February Meeting

2/13/2019

AGENDA

1. Announcements
2. Esri Updates
3. Workflow Manager in ArcGIS Pro
4. Data Reviewer in ArcGIS Pro
5. Open Discussion

**** Please mute phones!! ****

ANNOUNCEMENTS

- Meeting Invites
- GIS-T Special Interest Group Meeting
  - April 24, 6:30pm (draft schedule)
- GeoNet Roads and Highways Website
  - https://community.esri.com/groups/roads-and-highways-user-group-rhug

ANNOUNCEMENTS

Functionality/Enhancement Priorities:

- LRS editing
- Event Editor
- Complex Geometries (gapped routes, self-intersecting routes)
- External Integrations
- Concurrencies
- Event Behaviors
- Intersections
- Temporality
- Redlining
- Geocoding
- Geoprocessing
- R&H Data Reviewer Checks
- Training
- Support
- Conflict Prevention

ANNOUNCEMENTS

- Future Discussion Topics
  - Temporality
  - Geocoding
  - Event Editing in Pro

Esri Updates

Nathan Easley

Workflow Manager in Pro

Michael Broadbent

Data Reviewer for Roads and Highways

Jay Cary

Open Discussion

RHUG Community

Upcoming Meetings / Contacts

Wednesday, March 13, 2019
and
GIS-T April 2019

Contact Info:

Erin Lesh ealesh@ncdot.gov
Patrick Whiteford pwhiteford@azdot.gov

Product Team Update
(RHUG meeting 2/13/19)

Capabilities currently under development

- Multi-field (concatenated) Route ID support in ArcGIS Pro
  - Edit activities UI
  - GP tools
- Regression testing 10.7 final release (available March)

Support Incidents/Defects

- BUG-000117296 - Conflicts are introduced on routes when doing calibration point edits while the route edits are being posted in another version (fixed, being verified for 10.7)
- BUG-000118639 - Incorrect measure values are assigned to events when a whole part of a gapped route is realigned with the Split Value 'To Measure' set to the end of the gap and the event behavior is set to Cover in ArcGIS Desktop 10.6.1 (fixed for 10.7)
- BUG-000117736 Events on the gap route do not update correctly if the 'Gap calibration method' field is set to 'Applying Euclidian Distance' (as designed behavior)
- BUG-000119546 Extend route does not apply the Cover event behavior correctly on gapped routes (fixed, being verified for 10.7)
- BUG-000119545 Realign route does not apply the Cover event behavior correctly and applies incorrect measure values on gapped routes in different situations (fixed, being verified for 10.7)

Other Announcements

- **Roads and Highways GeoNet site now live**
  - https://community.esri.com/community/esri-roads-and-highways

esri
THE
SCIENCE
OF
WHERE

What is Data Reviewer for ArcGIS Pro?

February 13, 2019

Agenda

- Data quality management in ArcGIS
- What is ArcGIS Data Reviewer
  - Automated Data Review
  - Semi-Automated Review
  - Managing Errors and Reporting Data Quality
- Summary/Resources

Data quality management

Capabilities of the ArcGIS Platform

Geodatabase integrity

- Schema constraints
- Attribute Rules
- Versioning

Advanced data types

- Parcel Fabric
- Topologies
- Utility networks

ArcGIS Data Reviewer

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

What is ArcGIS Data Reviewer?

Data Quality Management for ArcGIS

Provides

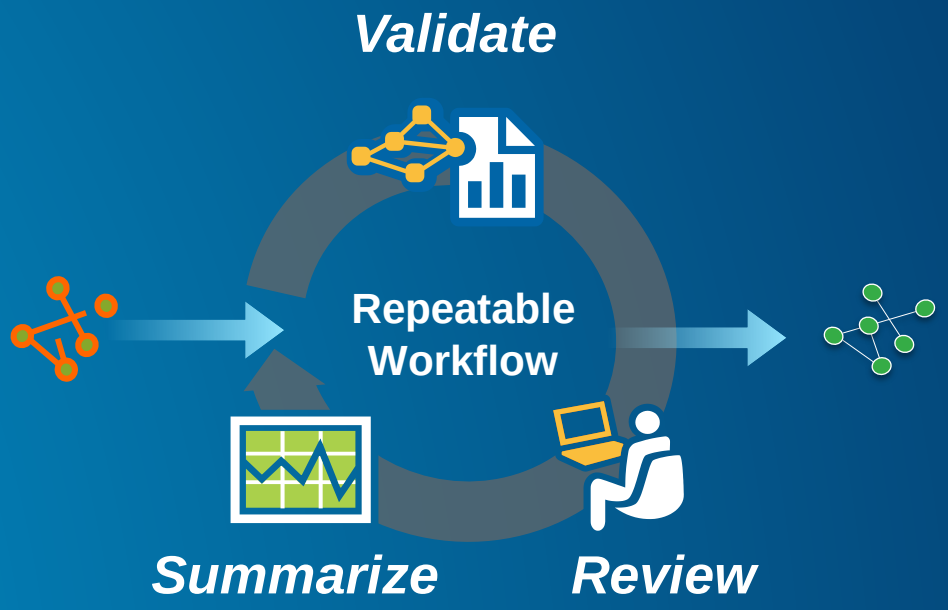
- Rule-based automated validation
- Semi-automated workflows
- Track and report quality

