

Geographic Coordinate Database (GCDB) Technical Advisory Group (GTAG)  
Meeting Notes  
University of Maine, Orono, ME  
Boardman Hall, #336  
September 20 thru September 23, 1999

Attendees:

Mark Dixon	MT-BLM
Dennis McKay	AZ-BLM
Dave Morlan	NV-BLM
Kevin DeRossett	ID-BLM
David Grainger	CA-BLM
Larry Holmes	OR-BLM
Jerry Sullivan	NIRMC-BLM
Don Ashbaugh	CO-BLM
Joe Schmitt	NM-BLM
Tom Noble	NARSC-BLM
Al Kayser	R9-USFS
Dan Eshelman	ES-BLM
Ray Hintz	U of Maine
Kurt Wurm	U of Maine
Steve Hope	UT-BLM
Don Chambers	ESRI
Jordan Henk	ESRI
Steve Robinson	AK-BLM
Don Buhler	WO-BLM
Tom Wohlwend	AK-BLM

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**MONDAY SEPT. 20**

This was a travel day but a few folks showed up at the University.  
We primarily went over the latest linking enhancements with Kurt Wurm.  
Several enhancements were noted.

- Selected Parcel "ID" on form, resize event/Automatic Resize List.
- Parcel Properties-Size for 800X600 resolution.
- Splash screen-resize for 800X600.
- Poly ID's "centroids" may need a separate "Make AN" program. VERIID is not always

needed.

- Do we need to maintain the “old” poly labels if they are edited?
- Ask for the ability to search for polygons using the “Parcel Counter” in properties screen.
- how to “tag” conflicting parcels; need LLD - GCDB parcel-by-parcel comparison.
- need definitions of conflict types.
- adjustment may cause one parcel to move “into” another parcel and cause conflict.
- need to drop the SEC part of, say, SEC\_003 because it is obvious.

Kurt also demonstrated the Parcel Locator and it’s full functionality which is quite extensive and an excellent tool for verifying data that has been attributed.

Dennis briefly discussed the format of the new GLD file and how it varies with the LLD file content and format. Dennis also elaborated on the concept of supplying information to the user on conflicts, which are noted in this file. One concept is to develop a “Help Tree”. It starts out very basic and at the user’s request, expands to provide more detailed information relating to a conflict. This is a critical addition to the fact that simply stating that a conflict exists is insufficient for users to properly understand and deal with these conflicts.

Do we need the “build IID from AN” as it is now in NODUP?(PCCS2GMM)

Also discussed were some linking enhancement recommended by Arizona which applies a “color banding” scheme to verify that polygons are correctly located in their proper aliquot nominal location. This can be very helpful especially where very small polygons are encountered.

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## TUESDAY SEPT. 21

Dennis went over the agenda

- NILS requirements
- ESRI in attendance on Wednesday
- Ongoing Task Orders
- Co-op agreement with ESO switched to NIRMC/\$50k on new TO
- Where are we and where are we going
- Funding and role of University of Maine. Currently funding is below minimum required

We then formulated a discussion list and prioritized it.

<b>Function</b>	<b>Discussion Priority</b>
GUI SID editor	Med
GUI Aprop	

Test NODUP -reports needed	Low (no funding) Med
GLD format-minor subs Suck out minor sub from case rec. LLD will write both .an and .gld for the interim Format from minutes from Denver GTAG. BB will have link to it. Combine LLD and VERIID, change name to TOGLD.EXE	High
Curve stuff	Med
APD2GMM	High
What INNY (RPO) Assign special surveys to innys in RPOs before subdivision makes many polygons. Use 'Parcel locator with 'add & delete' features added.. Also use Don's acreage better . Use GCDB point Ids to assign attribute to correct section. Double attributing rules. Aggregation (look at adjacents to see if you can piece together).	High
Option to 'un-stack' text @ centroid	Med
Training GMM AII	Low
Release 3.1	Low
Data prep OT&E	Med
AII edits what files	Med
Port Data Prep to NT	Done Tom coordinates info bet. Mike Carsela and Chris Smith. <b>Action Item</b> -Dennis write Recommendation to CMB for porting Data Prep to NT
Configuration settings for optional prompt windows.	
Elongation within TP Interior Proportion distance test. Add Pt ID to Use (cor sub. for proper elongated pt ids) (user input)	High
Snap Tolerance If points are in the .raw file, do not snap.	High

