

Geometry Simplification Method for the Simulation

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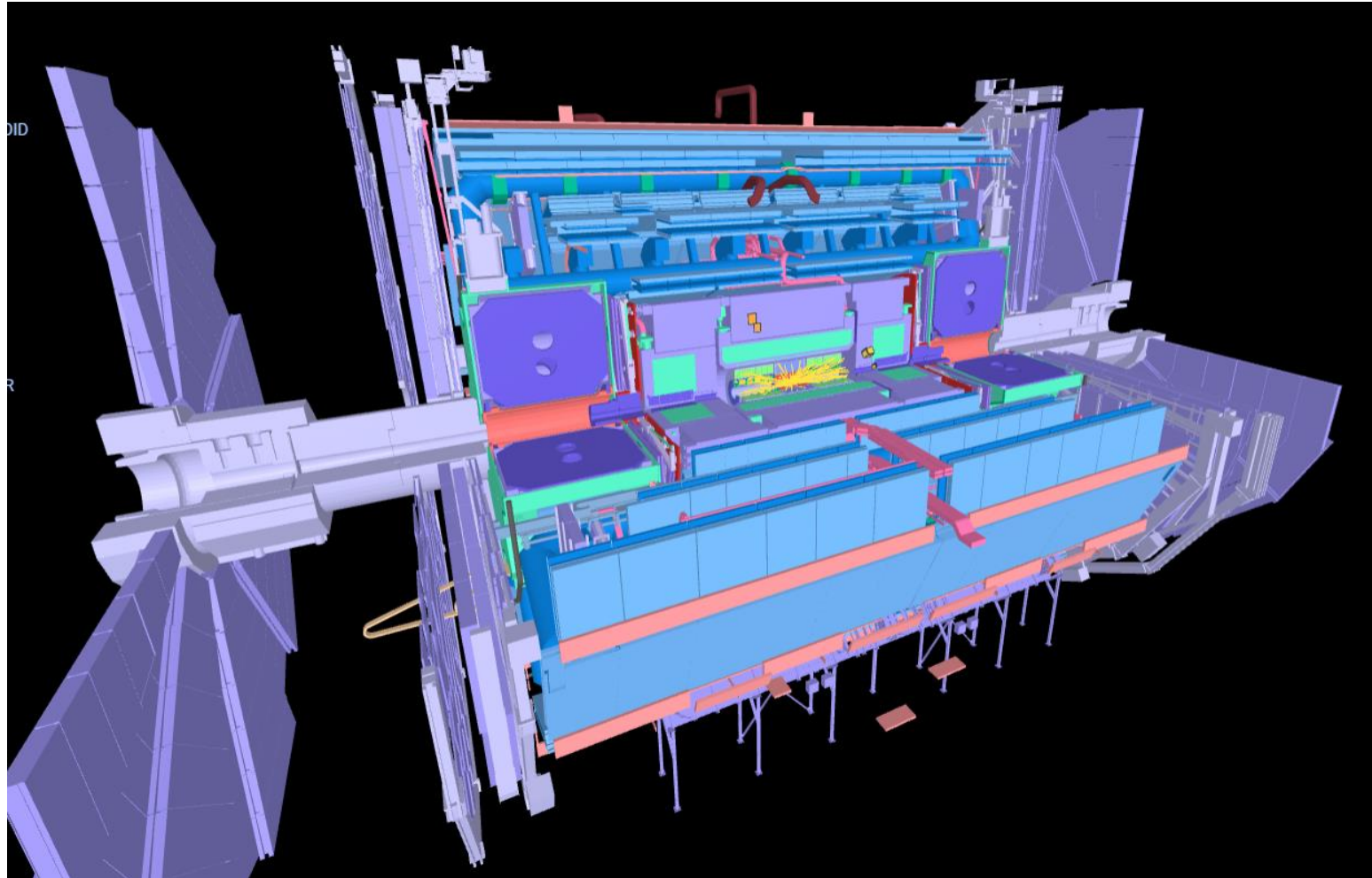