For individuals and enterprise

- Saves time/money
- Less rework

For multiple domains

- Configurable
- Extendable



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

Types of Quality Control

Automated review

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

Types of Quality Control

Automated review

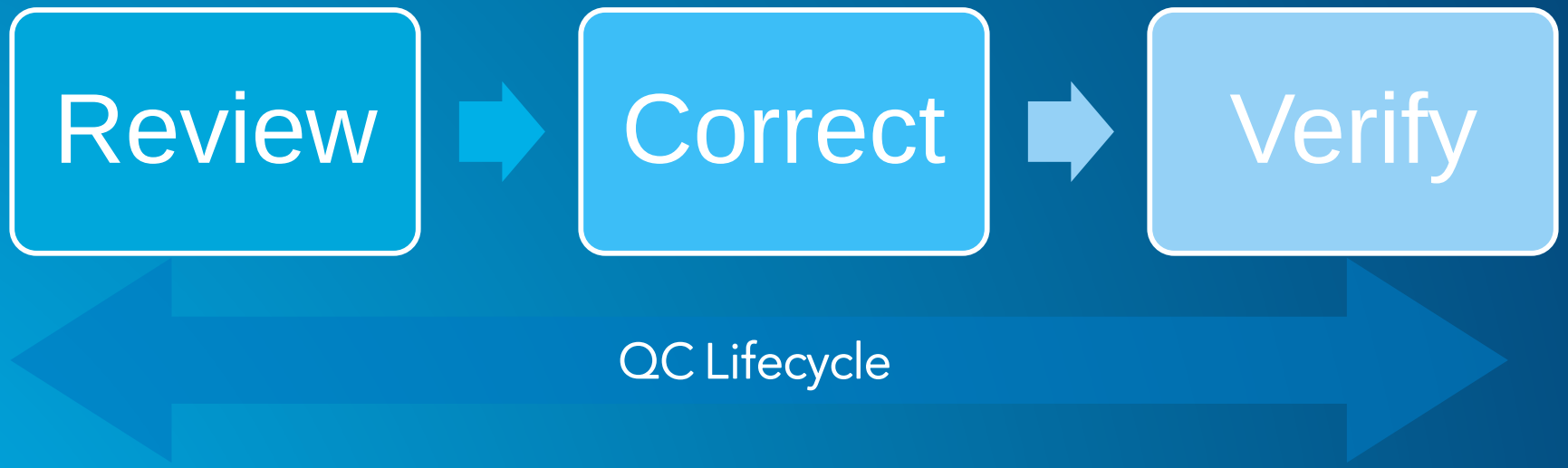
- Fast
- Consistent and repeatable
- Objective
- 100% coverage

Semi-automated review

- Guided Workflows
- Streamlined processes
- Subjective
- Sampling

Managing Quality Control

Framework for managing QC lifecycle



Automated Data Review

Types of Quality Control

Automated review

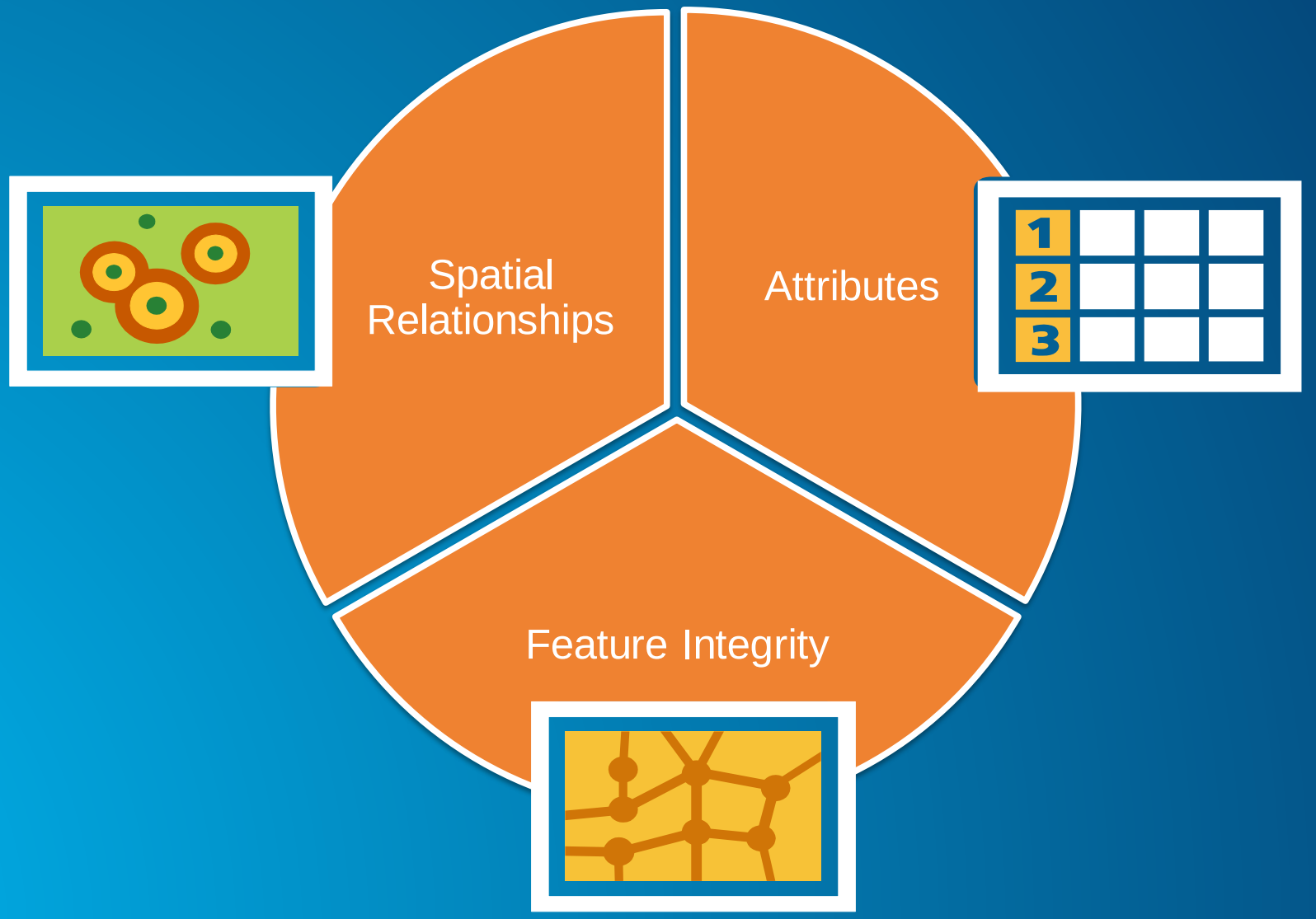
- **Fast**
- **Consistent and repeatable**
- **Objective**
- **100% coverage**

