ArcGIS Data Reviewer: An Introduction

Chandan Banerjee

Jay Cary

Workshop agenda

- Defining data quality
- What is ArcGIS Data Reviewer?
- Automated review
- Semi-automated review
- Managing errors
- Summary/resources

Defining data quality

Defining quality

A technical perspective

- Spatial Accuracy ★
- Thematic Accuracy
- Completeness
- Logical Consistency
- Temporal Quality
- Usability

Lake feature has been shifted

ISO-19157:2013 Geographic information – Data quality

Defining quality

A technical perspective

- Spatial Accuracy
- Thematic Accuracy ★
- Completeness
- Logical Consistency
- Temporal Quality
- Usability

Swimming pool captured as wetland

ISO-19157:2013 Geographic information – Data quality

Defining quality

A technical perspective

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Neighborhood with missing building footprint

ISO-19157:2013 Geographic information – Data quality

Defining quality

A technical perspective

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Highway with road surface type gravel

ISO-19157:2013 Geographic information – Data quality

Defining quality

A technical perspective

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- Thematic Accuracy
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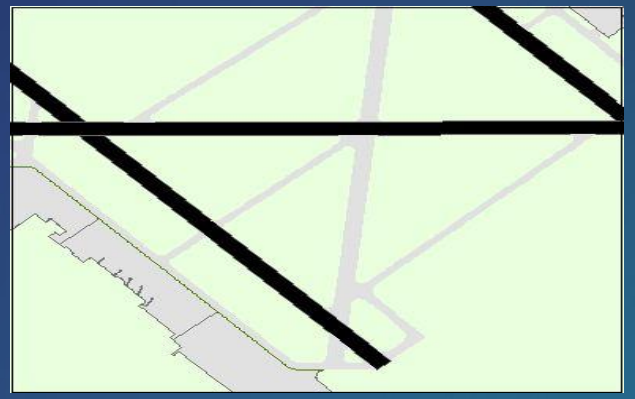
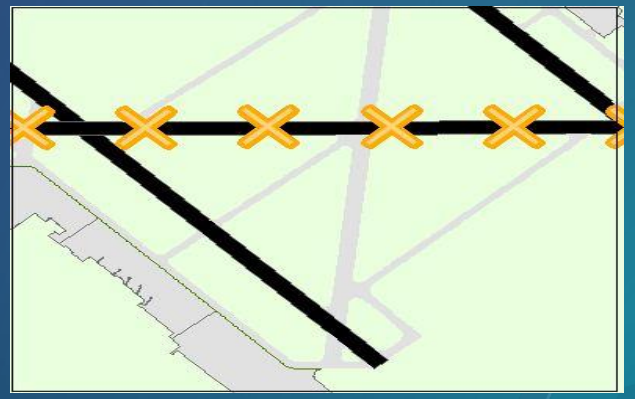


Outdated chart showing open runway



Updated chart should show closed runway

ISO-19157:2013 Geographic information – Data quality

Defining quality

A technical perspective

- Spatial Accuracy
- Thematic Accuracy
- Completeness
- Logical Consistency
- Temporal Quality
- Usability ★

ISO-19157:2013 Geographic information – Data quality

Used to route emergency vehicles

Used to map National Parks

Defining quality

Sources of data quality requirements

Defining quality

Sources of data quality requirements

Industry standards / specifications

Subject matter experts

Defining quality

Sources of data quality requirements

Industry standards / specifications

Subject matter experts

Training and experience

Defining quality

Sources of data quality requirements

Data quality management

Capabilities of the ArcGIS platform

Geodatabase integrity

- Schema constraints
- Attribute rules
- Versioning

Advanced data types

- Topologies
- Parcel fabric
- Geometric/Utility network

ArcGIS Data Reviewer

- Automated review
- Semi-automated review
- Error management
- Quality reporting

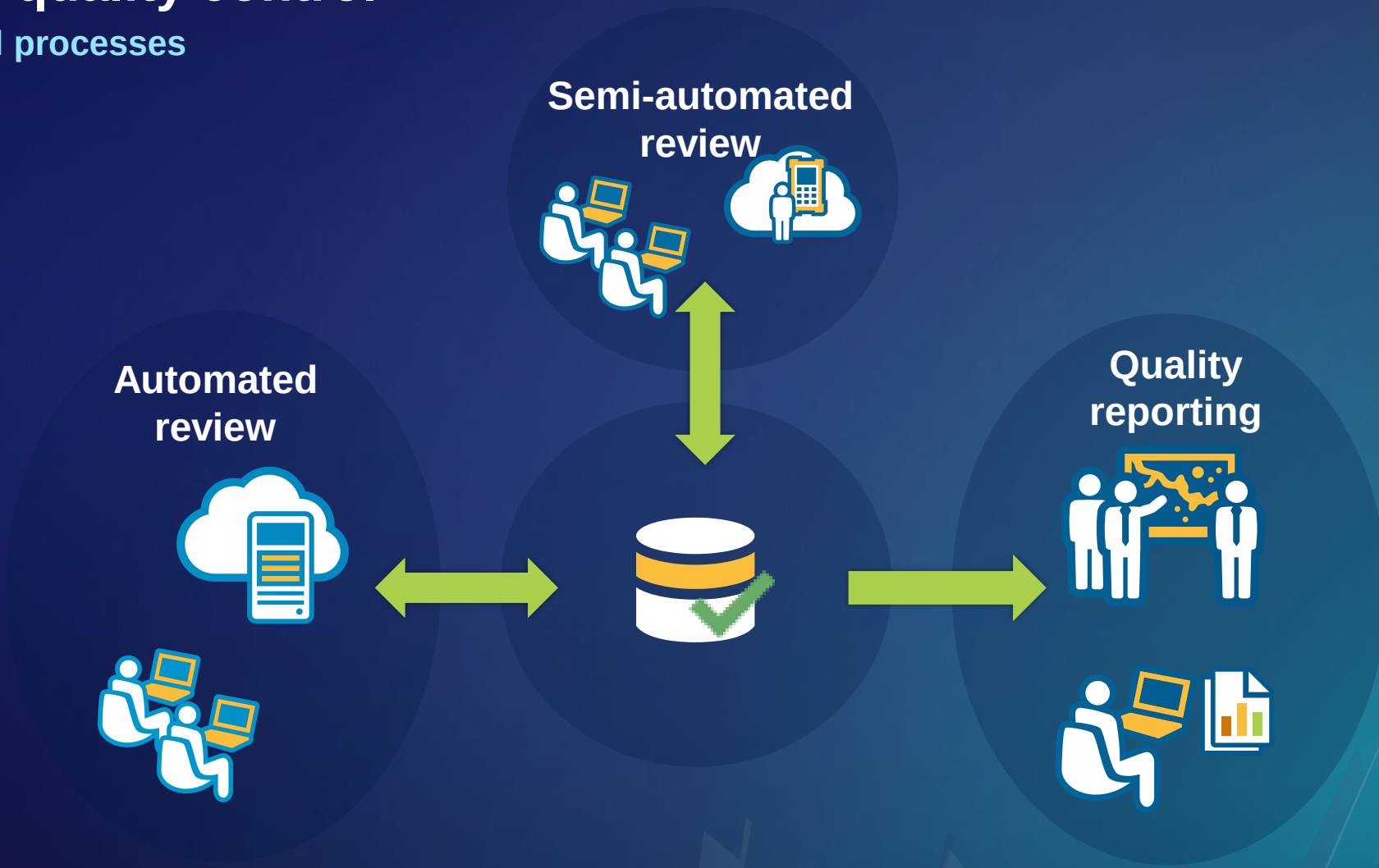
What is ArcGIS Data Reviewer?

Data quality management in the ArcGIS platform

- Data Reviewer for Desktop
  - ArcGIS Pro
  - ArcMap
- Data Reviewer for Server
  - ArcGIS Server (standard or higher)
- Data Reviewer API
  - JavaScript
  - ArcGIS Pro SDK for Microsoft .NET
- Web AppBuilder for ArcGIS

