Istituto Nazionale di Fisica Nucleare
SEZIONE DI FERRARA

Brookhaven National Laboratory

Jefferson Lab

U.S. DEPARTMENT OF ENERGY

ePIC experiment
dRICH

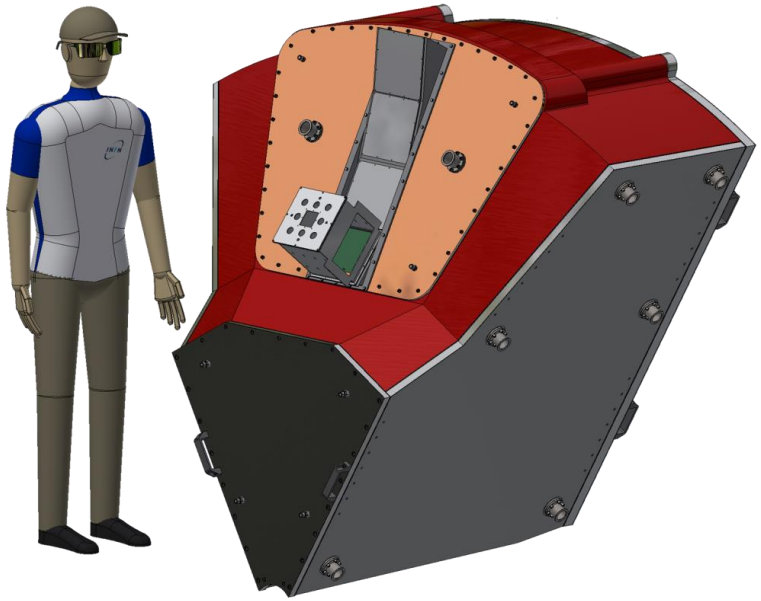
dRICH Meeting

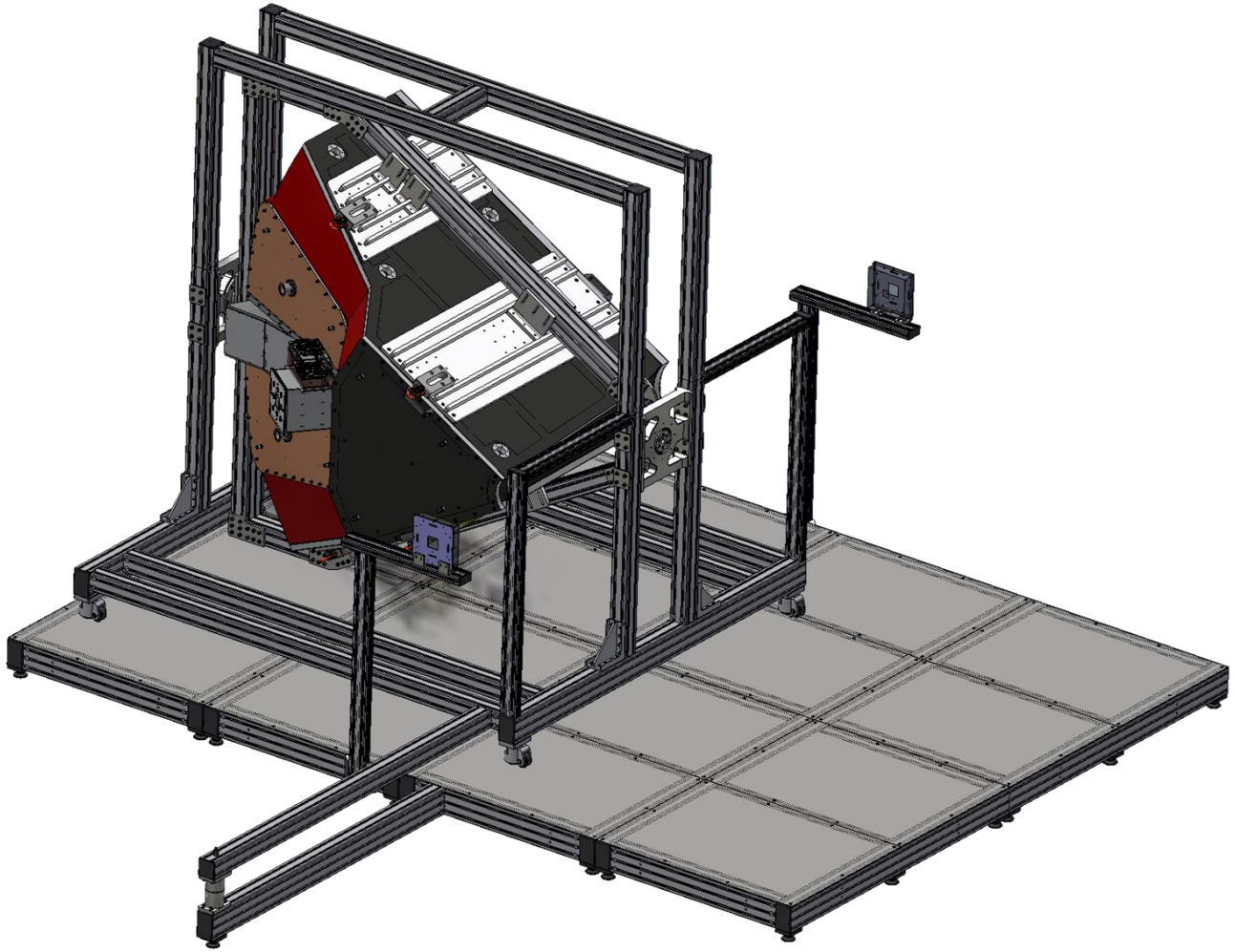
dRICH Prototype Status Report

Alessandro Saputi – 25 February 2026

