



November 30 – December 3, 2004 ♦ Las Vegas, Nevada

# The Art of Juggling Multiple CAD Systems

## **Mark W. Kiker**

The Core Technology Group

[www.ctg-web.com](http://www.ctg-web.com)

[www.caddmanager.com](http://www.caddmanager.com)

## **CM21-1**

If yours is like most offices, it probably has several CAD applications that you are working with, including differing versions of the same application.

Tough decisions must often be made to make the best of this situation and support the users on the front lines. In this class, we will investigate translations, training, user headaches, picking the right tool for the right job, and the things you need to know to manage in a mixed environment.

## **About the Speaker:**

Mark has more than 20 years of hands-on experience in the administration, configuration, deployment, coordination, development, and integration of CAD technology. As a technology manager, he understands the impact of CAD on the bottom line. He has implemented CAD for many firms and extensively customized CAD programs. He has developed corporate CAD standards conforming to client and military guidelines. He has instructed over 1000 operators at company sites and for local colleges and tech schools. Mark coordinates production of CAD documents from design concept to final construction documentation. He directed the use and structure of CAD for a nationwide, multiple-office AutoCAD deployment. Mark is the president of the Core Technology Group, a consulting firm based in Southern California.

[mark.kiker@ctg-web.com](mailto:mark.kiker@ctg-web.com)

## **The Art of Juggling Multiple CAD Systems**

### **A Mixed House**

- Many of us are using multiple CAD software packages
- Multiple Plotters
- Multiple Projects
- Multiple Standards
- Multiple Users
- How many plates are you spinning?

### **The Goals**

We need to establish several overarching goals that drive our offices and teams

- Unified Document Output
- Fully trained Users
- Productivity Enhancements
- Client Satisfaction
- Ease of Management
- Clean CAD Files
- Sharing Documents
- Solid Client Deliverables

### **The Issues**

The issues related to achieving the goals above

- Hardware Platforms
- Software Setup
- Training
- Plotting
- Design Presentation
- Translations

### **No easy answers**

- Communication is key
- Make sure everyone is involved or understands the issues
- Get all stakeholders to buy into the solution
- Don't be afraid to experiment
- A mixed house is a reality for most firms

### **Not an insurmountable task**

- Nothing is impossible
- Nothing will derail the design process
- The building will get built, the road will get paved, etc.

### **Advantages of a mixed house**

- You can deliver in diverse platforms
- It pads your resume

- It provides leverage with the Vendors
  - Play one product against another
  - Look for trial software offerings
- One Stop Shopping for Clients
- Keeps you on the front edge of technology

### Set up Base Camp

- Select one package as your main focus
  - Base your standards on it
  - Base your productivity on it
  - Base your training on it
- Define standard platforms
  - Keep an Approved Software List – Publish it
  - Don't add a tool unless it is formally approved
- Build your standard graphics in one package

### Nurture Diversify

- Develop teams to focus on each package
- Hire support staff for the packages you have
- Pour resources into people who are natural super-users
- Tap into user community for each tool
- Stay in touch with your vendors

### Working with Upper Management

Avoiding troubles will include communicating with Management. Keep them informed.

- Make sure they know the pitfalls of each platform
- Make sure they know which one should be used
- Educate them on the pain points to look out for when discussing CAD with the client
  - Provided files
  - Standards
  - Deliverables
- Get involved early in the Project lifecycle
  - Review contracts
  - Client negotiations
  - Kick-off meetings
- Get the word out anyway you can on the following issues.
  - Impact of using a Client CAD Standards
  - Cost of CAD
  - Training – the positive impact of doing it and the negative impact of not doing it
  - New Software release upgrades
  - Standardization
  - Need for best equipment
  - Deliverables
- Make sure that management knows what you are doing, when you are doing it and who it affects.

## **The Art of Juggling Multiple CAD Systems**

- Communicate good news quickly – communicate bad news faster.
- Always tell the PM when troubles will impact Deadlines or Dollars
- Couch all of your conversations in dollars and cents.
- Make sure you keep a good rapport with the right people
- Always keep the clients interests in mind

## **Mixed Data = Mixed House**

Whenever you exchange data from one firm to another, there exists the mixed data state. This can cause many difficulties.

- Getting Data from others is a Red Flag
  - Can be corrupt
  - Can be incorrect scale
  - Can be wrong layers
- Who pays to fix it
- PM's think that if they are provided with data it will save time – WRONG.

## **Hardware Platform**

- Get to the point where your PC hardware is all the same.
  - One vendor
  - One supplier
  - One configuration

## **Software Platforms**

- Local PC setup
  - One standard setup
  - Deployment tools
  - Disk images
- Local and Remote Office setup should be the same
  - Licensing methods
  - Support file locations
- Server Setup
  - Move as many of the support files to the server as you can

## **Picking the right tool for the right job**

- What does the client want?
- What will he allow you to use?
- What is the final format of the deliverable?
- What package has the greatest productivity?
- What package has the greatest amount of trained users?
- What package has the greatest number of available users?
- Are there enough licenses available?

