Esri Production Mapping
An Introduction

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Daryl Smith
Esri Production Mapping

Authoritative Content Producers
Esri Production Mapping

Authoritative Content Producers
Desktop

- Esri Production Mapping
- ArcGIS Workflow Manager
- ArcGIS Data Reviewer
Production Mapping

Standardized Workflows
Production Mapping

- Standardized Workflows
- Quality Controlled
Production Mapping

- Standardized Workflows
- Quality Controlled
- Automated and Efficient

Providing Mission Critical Capabilities
Without collection specifications
Specifications

- Common Rules and Procedures
- Consistency With Multiple Technicians
- Customize Behavior of Tools
- Automate Repetitive Work
Feature collection specifications

Must Populate Road Type
Must populate Road Name for all Main Roads
Where specifications come from

- **Formal Technical Specifications**
- **Identify Inconsistencies**
- **Understand Intended Purpose**
- **Industry Standards**
- **Talk to End Consumers**

You don’t have to have formal specifications to use specification driven tools!
Civilian Topographic Map (CTM)

Enabling Production Mapping for Topographic Mapping

Template Maps

Cartographic Rules

Generalization Rules

Workflows

Editing Rules

Validation Rules

Sample Data

Derived from NFDD

https://github.com/esri/ctm
Standardized Workflows
Workflows

- Simplify Processes
- Enhance Communication
- Optimize Resource Allocation
- Continual Process Improvement
Workflows Manager

Define Processes

Consistent Execution

Manage Resources
Workflows
Sequence of steps and paths

- Inventory Source
  - Create Version
    - Clip Imagery

- Edit Data
- QC Data
- Documentation
- Notify
Workflows
Sequence of steps and paths

1. Inventory Source
2. Create Version
3. Clip Imagery
4. Edit Data
5. QC Data
6. Documentation
7. Notify

Ask Questions
Workflows
Sequence of steps and paths

- Ask Questions
- Run Automated Processes
- Clip Imagery
- Inventory Source
- Create Version
- Edit Data
- QC Data
- Documentation
- Notify
Workflows
Sequence of steps and paths

- Ask Questions
- Run Automated Processes
- Launch Applications

- Inventory Source
- Clip Imagery
- Create Version
- Edit Data
- QC Data
- Documentation
- Notify
Workflows
Sequence of steps and paths

1. Ask Questions
2. Run Automated Processes
3. Launch Applications
4. Record Information

- Inventory Source
- Clip Imagery
- Create Version
- Edit Data
- QC Data
- Documentation
- Notify
Workflows
Sequence of steps and paths

- Ask Questions
- Run Automated Processes
- Launch Applications
- Record Information
- Send Emails

Flowchart:
- Inventory Source -> Create Version -> Clip Imagery
- Run Automated Processes
- Edit Data
- QC Data
- Documentation
- Notify

Diagram shows the sequence of steps and paths in workflows.
Job
Unit of work
Managing Work

Ensuring the right work is completed the right way, at the right time, by the right person
Quality Controlled
Quality Matters!
Quality Control

- Confidence In Data
- Make Good Decisions
- Less Rework
- Reduce Data Ownership Costs
ArcGIS Data Reviewer

- Automated Validation
- Interactive Validation
- Issue Tracking
- Promote Common Understanding
Designing automated validation rules

Determine the rule

Buildings can’t have multiple parts
Designing automated validation rules

Find the right check

Buildings can't have multiple parts
Designing automated validation rules

Find the right check

Buildings can’t have multiple parts

Multipart Polygon
Finds polygon features with more than one part and polygon features with holes
Designing automated validation rules

Find the right check

Buildings can’t have multiple parts
Designing automated validation rules

Find the right check

Buildings can’t have multiple parts
Running automated validation

Execute data validation using
• ArcMap
Running automated validation

Execute data validation using
- ArcMap
- ArcGIS Pro
Running automated validation

Execute data validation using

• ArcMap
• ArcGIS Pro
Running automated validation

Execute data validation using
- ArcMap
- ArcGIS Pro
- Model builder, Python Script
Running automated validation

Execute data validation using

- ArcMap
- ArcGIS Pro
- Model Python Script
- ArcGIS Workflow Manager
Running automated validation

Execute data validation using

- ArcMap
- ArcGIS Pro
- Model Python Script
- ArcGIS Workflow Manager
- ArcGIS Data Reviewer Enterprise
Visual Review
Centralized issue tracking

Lifecycle Management

- Review
- Correct
- Verify
Centralized issue tracking

Report and Oversight

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Quality is for everyone

Executive: Reduce Risk in Decision Making
Manager: Effective data stewardship
Technician: Create better products
Consumer: Consume with confidence
Demo
Quality Control
Automated and Efficient
Automation

- Faster Data Actualization
- Lower Costs
- Adhere to Standards
- Free Resources for New Products
Esri Production Mapping

- High Volume
- Exacting Standards
- Tools Understand Specifications
Defining Specifications in Production Mapping
Efficiency through Automation

Data Production

Data Repository

25K Data
Automated Validation while Editing

![Automated Validation while Editing](image_url)
Efficiency through Automation

Data Production

Data Repository

25K Data

50K Data
Efficiency through Automation

- Data Production
- Data Repository
- Automated Generalization
- Scale-specific Repository

25K Data → Automated Generalization

50K Data
Automated Generalization
Distributed Generalization

- Process data more efficiently
- Uses “Partitions”
- Process across multiple machines and CPUs
- Can process
  - Geo Processing tools
  - Model Builder
  - Python
- Uses ArcGIS Desktop for running GP processes
Demo
Efficient Editing and Generalization
Cartographic Production
Cartographic Data

Grids and Graticules
Cartographic Production

Symbology

- Grids and Graticules
- Visual Specifications
Cartographic Production

Cartographic Editing

- Grids and Graticules
- Visual Specifications
- Automated Masking
Cartographic Production

Cartographic Editing

- Grids and Graticules
- Visual Specifications
- Automated Masking
- Dynamic Elements and Tables
Efficiency through Automation

Data Production

Data Repository

25K Data

Automated Generalization

Scale-specific Repository

Cartographic Production

Cartographic Products

25K Maps

50K Data

50K Maps
Efficiency through Automation

Data Production → Data Repository → Automated Generalization → Scale-specific Repository → Cartographic Production → Cartographic Products

* 25K Data → 25K Maps
* 50K Data → 50K Maps
Map Automation

Production Mapping
Cartographic Rules

Geoprocessing
& Python
Production Mapping Enterprise
Real-time vector cartography with layouts over the web
Demo
Automated Cartography
Enterprise

ArcGIS Workflow Manager

Esri Production Mapping

ArcGIS Data Reviewer
Esri Production Mapping

- Standardized Workflows
- Quality Controlled
- Automated and Efficient
- Specification Driven

Providing Mission Critical Capabilities
Esri Production Mapping

Resources

Get the configurations:
https://github.com/esri/ctm

Production Mapping
Learn More:
http://www.esri.com/productionmapping
60-day Free Evaluation

Product on Demand
Get it:
https://github.com/Esri/product-on-demand
Try it:
http://pod.arcgis.com/

Reach out:
productionmapping@esri.com
Please take our Survey
Your feedback allows us to help maintain high standards and to help presenters

Introduction to Production Mapping
8:30 – 9:45
SDCC – Room 32A