



Database Production and Map Series Management

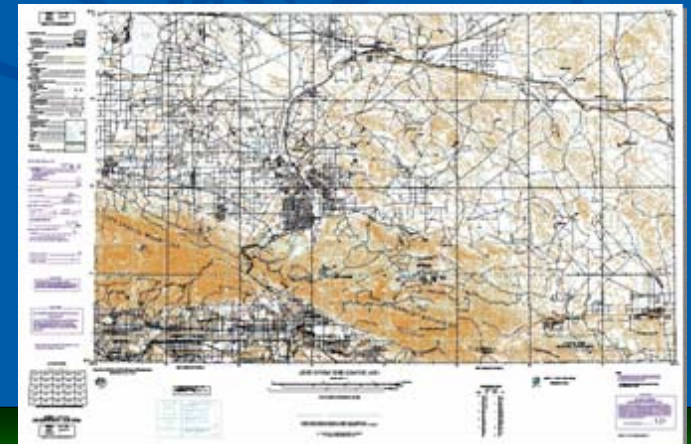
Using

The Production Line Tool Set

Dewey Marino - ESRI Redlands

Production Line Tool Set

- ArcGIS Solution for high volume database and map creation
- Creates maps against set specifications
- Promotes efficient end-to-end production workflow
- Eliminates “stove pipes”
- Higher map quality with less production cost



Mapping Agency Workflow

Mapping Agency Requirements

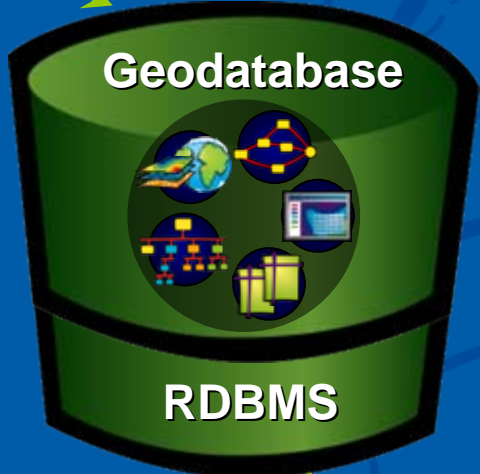
- Data Models
 - Cartographic Mapping Specifications
 - Geographic Information Products
- Geographic Datasets
- Maps and Globes
- Process and Workflow Models
- Metadata

Source Data Compilation

- Digital Data
- Photogrammetry
- Maps/Docs
- Survey/GPS

Data Management

- Models/Knowledgebase
 - Schema
 - Rules
 - Relationships
 - Definitions
 - Behavior



Quality Control

- Batch QC
- Visual QC
- Find/Fix
- QA Verification

Production

- Editing & Attribution
- Rule Based Validation
- Data Fusion
- Data Generalization

Data Maintenance

- Gap Analysis
- Updates
- Validation

Standards

Interoperability

Cartographic Finishing

- Cartographic Generalization
- Symbology/Representations
- Text Placement
- Product Layout

Cartographic Dissemination



Hardcopy Maps/Charts

Raster Data Products

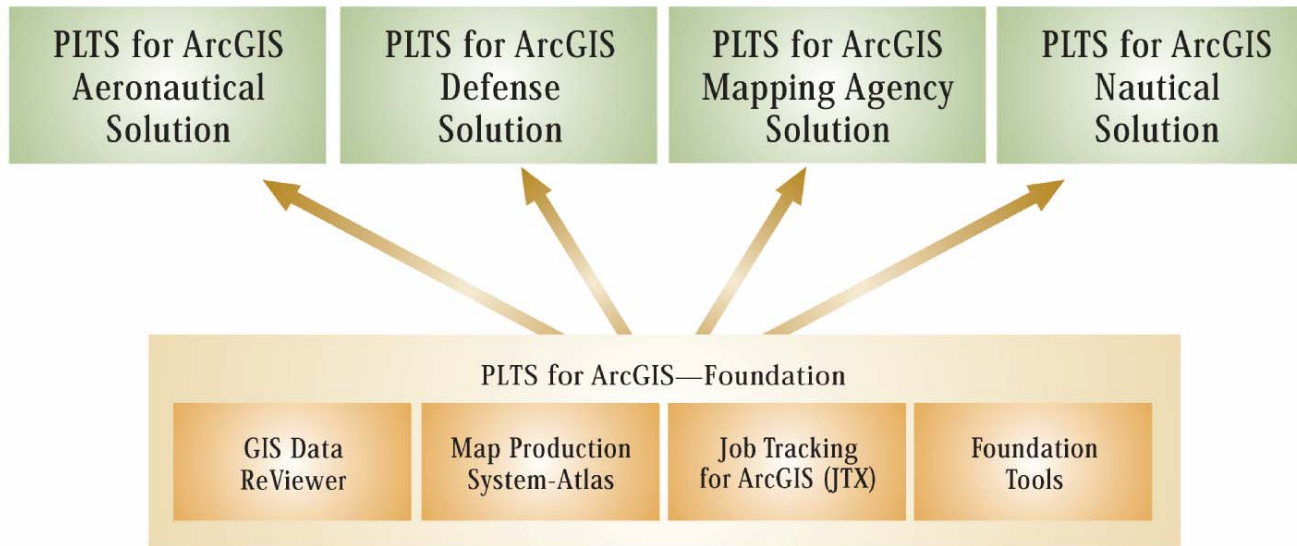
Vector Data Products

.pdf Map Products

Web Portal Map Dissemination

Web Portal Data Dissemination

PLTS Product Line



PLTS Features

- Focused, Database Production Environment
- Knowledge Base of Map Specifications
 - Valid Value Tables
 - Condition Tables
- Single Click Editing Tools
- On-the-Fly Feature Attribution, Validation and Symbolization
- Complete set of QC/QA Tools
- Digital and Hard Copy Chart Production
 - Map Series Creation and Management
- Workflow Management

PLTS Foundation and Components

helping

manage our

world



PLTS Knowledge Base

- Integrated Production Rules & Procedures
- Extends GDB Attribute Domains
- Production Specific Attribute Validation & QC
 - Valid Value Tables (VVTs)
 - Condition Table (CNTs)
 - Topology
- Rule based framework

Valid Value Tables

Valid Attribute Combinations

Description

Feature Symbology

FCsult	f_code	acc	cod	dat	exs	hdi	loc	mcc	sfc	soh	vrr	description	hac_style	hac	qc_style	qc	filter_dnch
1	BD020	1	-9	26	1	15	-9	-9	-9	-9	8	Crib Cov and Uncov	HAC.style	117	PLTS_QC	23	1
1	BD020	1	-9	26	1	12	-9	-9	-9	-9	4	Crib Submerged	HAC.style	116	PLTS_QC	1	1
0	BD000	1	-9	26	1	12	-9	-9	5	1	-9	Underwater Danger Subm Prod Plat	HAC.style	108	PLTS_QC	18	1
0	BD000	1	-9	26	1	12	-9	-9	3	1	-9	Underwater Danger Fish Haven	HAC.style	105	HAC.style	18	1
0	BD000	1	-9	26	1	12	-9	-9	2	1	-9	Underwater Danger Other	HAC.style	85	HAC.style	18	1
0	BD000	1	-9	26	1	12	-9	-9	1	1	-9	Underwater Danger UNK	HAC.style	85	ESRI.styl	19	1
2	BD130	1	-9	26	1	14	-9	84	-9	1	8	Rock Cov and Uncov	HAC.style	142	PLTS_QC	31	1
2	BD130	1	-9	26	1	12	-9	84	-9	1	4	Rock Submerged	HAC.style	134	PLTS_QC	31	1
2	BD130	1	-9	26	1	15	-9	84	-9	1	2	Rock Awash	HAC.style	141	PLTS_QC	2	1
0	BD000	1	-9	26	1	12	-9	-9	4	1	-9	Underwater Danger Well	HAC.style	100	PLTS_QC	22	1

