



USACE CADD NEWSLETTER



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CADD Newsletter

This unofficial newsletter, is authorized under the provisions of AR 25-30, and is intended to keep all Corps personnel who are involved in the use and management of CADD informed of CADD related issues throughout the Corps as well as HQUSACE changes and initiatives which will affect the Engineering business process. The Newsletter will be issued electronically on a quarterly basis. Articles on CADD issues with a broad area of interest are solicited from the field. Send all submissions and/or comments to jean.a.mcgin@usace.army.mil.

The CADD/GIS Technology Center Combined Corporate Staff and Field Working Groups Meeting

The Corporate Staff (CS) and Field Working Groups (FWGs) of the CADD/GIS Technology Center met in Vicksburg, MS, 27–29 May 2003. The FWGs met to select their top ten projects from the FY04 proposed projects. Each FWG chair then presented the results of their individual meetings to the Corporate Staff. A new CS member from the Smithsonian attended the meeting as well as representatives from USACE, NAVFAC, USMC, NAVAIR, USAF, and GSA. The revised Balanced Scorecard was submitted and approved with minor corrections. Harold Smith gave a briefing on the status of this year’s projects. An addition cut of \$260K in the OMA funding for the Center has been made. The group made decisions on what projects to cut to accommodate this reduction in funding. Primary cuts were for contracts that had not been awarded. The CS will meet 15-16 July to develop a suggested list of projects to be funded in FY04. OMA funding for FY04 has been reduced from that received in previous years.

CADD/GIS Technology Center Board of Directors Meeting

The Center BOD meeting was held at the NIBS Headquarters in Washington, DC on 30 April. Representatives from USACE, DoD, NAVFAC, USAF, ACSIM, USCG, GSA, NASA, and NIBS attended the meeting. USGS gave a presentation on the GeoSpatial One Stop project. They are working to broaden the community of GIS users and are interfacing with leaders to generate support. Harold Smith, Center Chief, briefed the group on current funding issues and the status of selected projects. Patrick MacLeamy, of HOK Architects, provided an overview of the International Alliance for Interoperability (IAI) and the Industry Foundation Classes (IFCs), encouraging members of the Board to develop pilot projects using IFC certified software. The IFCs are the standard for object-based 3-D CAD (or BIM, (Building Information Modeling)). Owner sponsorship will send a message to the industry that the standard has value and will be required in the future. Letters of appreciation and length of service plaques were presented to Dwight Beranek, Gary Erickson, and Capt Patrick Layne recognizing their contributions and dedicated service on the CADD/GIS Technology Center Board of Directors. Mr. Erickson is retiring from the Air Force, and Mr. Beranek and Capt Layne have changed positions.

Bentley International Users Conference (BIUC)

75 Corps employees, representing 28 districts attended the BIUC held in May at the Baltimore Convention Center. According to Bentley representatives, the Corps had the largest representation from single organization in attendance. Mr. Dwight Beranek, Deputy Director of Military Programs, gave the keynote address on Tuesday, May 20. After his address, a town hall meeting was held with those Corps employees who were present. Some of the topics of discussion were as follows:

- The need to identify the gap between what the private sector can do today versus what we need them to do tomorrow.
- Utilize the private sector to perform repetitive tasks, and identify the things we need (are able) to accomplish once this happens.
- Concentrate on improving our timeliness.
- Develop and use our 3D and 4D capabilities and encourage the private sector firms that we do business with to do the same.
- Think about how we can approach watersheds geographically using CADD and GIS.
- Apply technology into the built environment
- Develop our Regional Business Centers. Evaluate interoperability so that we can share resources. Change the culture so that we don't feel threatened.
- We are always students and always teachers. When you learn something pass it on.
- Finding a balance between funding salaries, training, and tools needed to get the job done.
- Funding problems associated with improving CADD efficiency.
- Infrastructure improvements needed to improve our network environment
- Increasing Corps representation at future BIUCs.

Submitted by Lori Taylor, St. Paul District

CADD/GIS Technology Center Ten Years Old

In October 2002 the CADD/GIS Technology Center passed its 10-year anniversary. You can read all about significant events in the Center's history and see a timeline in the Spring issue of the Center's CADD/GIS Insights. This can be found on the web site at <http://tsc.wes.army.mil>. Titles of some of the articles are: Ten Years of CADD/GIS Symposiums, Ten Years with the A/E/C CADD Standards, Spatial Data Standard – from Then to Now, and Object Model Moves to the Next Level. Check it out.

