

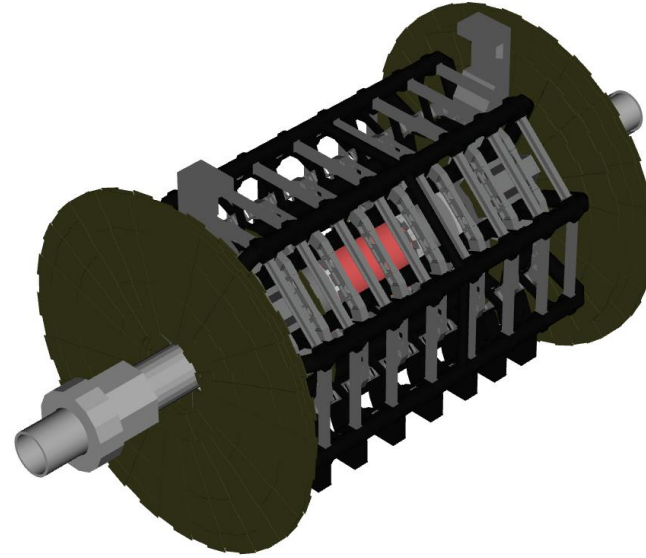
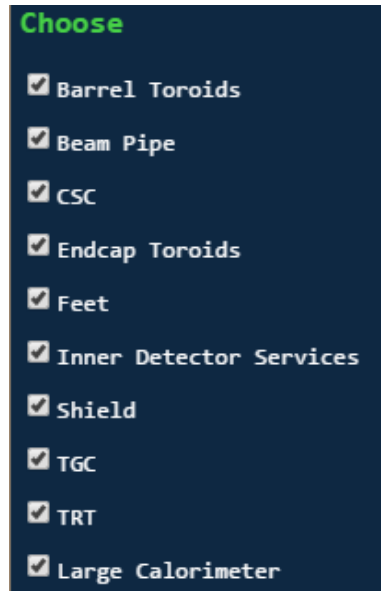
Development of Simplified Geometry Descriptions  
of ATLAS Detector for

# ATLAS Tracer

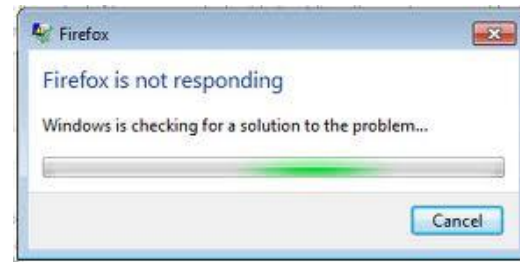
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Kobakhidze Shota



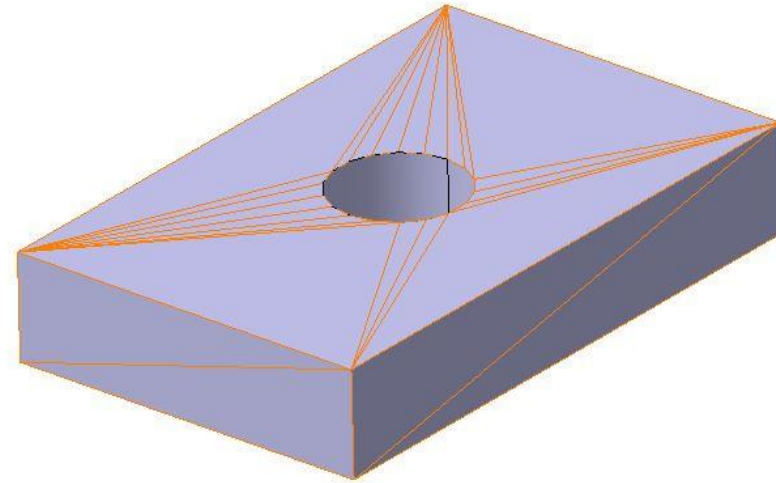


During the creation of ALTAS Tracer software our team came along the problem, it seems that loading all the geometries together in the Tracer software would cause browser to hang



After some further investigation we found out following:

- 1.It was caused by amount of faces(flat surface that forms part of the boundary of a solid object) that contained geometries
- 2.The limit of faces that single tab of browser could handle was 1'500'000



Ways to solve problem:

