



ESRI Support for SDSFIE 3.0 Implementation

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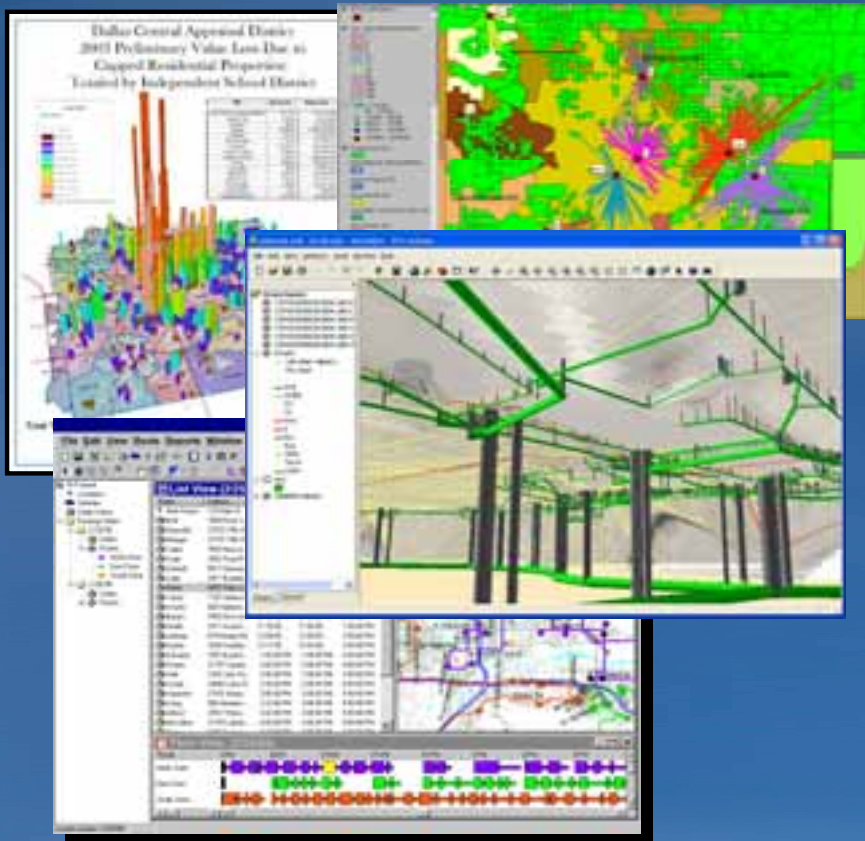
Agenda



- **ESRI Support of SDSFIE**
 - Adaptation Planning
 - Data Migration
 - Ongoing Data Management

A GeoCentric Enterprise

- Enterprise GIS based on geocentric workflows
 - Facilities and asset management
 - Land records management



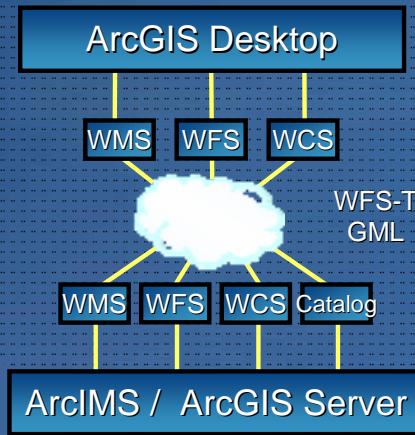
- Essential to achieving business objectives
- Generally multi-department and integrated with other enterprise systems

Enterprise Best Practice

Build Solutions on Interoperable Technology

Technology Standards

- Web Services
- OGC/ISO
- DXF, KML . . .



Transformation Procedures (ETL)

