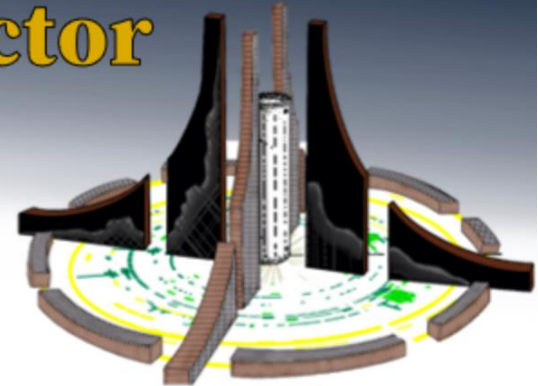




12th Forum on Tracking Detector Mechanics

Purdue University, West Lafayette, USA
29-31 May 2024

<https://indico.cern.ch/event/1336746/overview>



DRD8 - Mechanics and cooling for vertex and tracking systems

WG 8.4 - Design and Qualification Tools

**DRD8 - Mechanics and cooling
for vertex and tracking systems**
[Steering Committee]

Proposal

Detector R&D Committee
[DRDC]

WG 8.1 - Global/System
Design and Integration

WG 8.2 - Low Mass Mechanics
and Thermal Management

WG 8.3 - Detector Cooling

**WG 8.4 - Design and
Qualification Tools**

R&D - Identify requirements
and develop tools

Connection CAD tools to particle
simulation software (e.g. GEANT4)

Identify and test commercial
solutions or CERN
developments from other
departments

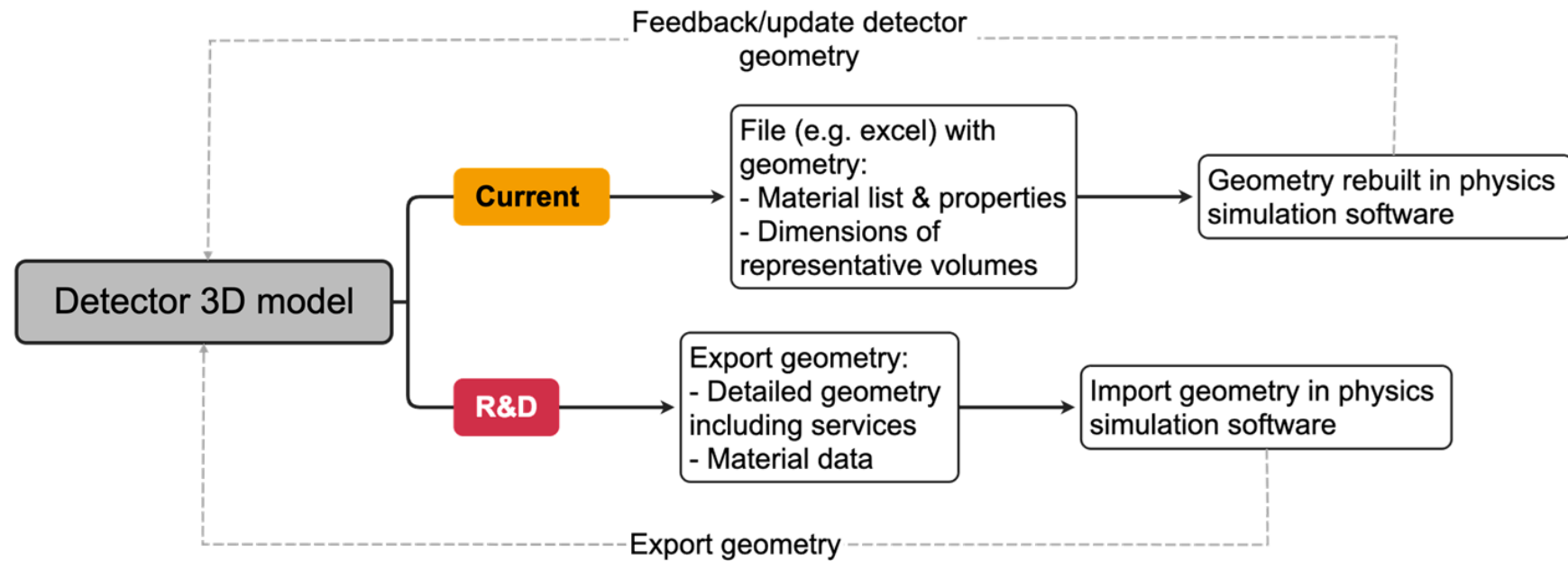
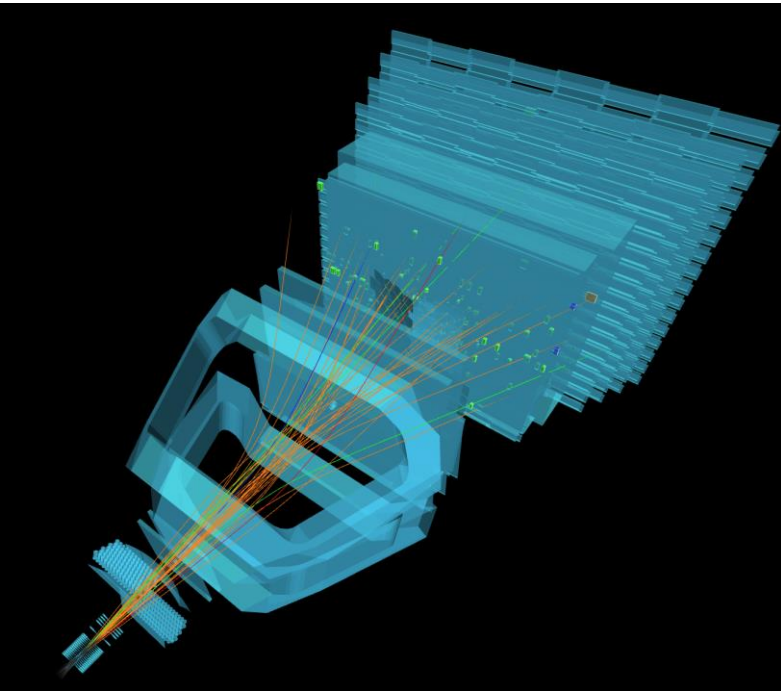
Open-source software & parallel
computing

Topology optimization (machine
learning)

Virtual/augmented reality aided
design. Virtual twins.