After data creation

During data creation

Automated Review Methods

Different Type of Issues in GIS Data

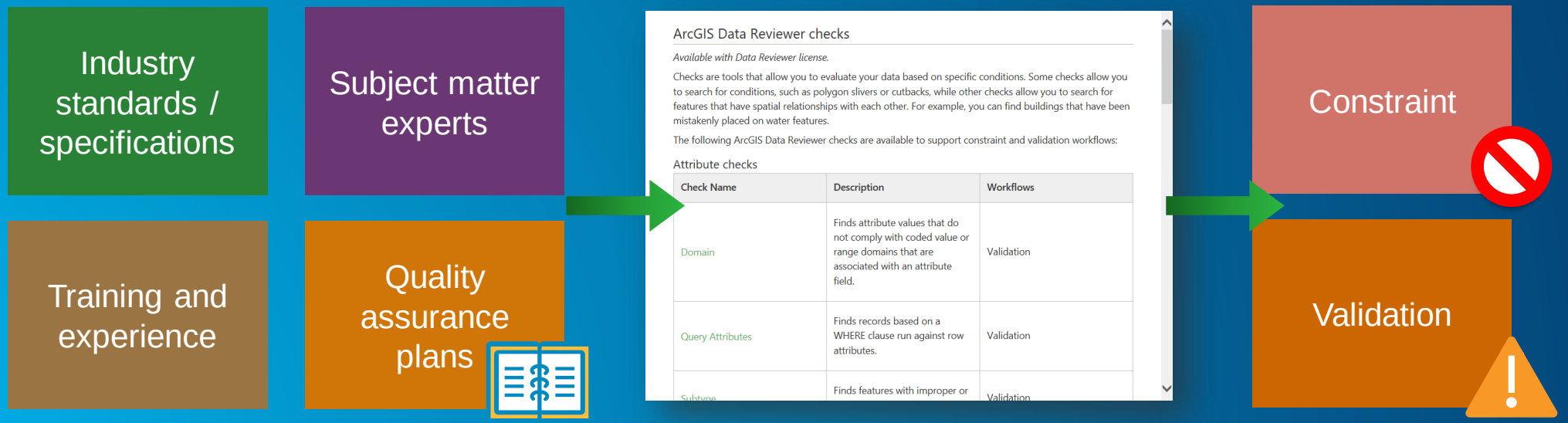


Implementing data quality rules

Rule implementation workflow

Authoring workflow

- Identify and document requirements
- Identify relevant validation methods in ArcGIS
- Identify validation workflow