- Formats
 - Schema
 - Semantic
- ETL = Extract, Transform & Load Data

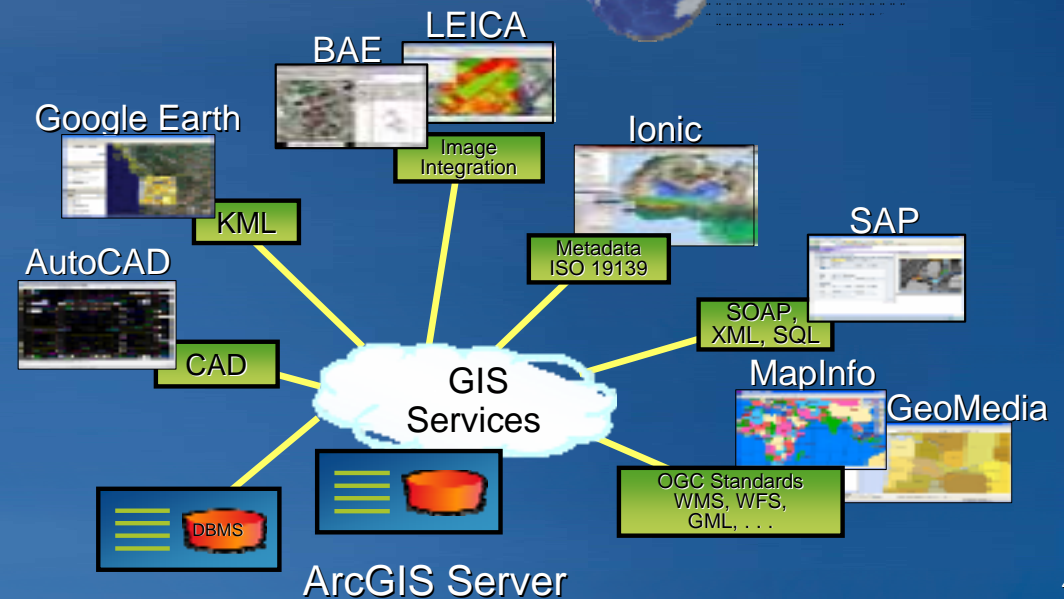


Content Standards

- Data Models
- Metadata (19139)



...that provide flexibility in the future



SDSFIE Adaptations

Adaptations

- *Adaptation* allows Services and users to specialize the SDSFIE to fit exactly their mission needs while remaining compliant
- Adaptation only works when accomplished using the on-line tool via the STARS Team provides