3D design of complex
geometries (services)

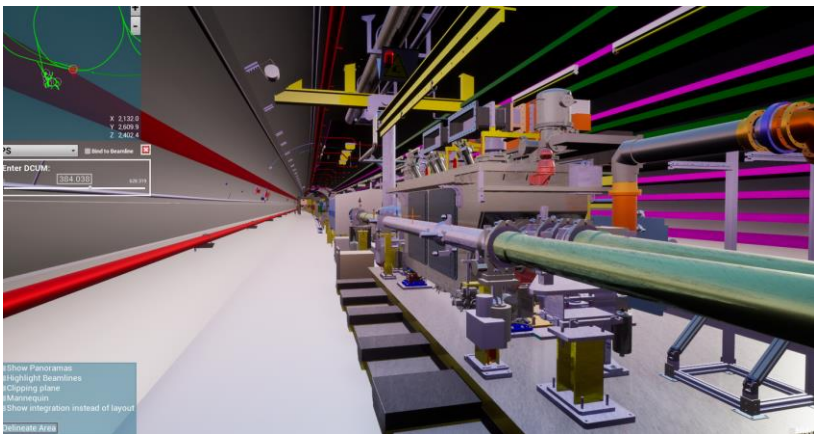
Connection CAD tools to particle simulation software



Virtual reality

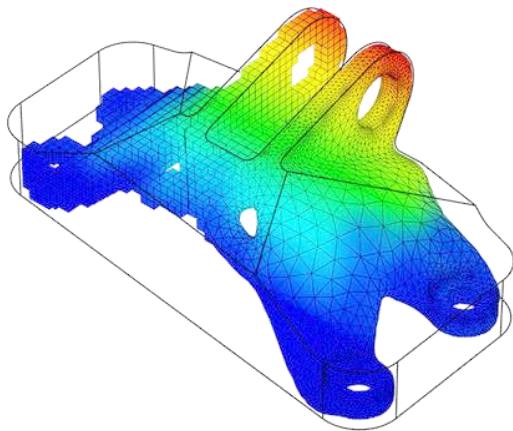


Virtual reality: display of a real event
<http://cds.cern.ch/record/2745563>

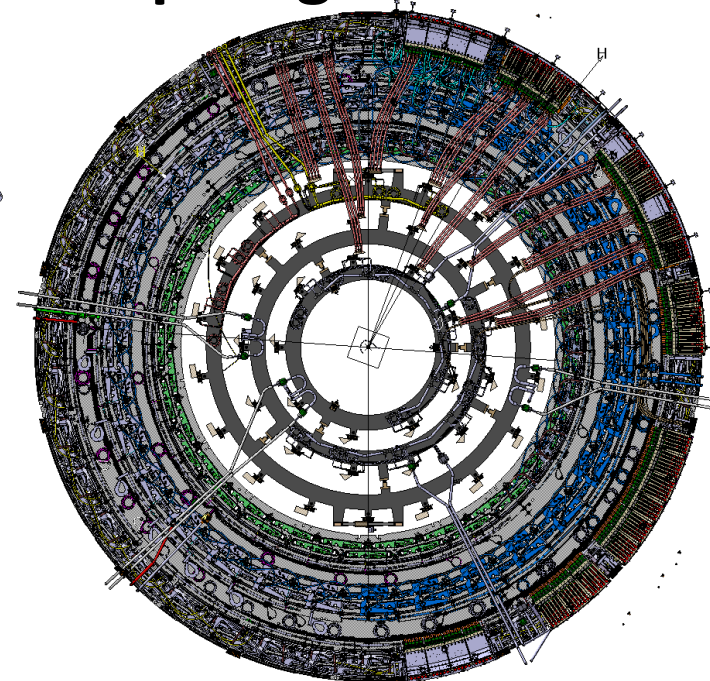


Digital twins: SPS CERN
<https://indico.cern.ch/event/1304817>

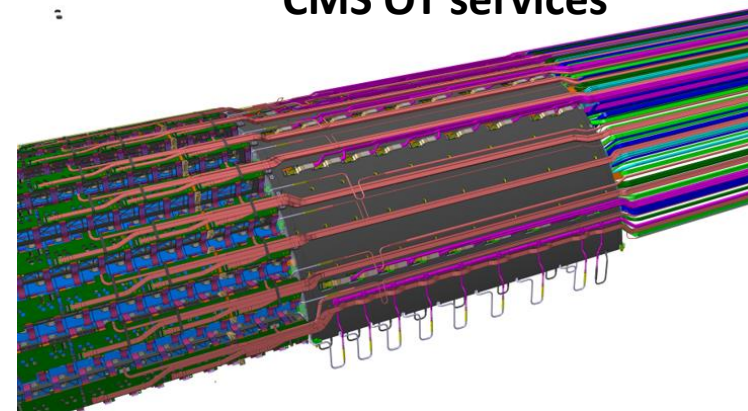
Topology optimization [machine learning]



Design of 3D: complex geometries



CMS OT services



ATLAS OB pixel services

If you are interested join the e-group:

DRD8-WG4@cern.ch

and let us know your ideas!