

Date: 29-July-2011

Agreement Number: G11AC20050

Project Title: Multi-State Planning and Implementation of Geodetic Control Framework Components

Interim report

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Collaborating Organizations: name, point of contact, address, web address

- Montana Department of Administration (DOA), Base Map Service Center, Stewart Kirkpatrick, skirkpatrick@mt.gov
- Idaho Department of Administration (DOA), Idaho Geospatial Office, Robert Smith, robert.smith@cio.idaho.gov
- Montana Geodetic Control Workgroup, RJ Zimmer, rjzimmer@djanda.com
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Project Narrative

This joint project by Montana and Idaho employs a two-part approach to demonstrate technical and governance approaches to support geodetic, surveying and mapping control in a multi-state environment. The technical portion provides tools to support the discovery, use, and exchange of control information in two states by adapting the Montana Control Point Database and web application to consume and make available Idaho's control points. The result will be a Multi-state Control Point Database and web application (MCPD).

The other portion of the project is devoted to developing a business plan for a Regional Geodetic Reference Center to support both Montana and Idaho. The Geodetic Reference Center will support various positioning projects and programs such as hosting the MCPD, densifying the Continuously Operating Reference Stations (CORS) network in Idaho, and establishing a real-time GNSS network initially in Eastern Idaho and Western Montana with the potential to later be expanded to a larger region. The plan will address governance, management, funding, technical issues, and other aspects that will insure accountability, longevity and stability.

To date, the project is proceeding well and nearly all aspects are on- or ahead of schedule. Task one, MCPD and web application, is on schedule if not ahead of schedule. To date, the database has been transitioned from Oracle to MS SQL Server and a new relational schema has been completed to accommodate the multi-state data. GCS Research in Missoula Montana has been awarded a contract to work on various technical aspects of this project focusing principally on the web application. At this point, nearly 50% of the coding for this project has been completed. There have been three technical meetings regarding the development of the MCPD and bi-weekly meetings will continue until the final product is delivered.

A solid outline for the business plan has been received on June 10th and the first draft of the business plan (task two) was received on August 8th. The draft business plan is currently under review by the PI (Weber) and will be released for broader comment by the project team later in August. After this, the current draft business plan will be released for comment to the Idaho and Montana stakeholder communities. Six formal technical meetings have been held to date, including an important stakeholders meeting on June 21st and a special precision agriculture stakeholders meeting on August 10th. This meeting was a follow-up from an on-line survey which was conducted using Survey Monkey software. That survey had over 100 respondents and the follow up meeting allowed us to forge a vital contact with precision agriculture stakeholders. This successful relationship is flourishing and we are planning an additional follow-up meeting with this group. Notes from the stakeholders meeting are attached and will be used to improve the business plan.

Our efforts have been as inclusive as possible. As anticipated, we have had good involvement from the GIS, GPS, and surveying community. In addition, the machine control (construction industry), local government engineers, and precision agriculture communities have been quite involved across both states.

We have leveraged a number of community contacts and technologies to aid in our success. To date, no specific activity can be considered unsuccessful however; the web-based forum (<http://geodeticcontrol.lefora.com>) has not been as successful as in previous, similar projects. This will likely change when the draft business plan is released for comment.

Attached to the interim report submission are four PDF documents. One is the PowerPoint presentation (saved as PDF) made at the 2011 Intermountain GIS Users' Conference to let the GIS community in Idaho and Montana know about the project, the second and third are articles which appeared in the Gem State Surveyor and Treasure State Surveyor magazines (publications of the Idaho and Montana state surveyors associations, respectively), and the fourth is the draft business plan including a summary of the stakeholders survey which was conducted in June of 2011.

Next Steps

We will continue working on this project and follow its timeline. At this point, specific assistance is not required; however input or suggestions are always welcome to help make this project more successful.

Revised Timeline

The project is proceeding on its original timeline and we do not anticipate the need for a no-cost extension

Attachments

As required

Draft business plan(s)

Multi-State Control Point Database Implementation and Geodetic Reference Center Business Plan – Panel Discussion

Rod Collins, Stu Kirkpatrick,
Donna Pitzer, Keith T. Weber, and
RJ Zimmer



Rod Collins

- Insert bio bullets here... photo

Stu Kirkpatrick

- Photo
- Montana State GIS Coordinator
- Chief of the Montana Base Map Service Center, IT Services Division
- More....???

