

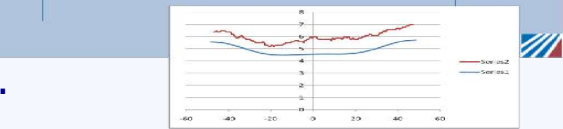
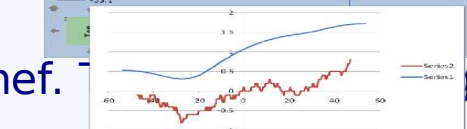
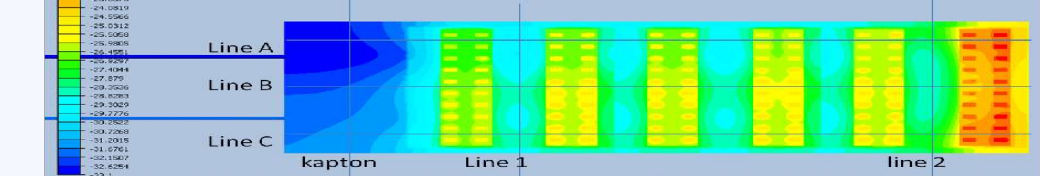
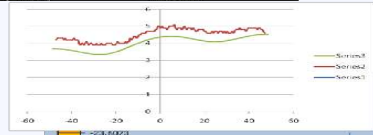
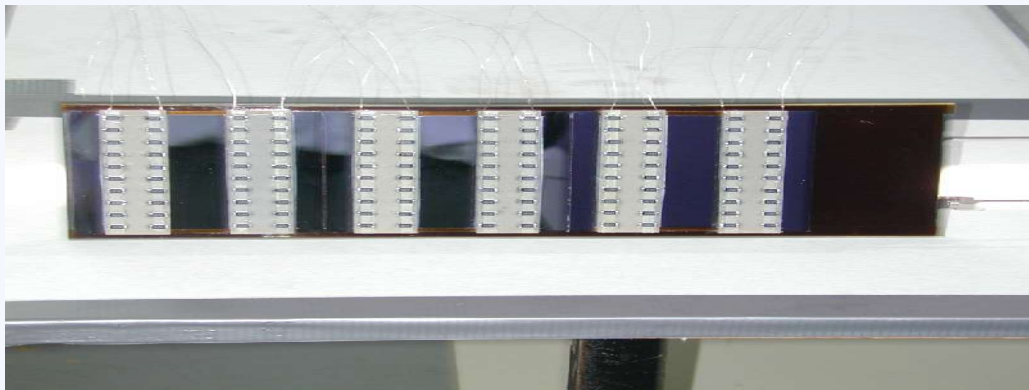
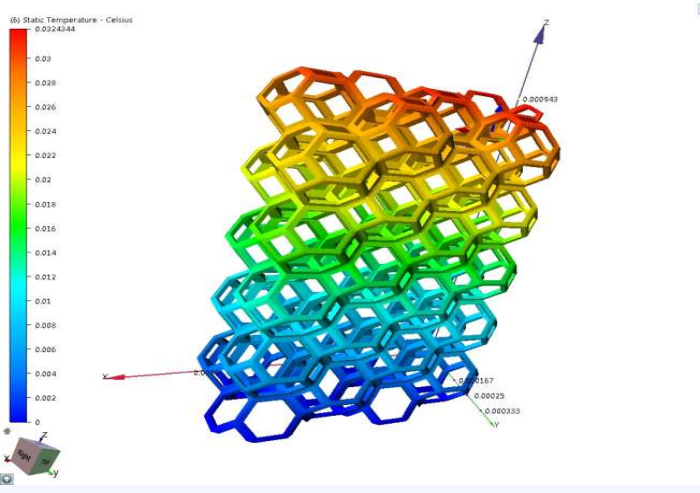
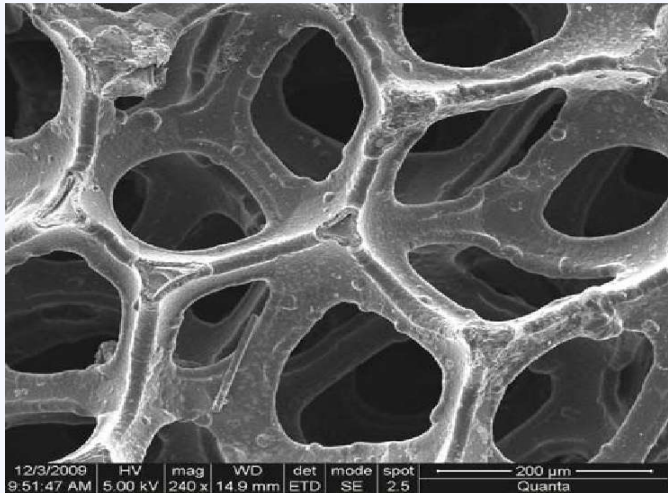
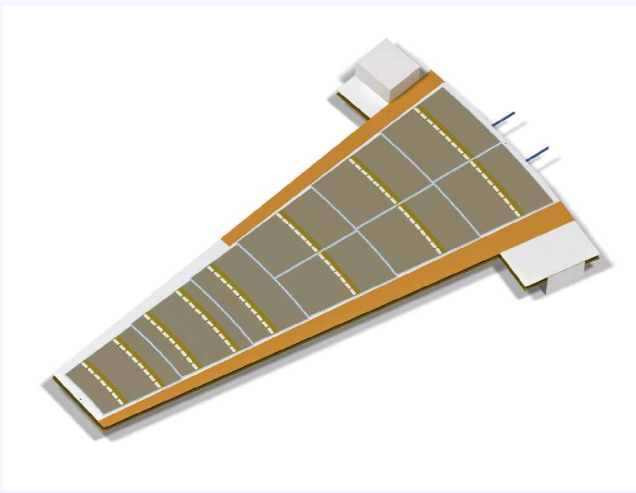
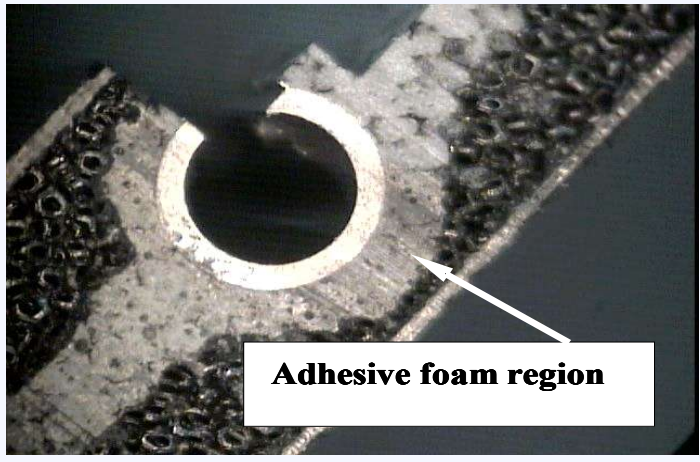
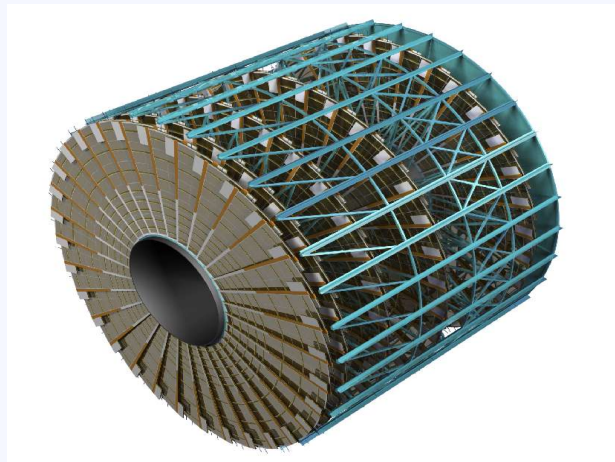
1. Goals
2. Positions
3. Deliverables

