



CCLR C
Daresbury Laboratory

AGATA Presentation

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Design of the full array

Design of the demonstrator

Array requirements

It is assumed that the array is to split perpendicular to the beam line, depending on the available space

Access is required to all detectors

For a beamline height of 1.75 meters, the array will have to rotate 25° (effects on length of cables, cable management technique and LN2 to be investigated)

The current layout will allow a beam pipe of maximum diameter of 40mm through the array.

Bigger through beam pipe would lead to detectors removed/ withdrawn.

It is necessary for Detectors to be withdrawn before opening the array

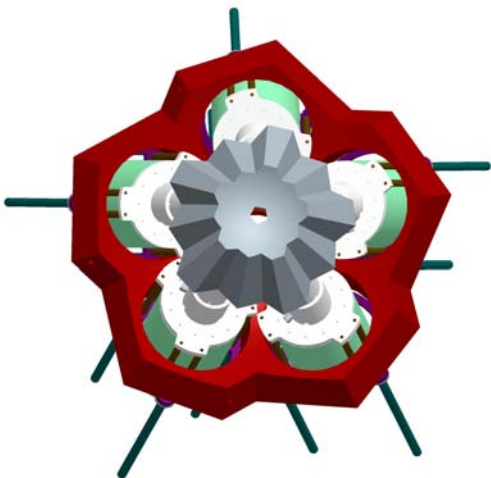
Any other components to be fixed to the array eg. Cables

Any other constraints at host lab

Method of removal/ installing detectors (manipulator)

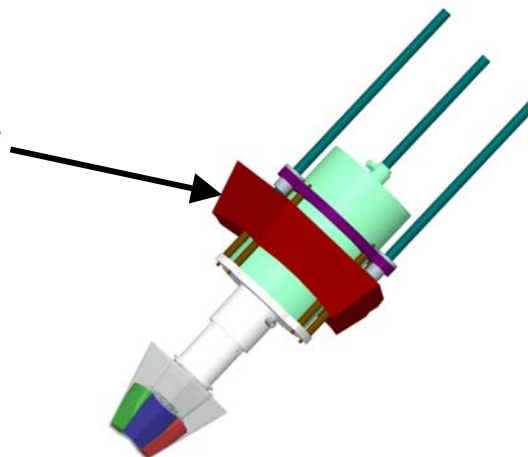
Size of target chamber, target change mechanism and its integration into the beamline

Detector support



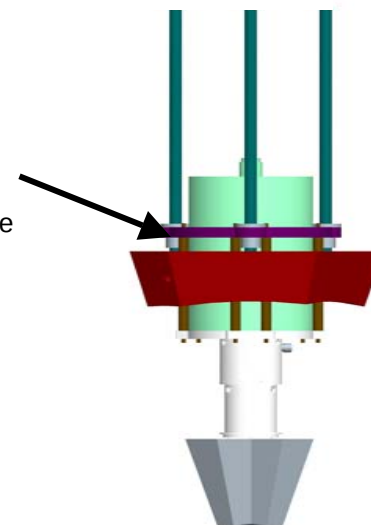
Five detectors are bolted together to form modules. This modular structure allows different formation/ set-ups of the detectors. The above set-up is for the demonstrator.

Detector is mounted off the support flange



A single Lead screw and two guide rods are used to position the detector

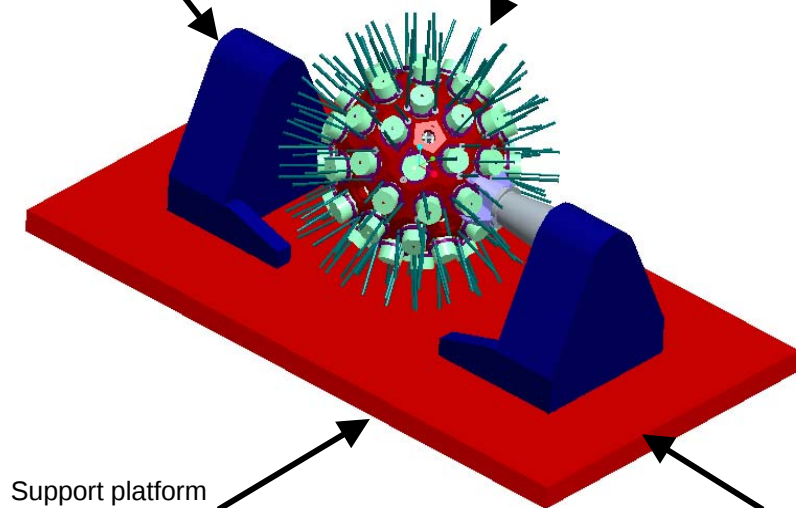
Current design shows the detector supported of a ring attached to the guide rods. An improved design is currently investigated.