- There is one VVT per feature class
- VVTs are stored in the geodatabase
- Allows for automated attribution of previously created features
- Each record is unique combination of coded value attributes
- Used in rendering and batch validation of geodatabase data

Enhanced Range – Condition Table

Link to DBS_FC_VVT table

Condition Statement

Error Number Referenced in
PLTS_ERRORS Table

Attributes of PLTS_MASTER_CNT									
OBJECTID*	ROWOWNERID	PLTSVALKIND	PARAMETER	PARAMETER2	PARAMETER3	ERROR	SUP TYPEFIELD	UUID	
1	2	0	PFH < 0 OR PFH BETWEEN 1 AND 14	<Null>	<Null>	132	0	{8601E9B2-B839-46FC-9402-F3DCE57815A}	
2	2	0	PFH < 0 OR PFH BETWEEN 1 AND 15	<Null>	<Null>	133	1	{892BEACE-4BD9-4B9E-8CE5-F3413AB0C9}	
3	5	0	NAM <> 'N/A'	<Null>	<Null>	138	0	{DDB3782B-F9C3-4992-B1BE-A94831EC8A}	
4	5	0	NAM = "	<Null>	<Null>	6	1	{AD9581D8-989C-422A-AB3C-32398388385}	
5	5	0	NAM = "	<Null>	<Null>	6	2	{3B90DC62-0508-47AD-863F-D2EF125F76E}	
6	5	0	ZV2 <> 29999 AND ZV2 NOT BETWEEN -4	<Null>	<Null>	139	2	{28B334C0-1319-46F8-B7E6-B11D447EC50}	
7	6	0	NAM = "	<Null>	<Null>	6	0	{DDFAB7E2-A865-4786-88E6-CF97B54FA01}	
8	6	0	NAM = "	<Null>	<Null>	6	2	{297D9F6E-C83D-4502-8D2E-DC8822360B}	
9	6	0	NAM <> 'N/A'	<Null>	<Null>	138	1	{02800955-9705-4353-B707-15AC26447259}	
10	7	0	NM3 = "	<Null>	<Null>	1	0	{D0F55AB6-E3C0-48CF-8283-E0F4F061248}	

- Accommodate attributes that rely on a condition
 - Discontinuous ranges
 - Character strings
 - Coded value attributes that rely on each other
- Upon Update, value(s) entered that do not comply with conditions will cause error to be generated
 - If the PFH is less than 0 or between 1 and 14
 - Error 132 returned

PLTS Selection tab

- Efficient navigation of selection
 - General functionality
 - Browse feature attributes
 - Zoom to/flash current feature
 - Easily change selection set
 - In edit session
 - Change attributes
 - Cache and transfer attributes
 - Validate feature attributes
 - Changes made can be automatically validated when you hit Apply

Table of Contents

Selection: Total Selected:16

- bnd
 - CoastL
 - CoastlineShoreline
 - D7470D30-C54E-44F3-9703-D6
 - PolbndA
- hyd
 - CoastA
- tra
 - RoadL

Fields (not using...)	
<input type="checkbox"/> OBJECTID	15
<input type="checkbox"/> FCsubtype	0 - CoastlineShor
<input type="checkbox"/> gfid	D7470D30-C54E-
<input type="checkbox"/> source	1 Field Alias Names
<input type="checkbox"/> f_code	8 Attribute Value
<input type="checkbox"/> acc	1 Attribute Value And Description
<input type="checkbox"/> slt	0
<input type="checkbox"/> vdc	7 Run-Time Validation
<input type="checkbox"/> Shape_Length	1

Reset

PLTS Selection

Display Source

Copy Attribute
Copy All Attributes

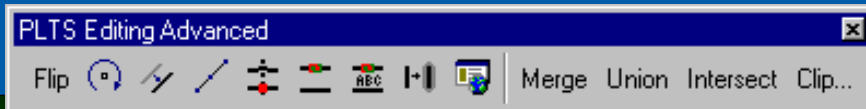
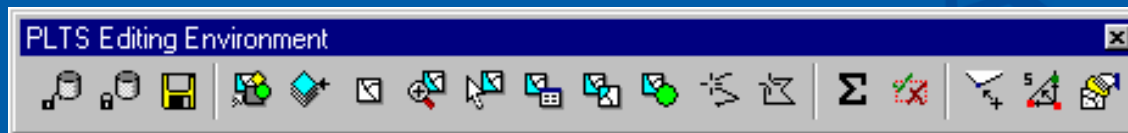
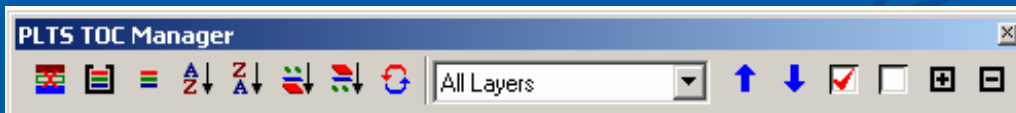
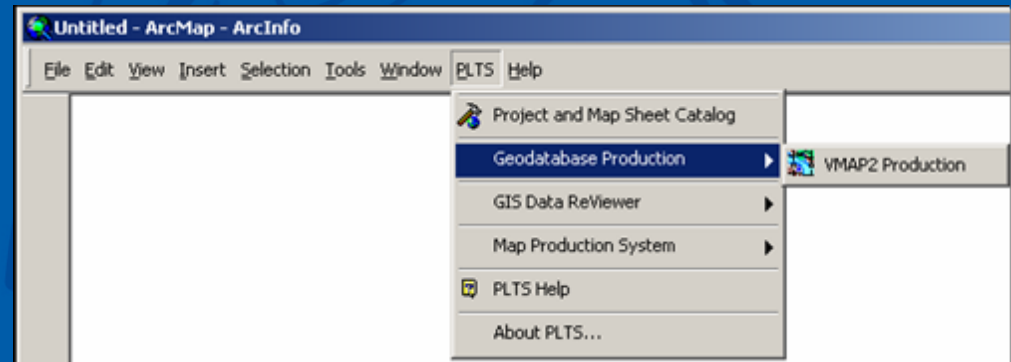
PLTS Target tab

- Works in edit session
- Choose target layer and subtype
 - Extension of core Target Layer
- Add pre-attributed features
 - Subtype defaults
 - User-customized defaults
- Create Favorites
 - List of common attribute combinations
 - Stored in Favorites geodatabase

Fields	Values
OBJECTID	
FCsubtype	0 - BuiltUpArea
gfid	
source	102 - ADRG100I
f_code	AL020 - AL020
bac	0 - Unknown
	999 - Other
	UNK
	0 - Unknown

PLTS Production Environment

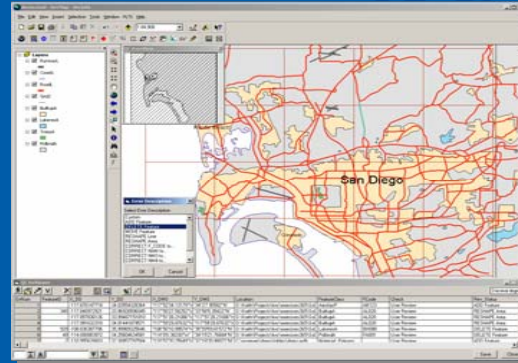
- Focused Environment
- Single Click Editing
- Additional tools