- Adaptation involves *profiling* and *extension*
 - Profiling - The selective removal of SDSFIE 3.0 elements subject to any higher authority mandatory restrictions
 - Extension - The addition of new SDSFIE 3.0 elements provided those elements do not conflict with the definitions of elements already defined by higher authority.

Support for Schema Adaptation/Generation

– Visualization

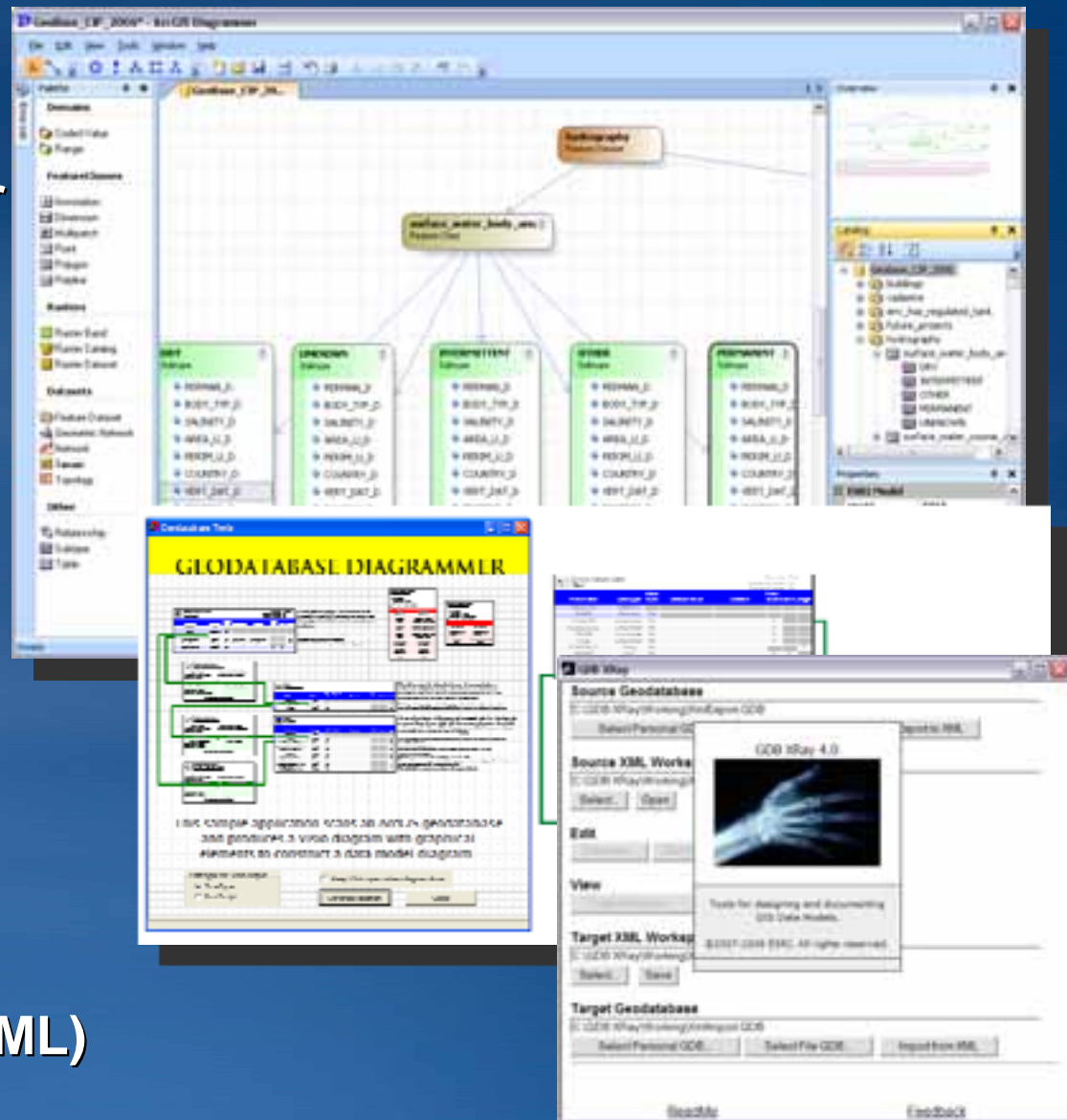
- ArcGIS Diagrammer
- Geodatabase Diagrammer
- GDB Xray
- CASE Tools (UML)