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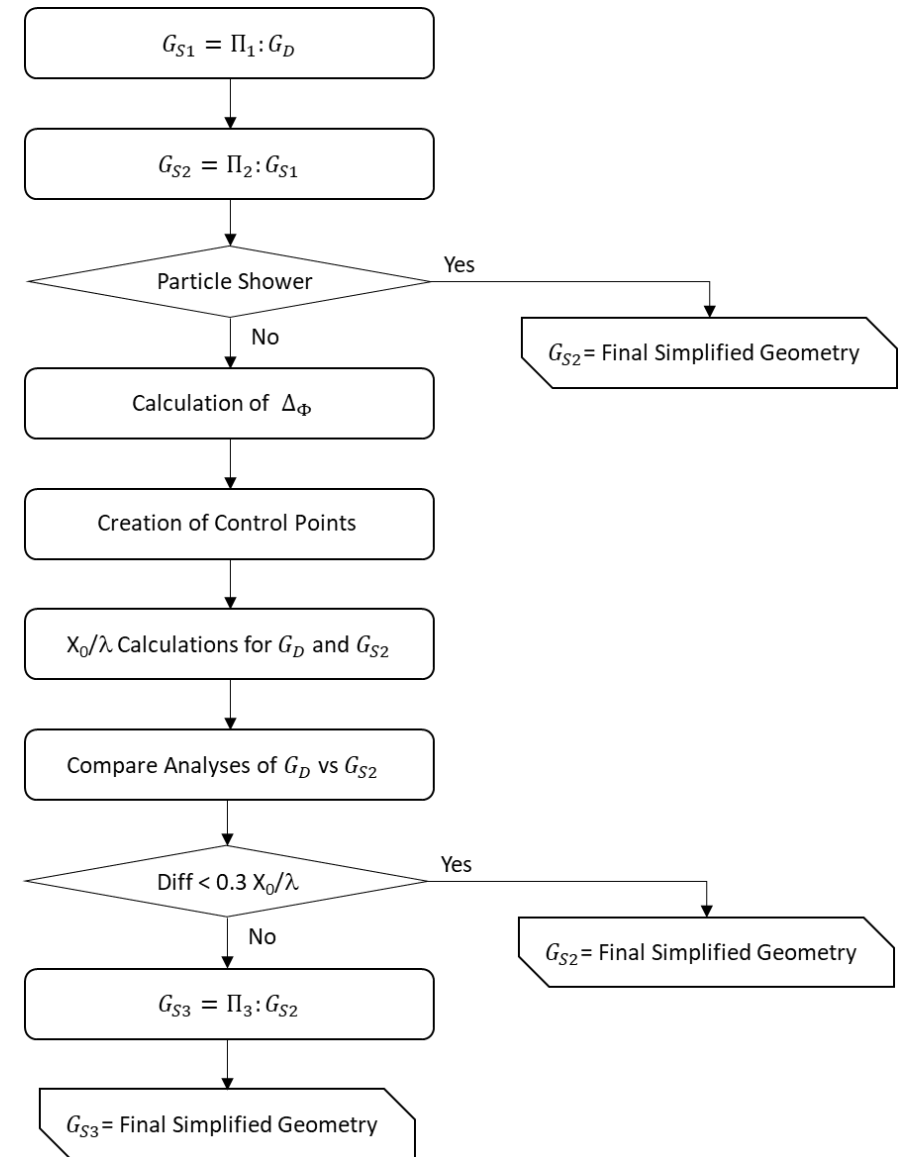
Simplification of Geometry