Electron-Ion Collider

dRICH Prototype



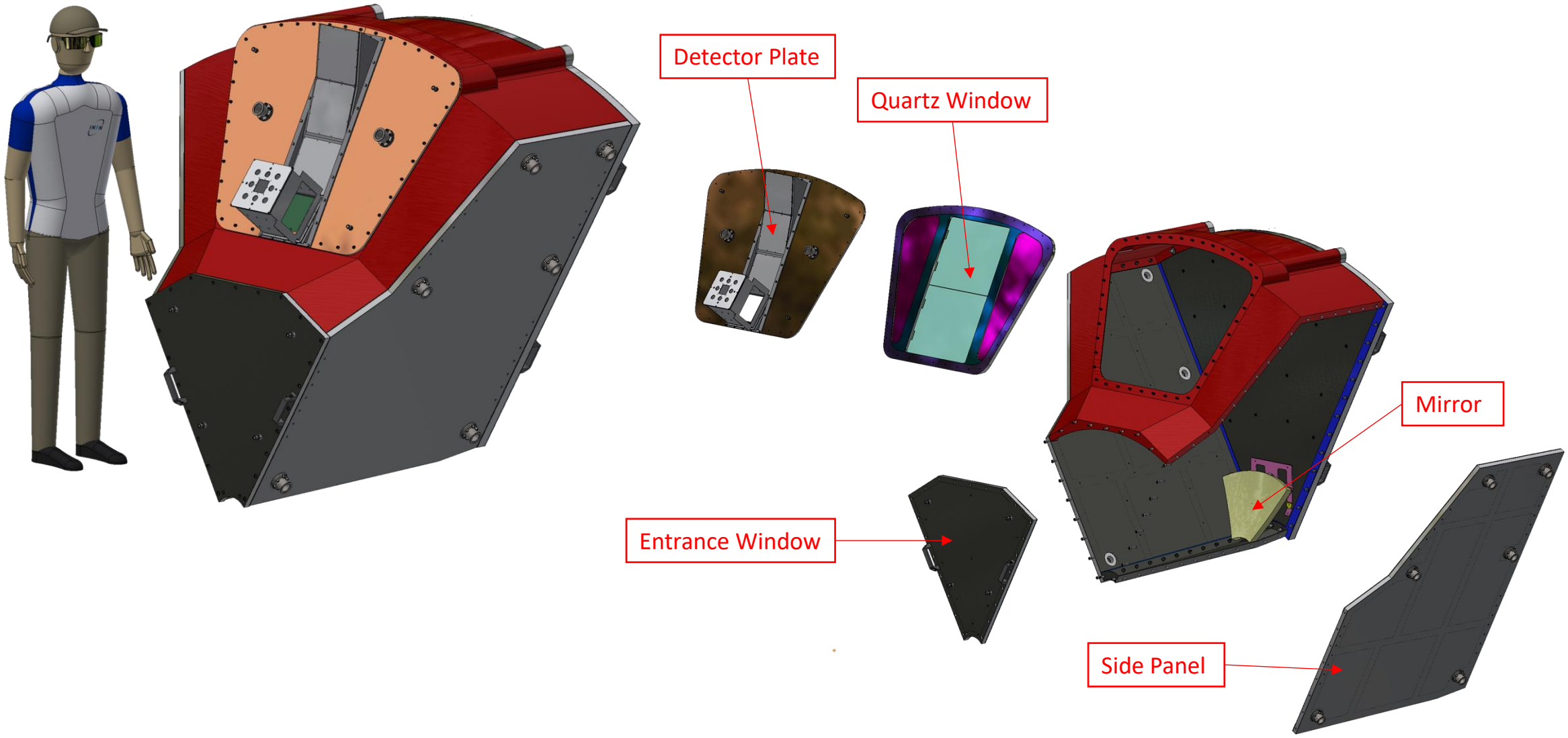


Full-scale (1:1) prototype representing one-sixth of the complete dRICH detector.

Purposes:

- **Validate the preliminary design of dRICH**
- **Test beam:** study and optimize the performance of dRICH components

