



# Compressing large models for mobile use

August 2022

*Changing the World's Energy Future*

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**Prepared for the  
U.S. Department of Energy  
Under DOE Idaho Operations Office  
Contract DE-AC07-05ID14517**



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## Using HFEF Cell CAD model for the study

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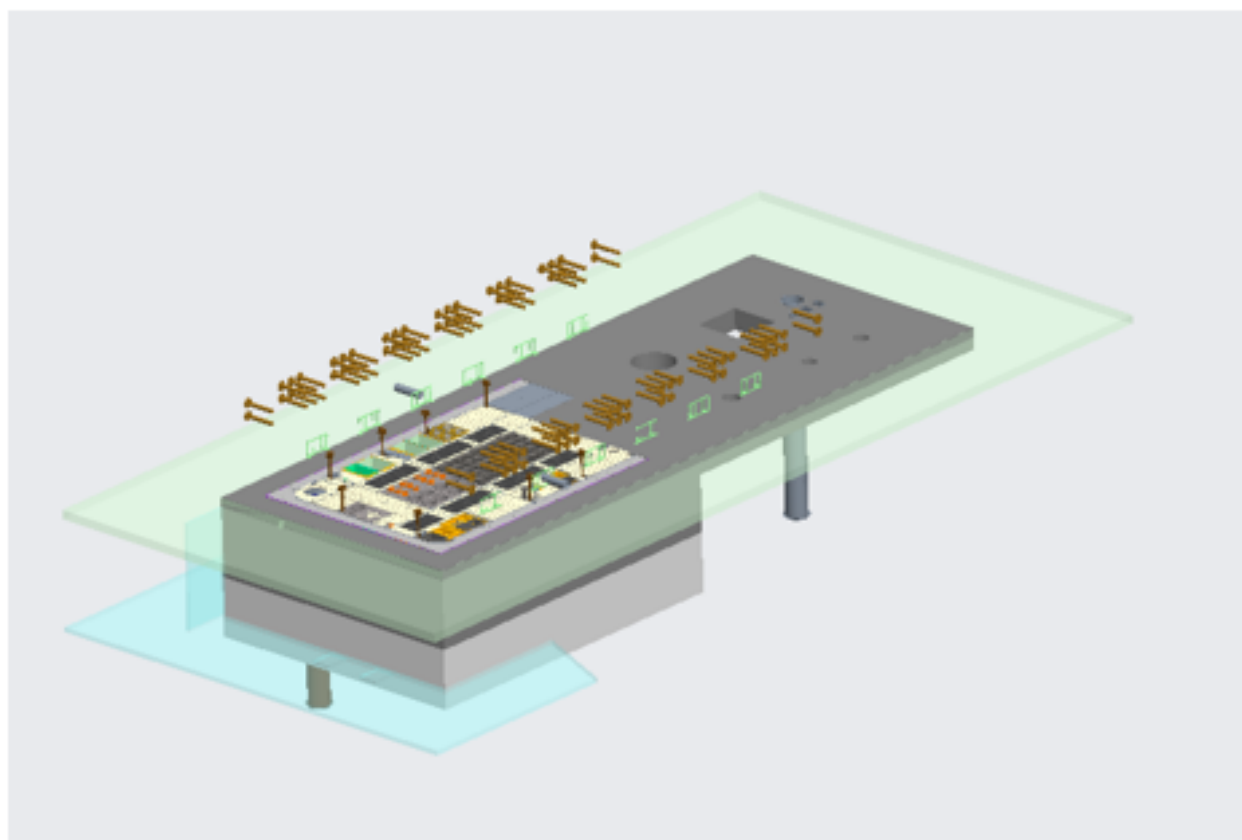
### Objectives:

- This project investigates the different techniques for model compression in creo8.
- Develop a technique using the model rule to display the part needed at a time in the model.
- Evaluate how the use of these techniques affects the size of the model.