– Design

- ArcCatalog
- ArcGIS Diagrammer
- GDB Xray (via Excel)
- CASE Tools (UML)

– Schema Sharing

- ArcCatalog (XML)
- Geodatabase Designer (XML)
- Case Tools (UML)



<http://arcscripsts.esri.com/>

Data Migration Trends

- **Data migrations now outnumber conversions**
 - Existing GIS data is widespread
 - Extract, transform, and load (spatial ETL)
- **Common migration scenarios**
 - Migration between software platforms (e.g., AutoCAD, MicroStation, MapInfo, Smallworld to ArcGIS)
 - Coverages and shapefiles to geodatabase
 - Integration of GIS with other business systems
- **Select appropriate approach for migrating data**

Data Migration: Tools

Data Migration Tool Comparison

| | |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ArcCatalog | <ul style="list-style-type: none">• Easy to Use• “Out of the Box”—No Additional Licenses Needed• Ideal for Smaller Migration Efforts |
| PLTS Data Loader | <ul style="list-style-type: none">• Easy to Use GUI• Easy to Automate for Repetitive Tasks• Log Files Created During the Process Used for QC |
| ArcGIS Data Interoperability Extension | <ul style="list-style-type: none">• Easy to Use GUI• Easy to Document Processes• Easy to Automate for Repetitive Tasks• Log Files Created During the Process Used for QC• Many Data Transformers• Ideal for Large Migration Efforts |

Data Migration: ArcCatalog

- Command-line script generation from SDSFIE portal
- No additional licensing costs
- Requires 2.4/2.6-compliant database