Managing quality control

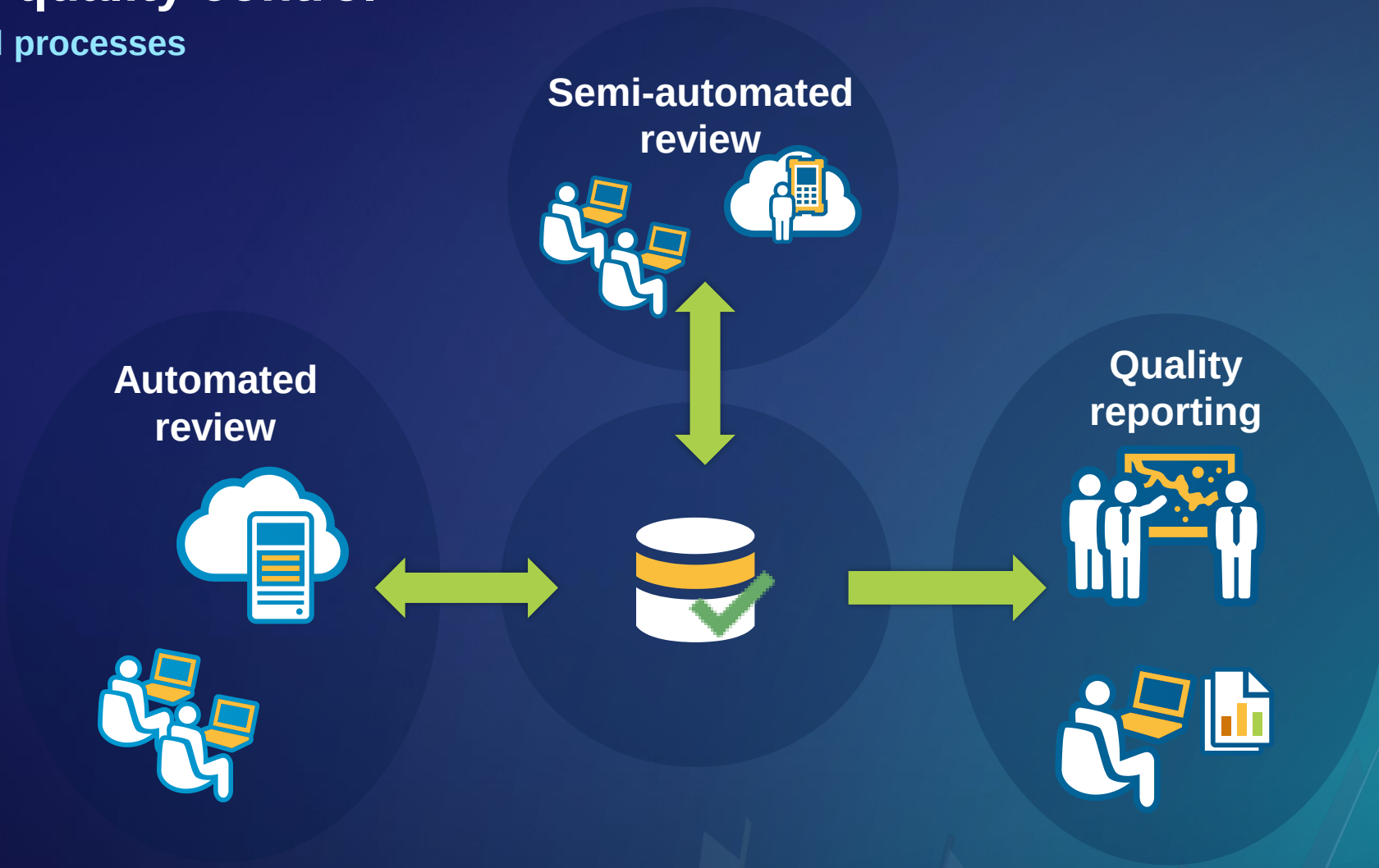
Quality control processes



Automated review

Managing quality control

Quality control processes



Types of quality control

Automated review

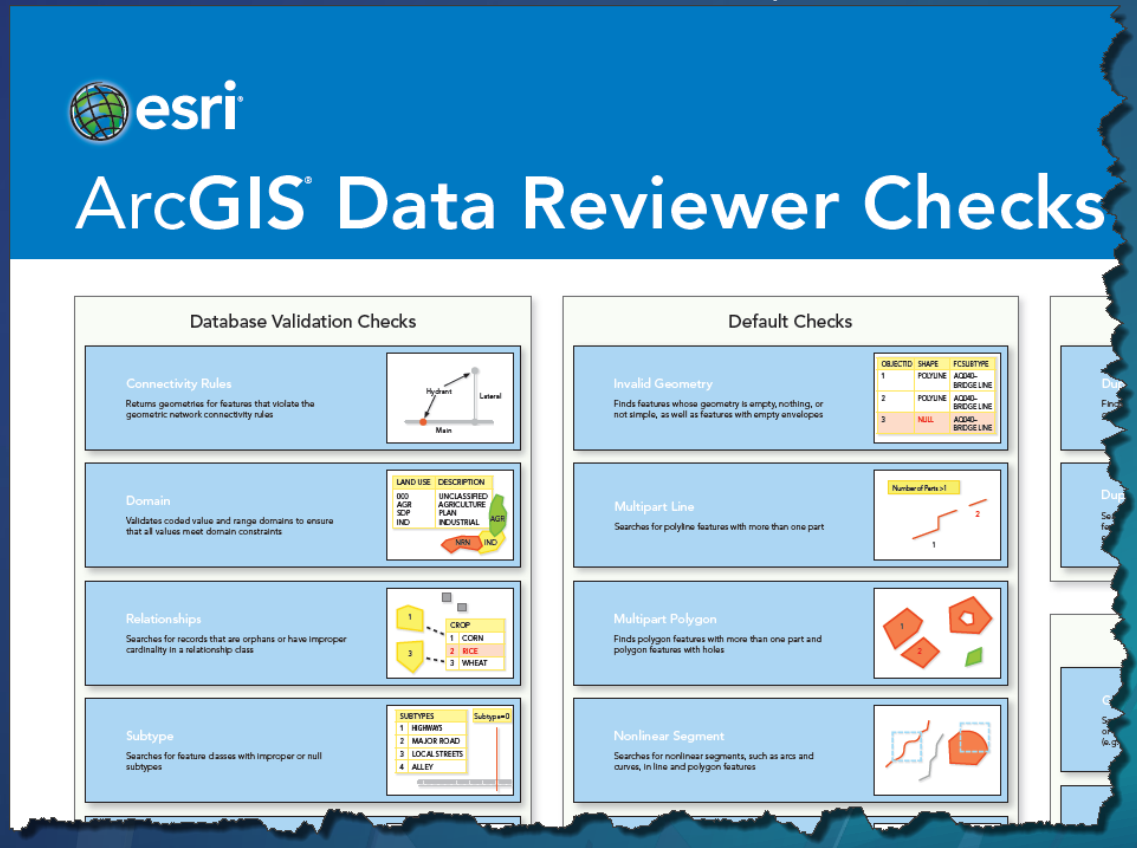
- **Fast**
- **Consistent and repeatable**
- **Objective**
- **100% coverage**

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



ArcGIS Data Reviewer: An Introduction

Implementing data quality rules

Rule implementation workflow

Authoring workflow

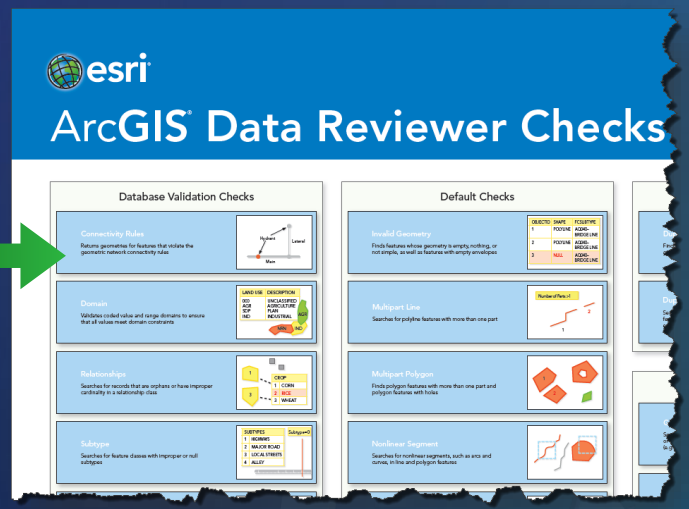
- Identify and document requirements
- Identify relevant validation methods in ArcGIS
- Implement data quality rules