### Method:

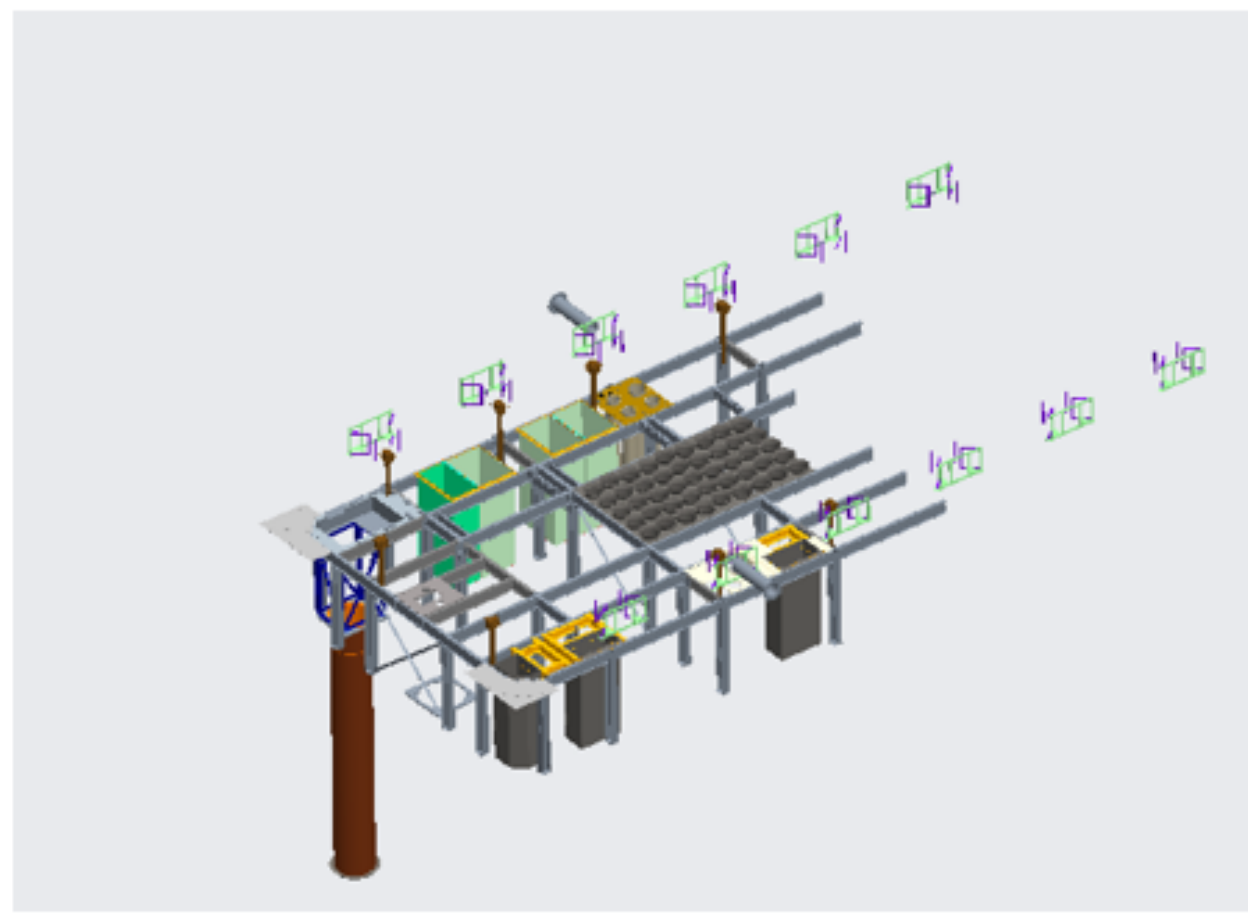
- Simplified representation and shrinkwrap techniques were explored for the project in creo8.
- Manually editing the edit menu in the simplified rep was used to create a new model from the large assembly based on specific conditions.
- The model rule was the easiest technique to create selected display parts from the original model.
- Conditional statement was created using the model rule that excludes irrelevant parts that are not needed for display and converts the other assembly parts to graphical representation using the automatic representation that reduces the display time for large assembly.
- Created different model using shrinkwrap models and reference the size of the model to original model, to see how it performs against the original model.

