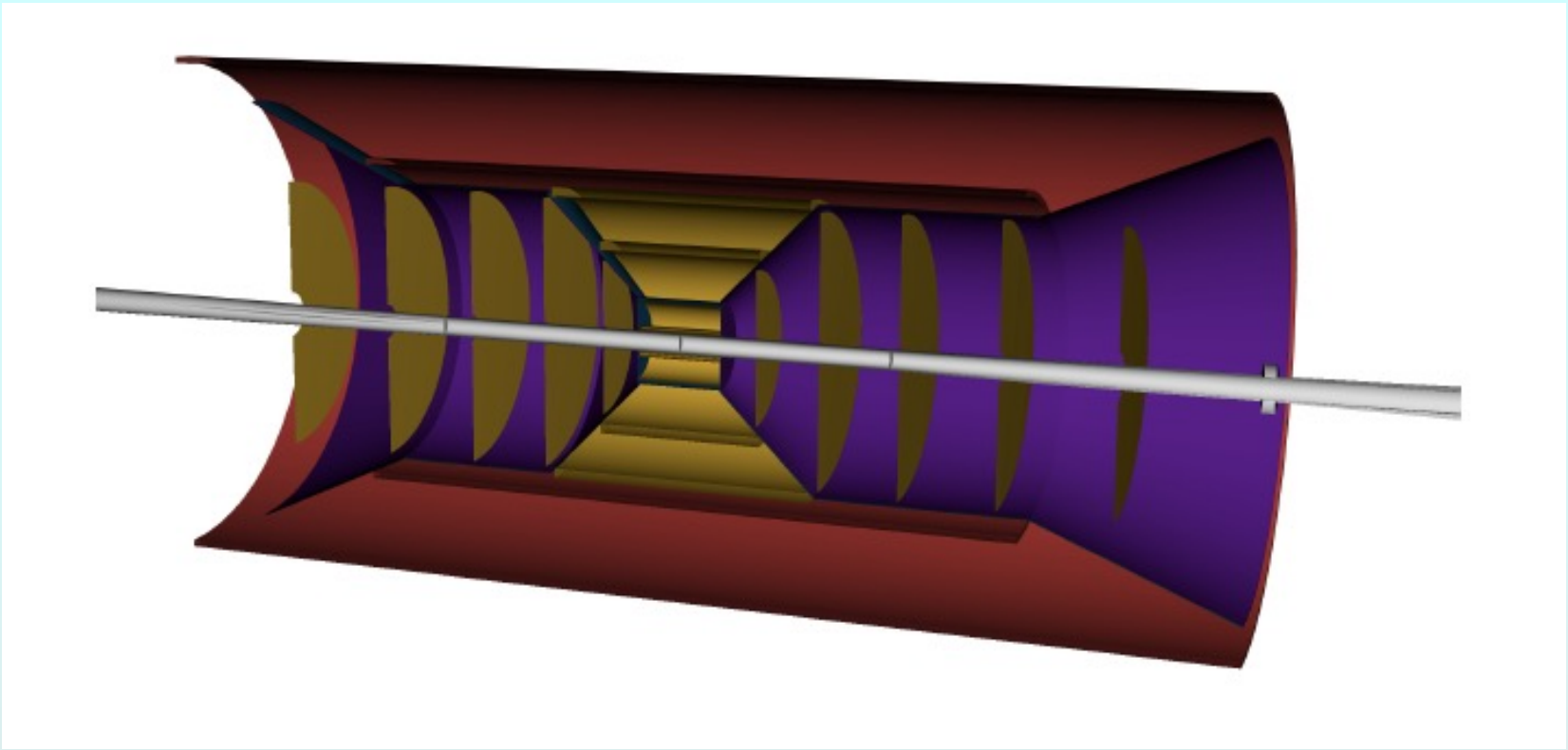
Towards Construction



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A silicon tracker needs:

Barrel tracker & Endcap discs each need:
- sensors (vertex layers & sagitta layers may differ)
- mechanical design (vertex layers & sagitta layers will differ)
- cooling
- power interface
- cabling strategy
- electrical integration (Flex PCB, power gen config, etc. to end of staves/discs)

Overall mechanical support & integration of subsystems
Services (cooling, power cables, RDO/config cables)
    barrel (vertex & tracker layers the same?); disks
Readout electronics (no FEE as this is built into MAPS)
Interlocks
Slow controls & run control interface (usually these are a separate subsystem)
Power distribution system
DAQ interface

Each sub-system (vertex, sagitta/stave, disc) will have its own assembly structure

Thank you to Leo

We know

- Silicon barrel layout
  - Should still investigate option of outer silicon layer
- Basic endcap disk positions
  - Some optimization still underway
  - Sensor tiling strategy being actively investigated
    - ITS2 stave structure is a starting point
    - Bakeout effects need investigation
    - Commissioning plan is needed – split assembly?
- Minimizing material is paramount!
  - Must optimize mechanical supports & cones
  - Need ultrathin supports for ultrathin sensors
  - Air cooling highly desirable
  - Does it need to be insulated from outside heat sources?
- Need hermetic acceptance
  - Integration with beam pipe is complicated

Interests expressed

- **Sensor design**
  RAL, BNL, LBNL
- **Sensor assembly & testing**
  INFN (Bari, Trieste, Padua), UK, LBNL, LANL, Wuhan, Korean groups?
- **Mechanical support**
  - **Vertex layers**
    LBNL, INFN(Trieste, Bari, Padua), UK
  - **Sagitta layers**
    ORNL, LBNL, UK
  - **Disks**
    LANL, LBNL, UK
- **Cooling**
  LBNL, LANL, ORNL
- **Data Cabling**
  BNL, ORNL
- **Power distribution**
  UK, ORNL, LANL, BNL, JLab?

Interests, continued

- **Readout**
  ORNL
- **DAQ interface**
  BNL, ORNL
- **Slow controls**
- **Interlocks**
  BNL
- **Integration**
  JLab, BNL