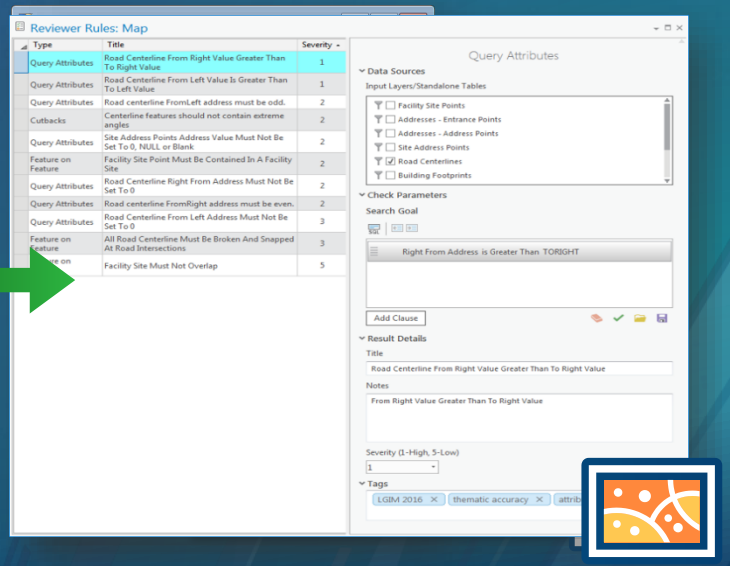
Industry standards / specifications

Subject matter experts

Training and experience

Quality assurance plans



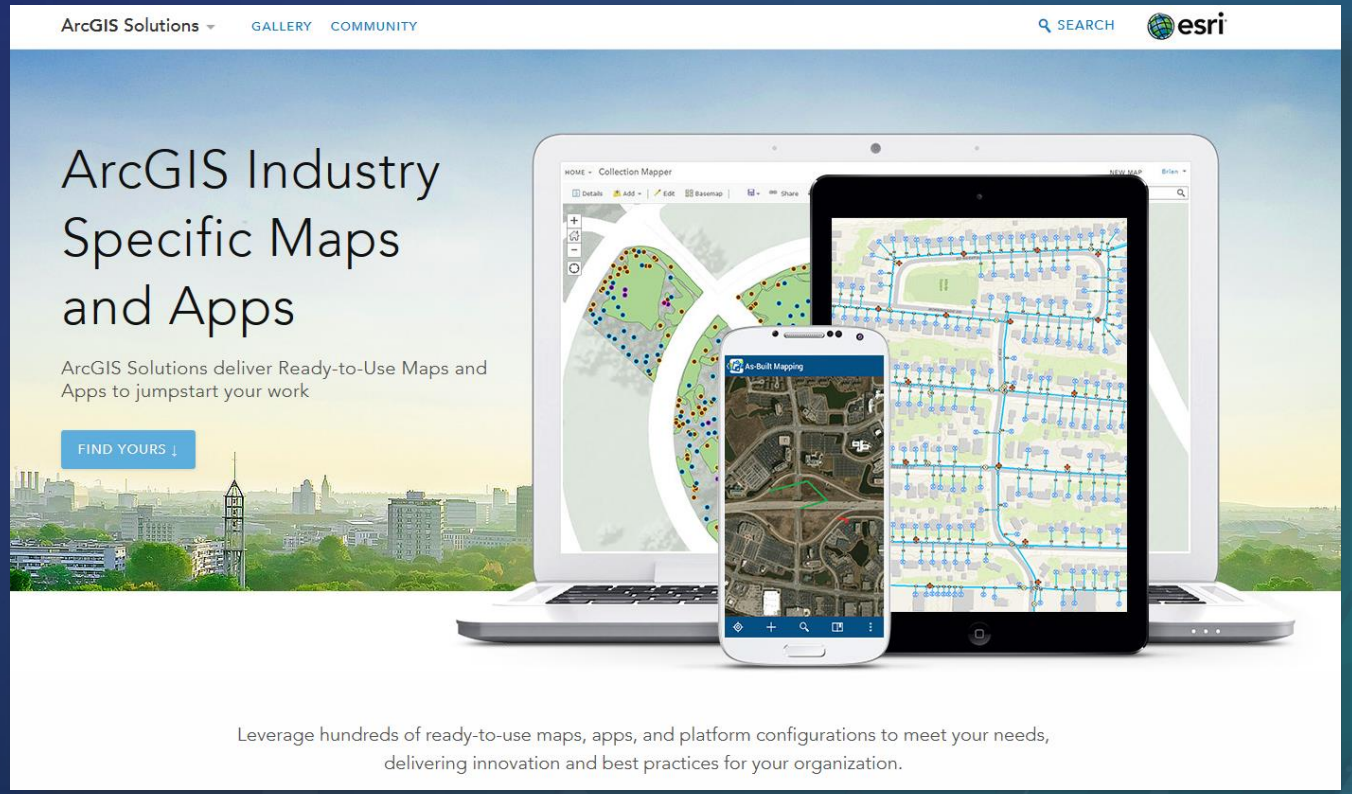


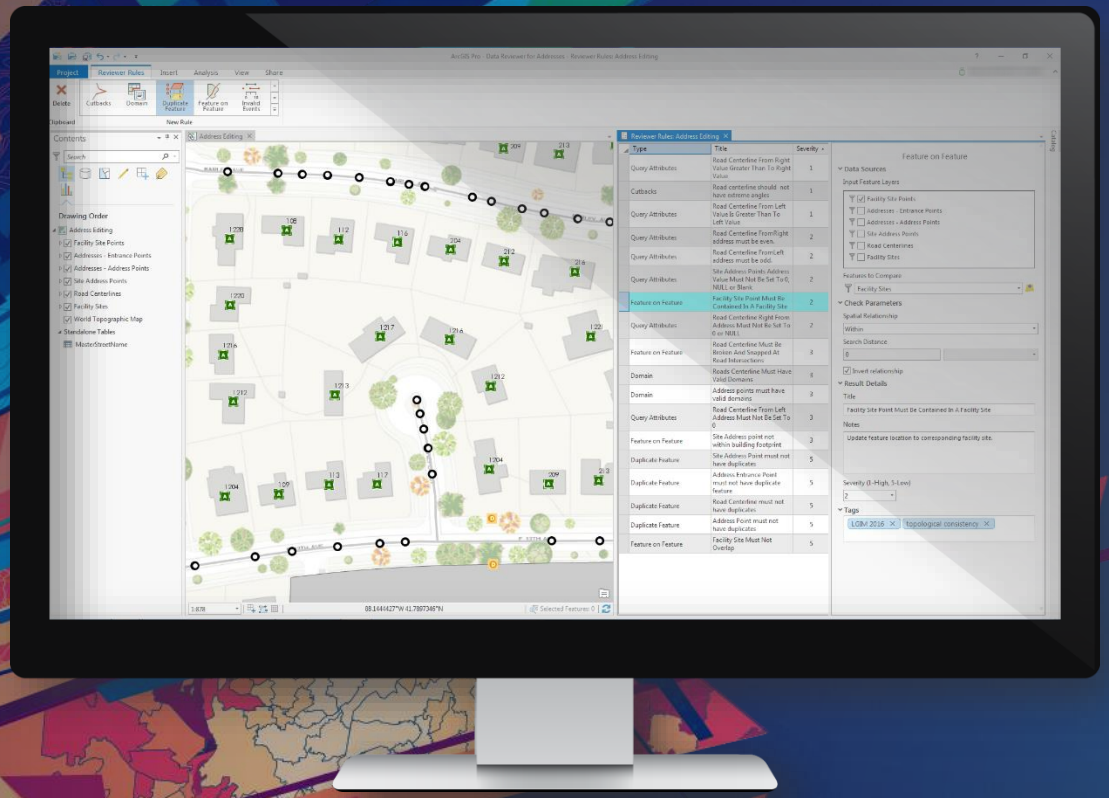
Where to start

Leveraging templates

- Data Reviewer templates
  - Local government
  - Topographic mapping
  - Utilities
    - Electric
    - Gas
    - Water
  - Water resources
- Based on Esri industry models
- Use as starting point

solutions.arcgis.com





Authoring data quality rules

Workshop scenario

My organization needs to address data quality issues that impact future requirements from stakeholders.

Success criteria

- ✓ Future data quality requirements are integrated into existing data management workflows
- ❑ Existing and new features should comply with new quality requirements
- ❑ Features should be accurately positioned
- ❑ All errors are corrected and verified