More Interfacing of logic between IRR & ADD	High
More intelligence intersecting irregular boundaries Add pts are non computable in .IRR automatically.	High
Need "NODUP" functionality in INRAW	Done
No SID entry required for "suffixed" SID's ie. -TIE, -LC, -RP, etc. Use the "Parent" SID if a suffix exists	Med
Control SID What is the source of the control. SIDS in .con. Proceeded by 'CS'. Error estimates in .SID file. If no SIDS, use error estimates in .con . Control standards comment line.	High
ID ranges for intersection rectangular	High
SIDS for control	High (FS) non PLSS
Test for GCDB Point ID compliance rename pt ids, create alias file, original point ids – alias (automatically); run APROP, create polygons; export alias - original point ids.	High (FS) non PLSS
VERIID recognizes edited centroids record lat & dep from original automatic location.	Done
GUI APROP	Low
Elongated Linking	High
Pt. Ids + centroid go get sec, A-P	High
Build LOT FILES (GUI) if No LLD	Low
Minor WinGMM Interface Problems	Done
Selection Tool Highlight/Display list	Done
LLD prompts before killing LLD ("Are you sure you want to do this?")	Done

Status Report (GMM task orders)	Low
Mckay-Jack GUI linking improvements Vertical/Horizontal stripping (sections 1/4-1/4) w/enhanced selection tool. Different Colors for horizontal (4) and vertical (4). Extend parcel locator w/toggle editor	High
Curve Stuff	Low
Training-GMM & AII	Low
Drag & Drop Centroid Store coord with Lat/Dep bracketed alongside. VERIID Recognize edited centroids Ray applies Lat & Dep to orig. coords.	Done
FORMREL File management too much Use a single .HOW file for ADD and FORMREL	Done
Need a stand alone UPAN as an executable.	
Standardized Headers (No ORIGIN)	Done
GCON Inform user of direction (NAD_? To NAD-?)	Med
FORMREL Appends to ADJ	Med
QCMCKAY (QCMAT) Not right	Low
External Intersections	Low
Consistency in Prompts	Low
Program to Auto-build and run regions (NOT RESOLVED)	Low
Control in Regions Transferred bdys, if 40,40 in one then "fixed" in the other	Done
Make .IID file from existing .AN file Does NODUP take care of this?)	Med

WINGMM ENHANCEMENTS

Survey NOTE & SUFFIX into LOT IID and AN files	Done
Ability to “toggle” so window remains open so user can see what caused a program to fail.	Done
Aliquots in Water and Specials not labeled Correctly	Done
Combine VERIID into LLD Warn before trashing IID file	Done
Auto “refresh” screen after running APROP, LLDW, VERIID	Done
Put “A-P” codes into “Show LLD” “Show LOT”	Done
Selection Tool Highlight/Display list	Done
Clean up IID file data stuff at end of file (Is this a GOOD thing?)	Done
Add ability to edit/move centroid (See previous page)	Done
Do not write “GLINK EDITED” at top of IID file	Done

**NOTE: All item above tagged with Done are removed from Agenda. Ray/Kurt will do.**

News received that the new Co-op agreement with U of Maine is apparently completed

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**WEDNESDAY SEPT. 22**

ESRI staff, Jordan Henk and Don Chambers, spent most of Wed. discussing the NILS use cases with the GTAG members.

GTAG/NILS/ESRI should be a combined effort:

- GTAG should act in an advisory role, providing the expertise from the field
- software tools will be developed to bring field activities into GIS
- tools will be diverse - they will support all levels of govt.
- the next generation of ESRI COTS is being developed
- for info, see <http://www.blm.gov/nils>
- requirements emphasize input from users

Why NILS? : (Jordan)

- partnerships to form common land database – the Consortium
- standard software
- the concept/system can evolve over time
- will be COM based
- will have tools for all levels of users
- will integrate access to all types of land records
- enhance agency data sharing

The “Field to Fabric” PowerPoint presentation was shown to the group. This is available in .pdf format at <http://www.blm.gov/nils/general>

They explained what ESRI terms “Use Cases” as a tool to help assist in determining exactly what the user needs before they ever begin designing and building software.