Donna Pitzer

- Insert bio bullets here

Keith T. Weber, GISP

- GIS Director, ISU
- Chair, Idaho Geodetic Control TWG
- PI, Multi-state Planning and Implementation of Geodetic Control Framework Components

RJ Zimmer, PLS

- Professional land surveyor in MT and OR
- GIS Manager for DJ&A, PC
- Chair, Montana Geodetic Control WG

CAP Project Overview

- Multi-state Planning and Implementation of Geodetic Control Framework Components
- CAP 2011 Award (April 2011-March 2012)

Two Primary Objectives

- Extend Montana's existing control point database (MCPD) and application to incorporate two states' data (Montana and Idaho)
- Develop a business plan to establish a Regional Geodetic Reference Center to:
 - manage and sustain the MCPD
 - establish, manage and sustain a real-time GNSS network to improve and streamline geospatial activities

Project Timeline

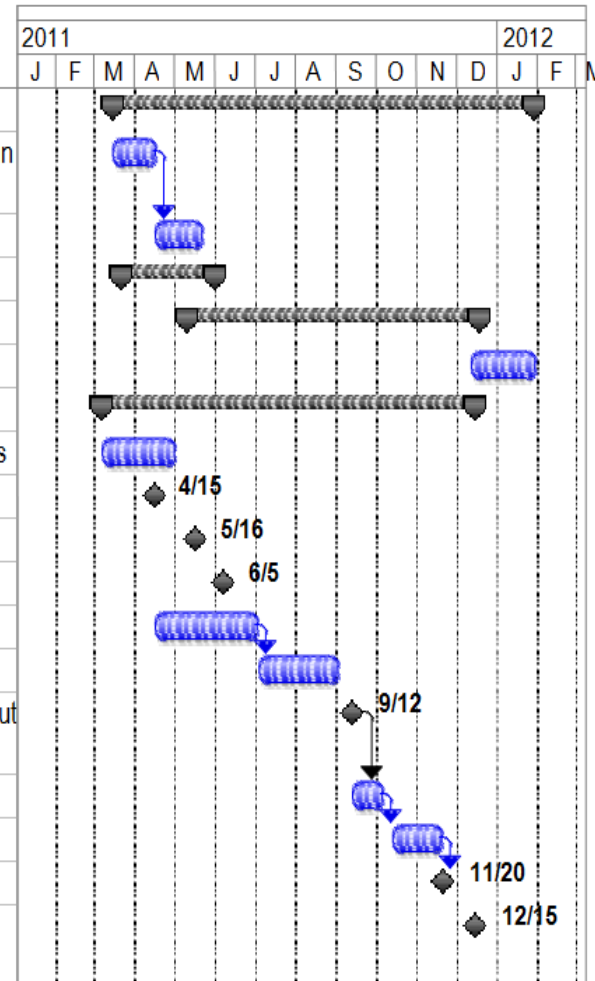
Key Steps

Part 1: Control Point Database & Application

- Conduct joint meeting of Idaho and Montana participants to explain project and gather input
- Standardize database and domains
- Incorporate Idaho control point data
- Modify web application
- Deploy multi-state application

Part 2: Business Planning

- Write scope and engage consultant for business planning services
- Collaborators meeting to initiate business planning (facilitated)
- Conduct second meeting to collect focused input (facilitated)
- Conduct follow-up interviews
- Draft Plan released for review and comment
- First Plan comment period
- Conduct third meeting to share comments and elicit additional input (facilitated)
- Release second draft business plans
- Second Plan comment period
- Final Plan released
- Presentation of business plan and MCPD demo to governance bodies



Learning from our Past...

- Communication is key
 - Between collaborators and investigators
 - Between stakeholders
 - GIS
 - Survey
 - Agriculture
 - Machine control (construction)

Communication is Key

- We will be developing a website for this project...
- And have already put in place, a web-based forum for open discussion
- <http://GeodeticControl.lefora.com/>

Web Forum

Geodeticcontrol Forum

Forum admin Send invites Help

webekeit edit profile messages (new) logout

Geodeticcontrol Forum

A discussion forum for the Multi-state Planning and Implementation of GC Framework Components CAP

Forum Members Stats Chatter

Google™ Custom Search

Search

powered by Google™

Geodeticcontrol Forum

Admins: webekeit

Start a new topic

category name	topics	posts
geodeticcontrol Forum Topics Topics for geodeticcontrol Forum	0	0
News Community News & Announcements	0	0
General General Discussion	0	0
FAQ Browse Frequently Asked Questions about this forum	0	0
Multi-state Control Point Database	1	2
Multi-state Control Point Database topics	1	2
Geodetic Reference Center	0	0
Geodetic Reference Center topics	0	0

All Topics From All Categories [1]