Bottom line:

The Client picks – The PM picks

- You could develop a team for project kickoff
  - VP, PM, Office Mgr, Job Captain, CAD Mgr
- Have an exit strategy for the tool you have picked if it fails
- Educate the PM's on the issues surrounding translations

### 2D vs. 3D

- This is a mixed house
  - Recent survey
    - 36% in a mixed environment
    - 26% mainly 2D
    - 31% totally 2D
    - 7% totally 3D
- Moving from 3D to 2D
- Moving from 2D to 3D

### Translations

- Don't do it
  - It is not perfect
  - It is not preferred
  - It is getting better
  - But that makes it harder to spot the flaws
- What will the client be doing with the files?
- What is their method of checking integrity?
- Setup Translation setting (Microstation)
- Purchase Translation Software
- Can the package directly open files
- What works well?
  - Sketchup to ADT?
  - ADT to AutoCAD?
  - ADT to Revit?
  - Revit to AutoCAD?
- Buy a copy of the target software (or use it in demo mode)

### Upgrading Software

- We have a greater avoidance to upgrades
- You must move the Users along
- You must coach or coerce to get users moving
- Must be planned
- Must be coordinated

## **The Art of Juggling Multiple CAD Systems**

### **Upgrading Software – The Plan**

- Get Beta Software before it is released to see what is coming
- Get NFR software to check out the final release before ordering
- Start testing it yourself
  - Your sore spots
  - Your custom tools
  - Your 3<sup>rd</sup> party tools
- Pay attention to the User Community
  - User Groups
  - Magazines
  - Newsgroups
- Move when it makes sense
  - Next Project
  - After Training
  - When demanded
- Start with your best users
  - Let them have the software earlier
  - Let them test it out
- Migrate a small team or the whole office – your call
  - The bigger the firm – the smaller the migration group

### **Project Check Points**

- Know the Project Target
- Identify the Pain Points
- Put in check points
- Watch the Process
- Everything is solvable
- Catch the glitches before you get burned

### **Review Method**

- A review procedure method for processing all files
- A check list of items to review
- A listing of which files to review
- Filename and Directory requirements
- A listing of the correct layer names to be used
- A listing of correct Dim Styles and Font Styles
- Xref requirements
- A listing of “look and feel” issues
- Title Block data and presentation

### **CAD File Review List**

- Layers/Levels
- XREF Attachments
- Coordinate Data
- Pen Weights

- Line Styles
- Line Type Scaling
- Dimensions
- Text Fonts and sizes
- Symbology
- Hatching
- Intelligent Objects

### Using the tools you have

- CAD Standards Checker in AutoCAD
- ETransmit or Archive

### Working with Others

- When others are not using the same software as you
  - Translate
  - Flatten the files
  - Backwards Save As
- Demand that all team members / subs use the same software

### Exchanging Data

- Use E-Transmit
- Have others use E-Transmit
- Transmit only needed files
  - Xrefs
- Exchange DWF or PDF files only

### Plotting

- Use out of the box plotting software
- Use third Party Software
- Adjust pen tables to match
- Adjust hatching and screened images to match

### Deliverables

- Risks of Digital file exchange
- Include a disclaimer
  - Software package
  - Version
  - Shelf life
  - Hardware requirements

## **The Art of Juggling Multiple CAD Systems**

### **Training**

- Can we learn it all?
- Focus on the needed levels
- Focus on one package
- Relate ideas and concepts between packages
- Let each package stand alone
- Don't expect everyone to know everything
- Get your staff and your self trained

### **User headaches**

- At best only 20% of your users are bilingual
- Do they know which tool to use?
- Do they know which standard to use?
- Frustration = stress = mistakes = \$\$\$
- Don't divide users up by software products
- We are not able to dig as deep into the products because of diversity
- Multiple high needs programs may not allow users to keep up

### **Standardize**

- Have your standards in place
- Standardize all items that you can
- Standardize items that are the same for all platforms
  - Folders
  - Filenames
  - Project flow
- Deploy the Standards information via an Intranet
- Allow for flexibility between packages and versions

### **Working with mixed versions of the same Tool**

- Stay in one version for the length of the project
- Migrate to the next version at the start of a project
- Try to keep migration in one direction only
- Move everyone on the same project at the same time
- Communicate with project teams to coordinate the move
- Let everyone in the office know which projects are moving and which ones are not
- Don't get tied into any one platform too heavily

### **Support Issues**

- No one can know it all – let your users know that
- Tap out one person for each tool
- Send your support team to training
- Install only one version of each tool on the desktop
  - Add others only when needed
  - Set up a common machine for using older tools

## The Art of Juggling Multiple CAD Systems

- Lock in the Software and Version in the Contract
- Focus on Customer Service
- Know where to get the answer

### **Making it better**

- Know your company and what it's real needs are for technology
- Know the technology that is out there
- Know which tool should be the next one added or dropped
- Always have your wish list handy

### **Pass it on...**

---

#### **Mark W. Kiker**

The Core Technology Group

mark.kiker@ctg-web.com

www.ctg-web.com

www.caddmanager.com