General Purpose Components

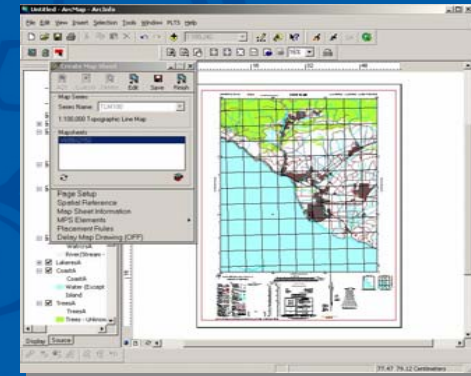
- GIS Data ReViewer

- Visual Data Review Tool
- Data Integrity Checks
- Available Now



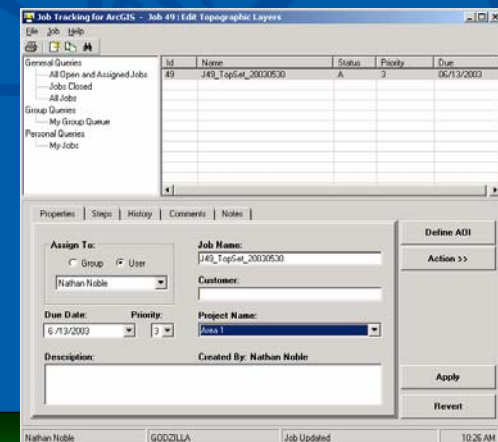
- Map Production System

- Database-Driven Cartographic Production
- Database Driven Atlas Production
- Release: ArcGIS 9.1



- Job Tracking Extension

- Workflow Management
- Edit history tracking



PLTS Solutions

helping

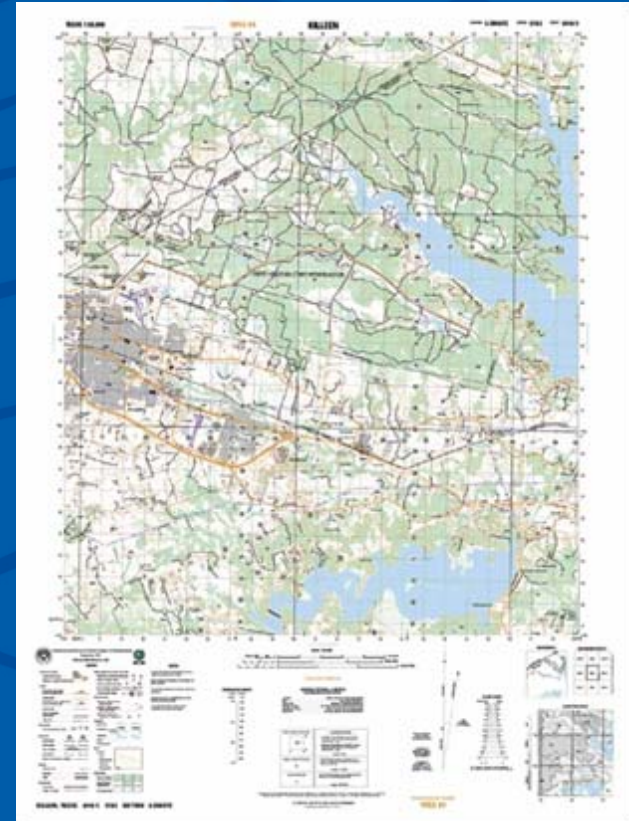
manage our

world



PLTS Defense Solution

- Built for:
 - Defense Mapping Agencies
 - Military Surveys
 - Defense Mapping Contractors
- Provides database and map series tools for:
 - VMAP0
 - VMAP1
 - VMAP2
 - Foundation Feature Data (FFD)
 - Stereo Airfield Collection
 - Theater Geospatial Database (TGD)
 - Global, Strategic, Tactical, Urban
 - VITD
 - Image City Map
 - GIFD Delivery 4
 - UVMAP
 - VMAP 2 Delivery 4
 - **MGCP**
 - **Geobase**



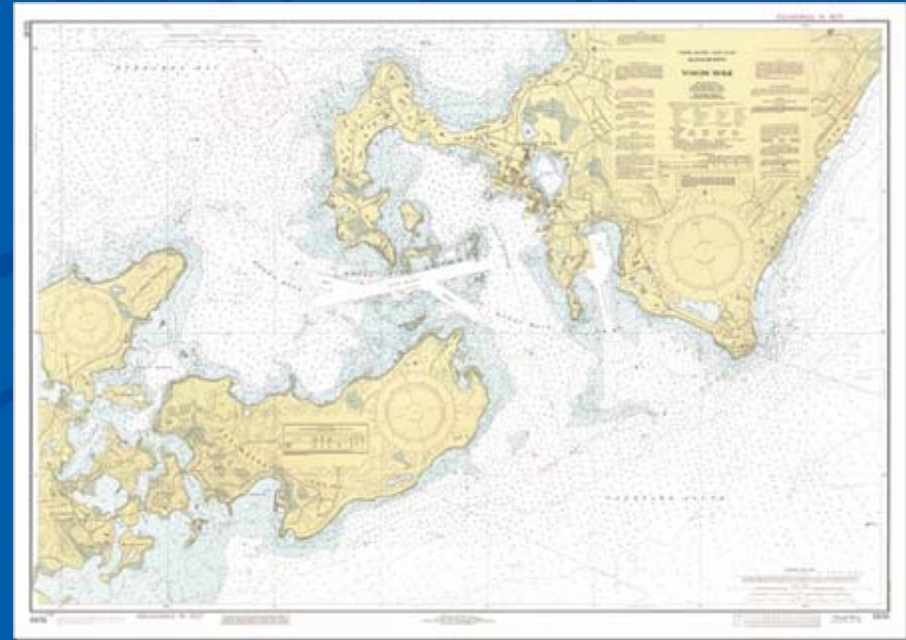
PLTS Mapping Agency Solution

- Built for:
 - Civil Mapping Agencies
 - State / Local / Provincial Mapping Agencies
 - Natural Resource Agencies
 - Land Management, Water Resources, Forestry, Ag, Soils
- Database and map series tools for
 - Topographic
 - USGS 1:24,000, 1:63,360, 1:100,000
 - Euro Regional Map 1:250K
 - Euro Global Map 1:1M (not yet released)
 - VMAP 1:250,000 JOG
 - GSDI 1:1M Globe Map
- Tools for creating a custom map series