it is necessary to develop unique methods and tools for the early study of the detector geometry, to ensure that simplified geometry brings high performance and precision to the simulation.

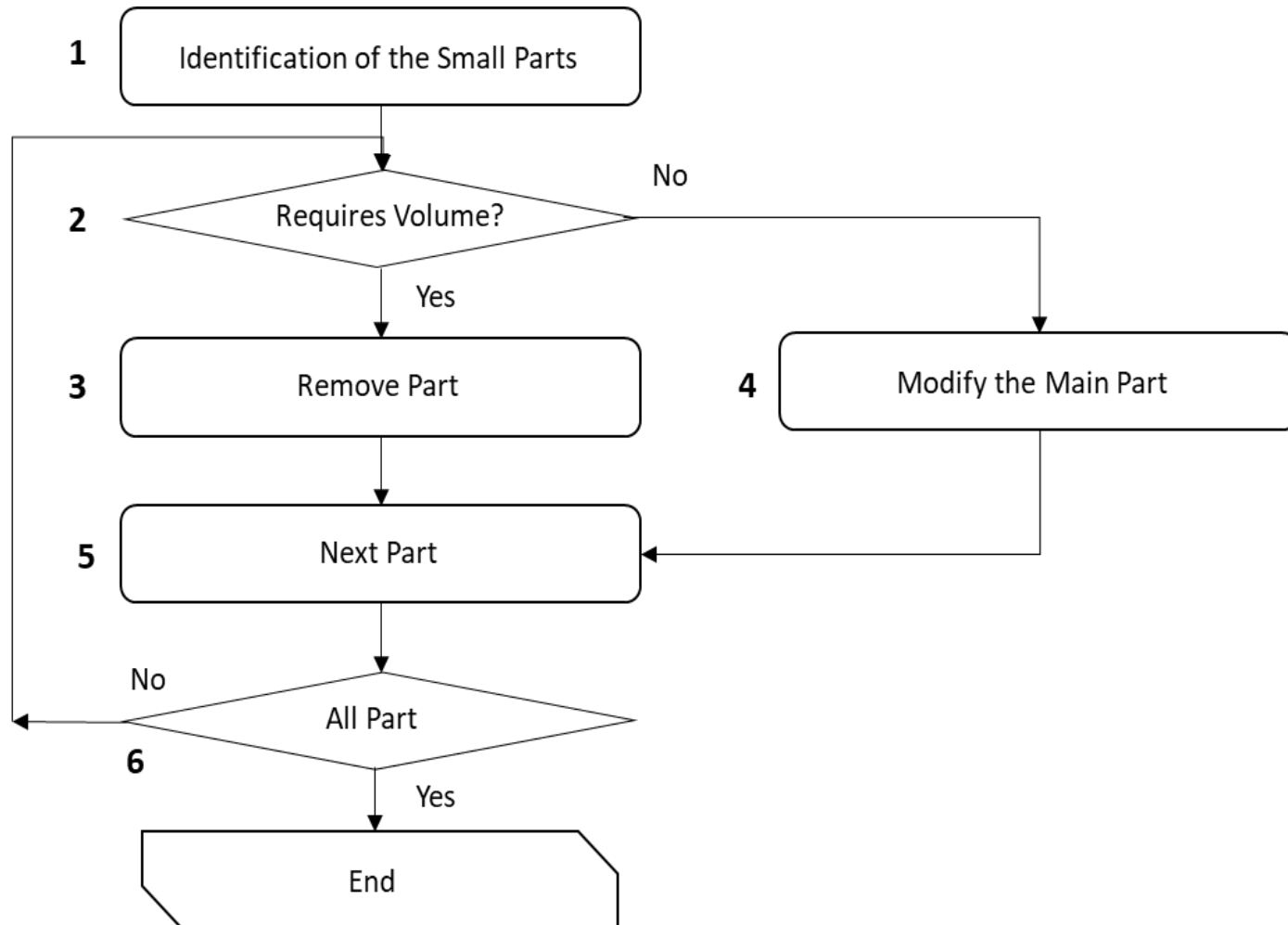


Geometry Simplification Algorithm for the Simulation

- Simplification is Π transformation of detailed geometry into simplified geometry.
- geometry contains minimum details to ensure the high performance of the simulation