I am the work-package leader; the following pages are what I have understood from the final proposal – please correct me if I mis-understood something

Goals

- Develop lower radiation length supports for Inner Trackers
 - Especially IBL
 - Better materials
 - Different fibres, weaves, layups, matrix materials
 - Better assembly methods
 - Co-curing, moulding, winding, ...
- Integrate cooling with mechanics
 - Measurement of thermal properties
 - Carbon foams
 - Bonding methods
 - Differential CTE problems
 - ...and carbon fibre tubes to avoid them
- Qualification at high radiation doses and for 10 year survival in an inaccessible place
- Put in place tools for engineering management of large projects
 - ATLAS engineering database with drawings and documents
 - CAD exchange and integration process

Examples



Main partners and positions in this package

• Geneva

- Allan Clark and Marzio Nessi

- ER1 to be recruited

- 3D CAD and FEA for supports, working with Composite Design. Especially common software tools for IBL and ATLAS (database of drawings etc.)

• Nikhef

- Nigel Hessey

- ESR7 to be recruited:

- CF Mechanics and materials, with integrated cooling

- ESR9 to be recruited:

- CO2 cooling, concentrating on boiling channel end

- Engineering PhDs

- will work with Twente University (Technical University in NL)

• Wuppertal

- Peter Mättig and Dr. Karl-Walter Glitza

- ESR8 to be recruited:

- CF Cooling Tubes and support mechanics

• Composite Design

- Hosting secondments and training in CF Design

Milestones and deliverables

- Mechanical and thermal requirements for IBL stave
 - M8 deliverable 4.1
- Thermo-mechanical prototype for testing
 - M12 milestone
 - IBL stave prototypes from Geneva et al
 - Nikhef will build a strip end-cap petal with cooling
- CO2 Cooling Plant for testing prototypes commissioned
 - M15 milestone
 - Geneva is building one with CERN/Nikhef help
 - Nikhef will adapted existing components
- Material recommendation on supports
 - M24 deliverable 4.2
 - Result of efforts by all
- IBL Engineering CAD Model released
 - M24 milestone
 - Geneva with ER1
- CO2 cooling technology assessment
 - M36 deliverable 4.3
 - Nikhef with input from all

- Recruit the ESRs and ER
- Start researching
- Keep in touch
 - E-mails
 - IBL Project
 - ATLAS Inner Tracker Upgrade project
 - Talent Meetings
 - Especially for deliverable deadlines and Milestones