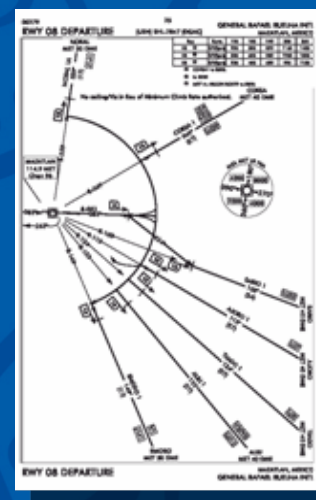
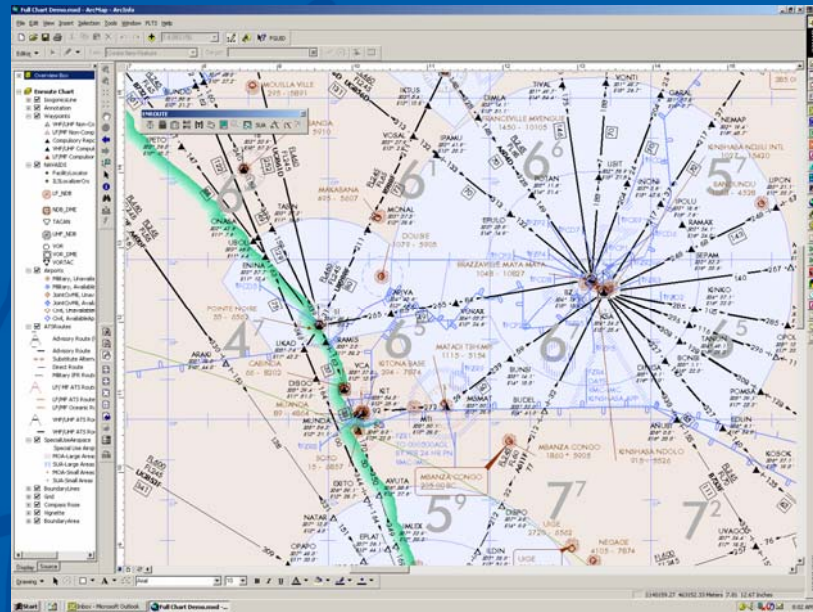
PLTS Nautical Solution

- Built for:
 - Hydrographic Offices
 - Mapping Agencies
 - Naval Commands
 - Commercial Companies
- Provides database and map series tools for:
 - Digital Nautical Charts (DNC)
 - International S57/ ENC Charts
 - Additional Military Layers
- Tools for creating a custom map series



PLTS Aeronautical Solution

- Built for:
 - Aviation Administrations
 - Airlines
 - Air Forces
 - Commercial Companies
- Provides tools for
 - En Route Navigational Charts
 - Terminal Procedures
 - Database Drive Chart Maintenance
 - Chart Maintenance



Products Required

- ArcEditor (or ArcInfo for charting)
- SDE (in Enterprise Clients)
- Extensions*
 - Spatial Analyst
 - ArcScan
 - ArcPress
 - Maplex

* Recommended

PLTS Components

The background features a blue gradient with a white curved line at the top. A faint, hand-drawn style globe is centered, with the text 'helping manage our world' arched above it. The word 'esri' is written across the globe, and 'GIS' is partially visible at the bottom right.

Quality Control: GIS Data ReViewer

- Visual Data Review Tools
- Batch Error Checks

The screenshot displays the ArcMap interface with several key components:

- Layers Panel:** Lists various data layers including Grid1, railroad stations, railroad arc, midlines arc, hydro_line arc, hydro_poly polygon, road_edge polygon, buildings polygon, and landfabric polygon.
- QC Overview:** A small inset window showing a grid overlay on the map data.
- Error Description Dialog:** A dialog box for selecting an error description, with options like 'CORRECT F. CODE to:', 'CORRECT NAM to:', 'CORRECT NM3 to:', and 'CORRECT NM4 to:'.
- Errors Table:** A table at the bottom showing a list of errors with columns for ErrNum, X_DD, Y_DD, X_DMS, Y_DMS, X, Y, FeatureClass, Check, Rev_Status, Rev_Tech, and Rev_Date.

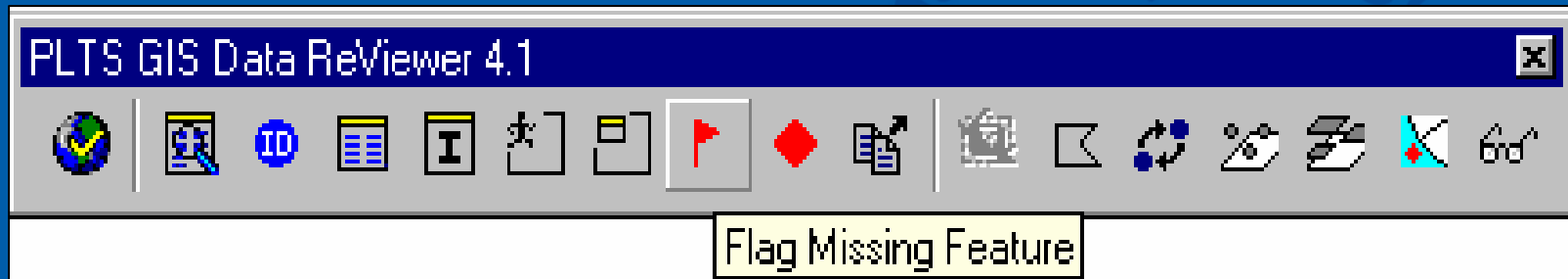
ErrNum	X_DD	Y_DD	X_DMS	Y_DMS	X	Y	FeatureClass	Check	Rev_Status	Rev_Tech	Rev_Date
1	-87.6495148671	41.87581232615	'87°38'58.25352"W	'41°52'32.92437"N	1170482.027278	1898077.856279	midlines arc	User Review	Extend road	mcycgan	2/14/2003
2	-87.6497525068	41.87469137957	'87°38'59.10902"W	'41°52'28.88897"N	1170420.561013	1897668.863206	midlines arc	User Review	ADD Feature	mcycgan	2/14/2003
3	-87.6491878049	41.87436299047	'87°38'57.07610"W	'41°52'27.70677"N	1170575.310000	1897550.430000	midlines arc	User Review	DELETE Feature	mcycgan	2/14/2003
4	-87.6540874245	41.87508956523	'87°39'14.71473"W	'41°52'30.30836"N	1169238.820000	1897803.170000	midlines arc	User Review	Change type to 1	mcycgan	2/14/2003

This screenshot provides a closer look at the GIS data review process:

- Map View:** Shows a detailed view of the GIS data overlaid on a satellite image of a road and parking lot.
- Layers Panel:** Similar to the first screenshot, but with different layers selected.
- Error Description Dialog:** A dialog box for selecting an error description, with options like 'CORRECT F. CODE to:', 'CORRECT NAM to:', 'CORRECT NM3 to:', and 'CORRECT NM4 to:'.
- Errors Table:** A table at the bottom showing a list of errors with columns for ErrNum, X_DD, Y_DD, X_DMS, Y_DMS, X, Y, FeatureClass, Check, Rev_Status, Rev_Tech, and Rev_Date.