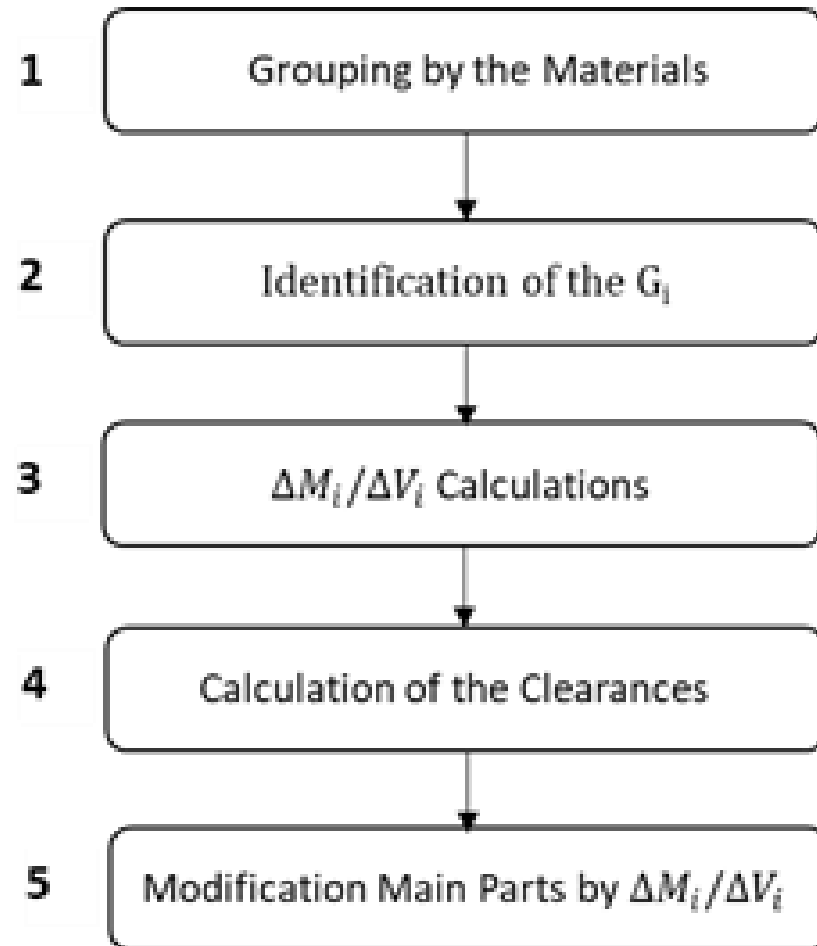


REMOVAL OF THE COMPONENTS



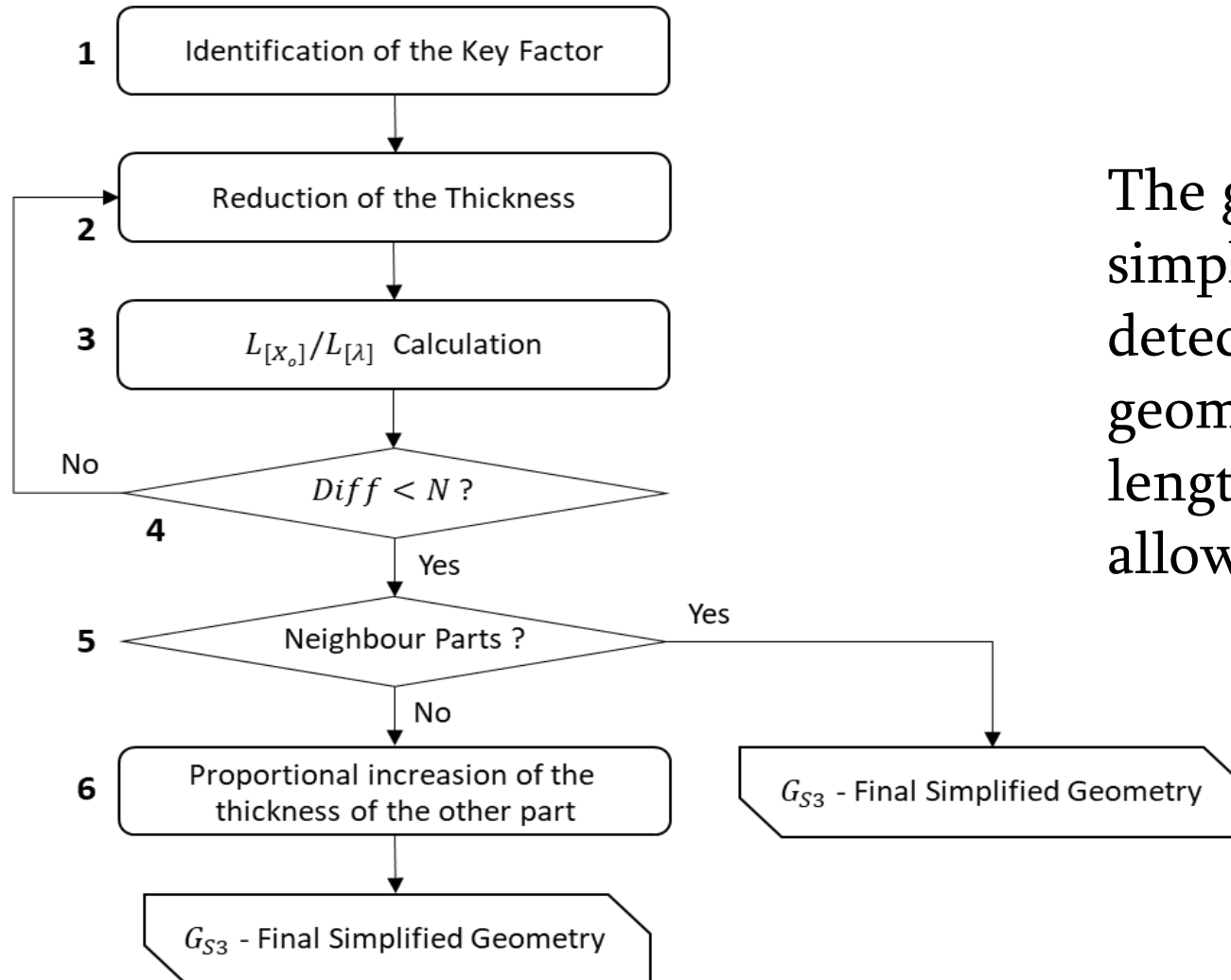
The number of volumes in the geometry is the key factor - as many volumes are described in the geometry, the simulation performance is less.

REPRODUCTION OF THE MASS PROPERTIES



The purpose is to compensate for material loss after the Π_1 and keep mass properties and volume of the initial, non-simplified geometry

REPRODUCTION OF THE RADIATION PARAMETERS



The general algorithm of simplification foresees the detection of regions in the geometry where the radiation length changes exceed the allowable value.

Conclusion

The CATIA platform can be considered a hub for the collection of geometry descriptions from various platforms and proceed with different studies of detector geometry for the best simulation.

Thank you for your attention!

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