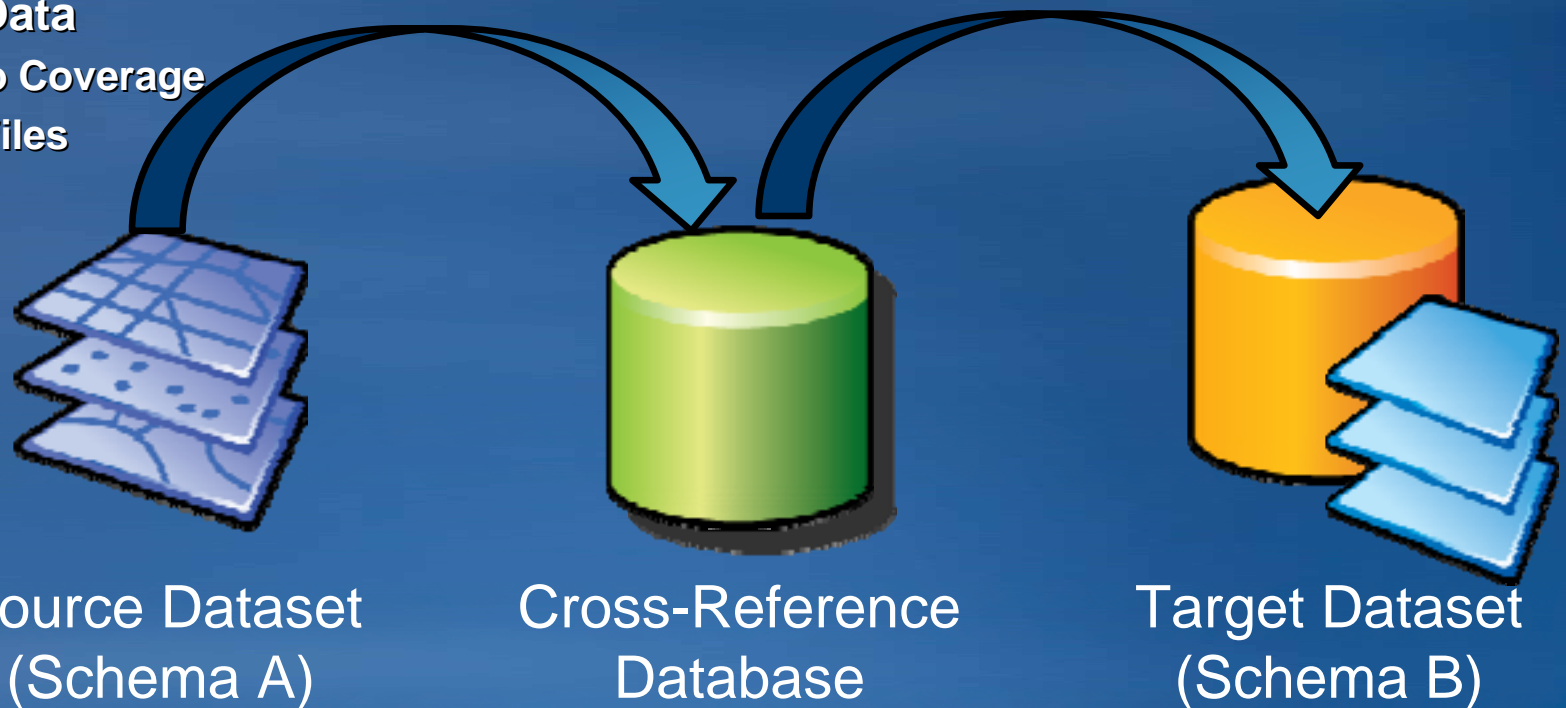
The screenshot shows the SDSFIE Migration Final Generation web interface. The page title is "Migration ---- Migration". The user is logged in as Collin Mirsky (cmirsky@upper-90.com). The interface includes a navigation menu on the left with options like "SDSFIE Home", "SDSFIE 3.0", "Discussions", "Support", "Pre 3.0 Tools", "Contact Us", "Modeling Glass Box", "Training", "SDSFIE Toolbox", "Admin", and "Host". The main content area displays the "Migration Final Generation" form. The form includes a "RESET" button, a "Select" button, a "Trial Run" button, a "Results" button, a "Migrate" button, a "Delete" button, a "GML" button, and a "HELP" button. The form also has radio buttons for "Show User Adaptations ONLY" (selected) and "Show Service Adaptations". The "Migration Final Generation" section includes a "Trial Run Date/Time" of 6/3/2009 1:11 PM, a dropdown menu for "ESRI Personal Geodatabase", a checkbox for "Ignore Extra Feature Classes in Source Dataset", and a text input for "Specify the ESRI Workspace Name" with the value "MyWkSpc". Below this, there are two sections: "Source Dataset (Migration From)" with "Version/Release: 2.61" and "User's File Name: cmirsky_SmalSDS_208.sds", and "Destinatn Dataset (Migration To)" with "Version/Release: 3" and "Configuration Name: LeveeDatabase". A red circle highlights the "Generate the Final Migration Script" button.