1. Make our own browser which wouldn't have restrictions of number of faces

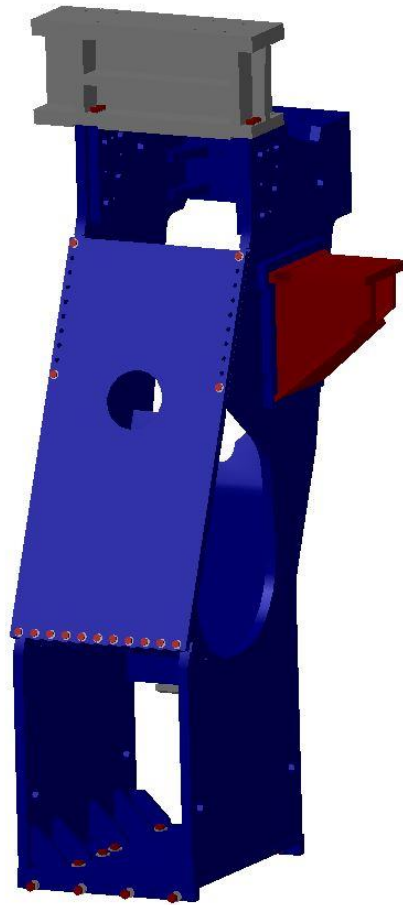
2. Simplify geometry descriptions so that all of them wouldn't exceed 1'500'000 face



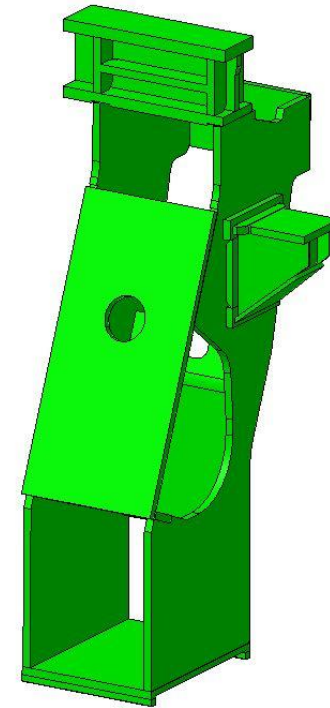
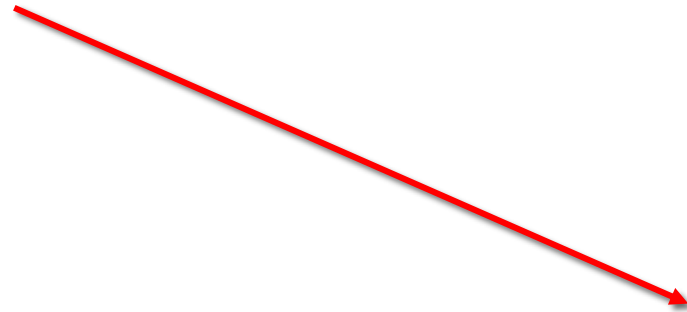
Method:

1. Decreasing accuracy of circles or removing them if possible
2. Remove all the inner cuts from geometries
3. Removing every single small detail that would not damage overall look of the geometry like small blats, screws etc.
4. Live small gaps between geometries(0,05mm)

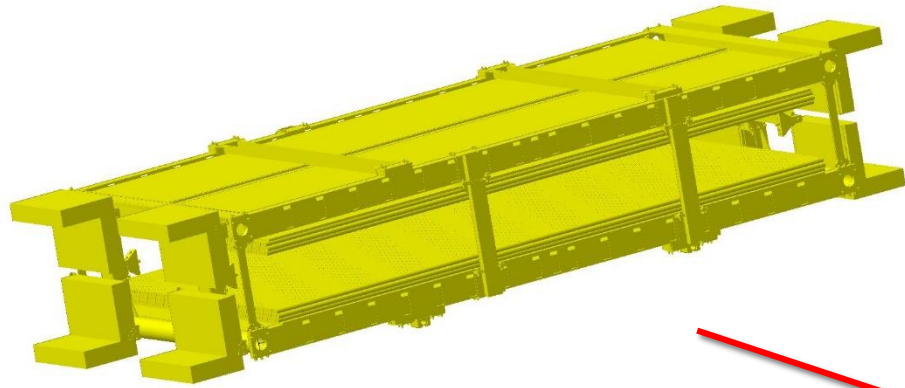
Here you can some examples:



