

## CAXA DRAFT – WHY?

### INTEROPERABILITY WITH OTHER CAD SOFTWARE

When AUTOCAD became the dominant 2D CAD software throughout the Architectural, Engineering and Construction industries, DWG (\*.dwg) became the dominant file format. This continues to be the default file format for 2D CAD interoperability. As a result, any 2D CAD software working within these industries needs to fully support this file format.

The OPEN DESIGN ALLIANCE (ODA) developed and maintains OpenDWG (\*.dwg), which it licenses to CAD Software Developers wanting a file format compatible with AUTOCAD's own DWG format. The ODA also offers a complete CAD Platform and Software Development Kits (SDKs) for Software Developers to build their CAD Software around. From the perspective of a user in the Architectural, Engineering or Construction industries, it makes no sense to use 2D CAD Software that isn't built around ODA's products; as full interoperability is a must.

**This is why CAXA DRAFT is so important within IRONCAD's Collaboration Suite.** At its core CAXA DRAFT is a genuine DWG Editor, that can collaborate with AUTOCAD and other DWG Editors. This is not the case with IRONCAD DRAWING (ICD), which makes it unsuitable for any applications requiring full DWG functionality, and collaboration with other software.

Beyond CAXA DRAFT's current 2D capabilities, the opportunity is there with ODA SDKs to enable reading and writing of 3D DWG and DGN files as well. And to potentially be able to edit the ACIS solids within 3D DWG models using IRONCAD's 3D scene. The point is, that there are a lot of ODA tools available that IRONCAD/CAXA DRAFT could be utilizing.

### COLLABORATION WITH EXTERNAL REFERENCING OF 2D MODELS

External referencing (xref) allows users to reference the 2D models (Model Space) of one or more drawings, within the 2D model (Model Space) of the current drawing. This is extremely beneficial in a collaborative environment, as different users can work on different parts of a project (within their own drawing files), while also being able to reference the drawings of others (including master layouts).

CAXA DRAFT allows users to reference and edit 2D models within DWG files received from others. CAXA DRAFT also enables users to create or generate 2D models within DWG files, that can then be referenced and edited within other software.

A typical example of this is where a client (or other) wants to externally reference a 2D model (layout) of a 3D design (such as processing plant or machinery) within the 2D model (layout) of the factory where it will be installed. In this example 2D views of the 3D model would be generated within Model Space of CAXA DRAFT (along with any additional 2D geometry or annotations), before finally being saved as a DWG file for external referencing purposes.

This functionality is not available with IRONCAD DRAWING (ICD).

## **REUSABLE CONTENT WITH CAD BLOCKS AND ATTRIBUTES**

A CAD Block is a named group of objects (lines, arcs, text, images, etc.), that act as a single object. Blocks are useful for creating content that is repeated within a drawing (or drawings), or that is shared among other users within shared libraries. These Blocks can be common components, standard details, annotation symbols, notes etc. They help to save time, maintain consistency, and reduce file size.

A Block Attribute (property) is a label or tag that attaches data to a Block. Users can choose whether the data of that Attribute is displayed or not. Multiple Attributes (properties) can be attached to a Block.

If the Block represents a component, then one Attribute could be “Part Number”, another “Part Description”, another “Material Description” and so on. Basically, any data specific to that Block that you would like included within a Bill of Materials (but not displayed in the component itself) can be attached to the Block in the form of an Attribute (property).

Drawing Frames, Title Blocks and Symbols are examples of Annotation Blocks containing Block Attributes, where the data is visible. Attribute data is edited by double-clicking on the Block, which opens a dialog box listing all of the Attributes within the Block.

CAXA DRAFT takes Block functionality even further with their Drawing Frames, Title Blocks, Paratables and Library Components (these are parametric Blocks which CAXA calls Symbols, but they should be called Components, or Component Symbols).

IRONCAD DRAWING (ICD) allows users to “Group” objects, to which assembly properties can then be assigned (similar to the 3D Scene). However, the functionality of these “Groups” is far less than the “Blocks” and “Component Symbols” offered within CAXA DRAFT.

## **MORE COMPREHENSIVE 2D MODELLING AND DRAFTING TOOLS**

For many industries and users (including Engineering Consultants, Project Managers, etc...), the ability to create and edit detailed 2D models is vitally important; which is why 2D DWG Editors such as AUTOCAD LT and others are still widely used. CAXA DRAFT offers:

1. A comprehensive range of tools for 2D modelling and drafting.
2. A comprehensive range of tools for generating and editing of 3D views.

The same level of capability and versatility does not exist in IRONCAD DRAWING (ICD). This is demonstrated in a separate document comparing the various tools available in both software products. Regardless of whether the earlier points regarding Interoperability, External Referencing, or CAD Blocks are applicable, this point is applicable to all.

## **FASTER VIEW GENERATION**

The projection method used in CAXA DRAFT is different than IRONCAD DRAWING (ICD), and doesn't suffer from performance issues when mixed kernels are used in the 3D scene.

### **MAINTAINS VIEW CONTENT POSITION**

Another benefit of the view projection method used in CAXA DRAFT compared to IRONCAD DRAWING (ICD), is that the positioning of the displayed content remains unchanged when other content is hidden (in the 2D View) or suppressed (in the 3D Scene).

### **BETTER INVESTMENT IN LEARNING**

Regardless of the software, an investment is required in learning. Because CAXA DRAFT is a genuine DWG Editor, this investment can be easily transferred to using other DWG Editors as well (whether in the future or in a multi CAD software environment). In addition, for new users that are already familiar with DWG Editors, the investment in additional learning is reduced. This is not the case with IRONCAD DRAWING (ICD).

In my experience CAXA DRAFT is not more difficult to learn for new users. CAXA DRAFT is just poorly configured by default, which doesn't showcase its capabilities and usability well. Any user who makes a genuine effort to understand and configure CAXA DRAFT correctly, will discover a more powerful and versatile product than IRONCAD DRAWING (ICD).

### **LOWER INVESTMENT IN SOFTWARE**

To create and edit an IRONCAD DRAWING (ICD) file requires a full license of IRONCAD. Whereas, to create or edit a CAXA DRAFT file only requires a license of IRONCAD DRAFT (which has a lower cost to purchase and maintain). So for multi-user environments, it isn't necessary for everyone in the organisation to have a full license of IRONCAD. This is a significant benefit of IRONCAD's Collaboration Suite.

Examples of users who could potentially be using IRONCAD DRAFT are:

- Clients
- Draftspersons
- Consulting Engineers
- Engineering Managers
- Project Engineers
- Project Managers
- Sales Engineers
- Workshop Managers

### **UNIFIED 2D DRAFTING FOR MULTI CAD ENVIRONMENTS**

For organisations that operate multiple CAD systems, but want unified 2D documentation, IRONCAD DRAFT represents a good option for them. Not just because of its 2D drafting tools and interoperability, but because of the 3D scene capabilities and dual kernels.

Using AUTOCAD and MICROSTATION as examples, these programs are very good at some things, but not so flexible when it comes to creating assembly structures or adding part and assembly properties. IRONCAD DRAFT can import 3D models from these programs using their kernel file formats (ACIS and PARASOLID). Once imported, users can easily create a meaningful assembly structure, along with adding cosmetic threads, custom properties, and creating scene configurations as well (to assist with 2D view generation). All of this is before you even get to the 2D drafting side that includes tools out of the box that AUTOCAD and MICROSTATION may not have (depending on addons).