Source: STARS Team, June 2009

Data Migration: Production Line Toolset (PLTS) Data Loader

- **PLTS Data Loader Tool**

- Automated data translation and loading
- End-User editable using Excel/Access
- Cross-Reference Database
 - Provides Feature, Attribute and Value Mapping
 - Source Data
 - ArcInfo Coverage
 - Shapefiles
 - GDB



Data Migration: ArcGIS Data Interoperability Extension

- **Format Support**

- Adds 85+ data formats
- Use data directly in all Desktop applications

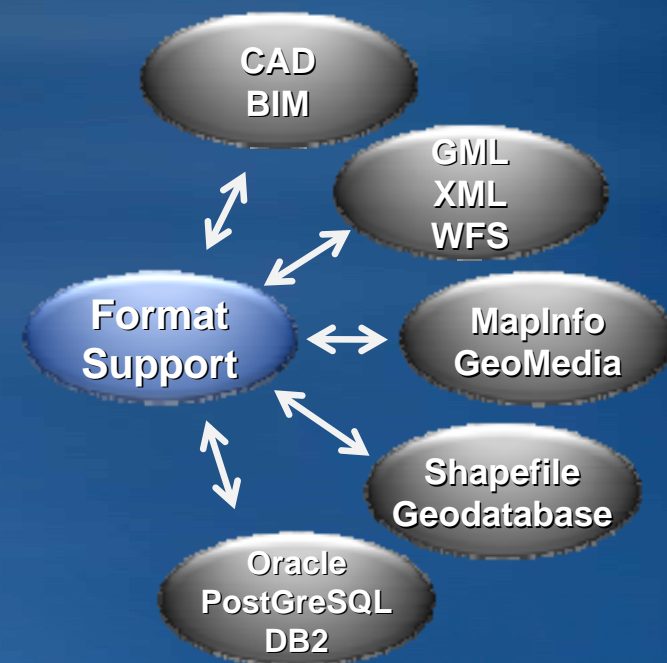


- **Data Translation**

- Data Interoperability Tools Toolbox
- Convert between data formats

- **Spatial ETL (Extract, Transform, Load)**

- Semantic Data Translation
- Data Restructuring



Data Migration: Quality Assurance

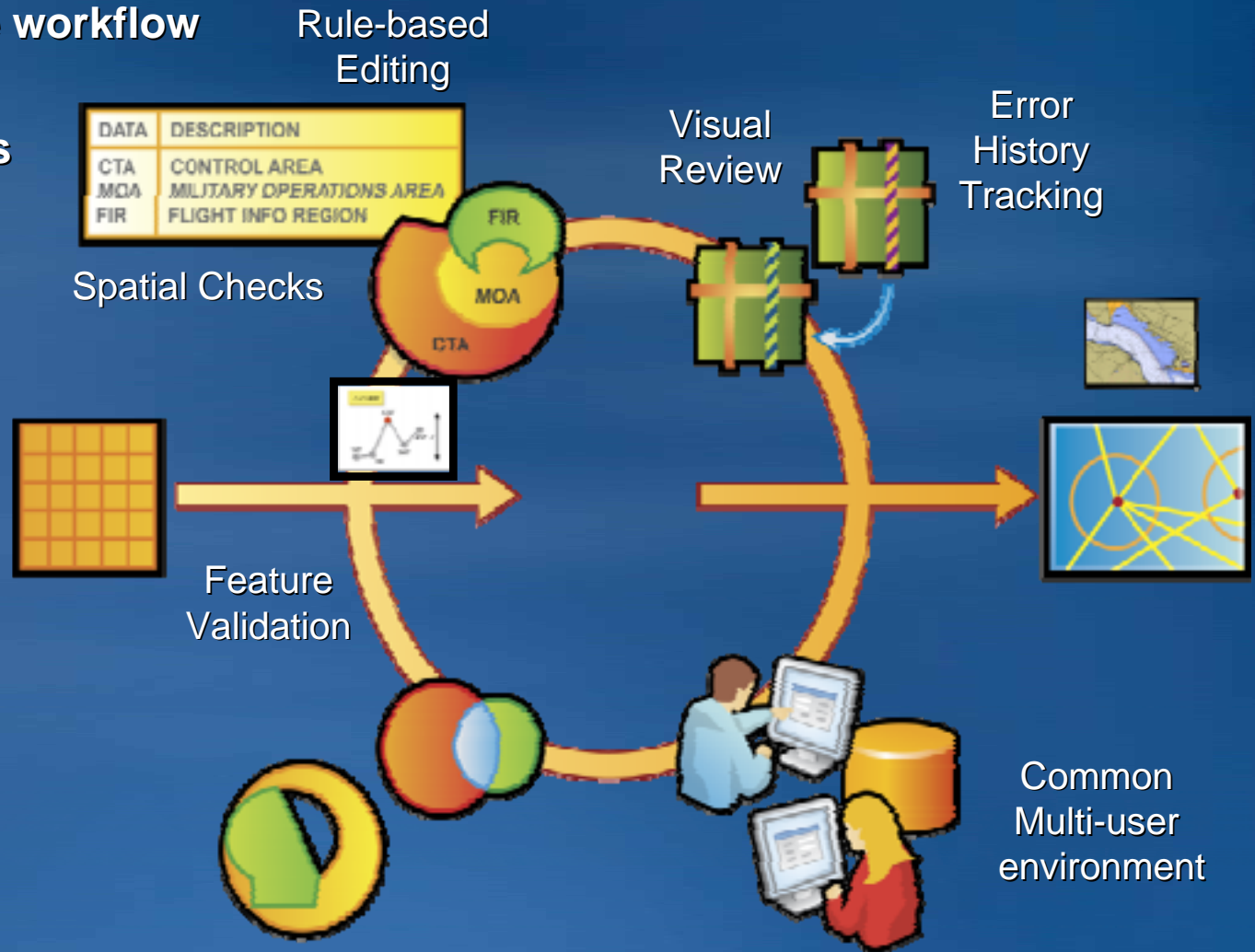
- **Quality assurance plan should be developed in advance of the migration or conversion and should address**
 - **Quality assurance workflow**
 - **Types of validation to be applied to each type of data**
 - **Automated checks**
 - **Visual checks**
 - **Sampling methodology if applicable**
 - **Specific checks to be performed**
 - **Allowable error tolerances, if any**
 - **Quality assurance records**
- **Data migration is not always as straightforward as it might seem**
 - **Don't assume migration process is foolproof—some level of QA is essential**