GTAG serves as advisors to ESRI (Dave and Dennis have been intimately involved in the project.)

Validation by GTAG is essential. Validation should be completed by late fall.

Detailed analysis of use cases will proceed next year as will iterative development.

They have divided the project into four major modules:

- Measurement Management
- Field Survey
- Parcel Management
- Geocommunicator

ESRI employs “Object Oriented Technology” in their software.

The concept is a single set of tools to populate a database used by all concerned users.

The “Use Cases” are supposed to be final sometime this fall.

After these are completed they do a detailed analysis.

They next go through a series of design cycles where the software is tested and debugged and or enhanced.

We are presented with a detailed run through the use cases which are being used to build parcels. While these use cases are very detailed they tend to focus on the business practices or what are the steps taken to get to a particular event.

We were all invited to look over these use cases back in the office and comment. They want to get it right the first time. ESRI needs our feedback by October. All comments are to be passed through either David or Dennis.

ESRI has now opened the secured web site to GTAG members.

A question was asked about the convertibility between ArcInfo 7.x and 8.x. We were assured that the tools will be there for this. Actually, it was explained that when one purchases ArcInfo 8.x you actually get the products; ArcInfo 7.x and ArcInfo 8.x (New generation). ArcInfo 7.x will have continued, full support from ESRI, including enhancements and bug fixes.

The ARC 8 release will be configured as follows:

Work Station Version - NT & UNIX:	Desktop Version - NT only:
Classic ArcInfo Version 7.x	ArcMap ArcCatalog ArcToolbox

The Revised Use Cases of 8/12/99 were presented to the GTAG audience. Each use case was discussed in detail.

Dave Grainger presented the following use cases:

1. SM\_Research
2. SM\_Pre-field-Setup  
Data collection devices were discussed: definition, general concepts
3. SM\_InFieldDataCollectorSetup
4. SM\_CollectFieldDataObservations
5. SM\_PerformCOGOandLayout

Dennis Mckay presented these:

6. ConstructMeasurementFeature
7. AdjustandAnalyzeMeasurementNetwork
8. SystemPerformDataTransformation

Other use case discussed:

1. AnomalyDetection
  - should incorporate other blunder finding tools when available.
  - should be available any time, possibly toggle on/off
  - could be a QA/QC function on calculated as well as raw data
2. Anomaly Correction.
3. Refine Error Estimates.
  - implement as a window with a slider to select error weights.

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Jordan presented and explained the use case diagram. This diagram shows all NILS use cases and how they relate to one another.

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Discussion with Don Buhler:

- we (GTAG, BLM, etc) are transitioning land software to GIS
- concern of GTAG members:
  - when ARC 8 / NILS becomes COTS, how will research and development be continued on cadastral and land?
    - ans. - (Jordan) - new versions; on-going, evolving project
- funding to U of ME is very important, especially now due to the large number of high priority issues/problems.
- current level of funding (\$50k) is inadequate to efficiently carry on research and develop of GMM tools.

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Don and Jordan left for the airport.

Comments by the GTAG members about Don and Jordan's visit:

- very beneficial

- thought provoking
- informational
- greatly appreciated the visit

For the remainder of the day, discussion centered on:

- snap tolerance
- do not move (points within snap tol.) to lines.

Group consensus: do not snap points if they are in the .raw file – always retain these.

Also, there is the line-on-top-of-a-line problem. Eg., a tract having one of its boundaries on a section line: the section line is curved, the tract boundary is most likely surveyed in as straight.

- possibly, flag this situation because during adjustment, the lines may be snapped
- Create new SID suffix of -SNAP
- this situation must be checked for every time computations are done – possibly have an on/off toggle for the checking.

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## **THURSDAY SEPT. 23**

### **APDs**

We had a long discussion with Tom Noble concerning the APR2GMM progress. Tom informed GTAG that the work was mostly finished. However Tom did have some suggestions to make it more functional which would involve some enhancements to WinGMM by Kurt.

Tom's solution:

All protraction lines in .raw file

Different SIDS for different kinds of APD lines. R&t, closing, fixed.

Special PIDs to signify closing on survey line (Only exist in PB's) Go a certain direction (cardinal) until it hits a line. This function can be used for APDs and regular intersection with Spec. Surveys.

Special point Ids will intersect closing lines after adjustment.

