	02:30 PM – 03:30 PM
ArcGIS Data Reviewer: Advanced Data Validation	Room 30 E	08:30 AM - 09:30 AM

Please Share Your Feedback in the App

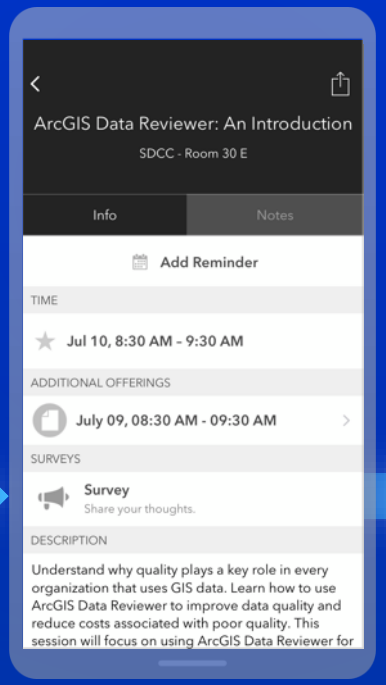
Download the Esri Events app and find your event



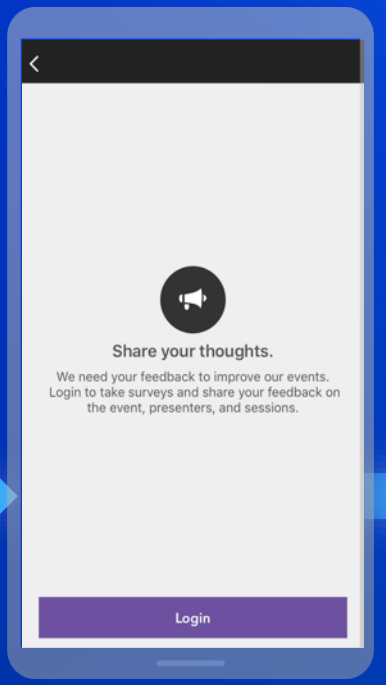
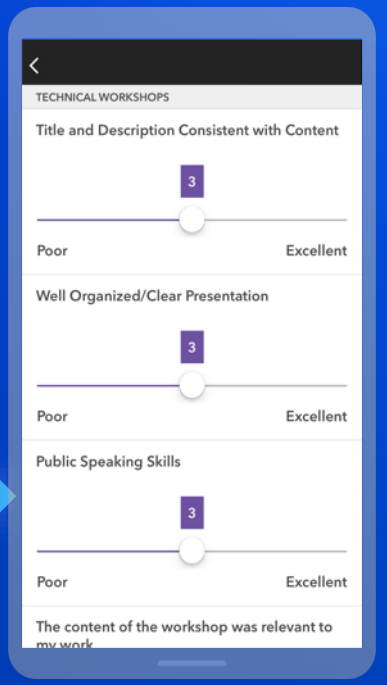
Select the session you attended



Scroll down to "Survey"



Log in to access the survey



Complete the survey and select "Submit"