Data Migration: Automated data quality control and analysis

- GIS Data ReViewer

- Complete error cycle workflow
- Easily configurable
- Sophisticated checks

Detect
↓
Review
↓
Correct
↓
Verify



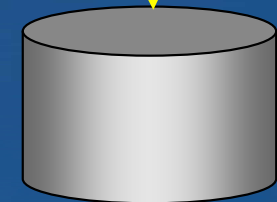
Scalable from single-user to enterprise production

Data Management: On-Going Data Integrity

- **Specific to geodatabase**
 - **Subtypes**
 - Categorize features into groups
 - **Domains**
 - Attribute validation on a field
 - **Relationship class**
 - Determine proper associations between records
 - **Topology**
 - Spatial validation rules
 - **Geometric networks connectivity**
 - Determine proper connections between network features

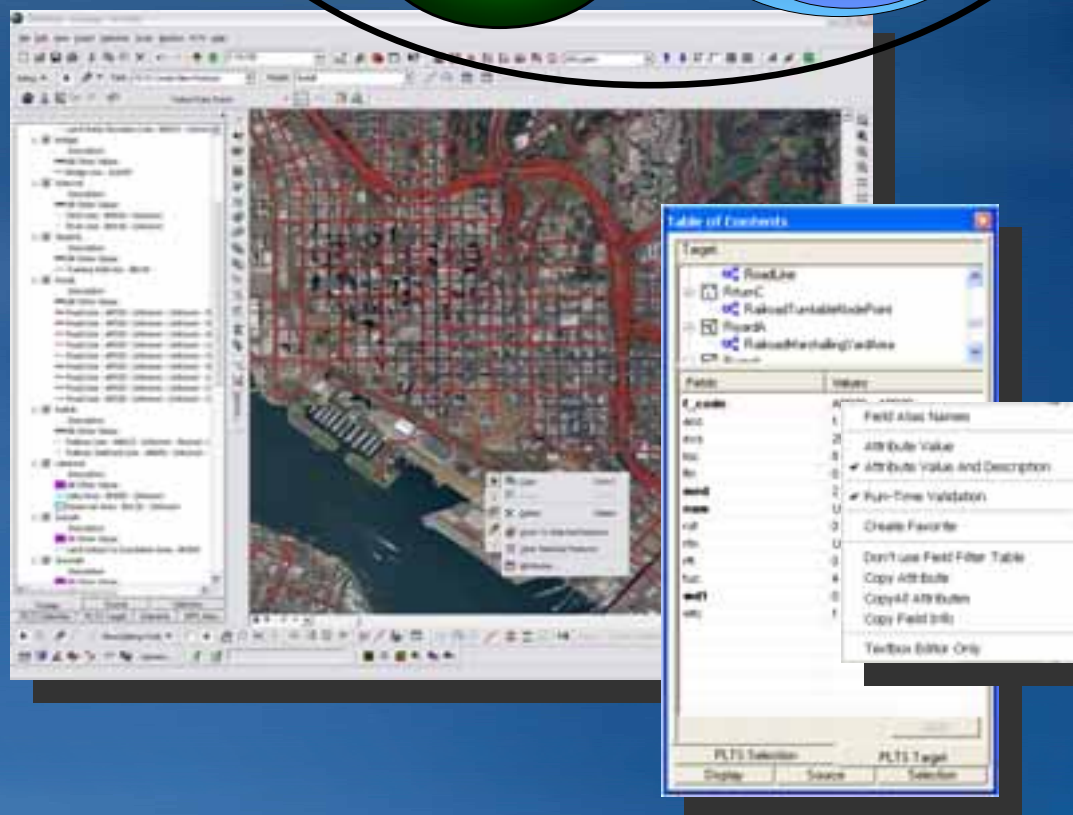
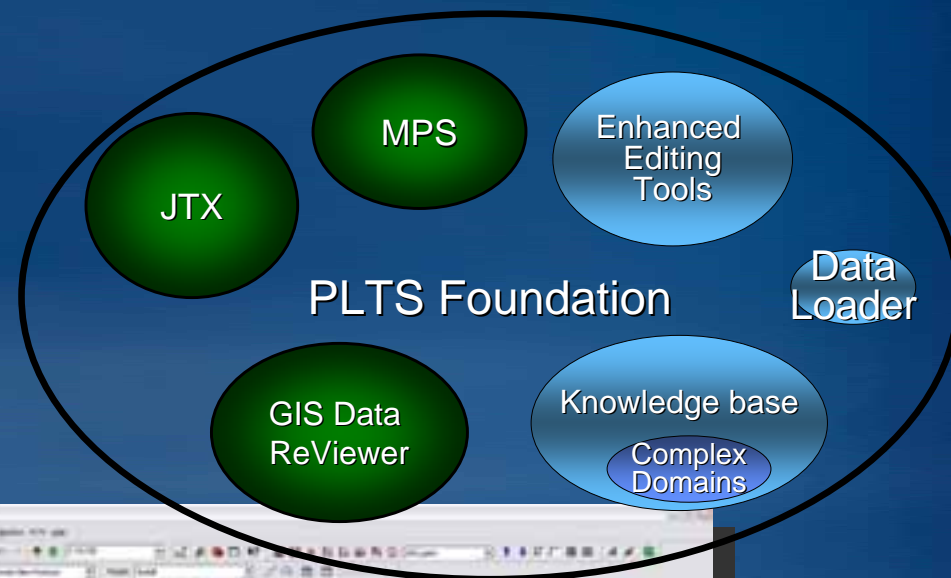


Create real-world
feature behavior
in geodatabase



Data Management: Extended Business Rules

- **In-Process Quality Assurance**
 - **PLTS Editing Tools**
 - Attribute & Spatial Validation
 - Discontinuous ranges
 - Character strings
 - Multi-Attribute combination validation
- **Quality Control**
 - **GIS Data ReViewer**
- **Best management practices**
 - **Job Tracking for ArcGIS**
 - **Task Assistant Manager**



