Case Study

Case Study – Using Windchill PDMLink to manage CATIAV5
April 2018

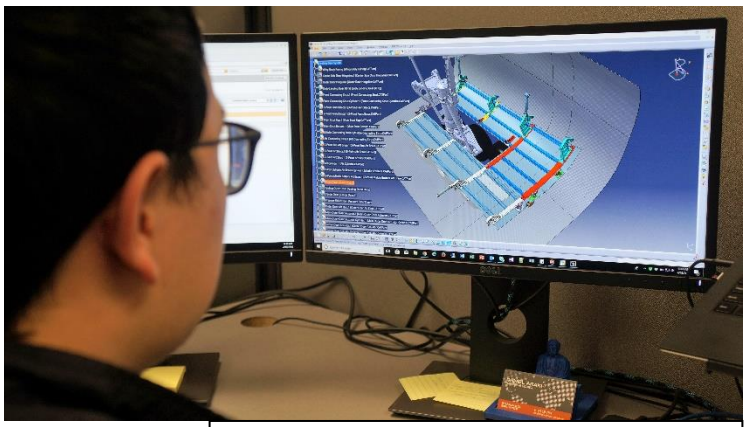
The Issue

There are several PLM systems available, and many more varieties of CAD commercially available now. Factoring in the legacy data as well as current data, most companies will have multiple CAD platforms internally. Additionally, the global supply chain means that it is highly likely companies will reference or utilize CAD data from other companies which may have been created using another CAD system as well. Even if a company is brand new and selects a single CAD system, it should be taken for granted that they will be working in a Multi-CAD environment eventually.

Managing CAD data has certain requirements that all PLM systems must confront, but the complexity of multi-CAD is a much larger concern. One of the basic needs for PLM is being able to view and access data across the enterprise. Many people that must access the data only need to be able to view the data, not make any changes to it. In a Multi-CAD environment, that greatly simplifies the requirements. To satisfy the needs of most users, it is only necessary to have a viewable file with basic engineering information. For 2D data such as drawings that means being able to open a universal file type such as a PDF. For 3D it means being able to open a file that can be interrogated to a certain extent. Users should be able to rotate and spin the model as well as take measurements, cross sections, and control visibility of the product tree. Lastly, this needs to be accomplished in a cost-effective manner. Small to medium companies cannot afford large overhead expenses to achieve this level of accessibility. This can all be done in Windchill, regardless of the authoring CAD platform, and without the need of an expensive translation software.

Background

Elite Aerospace Group (EAG) primarily works in the Aerospace and Defense sector, where customers often require that CAD data be delivered in CATIAV5. As well as specifying that data be delivered in a particular format of CAD, many OEMs will require that their suppliers are also able to manage the data, typically through the use of a PLM system. OEMs however, do not specify which one. This allowed EAG to determine which PLM system was best for them, and they determined to use Windchill PDMLink. Windchill is a creation of PTC, and CATIAV5 is a product of Dassault Systemes. Despite different companies creating the PLM and CAD software, Windchill can very effectively be used to manage data authored in CATIA V5. When using PTC's CAD software, Creo; there is a built-in integration from Creo to Windchill. This allows for easy lifecycle management and querying of the database within the native CAD tool. By utilizing the Workgroup Manager for CATIAV5, the same functionality is available in CATIAV5. From the CAD platform, data can be checked in, checked out, and searches within the database can be performed.

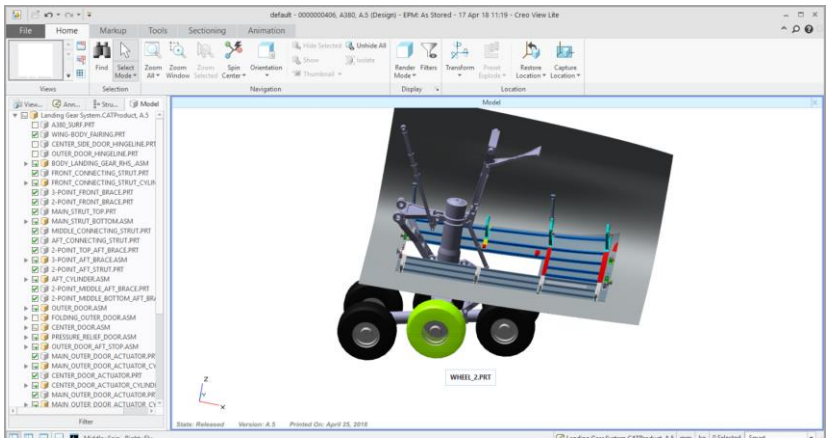


An engineer working in CATIAV5, managing it in Windchill.

Case Study

Using Creo and Windchill together allows for easy viewing of the CAD data. In Windchill there are both viewable files and thumbnails for checked in CAD data. This allows for a quick picture of a CAD file as well as a lightweight representation which can be used for further interrogation. PTC's native CAD viewer, called CreoView, is packaged with Windchill to open and investigate the lightweight files. Creo files can natively be viewed in CreoView, allowing the entire enterprise to access the data without requiring additional CAD licenses. This does not however mean that this functionality is lost when using a different CAD platform, such as CATIAV5. As of Creo 2.0, PTC has embedded a functionality that they have branded as "Unite Technology" which allows Creo to open CAD from other platforms without the necessity of translating the files, or converting to a neutral format such as .STP.

Sample of the CreoView user interface.



Solution

The Elite Digital Enterprise group has configured Windchill in such a way that lightweight files and thumbnails are generated for all CATIAV5 data upon a lifecycle action or user request. All revisions of the engineering data have a thumbnail and viewable file. This allows the entire company to access the thumbnails when browsing in Windchill, and the lightweight files when necessary for further interrogation. When the neutral formatted file is required, a .STP file is also generated by a similar process. EAG accomplishes this by sending each CATIAV5 file to a CADWorker, which is operating on a server. No additional processing is required on the client side, so the users do not experience any negative performance impact. The files are sent into a queue, and each one is processed by Creo to generate the .pvz file utilized by CreoView.

Generating viewable files for CATIAV5 has been accomplished before, but previously required third-party applications to perform the translation. Using that solution is a significant cost as well as additional liability because of the extra software to maintain and support. Without requiring any third-party software, all the representations are created and linked in Windchill, using software entirely from PTC. For the 3D CAD, this can be done without even requiring a license of CATIAV5 either.

This has resulted in all the benefits of using Windchill to manage a multi-CAD environment, and none of the loss in functionality that could be experienced in other PLM systems when managing non-native CAD files. By removing the need for third-party software and not tying up a CATIAV5 license, Elite has drastically reduced the operating costs of PLM as well. This makes PLM a much more viable solution to a small or medium sized company whereas previously relying on the third-party translator would have added an undue burden.