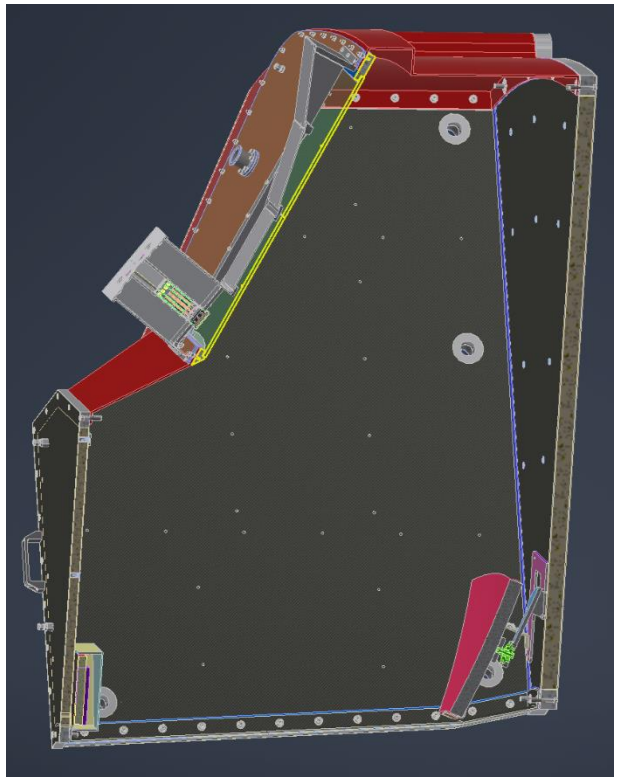
dRICH Prototype: full scale

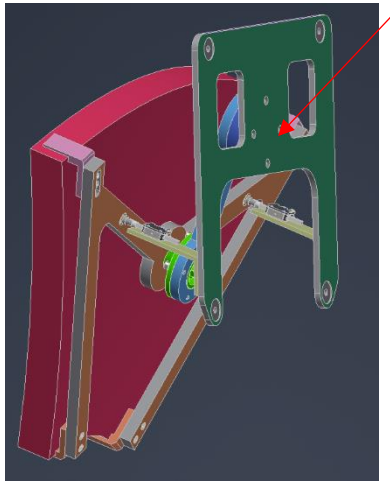


dRICH Prototype

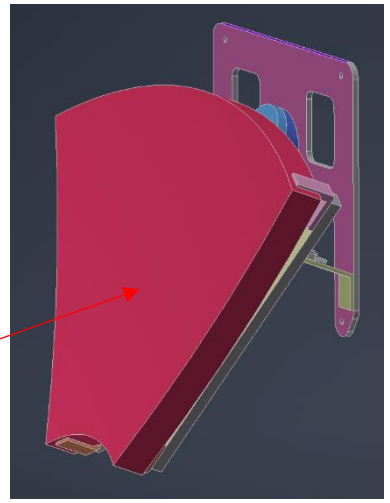
nil volentibus arduum

Mirror

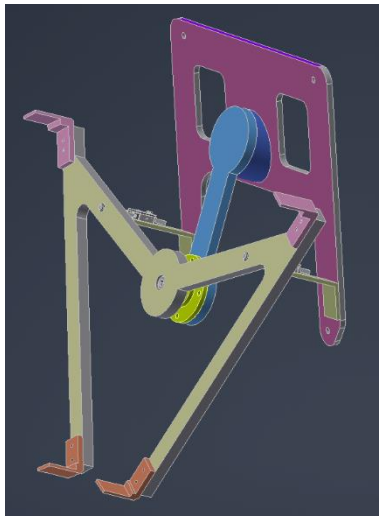




Mirror Holder

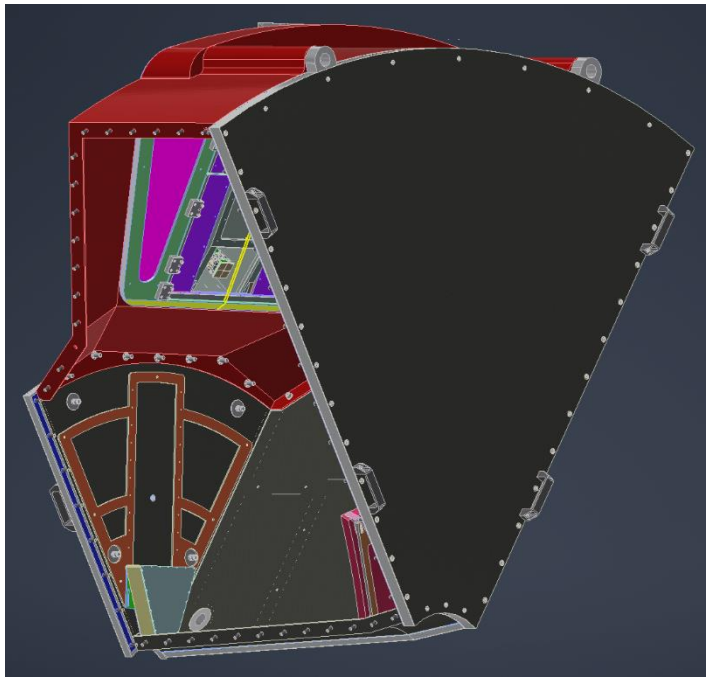


Mirror



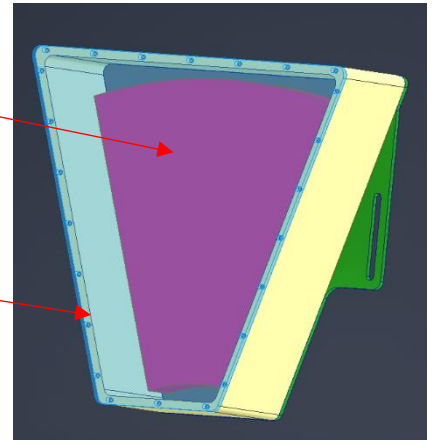
Mirror Holder

Aerogel

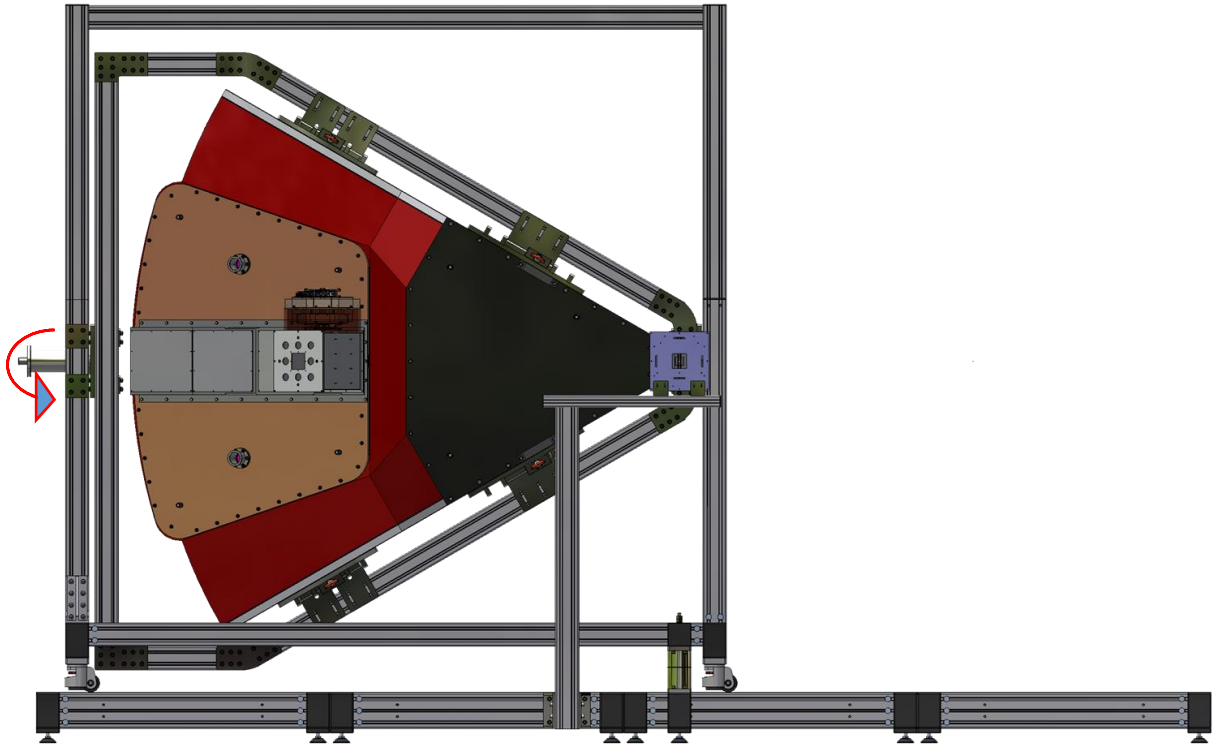


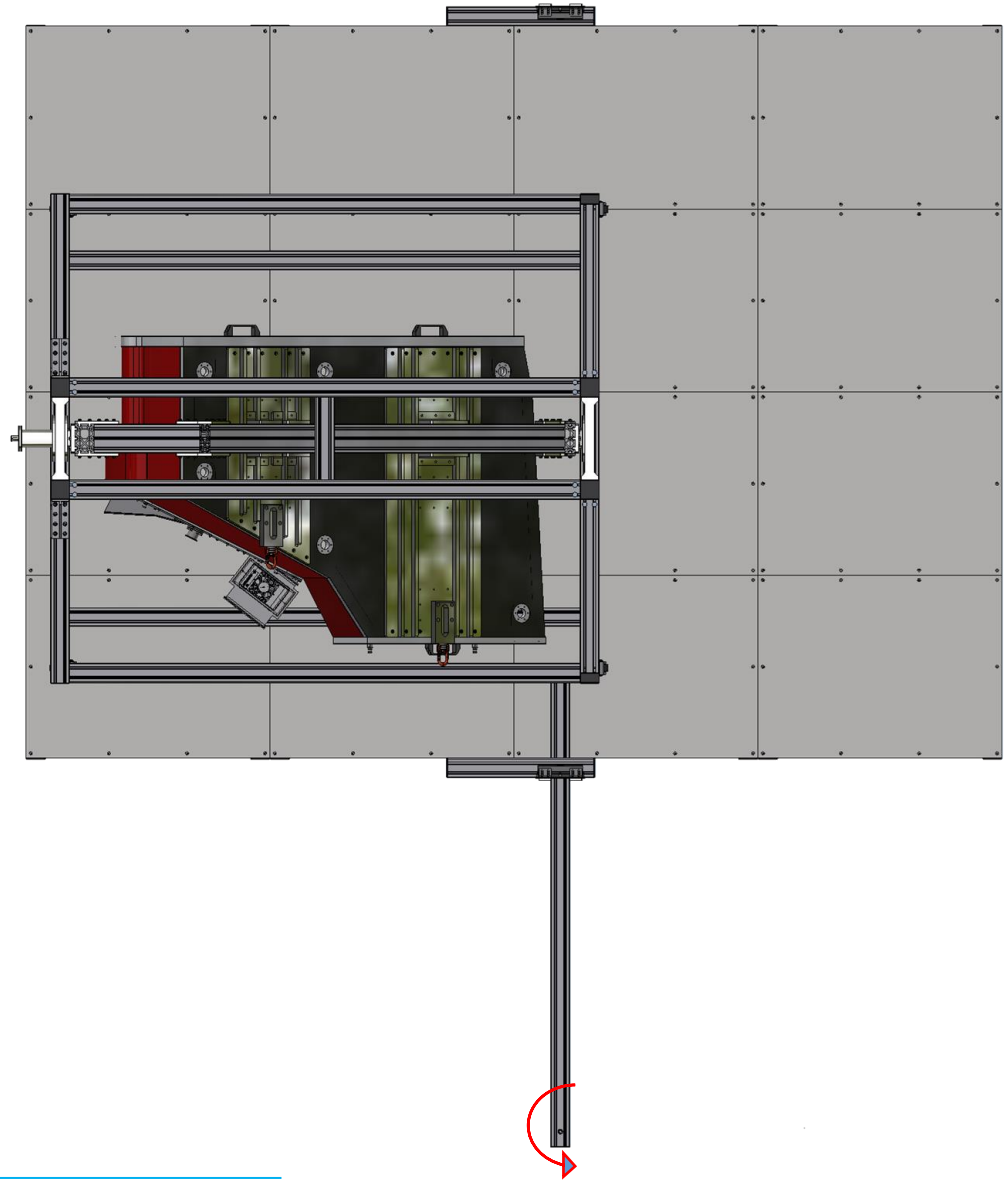
Aerogel Tile

Aerogel Holder