ErrNum	X_DD	Y_DD	X_DMS	Y_DMS	X	Y	FeatureClass	Check	Rev_Status	Rev_Tech	Rev_Date
1	-87.6495148671	41.87581232615	'87°38'58.25352"W	'41°52'32.92437"N	1170482.027278	1898077.856279	midlines arc	User Review	Extend road	mcycgan	2/14/2003
2	-87.6497525068	41.87469137957	'87°38'59.10902"W	'41°52'28.88897"N	1170420.561013	1897668.863206	midlines arc	User Review	ADD Feature	mcycgan	2/14/2003
3	-87.6491878049	41.87436299047	'87°38'57.07610"W	'41°52'27.70677"N	1170575.310000	1897550.430000	midlines arc	User Review	DELETE Feature	mcycgan	2/14/2003
4	-87.6540874245	41.87508956523	'87°39'14.71473"W	'41°52'30.30836"N	1169238.820000	1897803.170000	midlines arc	User Review	Change type to 1	mcycgan	2/14/2003

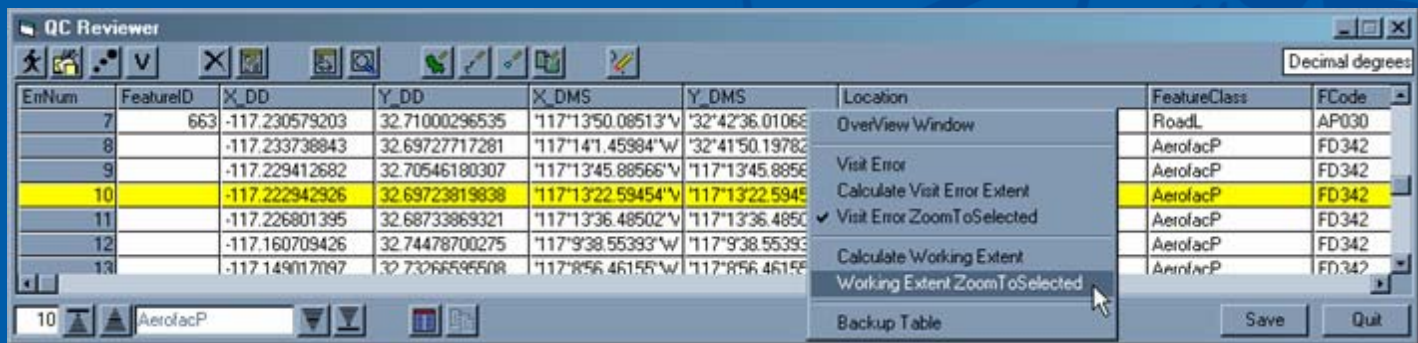
Correct and Validate ReViewer Errors



- “Drive” to the Feature With the Error
- View the Error Description
- Correct the Given Error
- Commit a Correction Status to the Error Report Class
- Validate Error Was Corrected

ReViewer Error Table

- **May Have Many Error Tables Per Project**
 - Group Errors by Reviewer, QC Checks, Region, etc.
- **Select a Record to Navigate to the Corresponding Feature in the Map**
- **Manage Error Records**
 - Add
 - Delete
 - Sort



The screenshot shows the QC Reviewer application window. The main window contains a table with columns: ErrNum, FeatureID, X_DD, Y_DD, X_DMS, Y_DMS, Location, FeatureClass, and FCode. Row 10 is highlighted in yellow. A context menu is open over the table, listing actions such as 'Overview Window', 'Visit Error', 'Calculate Visit Error Extent', 'Visit Error ZoomToSelected', 'Calculate Working Extent', 'Working Extent ZoomToSelected', and 'Backup Table'. The 'Visit Error ZoomToSelected' option is checked. The status bar at the bottom shows '10' and 'AerofacP'.

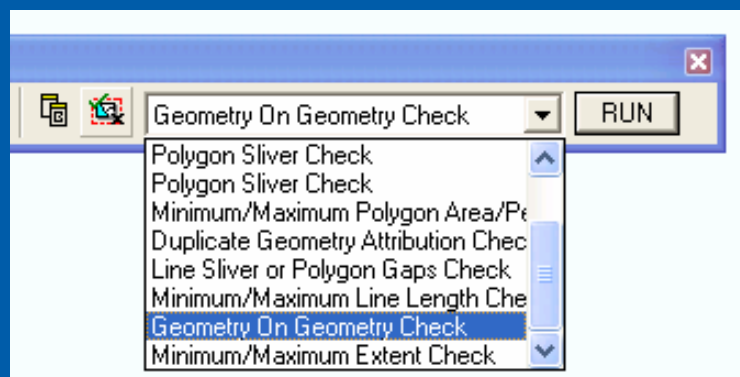
ErrNum	FeatureID	X_DD	Y_DD	X_DMS	Y_DMS	Location	FeatureClass	FCode
7	663	-117.230579203	32.71000296535	'117°13'50.08513"W	'32°42'36.01068"N	OverView Window	RoadL	AP030
8		-117.233736843	32.69727717281	'117°14'1.45984"W	'32°41'50.19782"N	Visit Error	AerofacP	FD342
9		-117.229412682	32.70546180307	'117°13'45.88566"W	'117°13'45.88566"N	Calculate Visit Error Extent	AerofacP	FD342
10		-117.222942926	32.69723819838	'117°13'22.59454"W	'117°13'22.59454"N	Visit Error ZoomToSelected	AerofacP	FD342
11		-117.226801395	32.68733869321	'117°13'36.48502"W	'117°13'36.48502"N	Calculate Working Extent	AerofacP	FD342
12		-117.160709426	32.74478700275	'117°9'38.55393"W	'117°9'38.55393"N	Working Extent ZoomToSelected	AerofacP	FD342
13		-117.149017097	32.73266596508	'117°8'56.46155"W	'117°8'56.46155"N	Backup Table	AerofacP	FD342

9.2 Release ReViewer

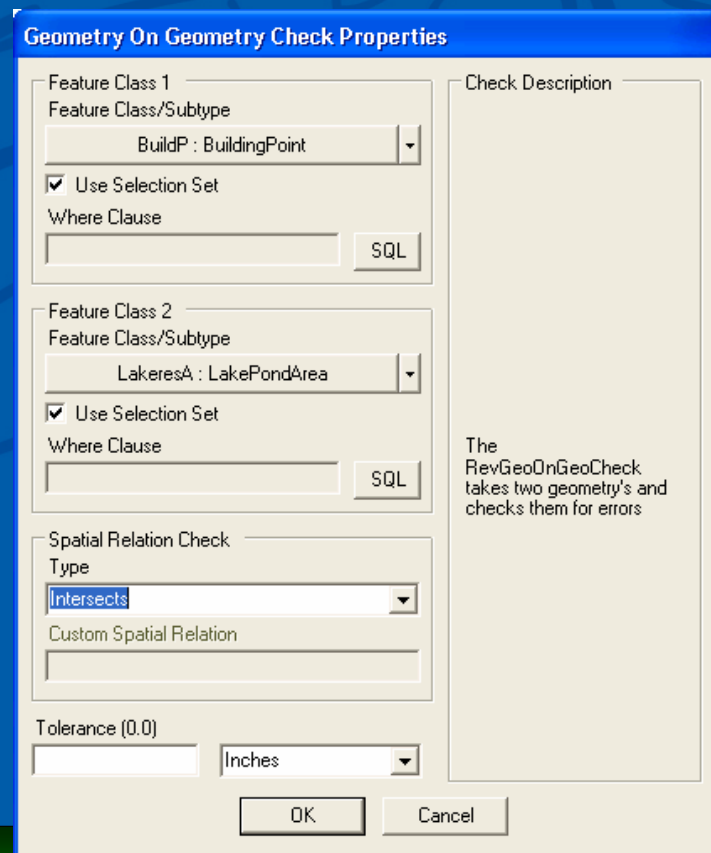
- Biggest effort is in a re-wright of the ReViewer
 - Batch job management
 - Create batch runs and save them as XML
 - The addition of many new checks
 - Batch Validate Enhancements
 - Run Batch Jobs
 - Major Performance improvements
 - New architecture for storing the ReViewer Dataset
 - Stored in the enterprise database or personal
 - Persist preferences from error session
 - New user interface to the errors
 - More flexible and extendable architecture
 - ReViewer will now have its own API

