Customizing JTX for Digital Flood Insurance Rate Map (DFIRM) Production

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Customized GIS tools have been developed for FEMA’s Mapping Partners to produce Digital Flood Insurance Rate Maps (DFIRMs) in support of the National Flood Insurance Program (NFIP).

The data and production processes must adhere to strict standards.

The effective flood data is incorporated into a nationwide flood hazard layer.
Job Tracking for ArcGIS (JTX)

- Complete enterprise GIS tasks
- Easily create and assign work to appropriate resources
- Organize, standardize, and streamline project workflows
- Simplifies creation, management, and tracking of geodatabase versions
- Centralize all job-related information for convenient retrieval and update
- Integrates with your GIS

Customizing JTX for DFIRM Production

Goals:

- Streamline and standardize tasks and processes
- Increase the efficiency of managing personnel and tasks
  - Ease of project management
  - Ease of data exchange between organizations
    - Production ↔ QC
  - Ease of organization of work
- Data integrity and security
Challenges to date:

- 1200+ registered users in 100+ organizations
- 80 concurrent users on average
- 650+ geographic locations
- 1200+ jobs
- 2 separate processes
  - Digital Flood Insurance Rate Map (DFIRM) Production
  - Letter of Map Revision (LOMR) Production
- 1 enterprise-level geodatabase
Mapping to Manage
Goal 1:

Streamline and standardize tasks and processes

- Workflow Looping
- Workflow Branching
- Cascading Holds
- Customized MXDs based on task
Workflow Looping
- Looping helps manage and ensure cyclic processes
  - Production ↔ QC
Workflow Branching
- Choose the appropriate path
- Answer calculates custom variable, which dictates future path
Cascading Holds

- Placing a hold on a parent job places a hold on all associated child jobs
  - Ensures that no one can interact with job
  - Holds must be released from the parent job
Customized MXDs

- Toolbars and feature classes needed for the task are automatically loaded
- Zoomed into the data extents for the job’s CID
- Definition query in all feature classes and tables is set
- Tools not necessary for DFIRM production are disabled
- All data is turned off and not selectable
Goal 2:

Increase the efficiency of managing personnel and tasks
  – Asynchronous steps
  – Automatic file attachments to the job
  – Job and Version Organization
Asynchronous Steps

- Process is sent to a web service so that the user can continue to work on another job
- Processes are typical ‘resource hogs’ within ArcMap
  - Exporting TIFF and PNG images
  - Creating feature-based annotation features
  - Exporting data from SDE and converting it into other data formats
- User can continue to work in another job
- When the process is complete, a logfile is attached to the job
Efficiency

Automatic File Attachments

- Attachments are added by JTX at certain milestones in a job
  - Logfiles for asynchronous processes
- Users cannot add attachments; attachments can only be saved or opened
Job and Version Organization

- One-touch ability to locate associated jobs.
  - Show Parent Job tool
  - Show Open Child Jobs tool
  - Show Closed Child Jobs tool

- Ability to remove versions via interface.
  - Cancel Job tool
  - Delete Child Job tool
  - Kill Job tool

- Job properties are viewable but not editable
Goal 3:

Support and promote data integrity and security.
- User Organization
- Restricted Access
- Child job creation and management
- Automatic reassignment of jobs
Data Integrity and Security

User Organization
- 3-tiered approach
  - Users
  - Groups
  - Mapping Partners

Restricted Access
- Job Queries
  - Users can only access jobs assigned to themselves, their group, and their subordinates
- Jobs can be assigned to other Mapping Partners but not retrieved
- Tools within JTX are available based on privileges
Child job creation and management

- Version of the parent job is created for data intensive tasks
- Inherits custom variables (e.g., CID, FEMA project ID)
- Batch assign jobs to one user
- Controlled reconcile and post event
Automatic Reassignment of Jobs

• Job is automatically reassigned to teams universally responsible for task completion
  – FEMA’s Independent QC team
  – Data Management team, which posts the effective data to the DEFAULT version

• During QC process, all associated jobs are assigned away from users
  – Ensures that data passing QC is the data that will be posted to the DEFAULT version

• If jobs are reassigned to users, logfile is attached to job
  – Built-in rules for reassignment
Questions?