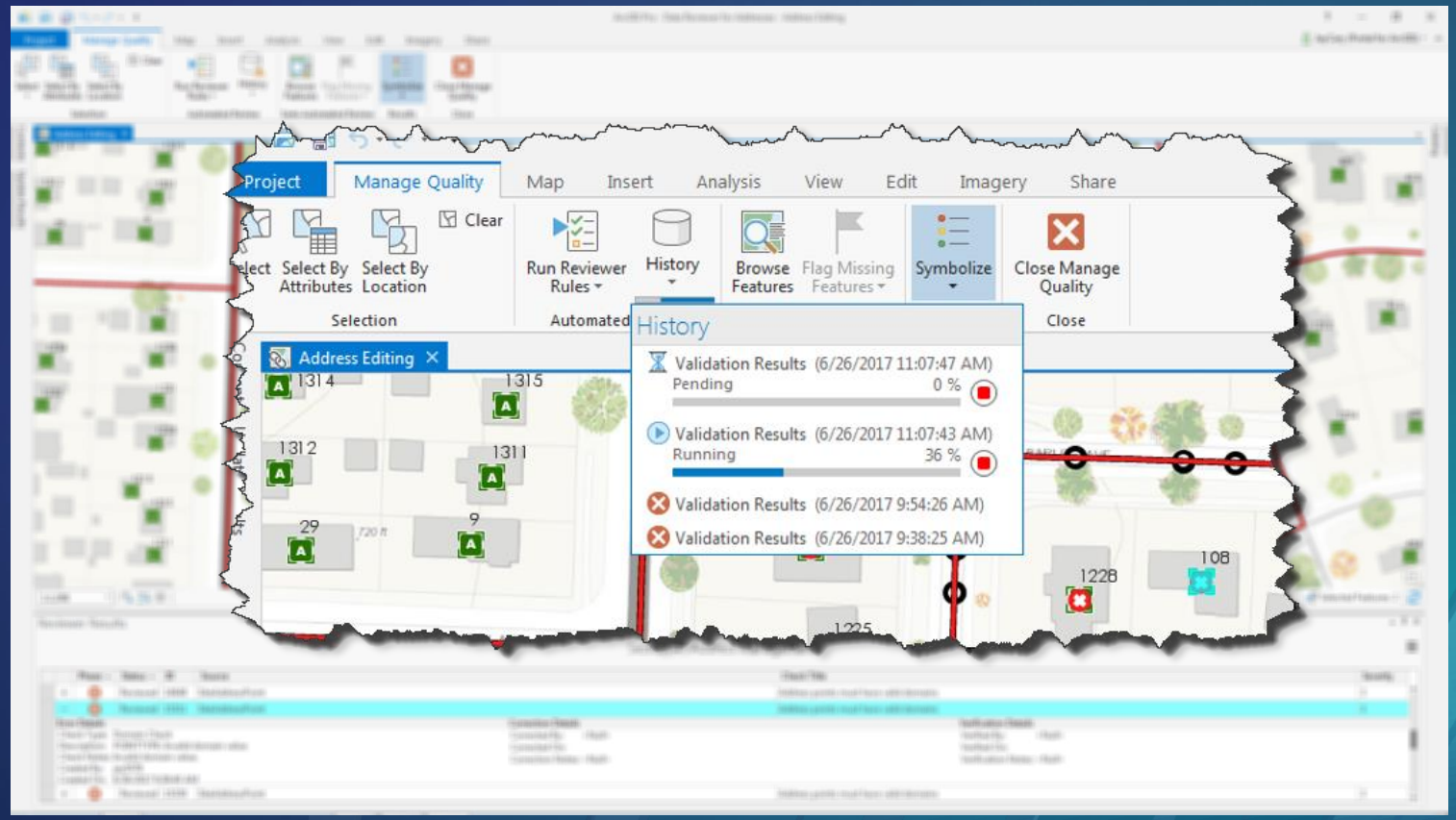
Automating feature validation

Methods for executing data validation

Validating features using Reviewer Rules

Validation in ArcGIS Pro

- Run Reviewer Rules

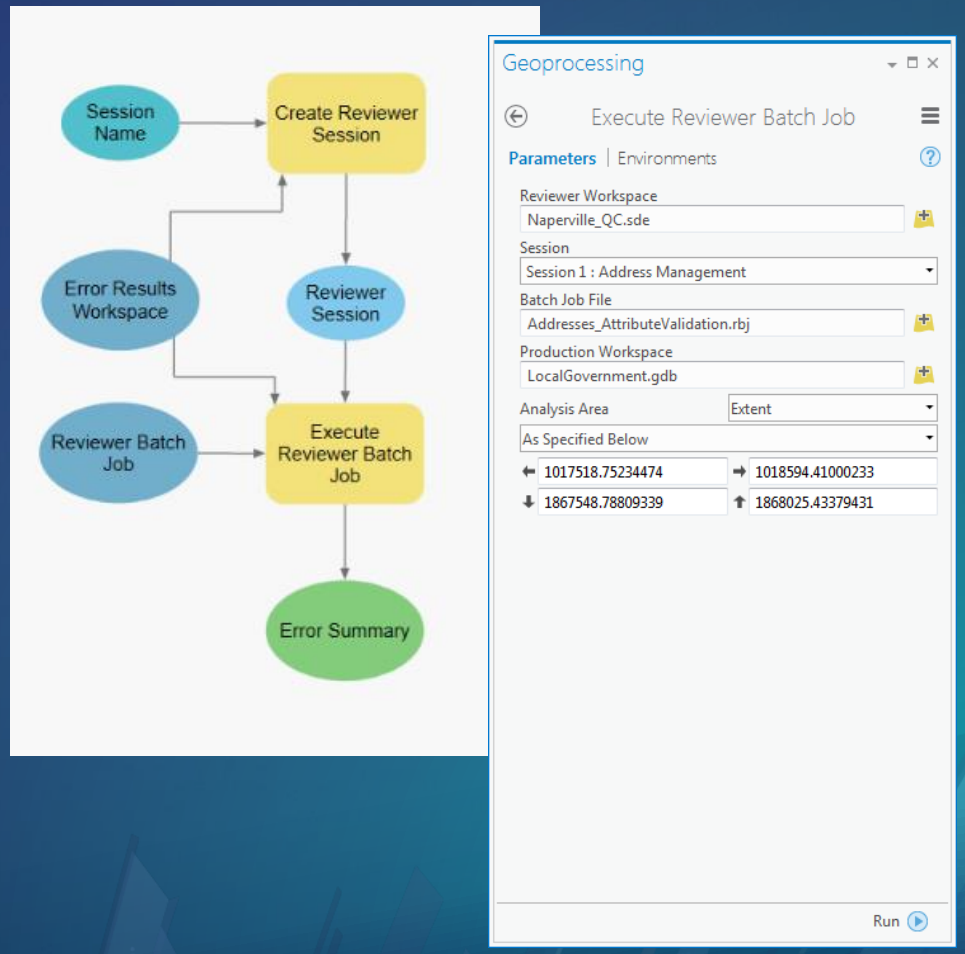


Methods for executing data validation

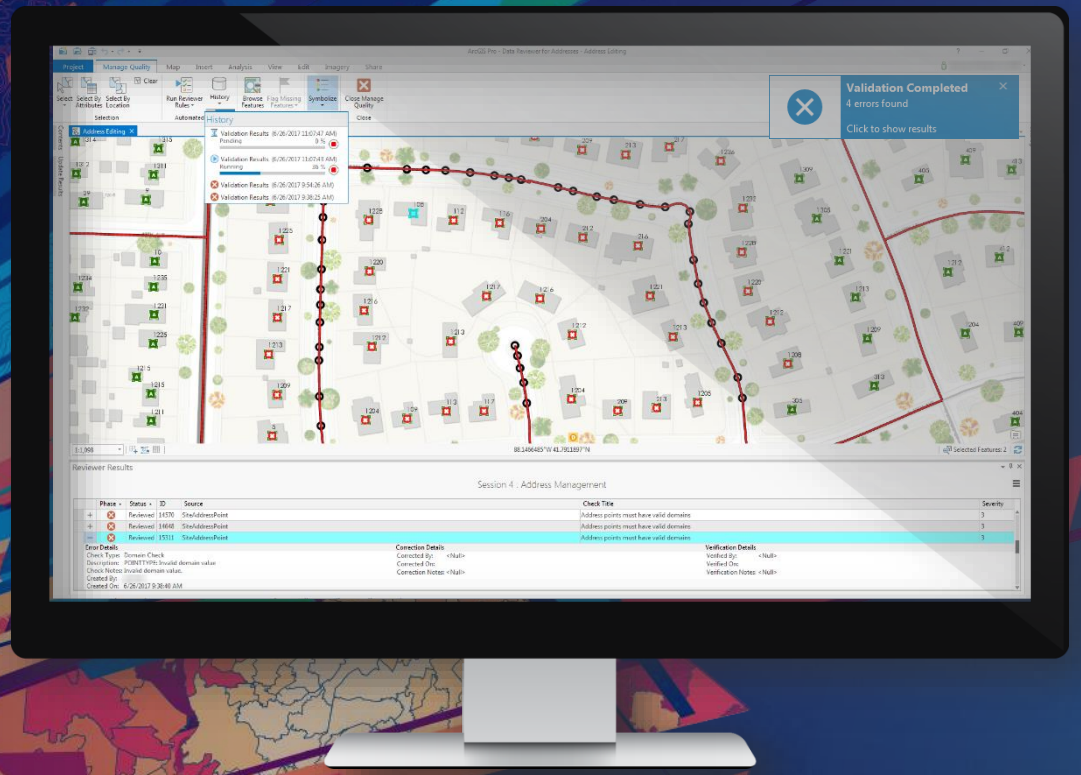
Validating features using Reviewer Batch Jobs

Validation in ArcGIS Pro

- Run Reviewer Rules
- Geoprocessing



ArcGIS Data Reviewer: An Introduction



Validating Features

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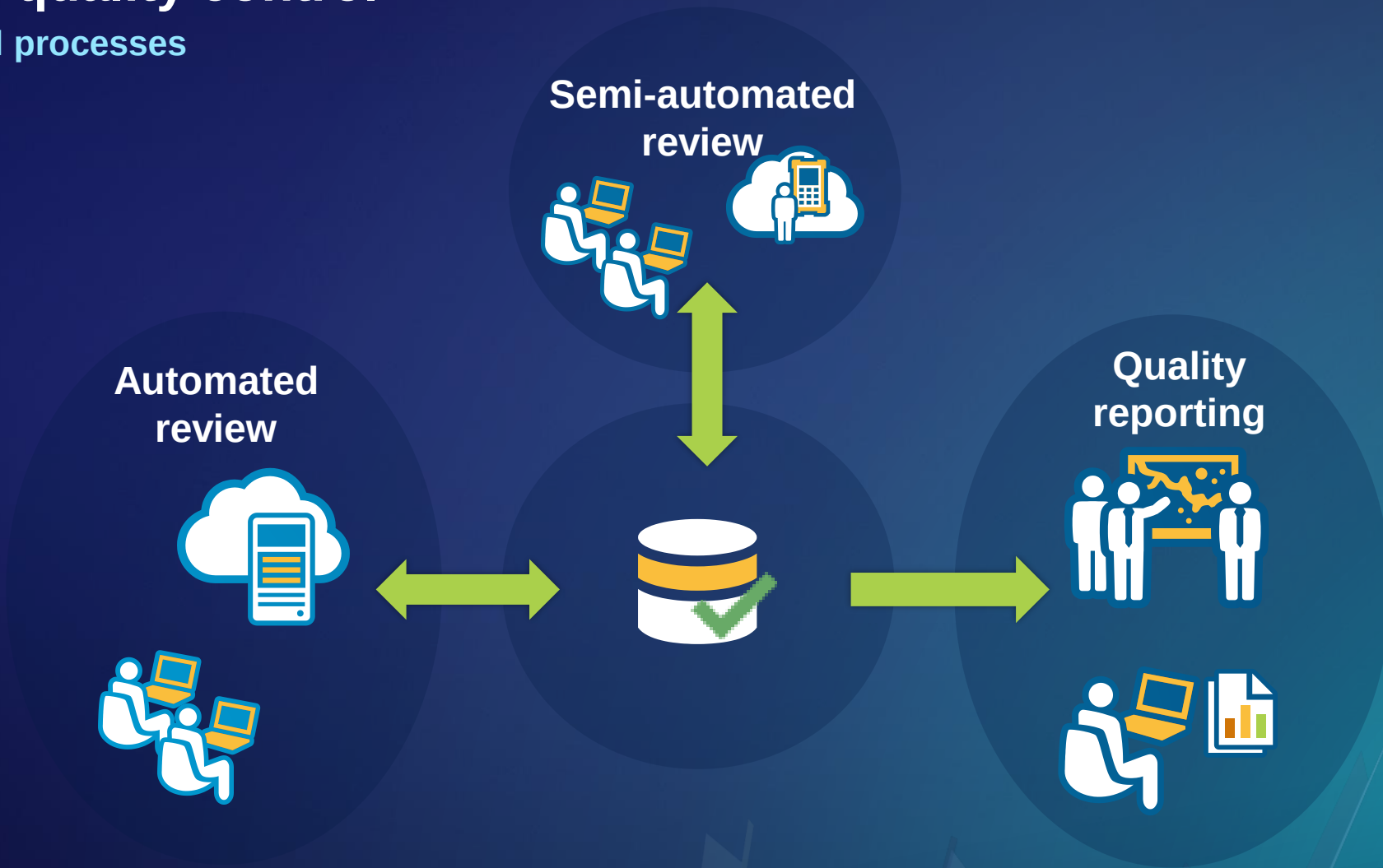
Semi-automated review