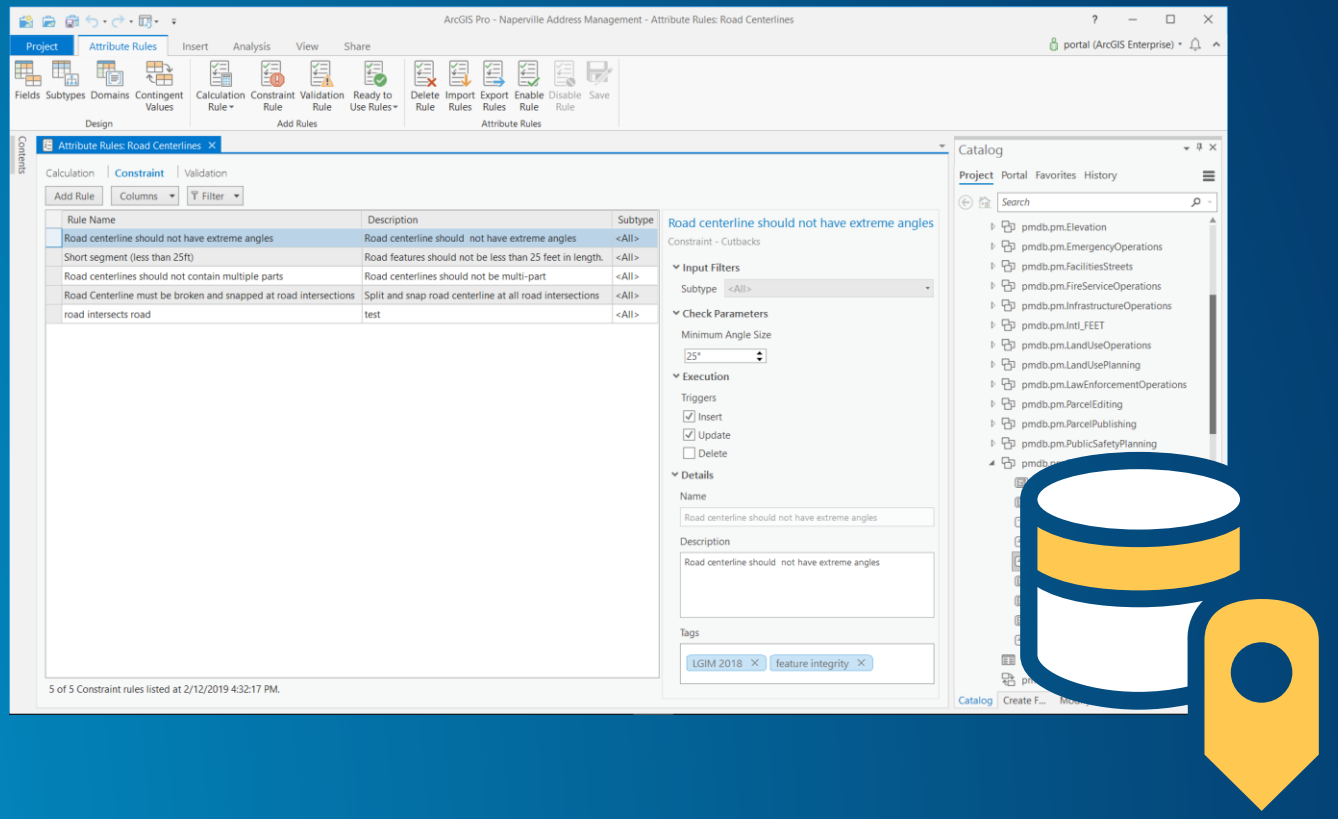


Data Reviewer Checks

Reviewer Rule in constraint workflows

Constraint workflows

- Rules are stored in Geodatabase
- Enterprise geodatabase sources

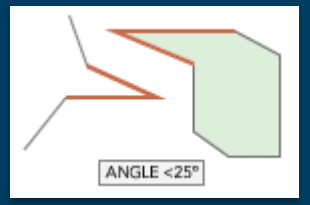


Data Reviewer Checks

Reviewer Rule in constraint workflows

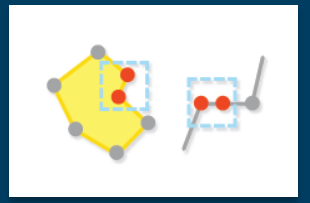
Constraint workflows

- Rules are stored in Geodatabase
- Enterprise geodatabase sources
- Assess a feature's
  - Integrity
  - Spatial relationships



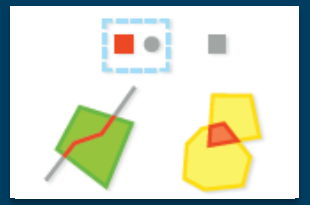
Cutbacks

Finds segments where the angle between segments in a polygon or polyline is below a specified minimum value.



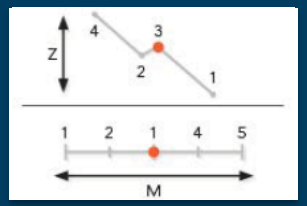
Duplicate Vertex

Finds vertices from the same feature that are collocated or within a specified tolerance of one another.



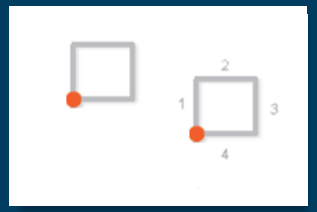
Feature on Feature

Finds features that have a specific relationship, either from two different feature layers or within the same feature layer.



Monotonicity

Searches Z or M-enabled polylines for vertices that are not strictly increasing or decreasing in value or are trending based on specified conditions.



Polyline or Path Closes on Self

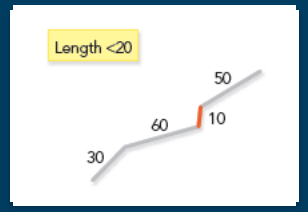
Finds paths or lines in polyline features that close themselves.

Data Reviewer Checks

Reviewer Rule in constraint workflows

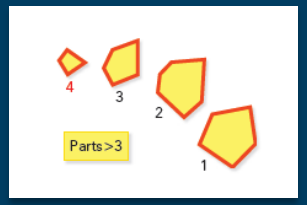
Constraint workflows

- Rules are stored in Geodatabase
- Enterprise geodatabase sources
- Assess a feature's
  - Integrity
  - Spatial relationships
  - Geometric properties



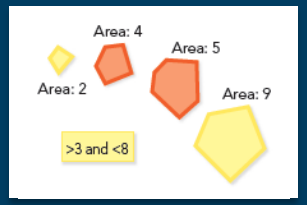
Evaluate Polyline Length

Finds polyline segments, parts or features that have a line length within a specified tolerance.



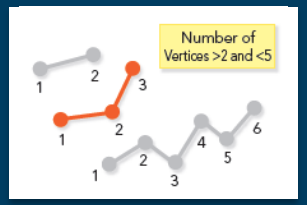
Evaluate Part Count

Finds features with a part count that is within a specified value.



Evaluate Polygon Perimeter and Area

Finds polyline segments, parts, or features that have a line length within a specified tolerance.



Evaluate Vertex Count

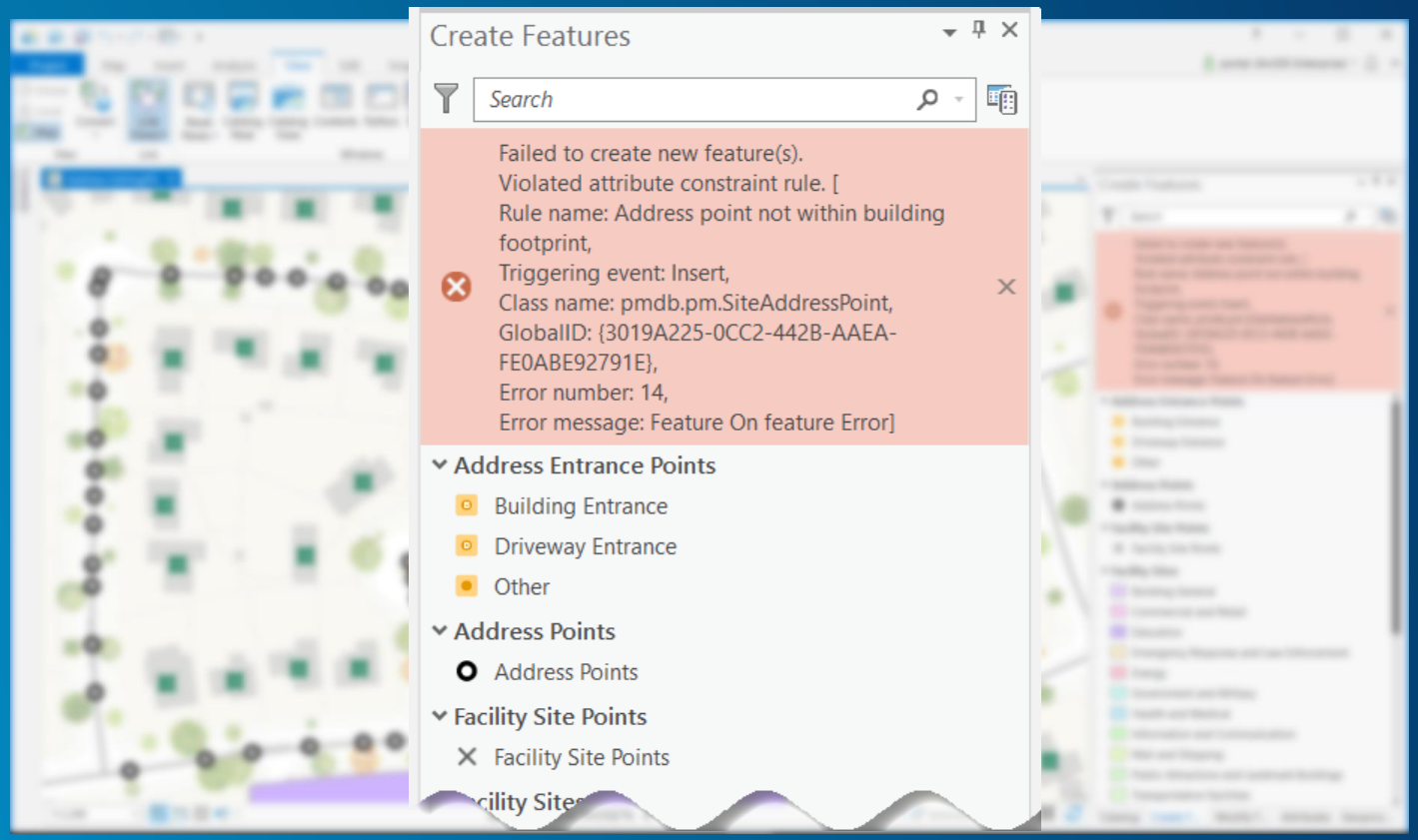
Finds polyline or polygon features that have a vertex count within a specified tolerance.