Link with Glink

All APDS coords. are put into .con

Tom will make .pfx file which contains: .RAW, .SID, .CON, DEF and ADP acres

.RAW will only include APD data, no survey data.

Special SID on APD's stuff will allow adjustment to ignore these lines. -APD's on SID #. Can add on to existing SIDS.

Dennis's solution

Have .ADD intersect the closing lines.

Kurt's solution

All APD data in .ADD, NOT in .RAW

Take Tom's APD .RAW file and create a big .ADD file with the data.

Control point SIDS.

Big question: APD data in .RAW file or .ADD file. Decision: .RAW file.

Discussion of building GMM data set without having GMM data (CFF-no PID's). Some APD's may exist which were built before GCDB data was available, in which case CFF data was used on the surveyed bdys.

To create a GMM data set you need to build a RAW file from CFF data.

Kurt will take Tom's GMM created files and build GCDB data for the Tp. And link it.

**Arrived at Solution:**

We will create a special SID or SUFFIX (APD or Original) so the CON data will not be adjusted or affect the adjustment. This is critical to maintain the APD data as shown on the official plat.

APD2GMM will create a RAW file. "If exist then append, IF NOT, create it"

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Steve Hope updated GTAG on current Task Orders and progress. This Status Table is on the AZ ftp site. File Name: TOSTATUS.doc

**This is when all the discussion items were fully dealt with and some decision was arrived at**

Fully test and report on PCCStoGMM (NODUP) Ray needs to know if it is done,

**Action Item-Milbert Krohn**

Other states need to test for their data. Reports should be consolidated through WY.

QC mat problem-Dennis will talk to Ray on Friday **Action Item- Dennis Mckay**

Origin-Vanquish/Ignore-Need to talk to Gina before proceeding to avoid conflicts with Data Prep.

**Action Item ?**

Standard Headers

Project ;Tier; Range; Mer;. State; (GLD style) modified; date; coord source (region name);

zone; date; datum; SEUW **Action Item-Dennis McKay**

GCON-Inform user of directions. State Datum in first prompt.

FORMREL-Ellipse data appended to .ADJ as not many keep the regional .ADJ

One .HOW file for adjustment/reliabilities

External intersections

Put A-P codes in show LLD SHOW LOT

Maybe change .LLD to ABC type. GMM would accept any character in the appropriate aliquot part column.

UNDO in APROP

Ray will do this, similar to INRAW

NOTE/SUFFIX, type into .LOT .AN .LLD .GLD files

Leave DOS window open upon program error (turn robust on in interim). Redirect error to file.

Auto build/run TPS in regional adjustment -user-configure able

40/40+fixed=40/40+40/40 update .CON .SD .LSA (control)

Consistency in prompts and verbiage (Ray Ware). **Action Item-Mark Dixon**

Parcel locator - put in nominal button, so A-P can be highlighted.

Snap Tolerance in SID file, farm unit problem, line on top of line problem. If end points of specials fall within snap tolerances of sub. line, specials line will snap to sub. line.

(Use “- **SNAP**” to SNAP

Close Points that are within tolerance in .raw file. Do not snap any points that are contained in the raw file.

Move to line. Ability to use APD “special” point ID's in APROP.

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## FINAL, PRIORITIZED LISTS OF TASKS TO BE ACCOMPLISHED

### HIGH PRIORITIES

Priority	TO #	Task
1.	1	Snap tolerance
2.	2	APD - pid for intersections
3.	1	LLD.exe - rpoly tagging & GLD creation

4.	2	ADD points
5.	1	ADD 999999
6.	1	40/40 + fixed
7.	1	Merge LLD and VERIID to TOGLD.exe
8.	1	One .how file
9.	2	GCON state datum prompt
10.	2	Control SID

**MEDIUM PRIORITIES**

1	2	FORMREL - ellipse data to .ADJ file
2	2	elongation proportion test
3.	1	Undo in APROP

**LOW PRIORITIES**

1.	2	origin line out
2.	2	Standardize header files
3.	1	QCMAT problem
4.	2	Centroid move

**TO-DO LIST FOR KURT**

1.	1	Color banding
2.	1	Display A-P code cor/LLD ??
3.	2	SID editor
4.	1	Lot file builder

5.	?	Batch TPS
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The meeting was adjourned at approx. 5:00 p.m.