dRICH Prototype: stand for test beam





dRICH Prototype

nil volentibus arduum

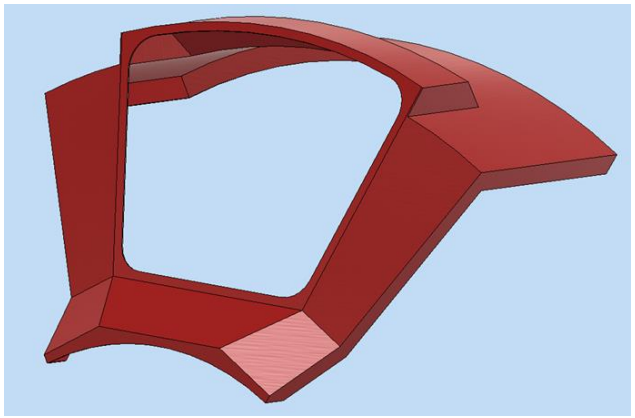
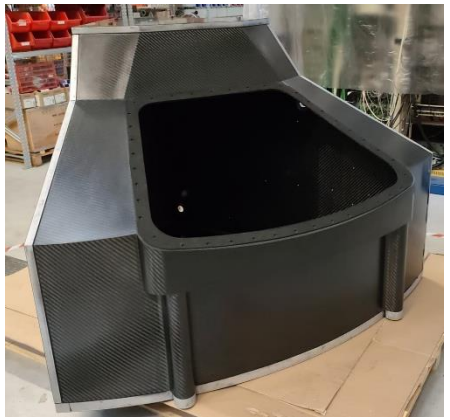
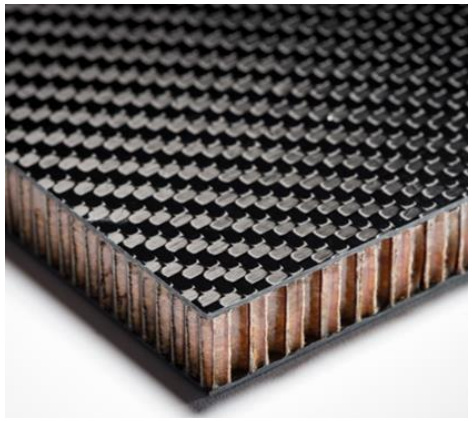
Building a **full-scale (1:1**) prototype representing one-sixth of the complete dRICH detector.

Purposes:

- **Validate the preliminary design**
- **Test beam:** study and optimize the performance of dRICH components

nil volentibus arduum

dRICH Prototype

- The shell and the central tube have been made of a 4.56 mm thick carbon fibre epoxy composite. Each laminate will consist of 6 layers of balanced weave fabric, with fibres oriented at 0°/90° in one layer and ±45° in the adjacent layer.
- The Entrance Window and Exit Window have been of a sandwich panel consisting of two carbon fiber-reinforced epoxy skins, each 1.52 mm thick, separated by a 25 mm thick Nomex honeycomb core. Each skin is composed of 4 layers of balanced weave laminate, with fibers oriented at 0°/90° in one layer and overlapped with ±45° in the adjacent layer. The external sides are enclosed by two solid frames made of aluminum.
- The lateral panels have been made of a sandwich panel consisting of two carbon fiber-reinforced epoxy skins, each 2.28 mm thick, separated by a 25 mm thick Nomex honeycomb core. Each skin is composed of 3 layers of balanced weave laminate, with fibers oriented at 0°/90° in one layer and overlapped with ±45° in the adjacent layer.

nil volentibus arduum