Data Reviewer Checks

Reviewer Rule in constraint workflows

Constraint workflows

- Rules are stored in Geodatabase
- Enterprise geodatabase sources
- Assess a feature's
  - Integrity
  - Spatial relationships
  - Geometric properties
- Triggered during creation, modification or deletion of a feature

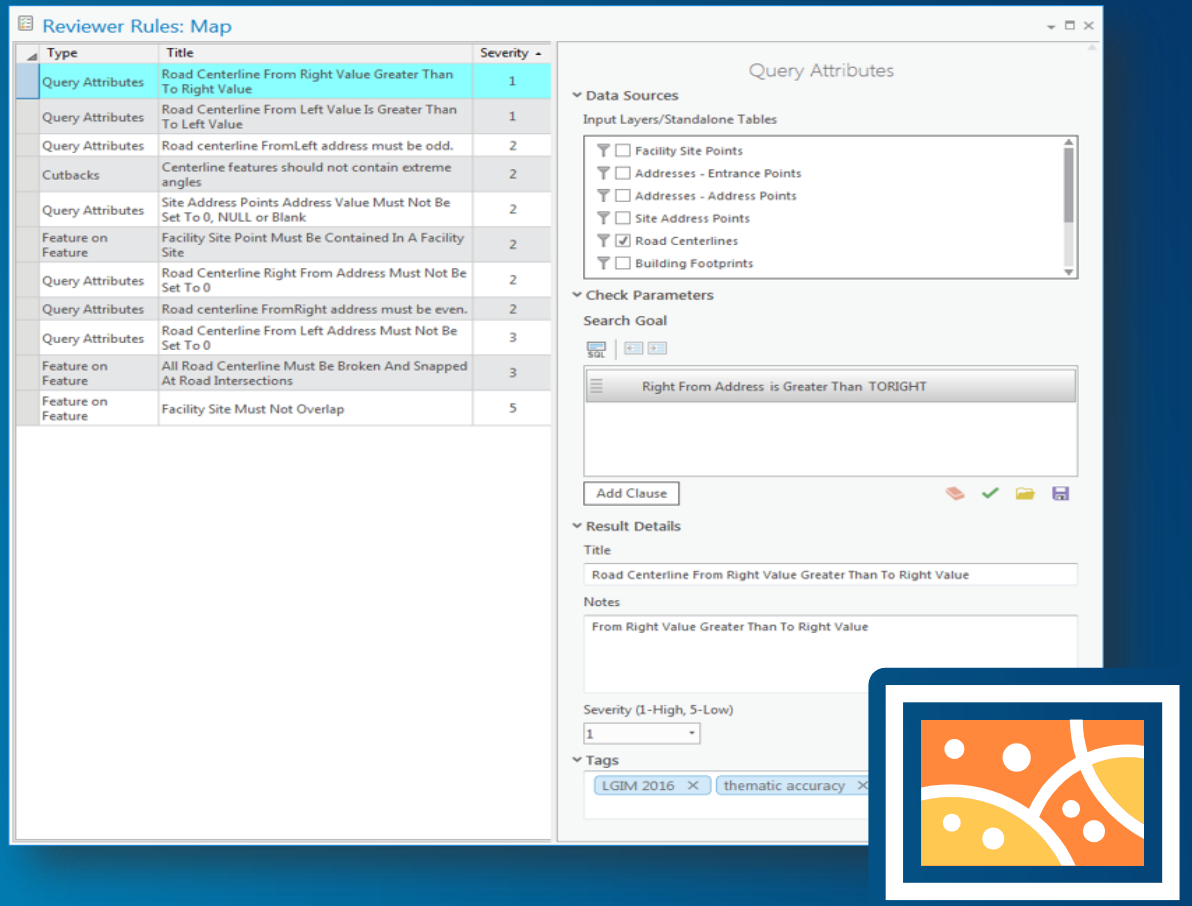


Data Reviewer Checks

Reviewer Rule in validation workflows

Validation workflows

- Rules are stored in Map
- Layer data sources

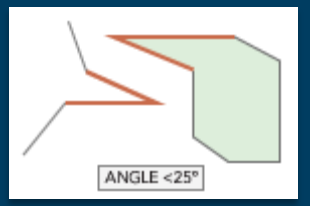


Data Reviewer Checks

Reviewer Rule in validation workflows

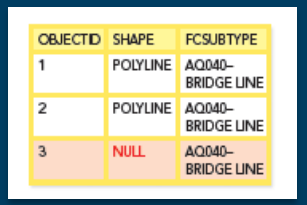
Validation workflows

- Rules are stored in Map
- Layer data sources
- Assess a features
  - Integrity



Cutbacks

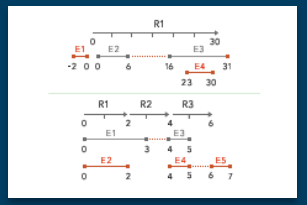
Finds segments where the angle between segments in a polygon or polyline is below a specified minimum value.