9.2 Release ReViewer

Access to individual checks are through a pull down menu

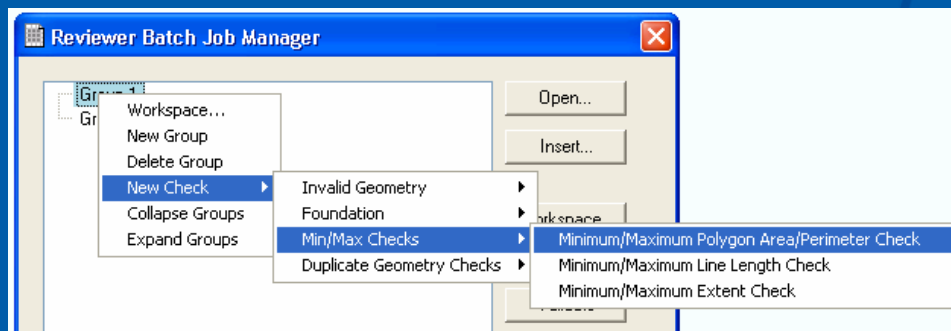


Each check has its own property page for configuration

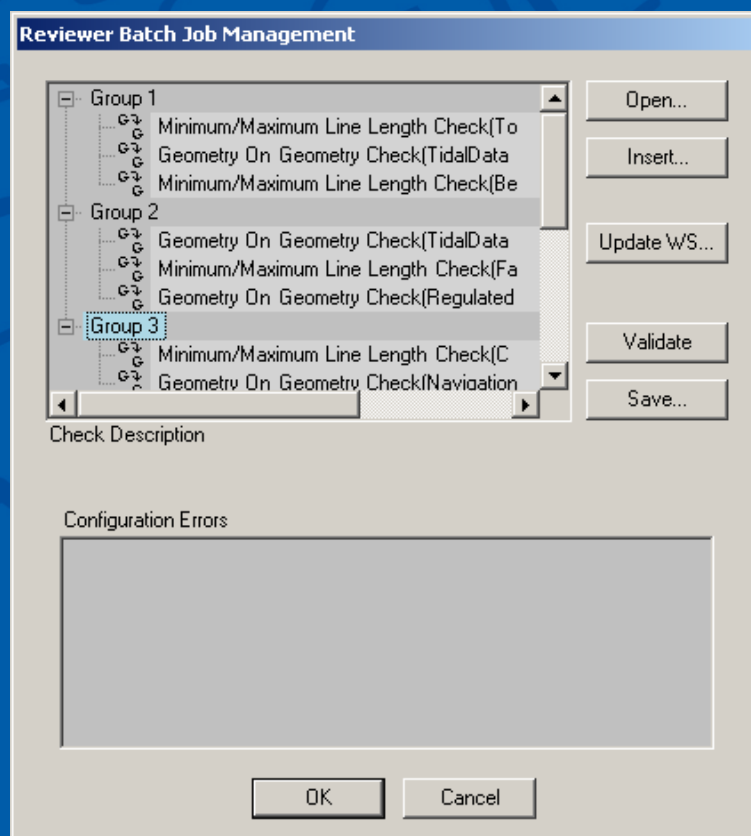


9.2 Release ReViewer

Batch Job Manager

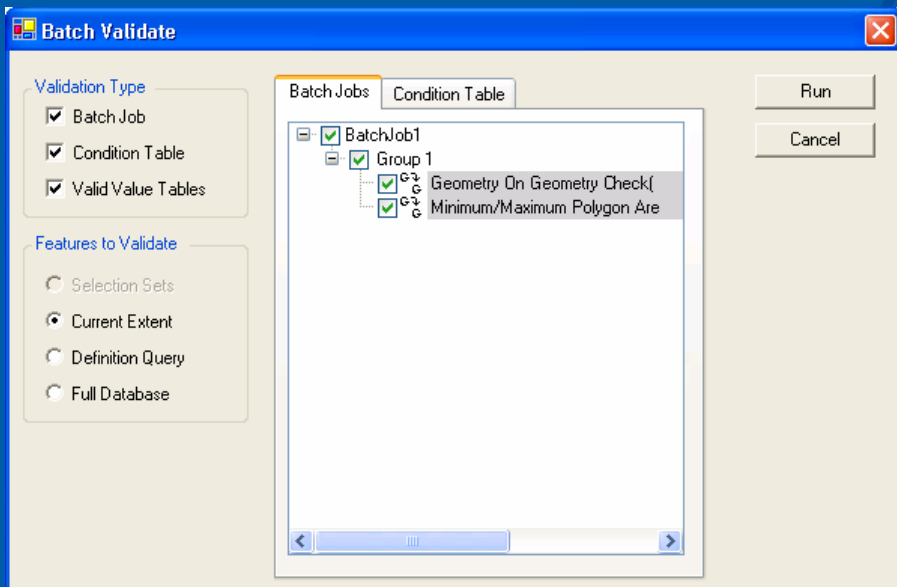


Batch Jobs

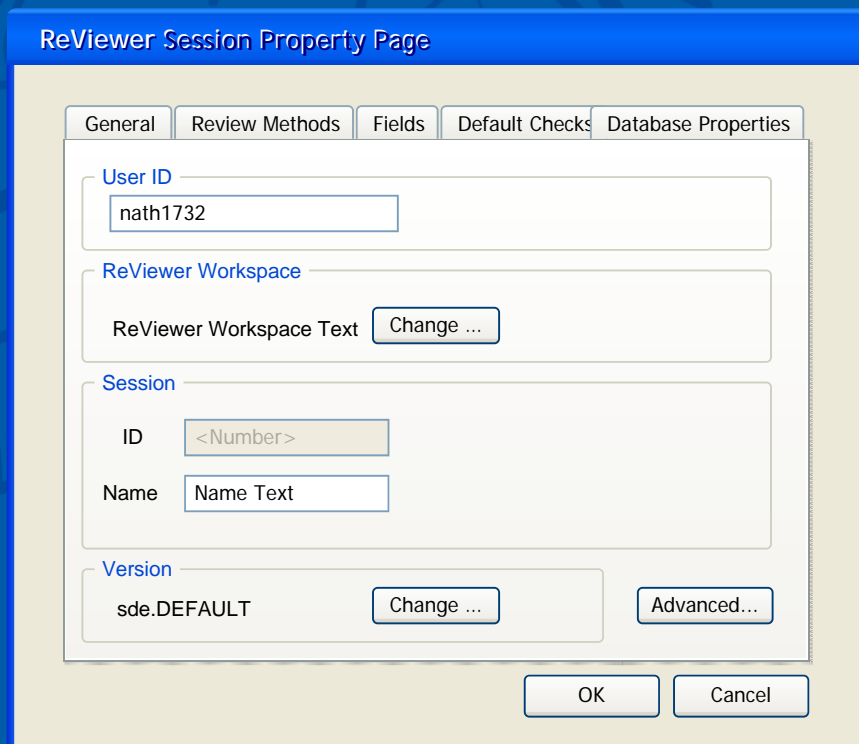


9.2 Release ReViewer

Batch Validate Interface changes



Session Properties



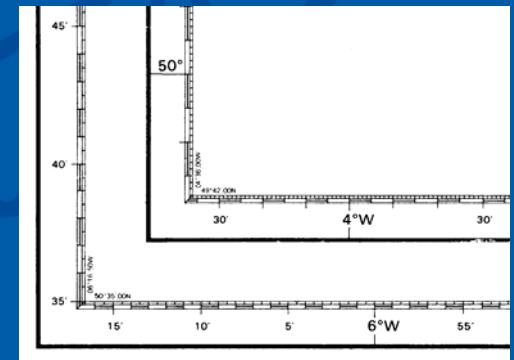
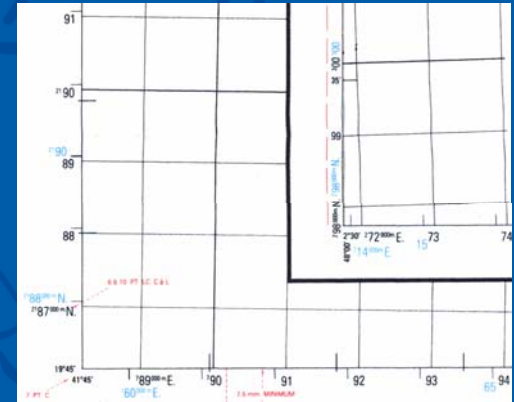
Hardcopy Map Production: MPS Atlas