Newest Posts Across All Categories

Start Topic

Community Info


Recent Posts


Forum Admins

Forum Categories

Recently Online

Top Posters




Founder: webekeit
Members: 2 (**1 online**)
Posts: 2
Founded: 1 day ago
Newest Member:  skirkpatrick

Can we post the URL to the viewer?
by webekeit, 2 hours, 36 minutes ago

Under our joint FGDC CAP grant the database and viewer will become the ...
by skirkpatrick, 2 hours, 51 minutes ago

See more

 webekeit founder

geodeticcontrol Forum Topics

News [0]

General [0]


FAQ [0]


Multi-state Control Point Database


Multi-state Control Point Database topics [1]

Geodetic Reference Center

Geodetic Reference Center topics [0]

 webekeit rookie

 skirkpatrick rookie

1.  skirkpatrick (1)

ZIM MCPD TOUR

Regional Geodetic Reference Center

- Manage and sustain the MCPD
- Establish, manage and sustain a real-time GNSS network to improve and streamline geospatial activities

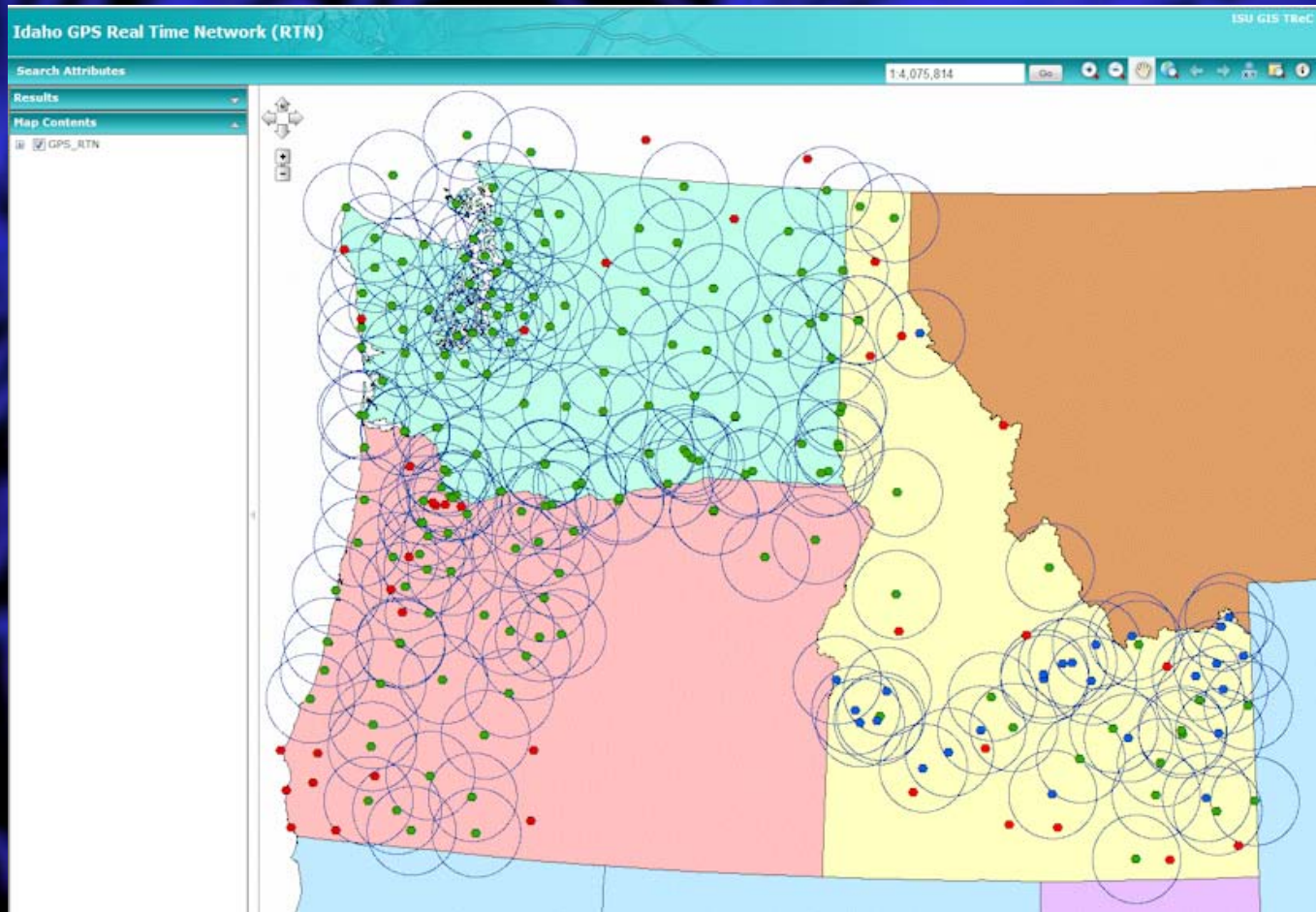
A Bit of History

- RTN efforts in Idaho...
 - Initial efforts began in 2006
 - Led by Maher Wissa, PLS (ISU)
 - More recently
 - GPS RTN group
 - GC TWG

A Real-time GNSS Network

- Uses a processed solution for differential correction in real-time
 - Within the network
 - For compatible receivers with access to the Internet

What Network?