Data Management: Best Management Practice Integration

- **Job Tracking for ArcGIS (JTX)**

- Macro workflow management

- Benefits

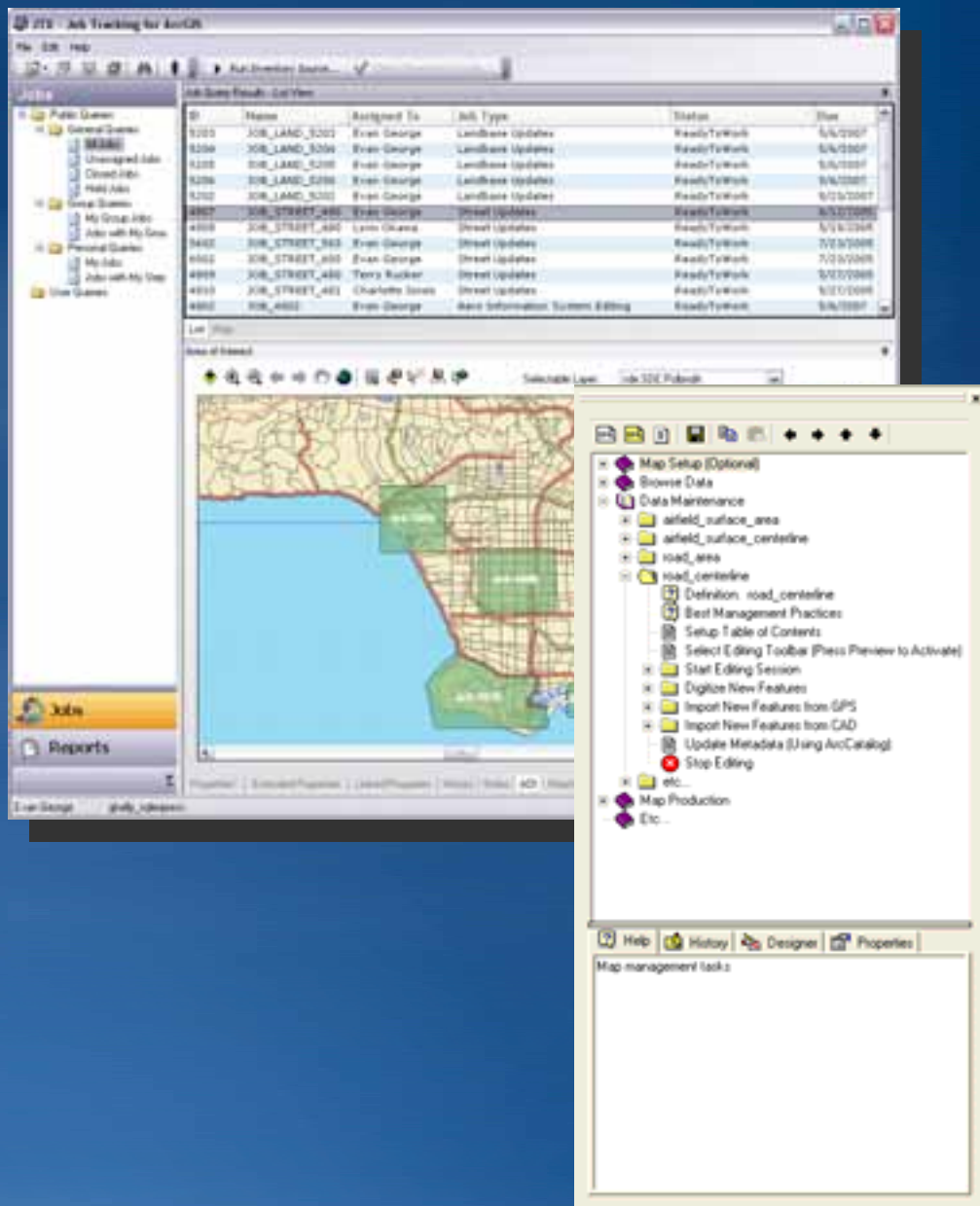
- Reduces costs through automation
- Repeatability of data management processes
- Heightened program visibility
- Quantification of data management efforts

- **Task Assistant Manager (TAM)**

- Micro workflow management

- Benefits

- Reduces button clicks
- Streamline processes
- Standardize procedures
- Captures domain knowledge



Future DISDI/SDSFIE Support

- **ArcGIS Desktop**
 - ISO 19139-compliant Metadata Editor
- **Production Line Tool Set (PLTS)**
 - **Editing Tools**
 - Feature-Level Metadata (M:N)
 - Enhanced In-Process QA (attribute/spatial validation)
 - **GIS Data ReViewer**
 - Metadata Check (user-defined xsd)
 - Enhanced Data Sampling Workflows
 - Updated Positional Accuracy Assessment Tool



Questions?