TF 8

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Werner & Frank
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Additional speakers:
Aldo Ianni (INFN LNGS), Georg Viehhauser (Oxford), Lorenzo Teofili (CERN), Luca Rosario Buonocore (CERN), Manuela Boscolo (INFN Frascati), Martin Aleksa (CERN), Moritz Guthoff (DESY), Paolo Petagna (CERN)

Skeleton of the technical part – key technologies

- \subsection{Magnets (W)}
- \subsection{MDI (W)}
- \subsection{Monitoring (F)}
  - \subsubsection{Environmental Monitoring}
  - \subsubsection{Radiation & Beam Monitoring}
- \subsection{Cooling(F)}
  - \subsubsection{Cooling systems}
  - \subsubsection{Local Cooling / Cooling contacts}
- \subsection{Lightweight mechanics (F)}
- \subsection{Neutrino Detectors, Dark matter, Liquid Calo (W)}
  - \subsubsection{Purification systems}
  - \subsubsection{Feedthroughs}
- \subsection{Robotics (W)}

- Need to work on links, figures

- Werner and Frank are writing the chapters based on the input from the symposia and additional input
  - though additional input was scarce!
    - This makes us believe, we have almost all and **the rest will come during this editing week**.
      - cross-TF session!
- We hope to achieve a uniform chapter and TF members will check afterwards!!

- We list items here, we believe will appear in other chapters, and otherwise will add them here later (next page)

- It would help to have a clear timeline of facilities to refer to!!!
  - We can implement such references this week.

- Will we have a common language editing at the end?

Potential integration items covered in other TFs

- Gas Recuperation – TF1 Gaseous Detectors
- Cryo (largely) – TF2 Liquid Detectors
- Hybridization – TF3 Solid State Detectors
- Lightguide, WLS – TF4 Photo Detectors
- Powering & DCDC – TF7 Electronics

R&D vs. Engineering/Prototyping

- We will distinguish between **R&D** topics vs **engineering** challenges and **prototyping**.

- For example, we consider the following topics not genuine R&D:
  - Dry gas supply, e.g. membrane plant from industry to provide oxygen depleted air.
  - Dewpoint measurement – sniff and measure with commercial DP meters outside volume; leak cables
  - Survey, 3D laser scanning, Virtual/Augmented reality
  - Neutron moderator
  - Cooling transfer lines (tripple-jacketed vacuum pipes, capillaries)
  - Thermal shields, thermal insulation
  - Some aspects of fibre-bragg grating (FBG), though several will be discussed!
  - Alignment; we cover opening closing scenarios but not internal alignment traditionally track-based!
  - Large Movement systems for the Neutrino Near Detectors
  - Safety systems
  - gas chromatographs and sonar systems to measure gas mixtures
- We do not cover R&D of the accelerators but try to address the interfaces to the detectors