OBJECTID	SHAPE	FCSUBTYPE
1	POLYLINE	AQ040–BRIDGE LINE
2	POLYLINE	AQ040–BRIDGE LINE
3	NULL	AQ040–BRIDGE LINE

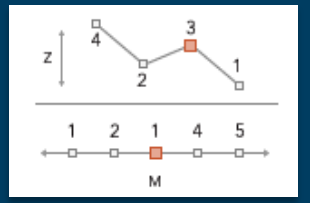
Invalid Geometry

Finds features that contain invalid geometry.



Invalid Event

Finds linear referenced events that do not have an associated route, contain invalid measure values, or have gaps or overlaps within the same route or across multiple routes.



Monotonicity

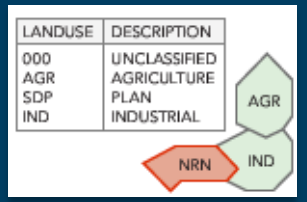
Searches Z or M-enabled polylines for vertices that are not strictly increasing or decreasing in value or are trending based on specified conditions.

Data Reviewer Checks

Reviewer Rule in validation workflows

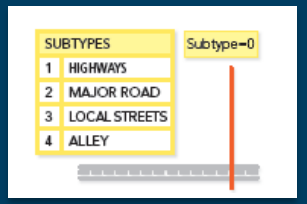
Validation workflows

- Rules are stored in Map
- Layer data sources
- Assess a features
  - Integrity
  - Attribution



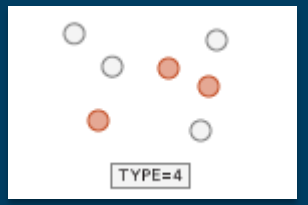
Domain

Finds attribute values that do not comply with coded value or range domains that are associated with an attribute field.



Subtype

Finds features with improper or null subtype values.



Query Attributes

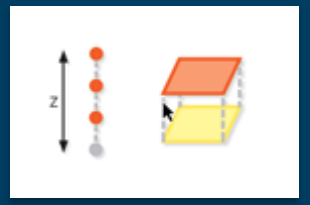
Finds features based on a query WHERE clause run against row attributes.

Data Reviewer Checks

Reviewer Rule in validation workflows

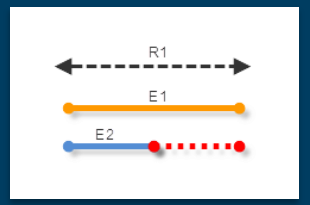
Validation workflows

- Rules are stored in Map
- Layer data sources
- Assess a features
  - Integrity
  - Attribution
  - Spatial relationships



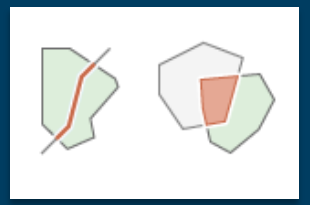
Duplicate Feature

Finds features of the same geometry type that are collocated and optionally share attributes.



Event on Event

Finds linear referenced events that overlay other events based on a user-defined relationship.



Feature on Feature

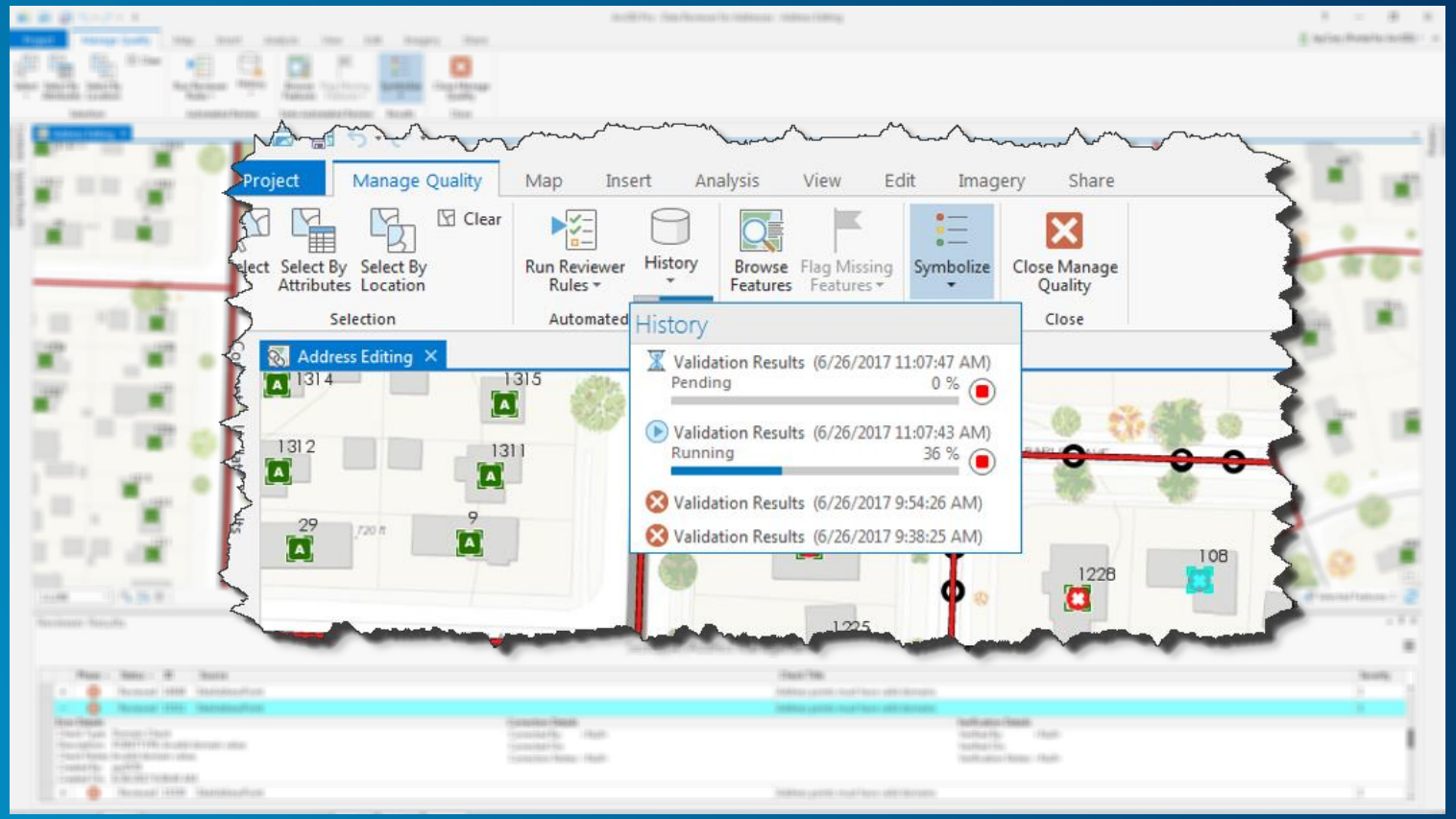
Finds features that have a specific relationship, either from two different feature layers or within the same feature layer.