- http://ags.giscenter.isu.edu/GPS_RTN_Service/default.aspx

Compatible Receivers?

- Pretty much any current GPS receiver capable of using RTCM, CMR, CMR+, etc. data
 - Needs a data connection to the Internet
 - Does not include recreational receivers

What are the Benefits?

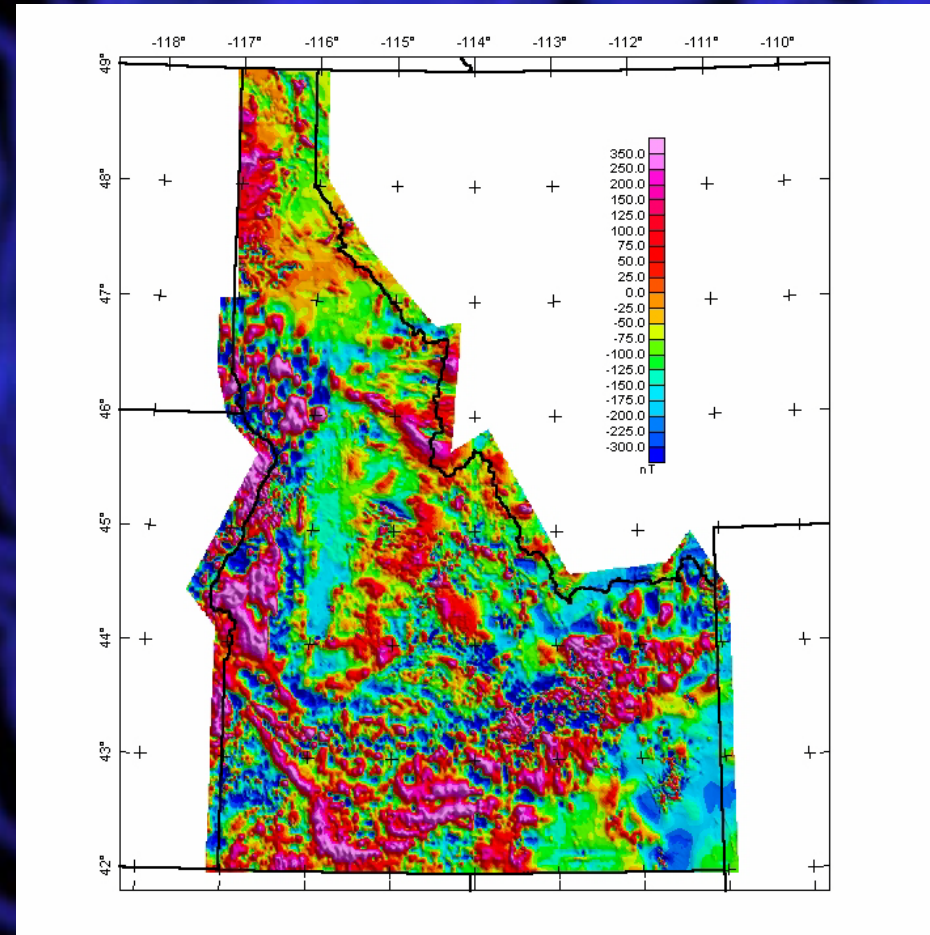
- Many...
 - Cadastral fabric
 - Absolute accuracy vs relative accuracy
 - Base data and imagery
 - Benefit of locating with geoid models (e.g., WGS84)

In Essence...

- Benefit of *locating* with geoid models (e.g., WGS84)
- Relative to ellipsoid models (e.g., NAD27)
 - Increasingly important in areas with much terrain relief
 - And sharply contrasting magnetic/gravity fields

For Example

- Magnetic anomalies map for Idaho
- Note the sharp contrast areas
 - Pink adjacent to blue
- Positional accuracy benefits from *locating* with Geoid models



A Geoid-based System

- GNSS
- Global Navigation Satellite System
 - GPS
 - Galileo
 - Glonass



The Future...