Test Pilot of NetSPEX CADD Standard Implementation Software

When the A/E/C CADD Standard was first released in 1995, the Center immediately started receiving requests for tools to implement such a massive standard. The first A/E/C CADD Standard CD did contain symbols and linestyles in electronic format, but the field wanted something more. In response to this need, the Center developed the A/E/C CADD Workspace, which was released for MicroStation in 2000 and updated for MicroStation V8 and AutoCAD in 2002.

Both the workspaces were successful, but there were still issues. For one, the two workspaces did not look the same. While the AutoCAD workspace and the MicroStation workspace achieved exactly the same results, users who wanted to work with both tools had to learn both tools to determine how to place information on the same level or layer.

Another problem was the time it took to implement changes to the Workspace and disseminate this information to the field. If a change was made to the A/E/C CADD Standard (like a level color change, or a symbol addition), that change had to be incorporated into the A/E/C CADD Standard database. Depending on the revision, these incorporations could be simple or quite cumbersome. Once the modification was made, the MicroStation workspace had to be regenerated. The results of that regeneration had to be made available to all users, and the resulting files had to be copied into the correct location on their computer or server, before they could implement the latest revisions to the Standard. Similarly, the resulting resource files from the MicroStation regeneration had to be made available for the AutoCAD workspace. Also, once the Center made sure that all updated files were available via CD or the Internet, there was no way to guarantee that the users had or were using the latest updates! This process took considerable time resulting in a lag between the field receiving the latest A/E/C CADD Standard data and incorporating revisions of the Workspace.

In an effort to speed up the time in getting updates out efficiently and quickly to the users, the Center started looking at various 3rd party CADD Standard implementation packages that were available. Three main criteria the Center focused on were: 1. does the package work in the latest software releases of both AutoCAD and MicroStation, 2. does the package look the same in both AutoCAD and MicroStation, and 3. does the package use a single database for inputting and exporting Standard information? NetSPEX from Professional Software Solutions, Inc. (ProSoft) was the first package in our evaluation that met all three criteria. An additional bonus feature of NetSPEX is that the A/E/C CADD Standard is already included as a ready-to-use standard.

Whether you are in MicroStation or AutoCAD, the look of NetSPEX is the same. It operates

in a manner that is similar to the MicroStation A/E/C CADD Workspace, but with a twist. Instead of selecting the type of item you want to place (e.g., door, window), you select the graphic component you want to place (e.g., pattern, symbol, line). When the component is selected, the database is queried to display a listing of only items that meet that type of component (i.e., fire wall patterning would not be available if a Linear component were selected). This makes it easier to locate the type of component you are trying to create/place. Another feature of NetSPEX is that when you have selected the item you want to place, the NetSPEX window collapses into a small “hotlink” icon window, thereby freeing up monitor display space until the next time you need to NetSPEX. NetSPEX also contains a more robust Checker application for verifying that files are in compliance with the Standard. Whereas the Workspace Checker only showed a list of items that were non-compliant, the NetSPEX Checker will offer suggestions for making the item compliant. Various compliance/non-compliance reports can be generated easily on the fly by the user.

As part of Project 96.017 (Maintenance, Revision, and Implementation of the A/E/C CADD Standard), the Center was tasked with purchasing NetSPEX software for a test implementation, to see if NetSPEX could ultimately replace the Workspace methodology for implementing the Standard. In April the Center purchased the following: the NetSPEX Main Server software, two (2) copies of the NetSPEX Mirror Server software, and one hundred (100) licenses of NetSPEX Designer. How does all this work? The Center will maintain the A/E/C CADD Standard database on a server located at the Center, using NetSPEX Administrator. Two remote locations (COE District offices) will be the hosts of the mirror servers. When a change is made to the A/E/C CADD Standard, the Center can “push” those changes at any time to the Mirror Servers. Once the change is pushed to the Mirror Servers, any person capable of using NetSPEX Designer Workstation within the network will see these changes immediately.

NetSPEX System Requirements:

Current CAD Platforms supported:

AutoCAD 2000i, 2002, 2004

MicroStation J, V8 and V8.1

NetSPEX Designer Workstation requirements:

- Windows 2000 Professional or
- Windows 2000 Server or
- Windows NT Workstation 4.0 SP6 or
- Windows NT Server 4.0 SP6 or
- Windows XP Professional
- At least 5 MB hard drive space reserved for application files and cache
- LAN/WAN/Internet connection to one of the two NetSPEX mirror servers
- Internet Explorer 5.5 or later