Managing quality control

Quality control processes



Types of quality control

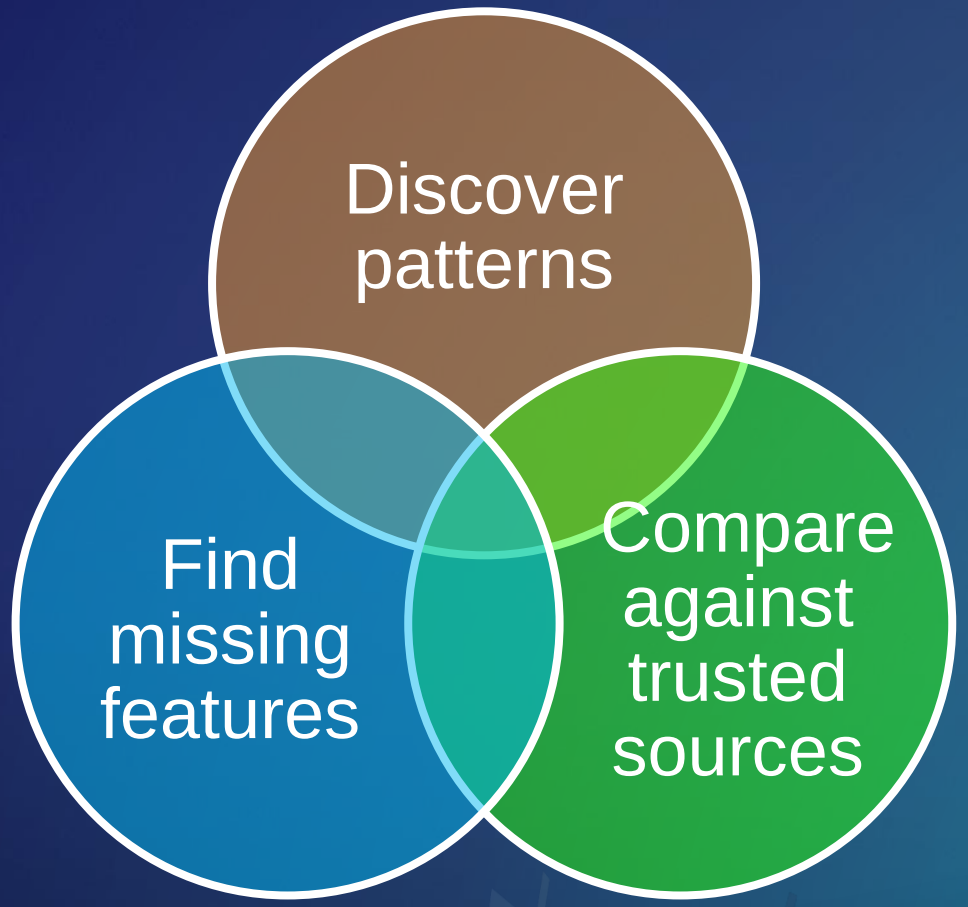
Automated review

- Fast
- Consistent and repeatable
- Objective
- 100% coverage

Semi-automated review

- Guided Workflows
- Streamlined processes
- Subjective
- Sampling

Value of performing visual review

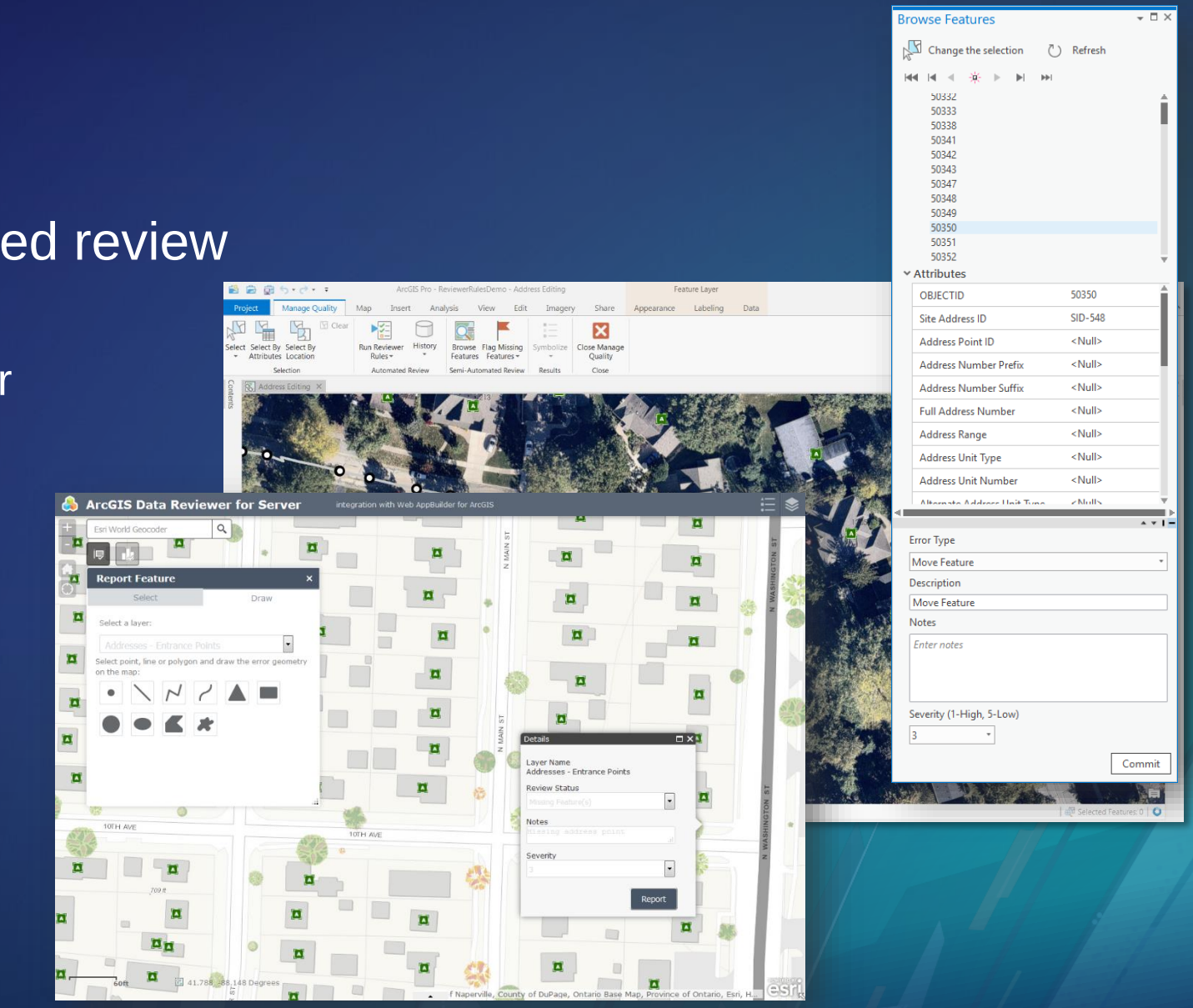


Semi-automated review

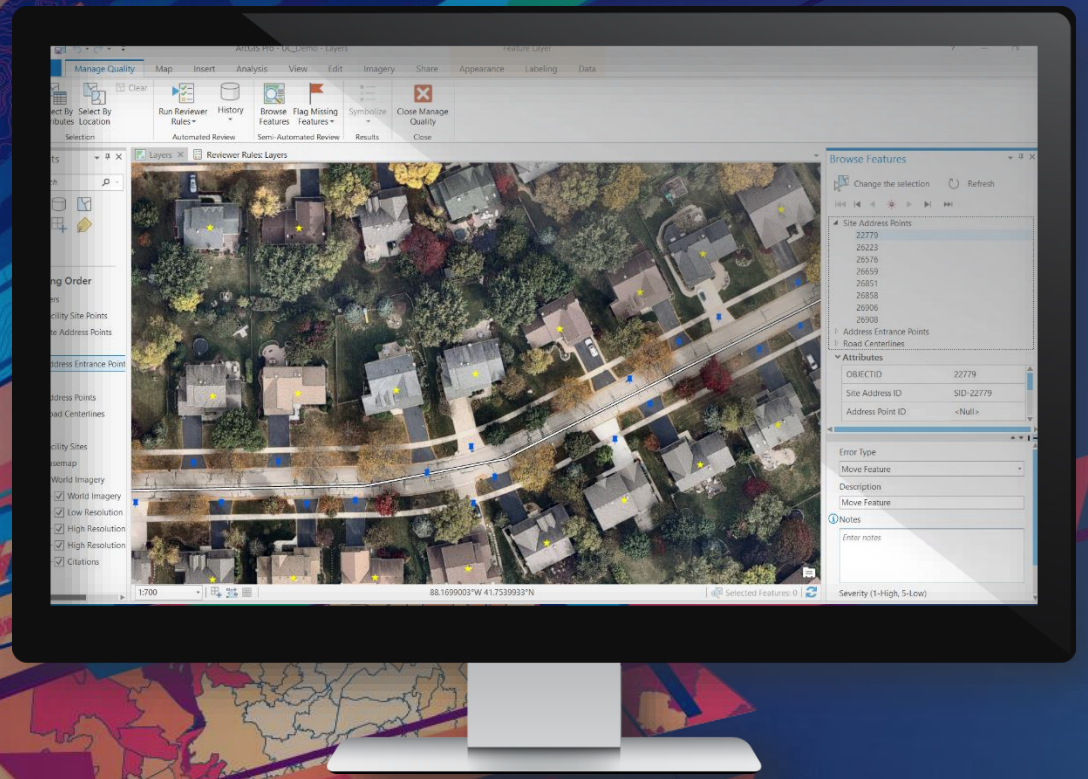
Leveraging ArcGIS Desktop

Tools supporting semi-automated review

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



ArcGIS Data Reviewer: An Introduction



Visual data review

Workshop scenario

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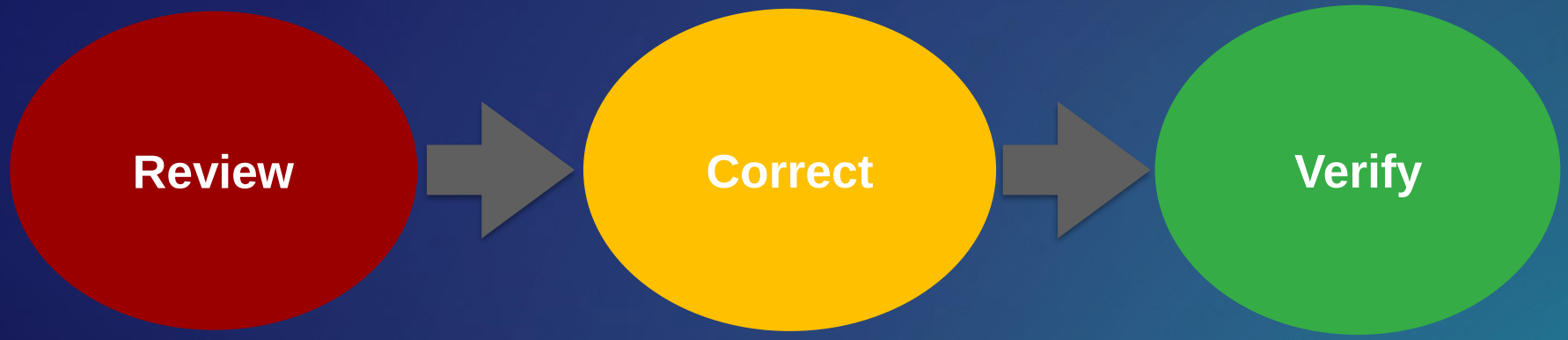
Managing errors