Data Reviewer Checks

Reviewer Rule in validation workflows

Validation workflows

- Rules are stored in Map
- Layer data sources
- Assess a features
  - Integrity
  - Attribution
  - Spatial relationships
- Adhoc execution



Demo:

Automated Validation

ArcGIS Data Reviewer

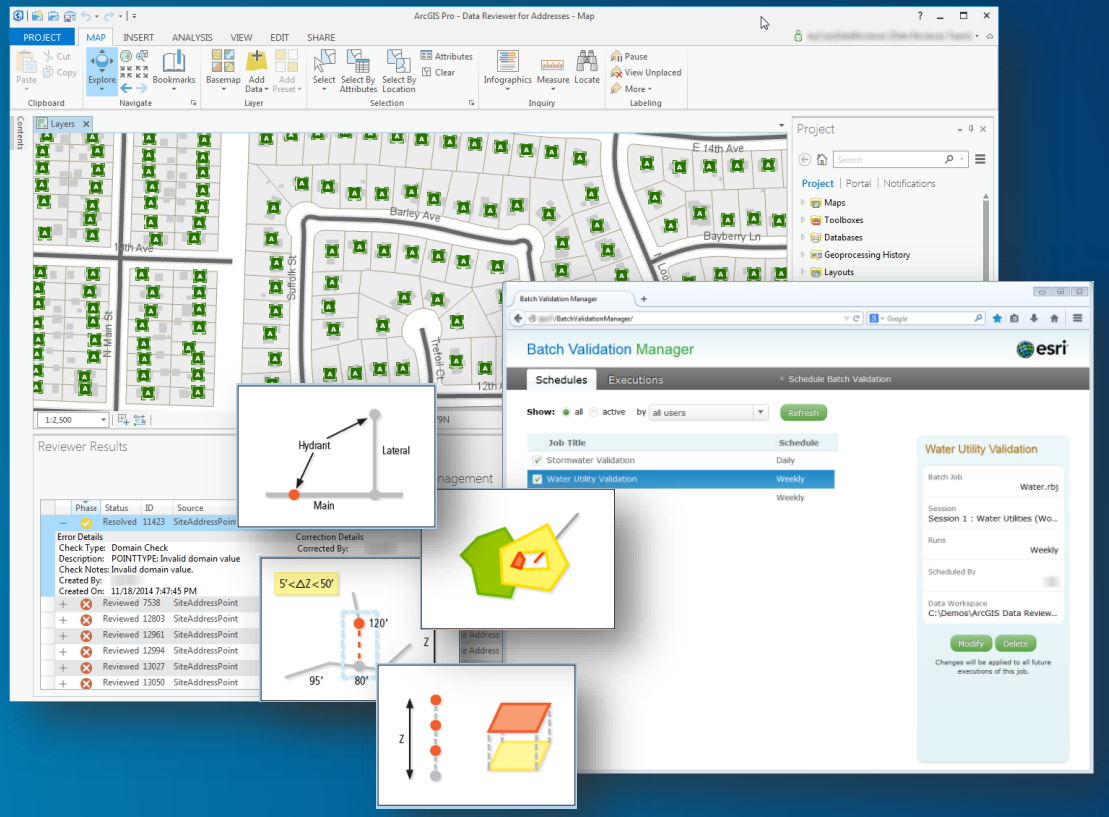
Automate, Simplify, and Improve your Quality Control Process