During the month of July, the Center will be evaluating the A/E/C CADD Standard database provided with NetSPEX to determine its accuracy. Edward Huell and Stephen Spangler will go through the database and make corrections as necessary. In August, the Center will set up a website where DoD personnel can download the NetSPEX Designer software and a license/configuration file to attach to the appropriate mirror server. Since the Center only has 100 licenses, the Center’s NetSPEX site will be restricted to people within the .mil domain. In August, look for an announcement on the Center’s homepage regarding the activation of the NetSPEX website. The Center looks forward to any feedback on this exciting endeavor! *Submitted by Stephen Spangler, CADD Center*

Building Information Modeling (BIM)

In the Laiserin Letter, Jerry Laiserin began a discussion of the need to rename the increasingly “intelligent” CAD systems, and proposed the new name Building Information Modeling, or BIM. This was initiated in Issue 15, which is available on the Laiserin Letter web site. Subsequently, Bentley (Microstation/Triforma), Autodesk (AutoCAD/ADT), and Graphisoft (ArchiCAD) responded to this suggestion, and agreed that the change should be made. Autodesk stated, “We at Autodesk agree that ‘building information modeling’ provides the most succinct description of the expanded capabilities available in new design authoring tools, and we join you in suggesting that our industry settle on it, and move ahead. ... we believe that adopting a shared vision for our industry will improve focus on the really interesting debate: how can the industry further refine building information modeling to accelerate its adoption in practice? How can we develop integrated technology solutions (not point products) that most effectively serve our customers' needs? Autodesk strives toward an equally important concept centered on extending the value of the information model far beyond the design stage.” Bentley stated, “Bentley does agree with your suggestion to us that we use BIM to express our ‘beyond CAD’ modeling vision for users in the building lifecycle. We encourage all providers and industry pundits to standardize on this term as well. The goal is to provide clarity for users so they can make informed decisions about their software strategy.... Our first principle is that BIM should be a superset of CAD. In other words, ‘starting over’ with a new, incompatible platform in order to achieve BIM is wrong.” Graphisoft commented, “For Graphisoft, the concept underlying the Building Information Model is not a new vision, The most important word in the BIM nomenclature is ‘information’, because that is what the BIM is designed to capture and re-present in a way that is meaningful to the users of that information..... one of the true benefits of BIM is that this information lives beyond construction and presents the owner with an informational model for ongoing management, operations and maintenance.” To read the complete comments from these vendors plus the original suggestion from Jerry Laiserin go to <http://www.laiserin.com/>, Archives. Jerry’s original article is titled Comparing Pommies and Naranjas in Issue 15. Autodesk and Bentley comments are in Issue 18, and Graphisoft comments are in Issue 19. Jerry Laiserin is an architect and industry analyst who “focuses on future technologies for the building enterprise and on collaborative technologies for project-based work.”

SAC Committee Members

The current SAC Committee members are:

- Larry Rogers, CESWF, Chair
- Art Connolly, CENAN
- John Bailen, CEMVP
- Daniel Hitchings, CELRP
- Ralph Barrett, CESAS
- Jean McGinn, HQUSACE

Field Action CADD (FAC) Committees

The names and e-mails of FAC members are no longer listed on the Corps CADD web site (<http://ckb.wes.army.mil>) due to security concerns since 9/11. If you are interested in information about any of the FACs, the names and districts of the chairs are listed below.

Geotechnical FAC: Chair Glen Kato, TAC.

Mechanical/Electrical FAC: Chair Ken Waldie, Fort Worth.

Cost FAC: Chair Gareth Clausen, Walla Walla.

Structural FAC: Chair Lorilee Taylor, St. Paul.

Systems FAC: Chair John Kincaid, Rock Island. .

Architectural FAC: Chair Stan Shirk, Omaha.

Civil/Site FAC: Chair Edward Murphy, Fort Worth.

If you are interested in being a POC for your particular discipline for any of these committees, please contact the appropriate chair by e-mail.

CADD/GIS Technology Center Standards Comment Form

If you have concerns about items in the Center's A/E/C CADD or Spatial Data Standards you need to go to the Center's new "[CADD/GIS Center Standards Comment Form](#)". In an effort to provide an avenue by which users of the A/E/C CADD Standard and/or the Spatial Data Standard for Facilities, Infrastructure and Environment can communicate their opinions concerning these products, the Center has developed a comment website. Submit as many recommendations as you like regarding either standard. You can also request a CD of either standard using the site. This form is accessible from the Center's main web page, <http://tsc.wes.army.mil>. From the main page go to Home, and then Comments. From this site you can submit comments and also view disposition of any comments submitted.

Call for Articles

All but two of the articles in this issue of the Newsletter were written by Jean McGinn, CECW-EE. I would encourage anyone in the field who has CADD related information of general interest to Corps personnel to submit articles (to my e-mail address) for the next issue, which should be issued the end of September 2003.