Managing quality control

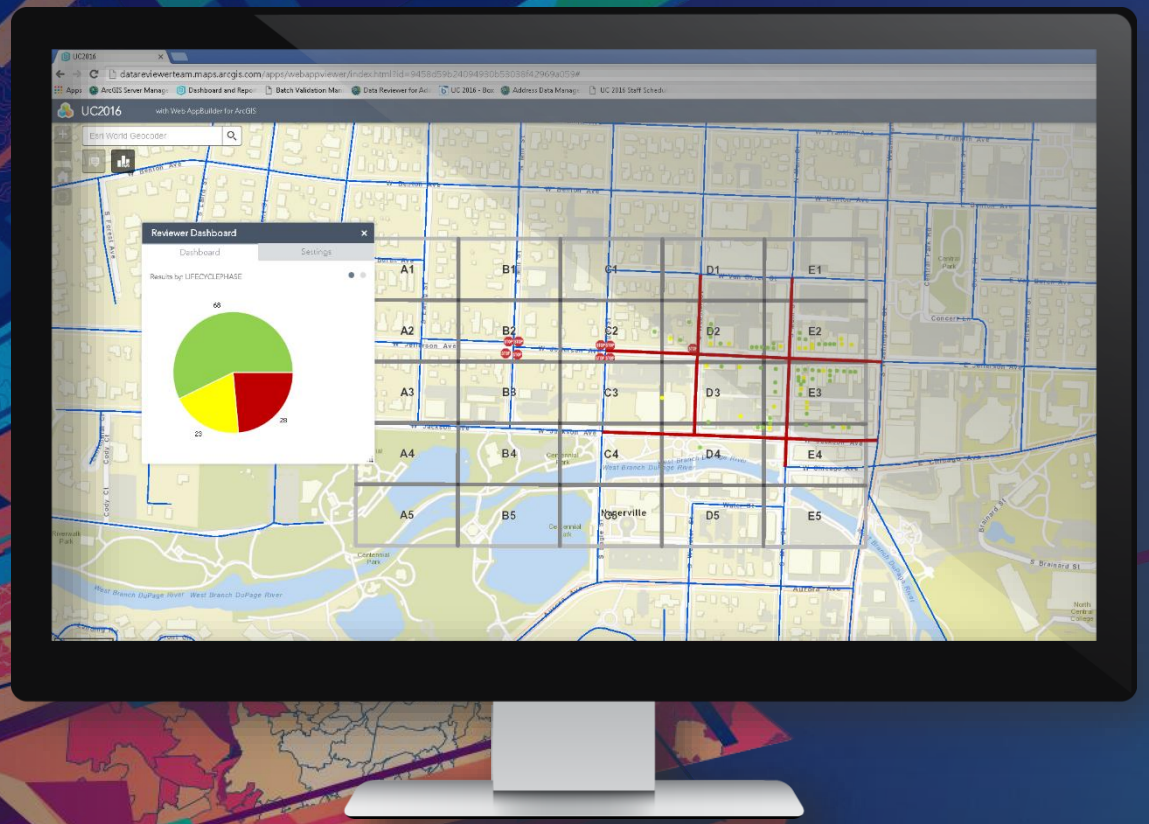
QC lifecycle management



Find and
record errors

Perform edits
or
Note exceptions

Acceptable
or
Unacceptable



Managing Errors

Workshop scenario

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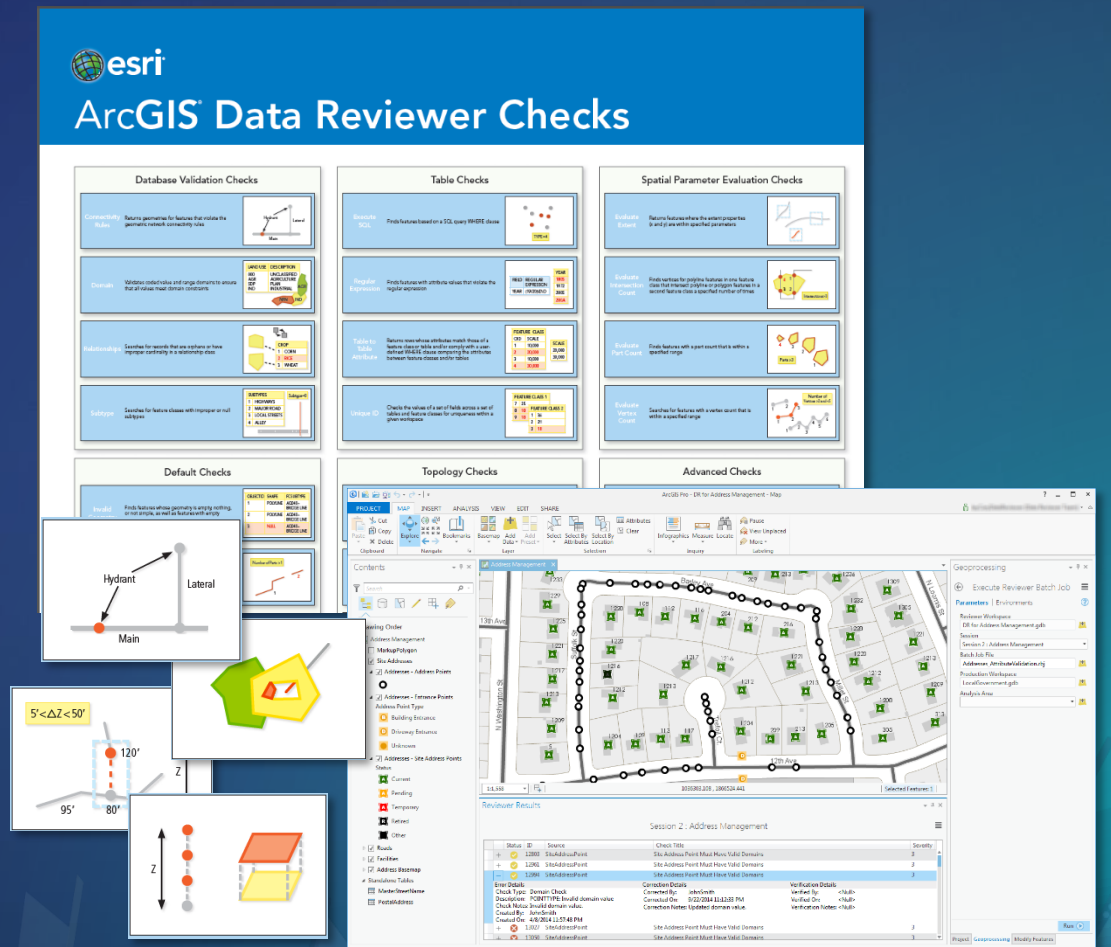
Workshop review

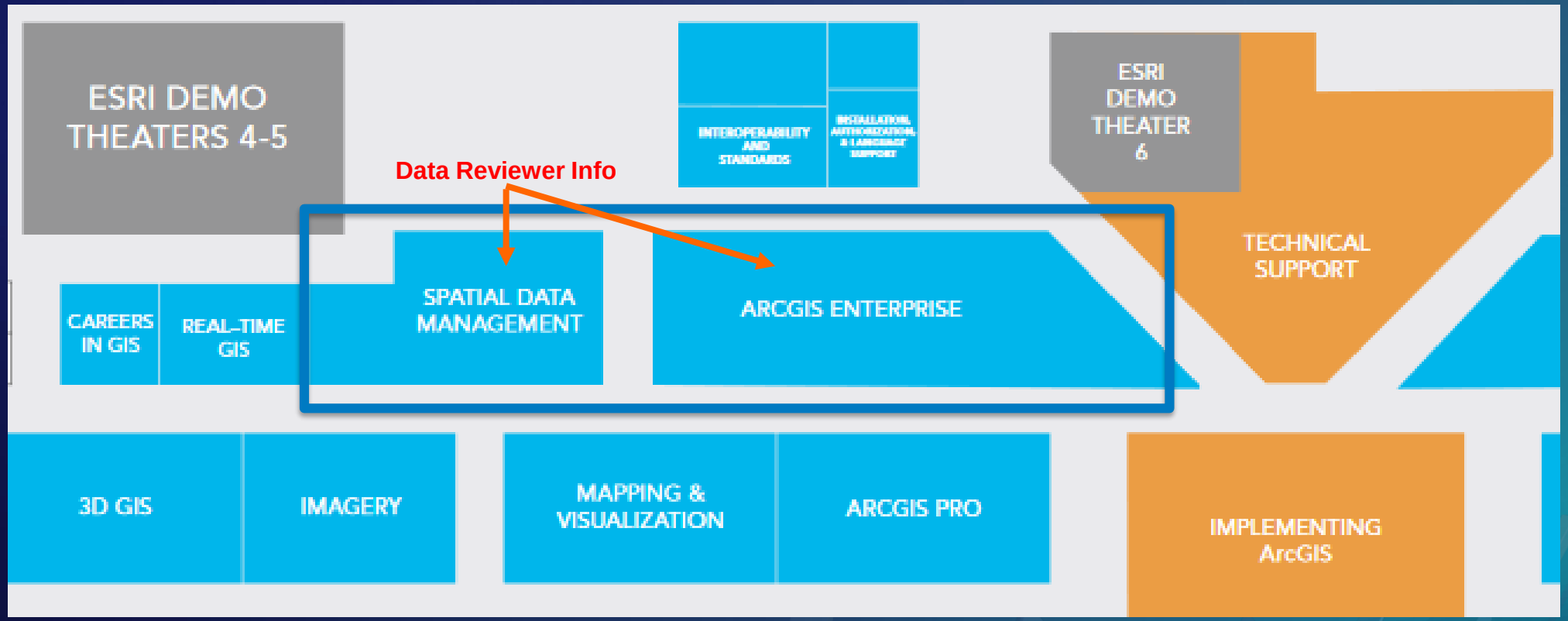
- Defining data quality
- Forms of data quality control
  - Automated review
  - Semi-automated review
- ArcGIS Data Reviewer
  - Automated validation checks
  - Semi-automated tools
  - Error management



See Us Here

WORKSHOP	LOCATION	TIME FRAME
• ArcGIS Data Reviewer: Deploying Data Quality Web Services	• Demo Theater 5	• Tuesday 11:15 – 12:00
