

CAD/CAE Model Clean Up Webinar

Question & Answer

Question: Dr. Versprille mentioned that when taking part in follow-up telephone interviews, some companies contacted were actively attempting to formalize their CAD data quality. What does that mean?

Answer: When talking to different individuals (CAE people), many were trying to impose within their companies certain work standards and/or processes that would make it a standard practice to make sure CAD had gone through some delegation on CAD quality before they reached the CAE individuals. These tests would include looking for gaps and sliver surfaces, actions that would prepare the CAD models by filling in certain size holes. Designers would not be able to submit these models to CAE unless they passed these tests. These companies have problems creating a system of CAD quality because they cannot find tools that really did that for them. A couple individuals indicated that they were attempting to implement a CAD quality system in-house by using API programming tools of their CAD products. Many have concerns and problems with doing that, but are having a difficult time finding another solution to do what they wanted to do.

While they might have some of these tools, trying to make sure they tied into their PDM workflow application, to ensure the tools were actually being used, was a concern on their part. They were looking at it from both of those directions.

Question: Is Anark Core useful for cleaning up reverse engineering scans done by a HandyScan or Faro Arm?

Answer: Yes. In the case of scanned data Anark Core would most likely import a B-rep mesh (as opposed to a solid) generated by a HandyScan or Faro Arm, but it actually depends on how the geometry is reconstructed. If you are producing c2 continuity and having faces that are being generalized, so there aren't a ton of B-rep faces, then we can do a great job with that. Even if it is scanned, we have examples of laser scan data that where you can do quite a lot, in cases where you don't need whole portions of the scanned data. You can simply remove those faces and use the high quality shell geometry that results in that.

Question: How much is Anark Core workstation?

Answer: Anark Core workstation starts at \$5,000 for a seat. Anark core server is priced on a per CPU basis, and scales to the number of CPU's that are required.

Question: Can you select objects using a regular expression (RegEx)? For example, can I type *screw* and select all parts with the string "screw" within the name?

Answer: You cannot currently select objects by name, but this is a feature that we're going to be adding in the near future. Right now the selection list that you create is really through interactive selection. We are planning on adding a powerful query based operation that will allow you to build regular 3D expressions and apply actions according to the selection list that results from regular expressions.

Question: What geometric error elimination or correction is Anark doing on imported files? Does Anark Core heal gaps, sliver faces, etc?

Answer: Yes. Anark Core heals geometry during the import process and removes sliver faces and gaps automatically. Anark Core also re-tolerizes the model to fix precision related errors without manual intervention during the import process. This is helpful because sliver faces are usually artifacts of feature based modelers that inadvertently produce them during the design process.

Question: Can Anark Core remove interferences between parts?

Answer: Anark Core can remove interferences if you do defeaturing operations that end up with the removal of the interference. If you are referring to changes to the transformation so that the interference doesn't occur, Anark Core is not capable of that yet, but certain feature suppression can cause the interference to go away.

Question: Is there a boolean operation in Anark Core to remove interferences?

Answer: There are some options that exist on import that can do some of that. It's not a default option, but some degree of success can be had there. It isn't an explicit operation within Anark Core at this point, but some of the Boolean operators have been discussed as action features on our roadmap.

Question: Can Anark close holes in "dumb models" (like STEP files), without features listed in the tree?

Answer: Yes. Anark Core doesn't rely on "features" defined in the original CAD file. Anark Core analyzes the B-rep topology and can thus identify and remove CAD geometry "features" without them being defined as such.

Question: Does your software create mid surfaces from existing geometry?

Answer: Not at this point, but this has been a requested feature from the FEA folks for generalizing solid bodies to simplify the model. We have the capabilities to do that, we're evaluating how we would do that as an action type. It is on the road map.

Question: Do you import construction geometry like wires and planes?

Answer: Yes. By default we suppress that, but we can change an import option so wires and planes come in.