

# Target Mechanical R/D

- Magnetic Immersion Effects (Daresbury Experiment)
- Pass-Through/Seals (Vacuum, Water union)-leaks, survivability
- Thermal Loading on Wheel
- Radiation Hardness

# Material Behavior

- Repeated loading (creep, fatigue, possible metallurgical phase changes)
- Look into repeated loading stress/thermal (cooling) effects

# EDR R&D plans in 2007

- Target wheel lifetime / material choice
  - Short time-scale processes
  - Long time-scale processes
  - Alternative target materials
- Target wheel design
  - Eddy current studies
  - Rotating coupling validation
  - Water union validation
  - Cooling channel validation
  - Wheel engineering drawings
- Target wheel environment
  - Beam window studies
  - Vacuum simulations
  - Vacuum vessel design
  - Target station engineering drawings / remote-handling integration
- Instrumentation and control systems design