• ArcGIS Data Reviewer: An Introduction (Offering #2)	• Room 31A	• Tuesday 4:00 – 5:00
• ArcGIS Data Reviewer: Leveraging Geoprocessing for data validation	• Demo Theater 3	• Wednesday 10:00 – 10:45
• ArcGIS Data Reviewer: Advanced Data Validation	• Room 31A	• Wednesday 2:30 – 3:30

See Us Here


ESRI DEMO THEATERS 4-5
INTEROPERABILITY AND STANDARDS
ESRI DEMO THEATER 6
Data Reviewer Info
TECHNICAL SUPPORT
CAREERS IN GIS
REAL-TIME GIS
SPATIAL DATA MANAGEMENT
ARCGIS ENTERPRISE
3D GIS
IMAGERY
MAPPING & VISUALIZATION
ARCGIS PRO
IMPLEMENTING ArcGIS

Want to learn more?

- Documentation
  - Desktop

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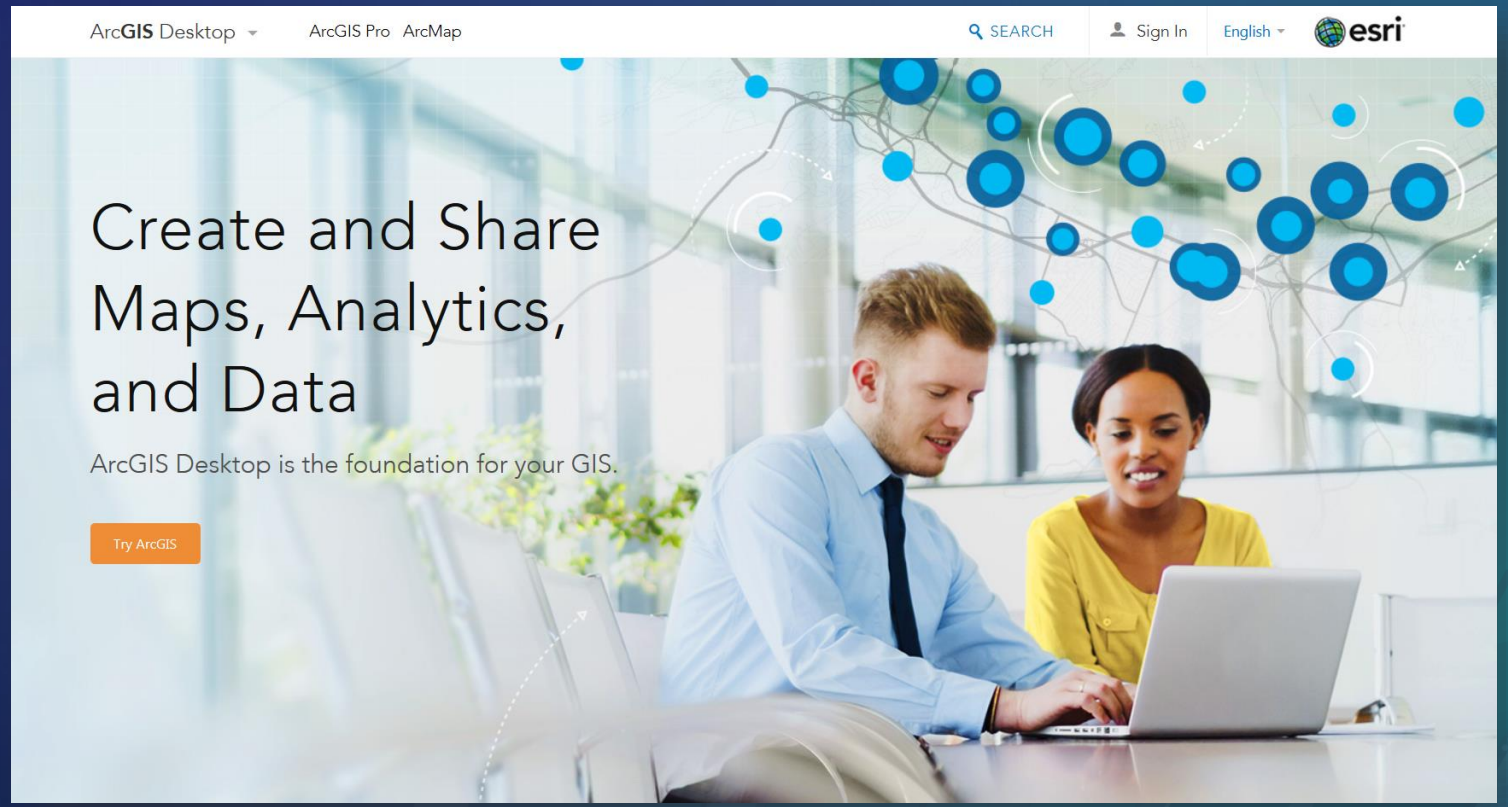

Want to learn more?

