

AGATA ancillary detector information form

Introduction and advice:

The aim of this form is to prepare the coupling of ancillary detector with Agata. In a first step, an Agata demonstrator will be built around 2007. Since the demonstrator will cover a small solid angle, a large place will be left for ancillary detectors. Therefore, ancillary detectors and their coupling (mechanics, electronics, readout and acquisition) have to be ready for the demonstrator phase.

The term ancillary detector may not suit to the array describe here. This is in particular the case for recoil spectrometer, for which a gamma array is sometime considered as an ancillary detector. It is however extremely important to consider the coupling of such detectors with Agata and to fill this form.

Do not hesitate to join pictures, existing documents, publications, list of references to this questionnaire. Please feel free to describe missing items.

This form has to be sent to Andres Gadea (andres.gadea@lnl.infn.it) and Christophe Theisen (ctheisen@cea.fr).

1. The detector

1.1. Brief description of the detector

1.2. Does the detector already exist?

If no, please specify your time schedule

1.3. Has the detector already been coupled to a gamma array?

If yes, which one?

1.4. Interferences with gamma detection:

1.5. Please comment on the specific use of the detector in the AGATA demonstrator period to prove tracking feasibility

2. Mechanical constraints

Size of the detector:

Is it necessary to dismount AGATA modules?

Vibrations issues:

Considering the mechanical constrains of the AGATA demonstrator and latter of the full AGATA, does the detector requires a dedicated reaction chamber?:

3. Electronics

3.1. Front-end electronics :

Has the detector already a front-end electronics?

If yes, please describe:

If no, please describe your plans and time schedule:

Number of signals from the detectors:

Type of signal processing:

3.2. Coding

Has the detector already some converters?

Number of channels to code:

Type of converters (ADC, TCD, QDC, FADC...):

Standard used for converting (VME, Fera, VXI...):

Is your system based on sampling ADCs:

Are you planning to build digital/sampling electronics for your detector?:

If yes, please indicate the sampling frequency you need for your detector:

The AGATA sampling electronics and trigger is working in “Parallel or pipe-line mode”, this means that a central contact trigger in a capsule does not inhibit the trigger or sampling system for the rest of the capsules. Is your coding electronics working in pipe-line or in common dead-time mode?

3.3. Read out

Is the front-end read-out electronics in a different standard than your converters?:

Please indicate which (VME, PC, etc...):

3.4. Trigger

Coincidences with AGATA:

Prompt coincidences?

Delayed coincidences? Typical delay range:

Typical time resolution:

Requirements concerning the flexibility of the trigger settings:

3.5. Rates

Please make the worst estimates in this section!

3.5.1. Estimate of the single detector counting rates

3.5.2. Estimate of the readout rate (event/s and Bytes/s)

4. Remote control

4.1. Type of elements to control (HV, thresholds...).

4.2. Does the detector have already a dedicated remote control system or been used with an host remote control system?

If yes, which one?

4.3. Do you wish to integrate the ancillary detector remote control in the Agata remote control system?

5. Infrastructure

Please describe your requirements: cooling (detector, electronics), Cables between electronics racks and the detector....

6. Data analysis.

6.1. Requirements for on-line data analysis

6.2. Requirements for off-line data analysis

7. Set-up of the detector

Please give an estimate of the time to set-up the detector for the following items:

7.1. Mechanics set-up

7.2. Electronics set-up

7.3. Off-beam electronics tuning

7.4. In-beam tuning (electronics and trigger).

7.5. Off-beam calibrations

7.6. Dismounting