#### Manual Selection in the edit menu



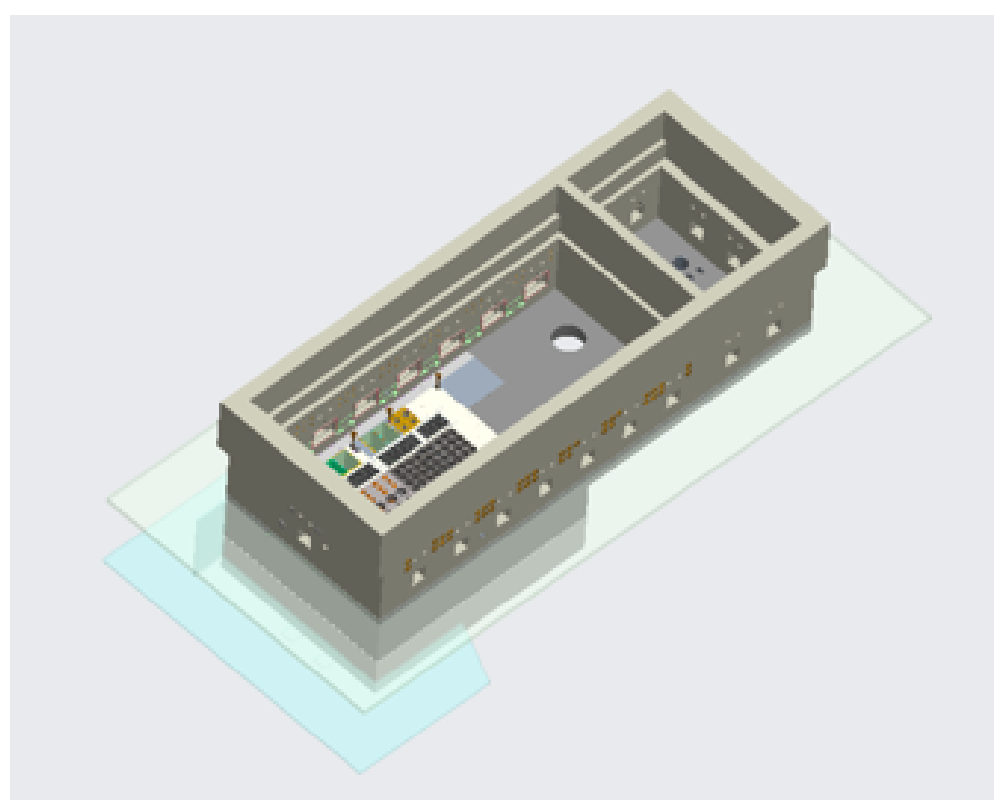
- HFEF wall is excluded.
- Assembly in the model is set to Automatic rep.
- The selection process was done manually in the model tree

#### Model Rule Technique

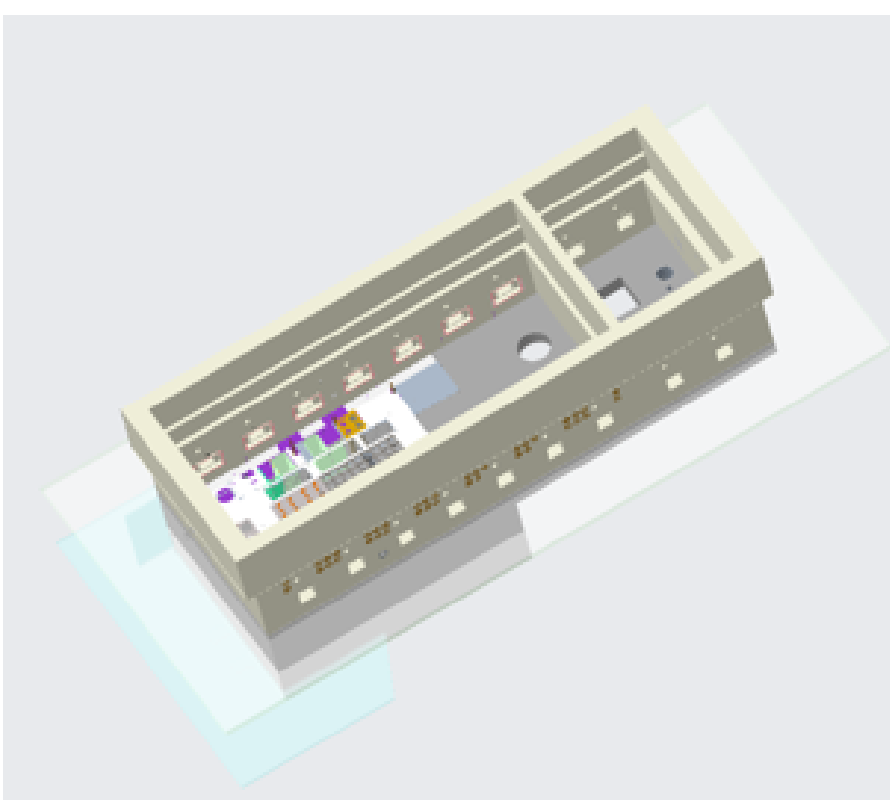


- Conditional statement was used.
- The walls from the original model was excluded.
- The assemblies was converted to automatic rep.