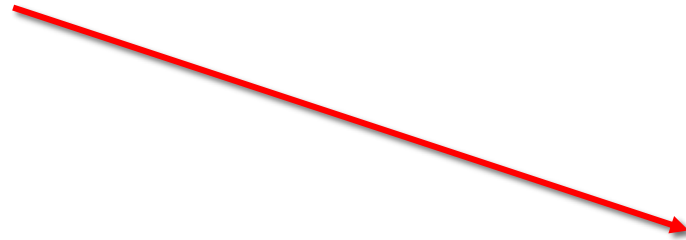
FACES – 14 946



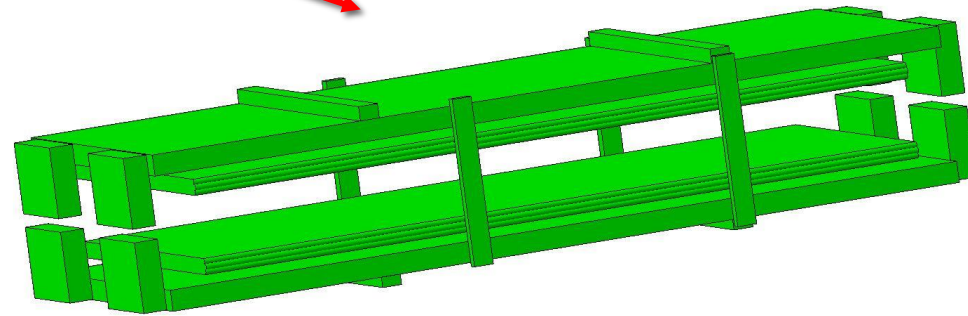
FACES – 1 186



FACES – 273 065

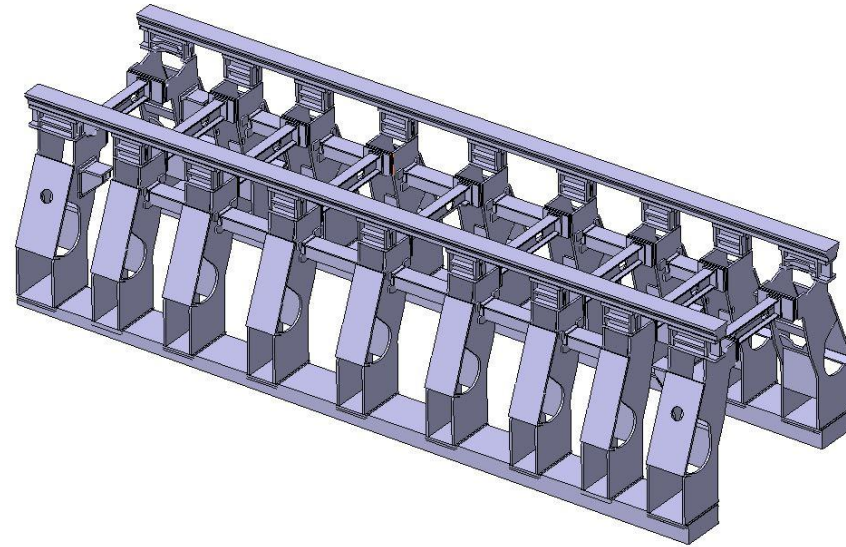


FACES – 440



As a result we got

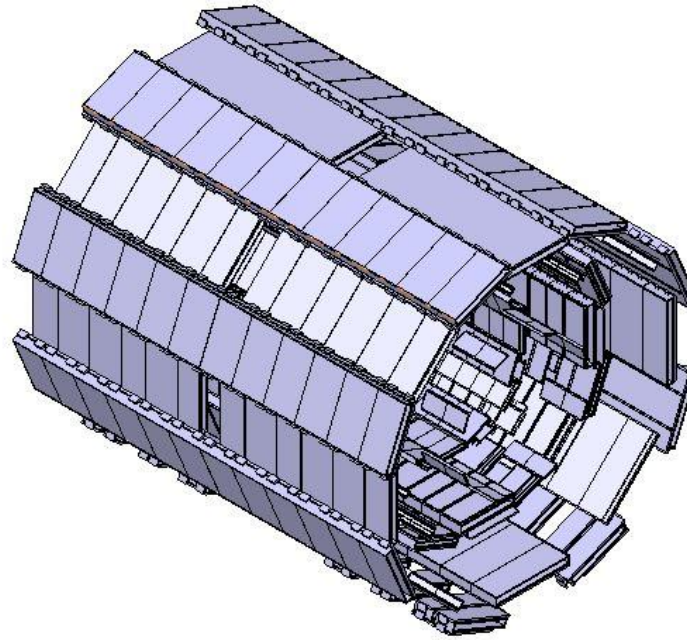
Feet



FACES – 571 312

FACES – 24 952

# Chambers



FACES – 1 548 359



FACES – 66 788



**Thank you for your attention**

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