Extension to ArcGIS for Desktop and Server

Supports complete QC process

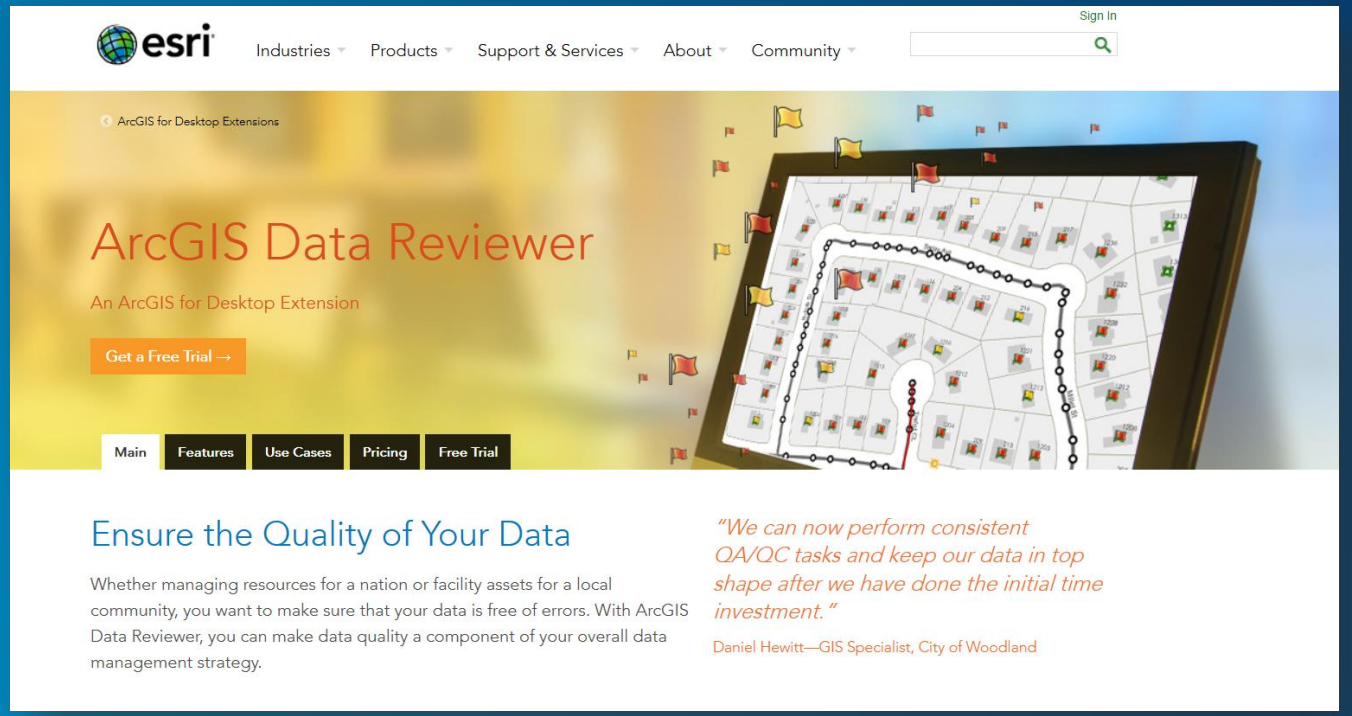
Provides

- Rule based workflows
- Interactive tools
- Track errors



Want to learn more?

Product page



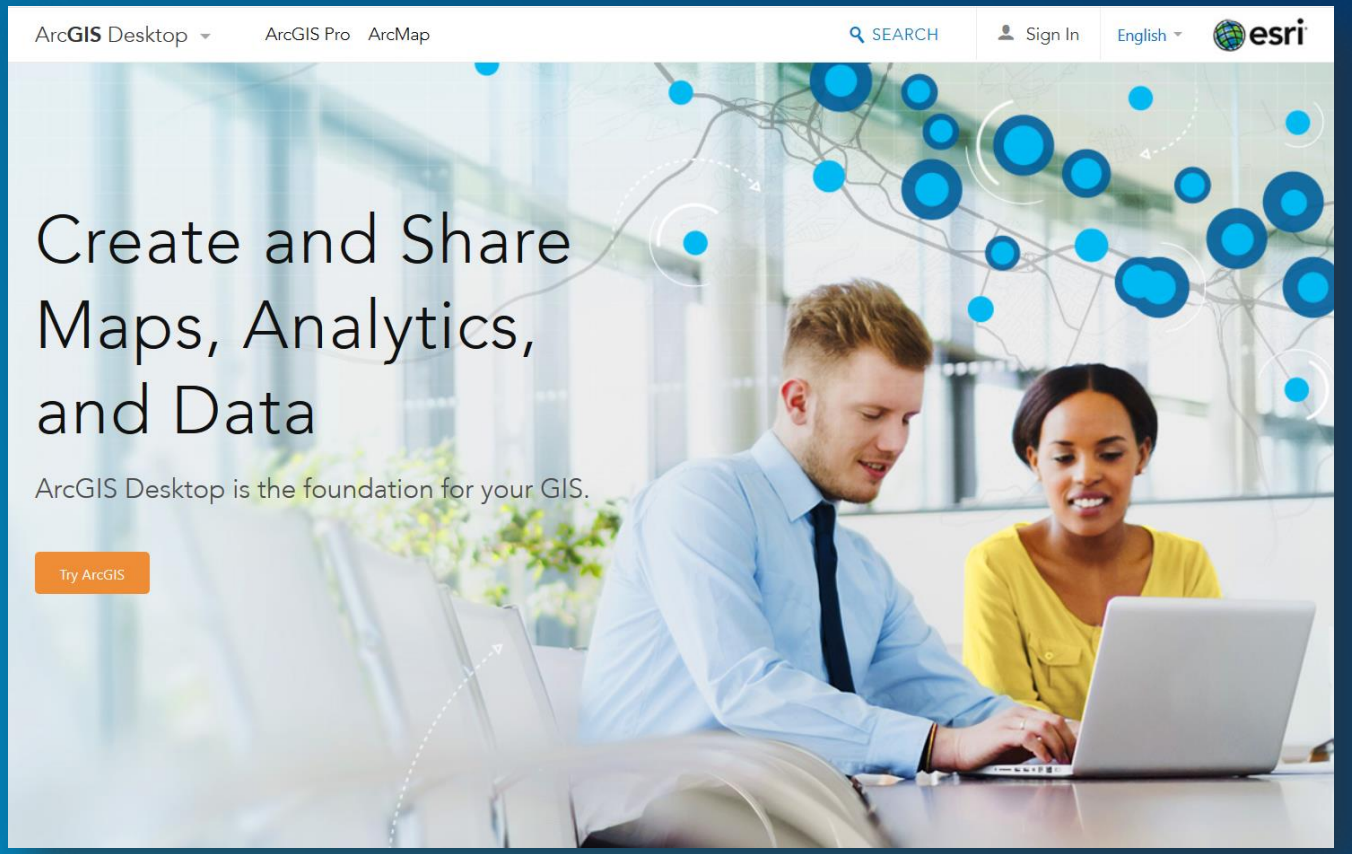
www.esri.com/datareviewer

Want to learn more?

Documentation

- ArcGIS Pro

desktop.arcgis.com



Want to learn more?

Documentation

- ArcGIS Pro

GeoNet *(geonet.esri.com)*

- Data Reviewer place

Questions?

esri
THE
SCIENCE
OF
WHERE