- Documentation
  - Desktop
  - Server

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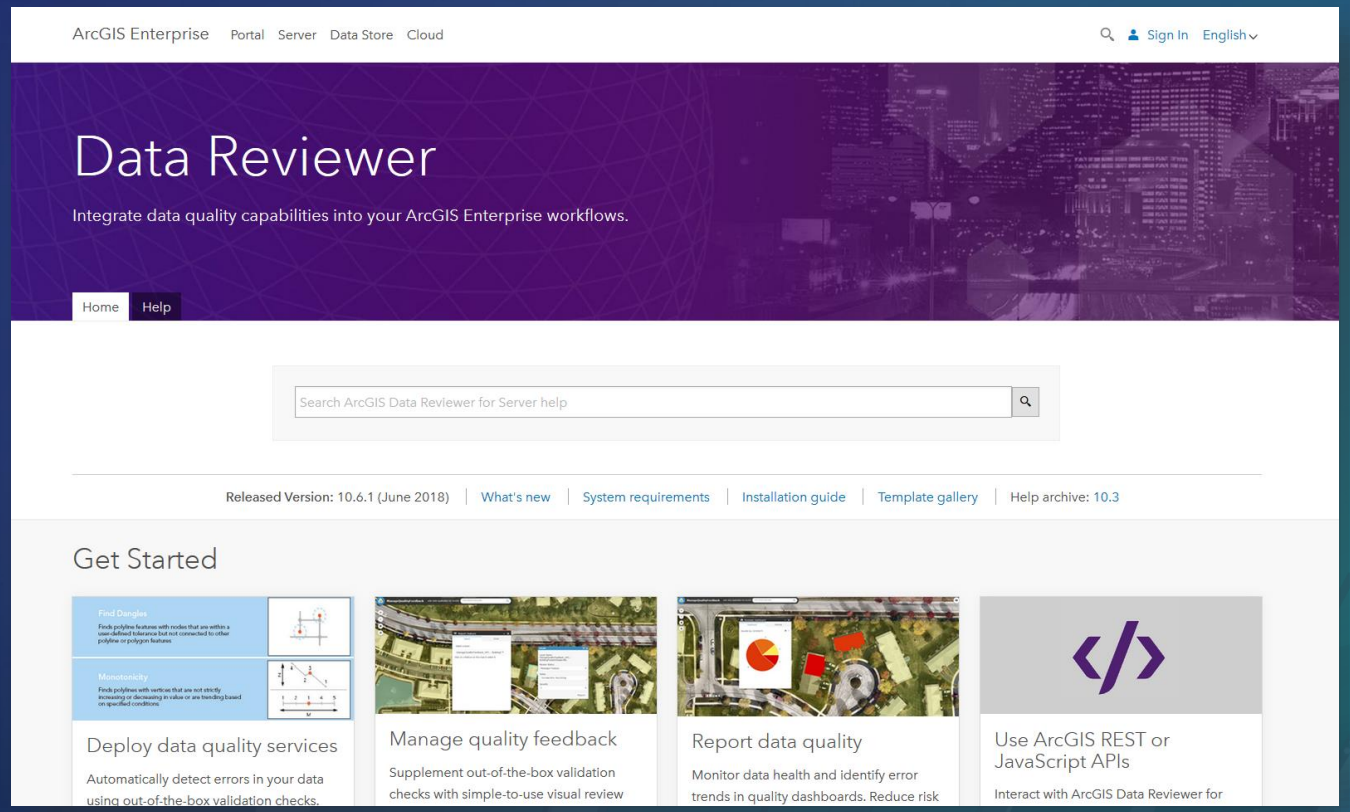

Want to learn more?

- Documentation
  - Desktop
  - Server

- Training *(training.esri.com)*
  - Assessing Data Quality using ArcGIS Data Reviewer *(Seminar)* Free
  - Evaluating Positional Accuracy Using ArcGIS Data Reviewer for Desktop *(Seminar)* Free
  - Data QC with ArcGIS: Automating Validation *(Web Course)*
  - Data QC with ArcGIS: Visual Review *(Web Course)*
  - Quality Control Using ArcGIS Data Reviewer for Desktop *(Instructor-Led)*

Want to learn more?

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  - Quality Control Using ArcGIS Data Reviewer for Desktop
- GeoNet *(community.esri.com)*
  - Data Reviewer place

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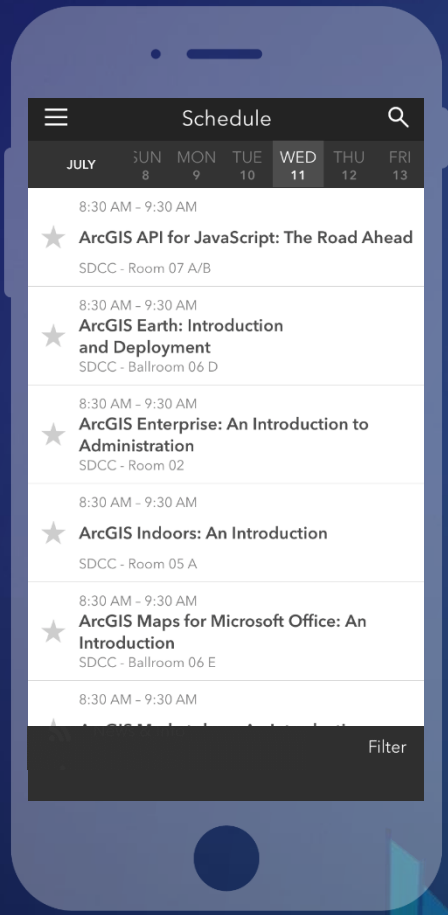
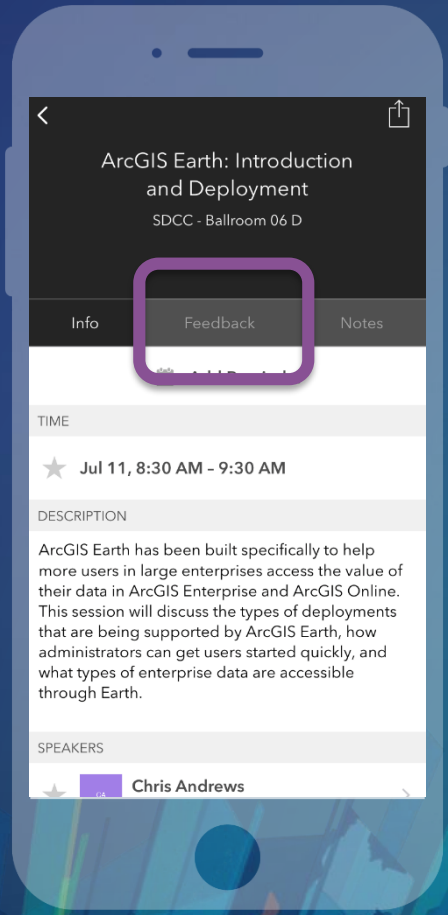
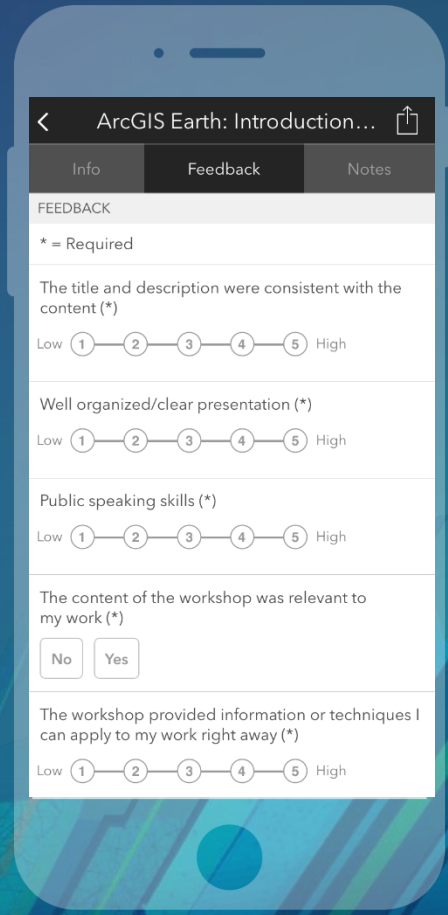


Scroll down to find the feedback section



Complete answers and select “Submit”



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