- MPS Atlas provides:
 - Tools for creating a map series
 - Tools for creating individual map sheets
 - Batch printing and export
 - Dynamic text and elements
 - Element placement rules
- Available as part of MPS or with PLTS



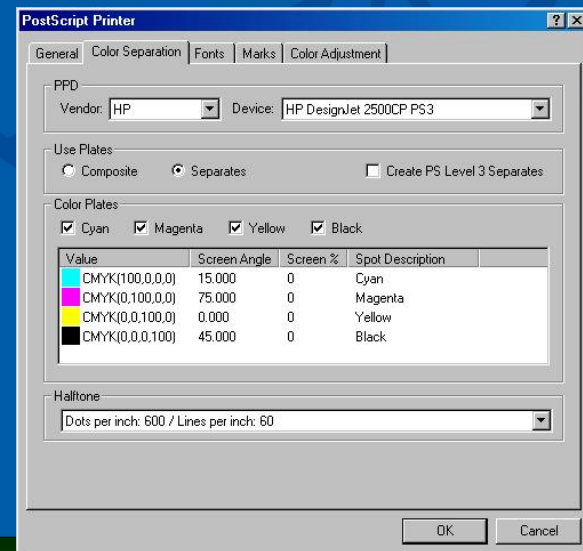
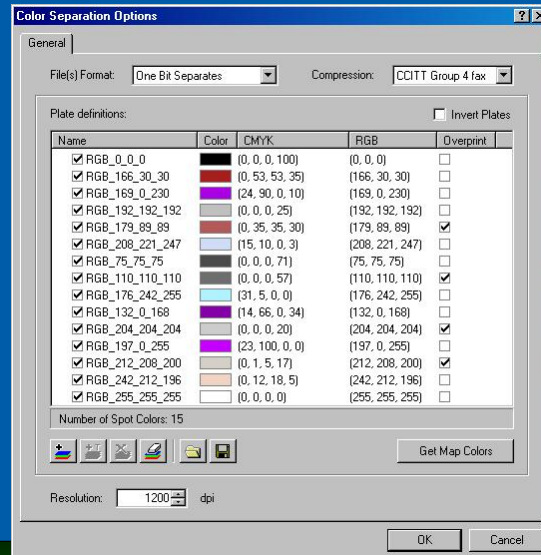
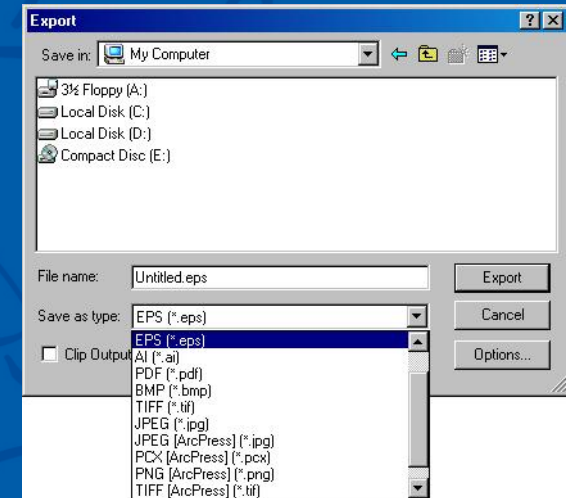
Hardcopy Map Production: Grid Manager

- Grid Designer
 - Implement grid specification
 - Edit existing grid features
 - Export to XML
- Grid Creation Wizard
 - Loads Grid Designer's XML files
 - Batch grid creation
 - Coordinate system conversion
- Add Grid Data
 - Adds grid features into data frame
 - Retains layer properties



PLTS Map Production System Output

- Multiple Export Formats
- PostScript CMYK Color Separation
- TIFF Spot Color Separation



9.2 Release MPS-Atlas

- Re-Write Dynamic text to have the ability to use expressions (like label expressions)
- Additional buffer data frame managers (Calculators)
- Additional coordinate system managers for central meridians, standard parallels and for State Plane (Calculators)
- Expand on dynamic definition queries (Specify more than one field and value)
- Expand the use of the Elements Tab

MPS Atlas vs. DS Map Book

Functionality	MPS Atlas	DS Map Book
ESRI Official Product	Yes	No
Technical Support	Yes	Limited to DSG only
Instructor led training	Yes	No
Virtual Campus Training	Yes	No
Multiple Layouts in the same map document	Yes	No
Dynamic Text	All Attributes and Map Properties	Titles only
Element Placement Rules	Yes	No
Ease of use	Easy	Programmer required
Cost	\$2500	Free Download

Job Tracking Extension

- JTX is part of a System
 - Works with ArcGIS and PLTS
- Tracking Workflow
 - Establish a logical flow
 - Track the status of jobs
- Managing jobs
 - Job properties
 - Database versions
 - Toolbars
 - AOI (Area of Interest)
 - Routing jobs
 - Documenting jobs
 - Integrate core software and applications
- Feature Tracking
 - Support multi-server replication framework
 - Track feature edit history

The screenshot displays the 'Job Tracking for ArcGIS - Job 49 : Edit Topographic Layers' window. It features a menu bar (File, Job, Help) and a toolbar. A tree view on the left shows 'General Queries' expanded to 'All Open and Assigned Jobs'. The main area contains a table with the following data:

