

Possible structure for Horizon2020 proposal

1. Detector and infrastructure:

- A. Underground infrastructure
- B. Cryostat and cryostat support
- C. TPC structure, field cage
- D. Grid electrodes, HV and HV feedthroughs

2. Liquid target:

- A. Cooling system
- B. Purification system
- C. Multi-ton gas storage system; emergency recovery
- D. Procurement of noble gas

3. Signal detection (light and charge):

- A. PMTs and alternative photosensors
- B. Alternative charge read-out [now also includes S2 in liquid etc]
- C. Cold electronics
- D. Cables, connectors, feedthroughs

4. Signal readout:

- A. DAQ systems (signal amplification, digitization, warm electronics) B. Trigger and veto systems
- B. Data storage, handling and processing

5. Calibration:

- A. Light calibration (LED system etc) and stability monitoring
- B. ER + NR band calibration
- C. Energy calibration: Ly and Qy measurements; mono-energetic lines as anchor points

6. Background reduction:

- A. Kr assay and removal system, Rn assay and removal system
- B. Material screening (HPGe, ICP-MS, NAA) and Rn emanation
- C. Shield: mechanical aspects, water Cherenkov shield, liquid scintillator shield

7. Science:

- A. MC simulations: backgrounds, light collection efficiency, signals
- B. Sensitivity studies (WIMPs, axions and ALPs, neutrino channels)
- C. Statistical sensitivity analyses including astrophysical, nuclear etc uncertainties