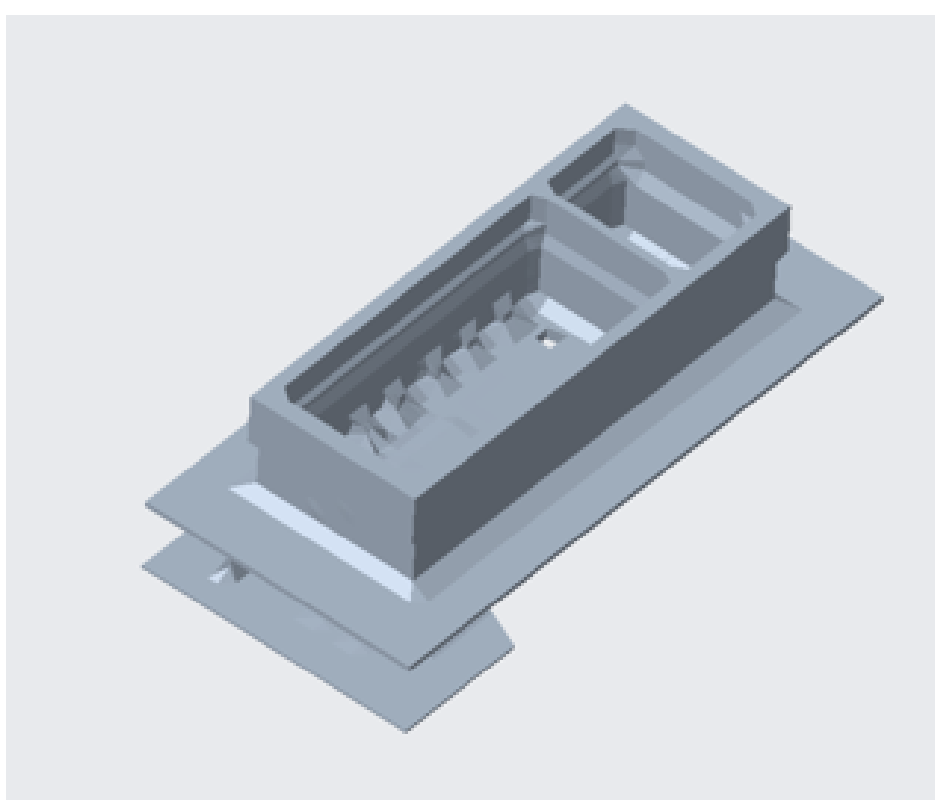
#### Shrinkwrap Models and It sizes



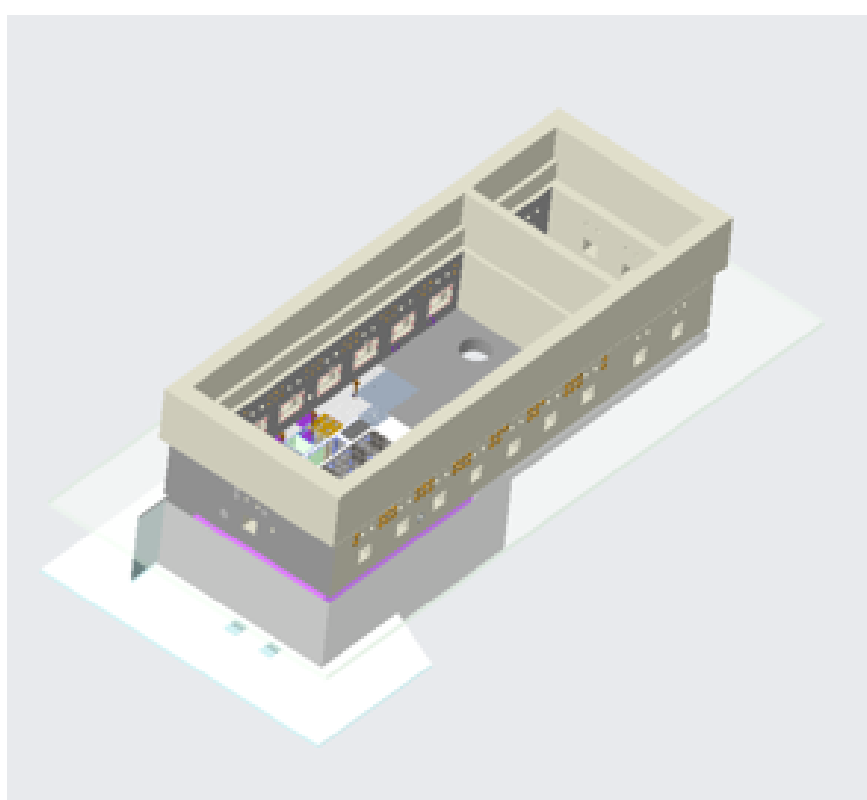
- Original HFEF Cell Model.
- Surfaces: 21831.
- Components: 813.
- Size: 53.8MB.



- Surface subset.
- Surfaces: 3076.
- Quality: 5.
- Size: 13.4MB.



- Faceted Solid.
- Triangles: 16984.
- Quality: 8.
- For Quality 5, the size was 270KB, but it was too crude.
- Size: 805KB.



- Merged Solid
- Components: 262
- Quality: 5
- Size: 36.4MB

### Conclusion:

- From the different models created, Faceted Solid created the best-compressed model but was too crude compared to other models.
- Models created from simplified representation were more practical in industry application but were not standalone as it was embedded in the original model; hence it was difficult to access their size.

#### Keyword:

HFEF: Hot Fuel Examination Facility  
MB: Megabyte  
KB: Kilobyte

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