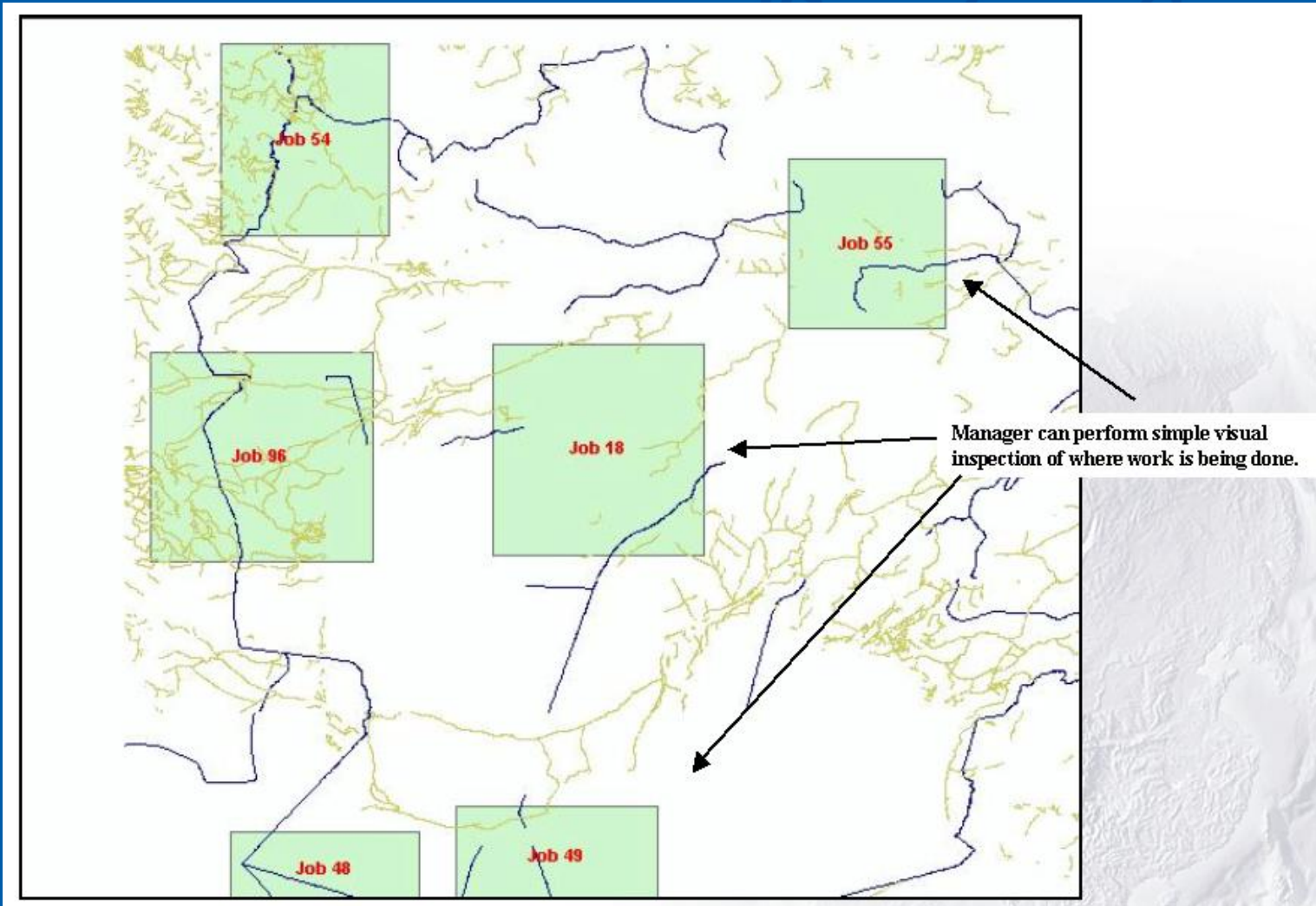
Id	Name	Status	Priority	Due
49	J49_TopSet_20030530	A	3	06/13/2003

Below the table is a 'Properties' tab with the following fields:

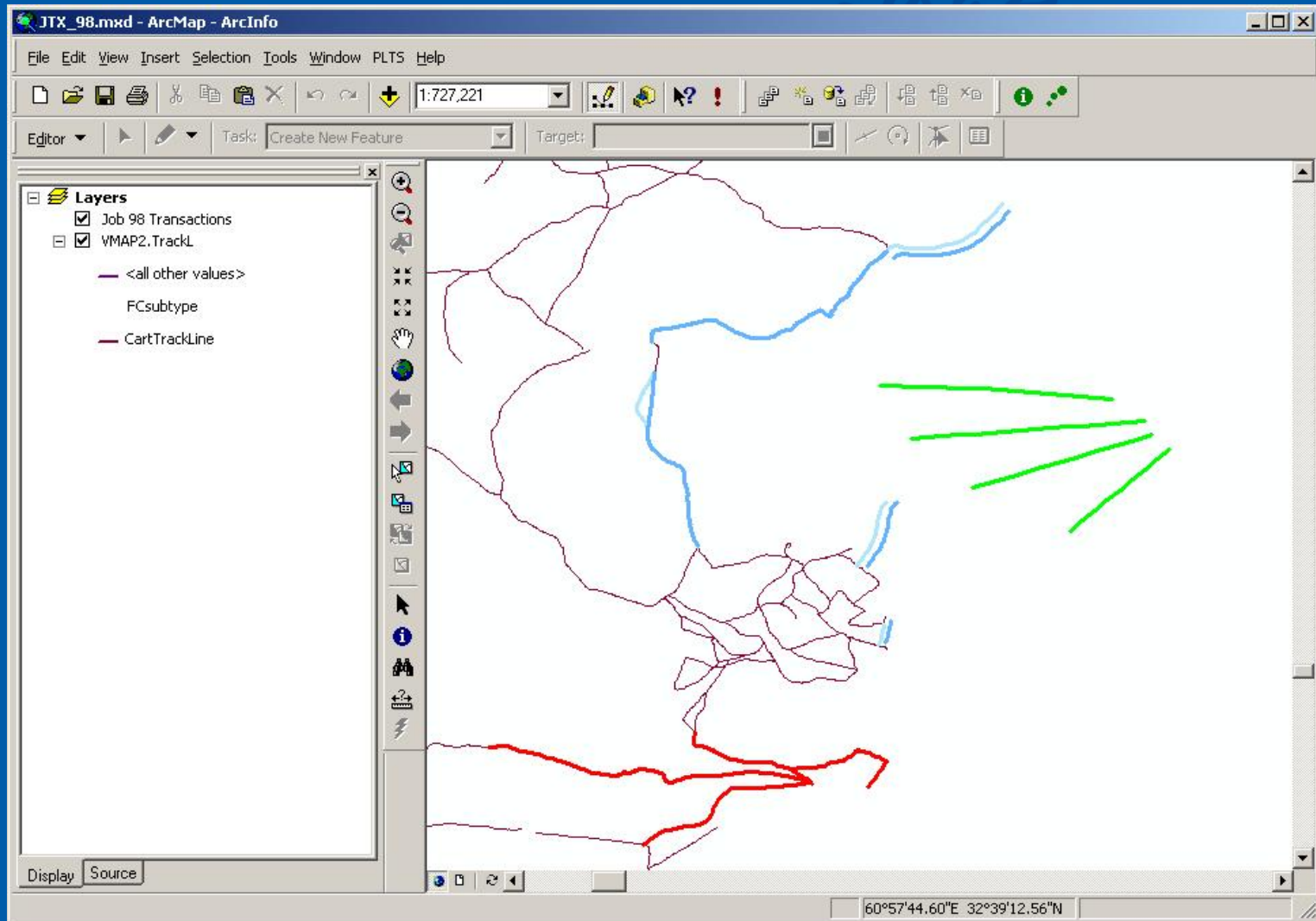
- Assign To:** Group (selected), User (selected), Nathan Noble (dropdown)
- Job Name:** J49_TopSet_20030530
- Customer:** (empty text field)
- Due Date:** 6/13/2003 (dropdown)
- Priority:** 3 (dropdown)
- Project Name:** Area 1 (dropdown)
- Description:** (empty text area)
- Created By:** Nathan Noble

On the right side of the properties form are buttons: 'Define AOI', 'Action >>', 'Apply', and 'Revert'. The status bar at the bottom shows 'Nathan Noble', 'GODZILLA', 'Job Updated', and '10:26 AM'.

JTX Job Management Tools



JTX Transaction Tools



View stored transactions (adds, modifies, deletes) for Job

Demonstrations

helping

manage our

world



Training/Support

- **Training**

- **Conducted at ESRI or Any Appropriately Equipped Client Sites.**
- **Available for Each PLTS Solution and Component Tool**
- **Virtual Campus (Reviewer & Atlas)**



- **Maintenance**

- **Annual Maintenance Support Plan**
- **Standard ESRI Technical Support**

Questions?

www.esri.com/plts