- There is much to do, beginning with a plan to
 - establish,
 - manage
 - and sustain a real-time GNSS network

Idaho State University, the Idaho Cadastral Reference Framework Group, the Idaho Geodetic Control Framework Group, the Montana Base Map Service Center and the Montana Geodetic Control Working Group /Montana Height Modernization Executive Committee are pleased to announce that we have been awarded a FY2011 Federal Geographic Data Committee (FGDC) National Spatial Data Infrastructure Cooperative Agreements Program (NSDI CAP) grant at a funding level of slightly less than \$40,000.

A portion of the award will be used to adapt the present Montana Control Point Database schema and application to a multi-state control point inventory. The application will provide tools to support the discovery, use, and exchange of mapping, surveying and geodetic control information within the two states. Currently providing Montana's control point information, the Multi-State Control Point Database (MCPD) will also include and make Idaho's control points publically available. The control points in both states are contributed by Professional Land Surveyors and will include information about collection methods, accuracy, datums, etc., that will allow the end user to evaluate the usability of any particular control point to their needs.

The other portion of the grant is devoted to developing a business plan for a Regional Geodetic Reference Center for Montana and Idaho. The Geodetic Reference Center will support various positioning projects and programs such as hosting the MCPD, densifying the Continuously Operating Reference Stations (CORS) network, and establishing a real-time network. The initial RTN will be in Eastern Idaho and Western Montana with the potential to later be expanded to a larger area/region. The plan will address governance, management, funding, technical issues, and other aspects that insure accountability, longevity and stability.

The above tasks will be completed by the first quarter of 2012.

We thank the National Geodetic Survey and the Idaho and Montana/Dakotas BLM state offices for supporting this proposal.

If you want to find out more information or participate in the discussion and development of either the Multi-State Control Point Database or the Geodetic Reference Center business plan, please visit our project website at <http://giscenter.isu.edu/research/Techpg/capGC/index.htm> . We are in the early phases of each of these tasks and your input is invaluable to ensuring the long-term success of these projects.

To see the current Control Point Database, go to:

<http://giservice.mt.gov/MCPDviewer/>

Multistate Control Point Database (MCPD) training videos and documents are now posted on the web at: <http://mcpdtutor.info/>

Donna Pitzer – Boise, Idaho on behalf of the Idaho Cadastral Technical Working Group.

Rj Zimmer, PLS – Helena, Montana on behalf of the Montana Geodetic Control Working Group and the Montana Height Modernization Executive Committee

from Treasure State Surveyor (Montana Association of Registered Land Surveyors magazine).

Along with Idaho State University and the Idaho Geodetic Control Framework Group, the Montana Base Map Service Center and the Montana Geodetic Control Working Group /Montana Height Modernization Executive Committee (<http://www.mdt.mt.gov/mdt/heightmod.shtml>) are pleased to announce that we have been awarded a FY2011 Federal Geographic Data Committee (FGDC) National Spatial Data Infrastructure Cooperative Agreements Program (NSDI CAP) grant at a funding level of \$39,336. The Montana-Idaho application was submitted through Idaho State University in Pocatello. A short description of the project is below. We will provide a link to the full text of the proposal off the Montana Spatial Data Infrastructure (MSDI) Geodetic Control web page (http://giscoordination.mt.gov/geodetic_control/msdi.asp) as soon as the FGDC publishes the grants.

A portion of the award will be used to adapt our present Montana Control Point Database database schema and application (<http://gisservice.mt.gov/MCPDviewer/>) to a multi-state approach. The other part of the grant is to develop a business plan for a Regional Geodetic Reference Center for Montana and Idaho. The Geodetic Reference Center would support various positioning projects and programs such as densifying the CORS network, hosting the Multi-state Control Point Database, and establishing a real-time network. We thank the National Geodetic Survey and the Idaho and Montana/Dakotas BLM state offices for supporting this proposal.

This joint proposal by Montana and Idaho employs a two-part approach to demonstrate technical and governance approaches to support Geodetic Control in a multi-state environment. The technical part will provide tools to support the discovery, use, and exchange of geodetic information in two states by adapting the Montana Control Point Database and application to consume and make available Idaho's control points. The result will be a Multi-state Control Point Database and application (MCPD).

To achieve long-term success, the second part addresses collaborative development of a business plan to:

- a) Establish and operate a Regional Geodetic Reference Center to sustain the MCPD and
- b) Realize a real-time network of Continuously Operating Reference Stations (CORS) in both states and possibly others.

The plan will address governance, management, funding, technical issues, and other aspects that insure accountability, longevity and stability.

The results will demonstrate a viable path to a Geodetic Control Framework for the region and, potentially, the nation.

Rj Zimmer, PLS

on behalf of the Montana Geodetic Control Working Group and the Montana Height Modernization Executive Committee