AGATA support structure

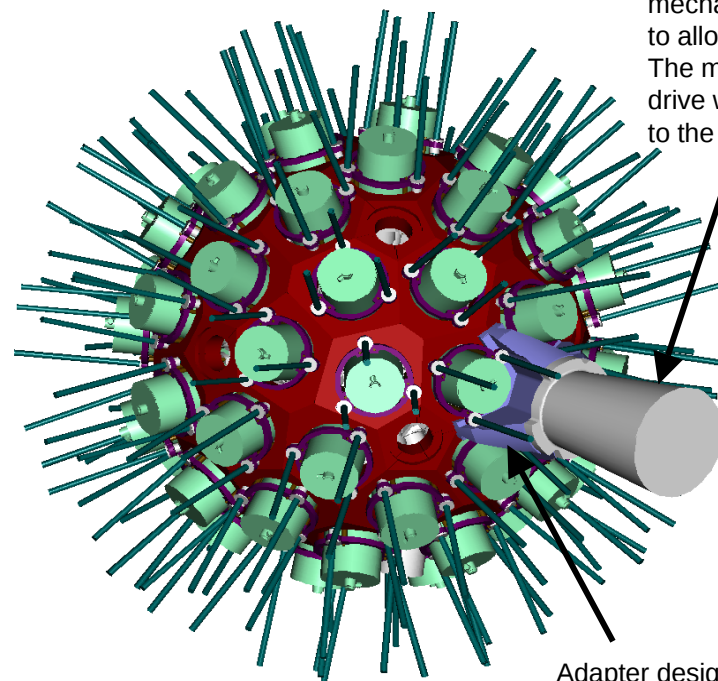
Current Mechanical drive design will allow a rotation of 25° to be determined

Ball to split into a 30-30 configuration



Support platform to be mounted on linear rails that will allow the ball to split into two half's

The platform is to be designed to support the electronic racks



Shaft attached to mechanical drive to allow rotation. The mechanical drive will be fixed to the platform

Adapter designed to obtain maximum contact area with the ball structure but allow access for removal/insertion of detectors

Platform requirements

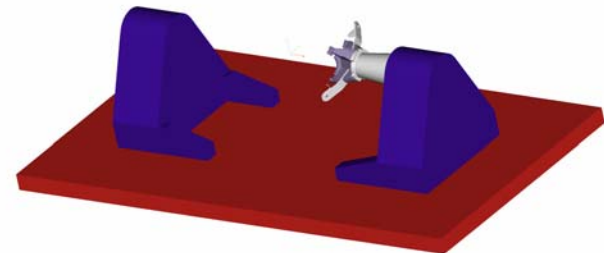
The current design shows the platform supporting the array and drive mechanism.

It is assumed that the electronic racks are to be placed on the platform,
The size of the racks, weight and position is needed.

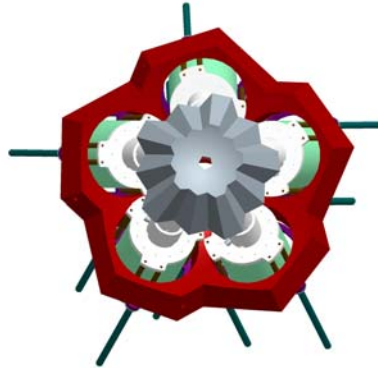
The area that the platform is to be placed (which institute).

The access to the area.

Other components to be placed on the platform such as detector support systems (DDS) and the Ge cooling.



Demonstrator Requirements



The demonstrator will consist of 5 or 6 (10) detectors grouped together or held at certain positions relative to each other.

The orientation of the demonstrator to the beamline.

The location of the demonstrator is to be determined (host lab).

Will the demonstrator be coupled to other arrays/spectrometers

Any future requirements for the demonstrator to be built into the design.

Any constraints at host lab.

Method of removal/ installing detectors

The requirements for other equipment eg. Electronics and LN2

Future requirements

Projection of detector supply/ requirements for future experiments after the demonstrator

Possible locations

Orientation and positions to beamline/other instruments and to each other.