

GIS-T Roundtable Sessions

On Tuesday April 17, GIS-T hosted concurrent roundtable discussions, CAD to GIS Integration and Field Data Collection. The topics were chosen by observing appearances on the 2011 Roll Call of States issues lists. Attendance was high for both sessions with nearly two-hundred (200) participants. The facilitated discussions delved into the difficulties DOT's are having as well as ways to overcome them.

GIS / CADD Interoperability Summary

The overall consensus is the desire for more seamless integration with the technology vendors. Not only seamless but shorten the "stack" of products necessary to perform interoperability / integration tasks between GIS and CADD formats.

- Technology solutions are part of what needs industry modernization but also workflow and policy change within Transportation organizations will facilitate better integration.
- Communication is also key factor in exchange and versioning of data across the DOT Enterprise. Culture change within the organization necessary. Trust and data integrity are paramount to collaboration between GIS and CADD communities.
- Answering the question "What do we want/need to do with the data?" will help determine the right solution for each agency.

There are many fundamental differences between how the GIS and CADD products / workflows operate and two of the most distinct examples are the absence of a relational database component to CADD data and the differences between coordinate space used in both communities within the transportation agencies. The discussion noted that a closer look at standards for both GIS and CADD industries is needed to ultimately gain some level of consistency between technologies so both communities within DOTs or across the industry have closer definitions of data.

- Challenge was made to vendors to embrace open format technologies and refine the definitions and product adaption to use such as Land XML and Trans XML to name a couple.
- Users / Customers desire more real time access to information so "cleaner" hand-off between GIS and CADD formats will help.
- There is a need for graphic representation consistency between GIS and CADD data so common features are defined similarly.

Training opportunities were also discussed as necessary to educate both engineering and GIS staff to work toward common grounds to integrate and leverage data.

- One suggestion is to host a GIS-T Workshop in 2013 to cover workflows and best practices for GIS / CADD interoperability. Instruction could include both vendors highlighting specific tools and techniques for working with both types of data and product integration as well as transportation agencies who have implemented successful solutions that others can learn from.
- Another suggestion was to follow up the technical interoperability workshop with a focus group to look at developing strategy and approach priorities that transportation agencies can use to begin creating change in their organizations.
- FHWA hosted peer exchange reviews were also suggested as a tool for best practices and successful implementations.

Solutions developed within any transportation industry should follow "change" throughout the entire project life cycle with multidisciplinary use along the way to refine end designs.

Policy change may be necessary both at departmental and legislative levels to enforce requirements for better GIS / CADD collaboration.

- Recent legislation was discussed regarding Senate Bill 1813 and House Bill 7.
- FHWA and other transportation representative participation in organizations such as the Open GeoSpatial Consortium (OGC) are needed to reflect industry specific needs in standards.

Based on this event there are a number of actions that should be taken to improve the interoperability/integration between GIS and CAD operations. Education of users on existing standards/solutions being a key action. Some of the recommendations for better educating users was to work with FHWA on the development of a GIS/CADD peer exchange; conducting a GIS-T workshop, as well as, establishing an outreach to appropriate engineering groups such as HEEP. In addition, each individual DOT agency as a customer/user of both GIS and CADD technology should work with their respective vendors to address interoperability/integration issues.

In summary, the GIS / CADD Interoperability roundtable discussion was a good forum to generate change in the industry from both vendor technology solutions as well as organization policy, best practices, and workflow adaptation to help reduce the complexity of integration many transportation agencies struggle with today.