

ATLAS Upgrade P(review)

Activity Title

Activity responsible

Activity team

Reviewer(s)

Goal of the P(review)

This is a “light” review between the activity and the Review office to establish that the proposed R&D is relevant to ATLAS. This means reaching a common understanding of the physics requirements, the subsystem specifications, how the subsystem interfaces into ATLAS, the scope, timescale and cost of the R&D and a first estimate of the design and cost and production time for the final system.

P(review) documentation:

1. Physics requirements

A brief overview of the goals of the R&D and the reason why it is relevant to the ATLAS Upgrade. Make clear assumptions on physics requirements, the definition of the subsystem, interfaces and time-scales

2. Subsystem specification for R&D

The goal is to document the main parameters of the elements of the system which the R&D is targeting. This is seen as the start of a process to ensure that the collaboration is working towards an agreed and coherent target specification. Where parameters are uncertain a range should be provided. Typical parameters to be supplied:

- ✓ Power requirement (watts, voltage)
- ✓ Operating temperature
- ✓ Cooling requirement
- ✓ Thermal interfaces
- ✓
- ✓ Material budget
- ✓ Inventory of materials to be used
- ✓ Mechanical interfaces
- ✓
- ✓ Control requirements
- ✓ Monitoring requirements
- ✓
- ✓ Safety issues

3. System specification for production

The goal is to have a first estimate of what the final system would like. Again this is seen as the start of a process to ensure that the collaboration is working towards agreed and coherent target specifications. Typical parameters to be supplied:

- ✓ Preliminary schematic of the final system
- ✓ External electrical interfaces (cables)
- ✓ Total power requirement (watts, voltage)
- ✓ Operating temperature
- ✓ Cooling requirement
- ✓ External thermal interfaces
- ✓
- ✓ Material budget
- ✓ Inventory of materials to be used
- ✓ Mechanical interfaces
- ✓ Stability requirements
- ✓
- ✓ Assembly
- ✓ Commissioning
- ✓ Control requirements
- ✓ Monitoring requirements
- ✓
- ✓ Cost envelope
- ✓
- ✓ Safety issues

R&D plan

The goal is to have clear target, agreed time-scales and milestones for decisions.

- ✓ R&D plan with time estimates
- ✓ Review of current ATLAS solutions & benefit of proposed R&D
- ✓ Maturity of the technique – how much experience already exists
- ✓
- ✓ Milestones and decision dates
- ✓
- ✓ Cost of R&D
- ✓ Collaborating groups
- ✓ Missing resources, facilities or expertise

