L.L. last update 02/10/2008

Main Output from Site Characterization/Feasibility Study

Notes:
- this is a rough draft-document; it is intended only to serve as a guideline
- this document is conceived as being in a constant up-to-date process
- purple,s means that part of the work has to be carried out with the indicated company, institute etc.
  It deals mainly with the tank characteristics and construction

WC: Water Cherenkov Technology
LS: Liquid Scintillator Technology
LA: Liquid Argon Technology

- MDC: Main Detector Cavern
- AC: Auxiliary Caverns
- UF: Underground Facility
- EXP: Experiment

Mainly Geotechnic

	WC	LS	LA
Determine best place for location of MDC:	✓	✓	✓
- Analysis of already existing geotechnic data	✓	✓	✓
- Rock analysis along the volume of MDC and rest UF; bore holes desirable	✓	✓	✓
- Water content and MDC and rest UF; removal and disposal of water (pumps, pipes)	✓	✓	✓
- Rock: any environmental issue ?	✓	✓	✓
- MDC: optimal method of excavation	✓	✓	✓
- MDC: optimal access method for excavation	✓	✓	✓
- MDC: Optimal access method for tank construction (with Technodyne)	✓	✓	✓
- Emptying of the tank: procedure and required specific facilities	✓	?	?
- MDC: Recommendations on Cavern geometry (if imp. differences from requested)	✓	✓	✓
- Requirements for rock bolting and extra structures at MDC	✓	✓	✓
- Requirements for rock bolting and extra structures at rest UF	✓	✓	✓
- Treatment and securing of MDC caverns walls	✓	✓	✓
- Treatment and securing of walls of rest of UF	✓	✓	✓
- Special requirements during excavation (dust control, others) ?	✓	✓	✓
- Rock removal from site: method, limitations, others	✓	✓	✓
- Disposal of excavated rock	✓	✓	✓
- Environmental issues of rock excavation and disposal	✓	✓	✓
- Interaction with tunnel/mine company: requirements, costs, protocols, others	✓	✓	✓

Mainly Geotechnic

	WC	LS	LA
- Geotechnic pre-design of whole UF: MDC, all the ACs, access and interconnection tunnels, others ...	✓	✓	✓
- Estimate of time of construction of MDC and rest UF (at 30%)	✓	✓	✓
- Cost estimate of Full Design of MDC and rest UF (at 30%)	✓	✓	✓
- Cost estimate of full construction of MDC and rest UF (at 30%)	✓	✓	✓

Mainly Services to EXP and UF (the later non specific to EXP)

	WC	LS	LA
Specific to EXP			
- System for filling the detector tank	✓	✓	✓
- Power provision (for detector, electronics, others)	✓	✓	✓
- Ventilation system in MDC	✓	✓	✓
- Main pipes and pumps	✓	✓	✓
- Provision of secondary containments / dumps for water/LS/LA (with WP3)	✓	✓	✓
- Safety induced issues (with WP3)	✓	✓	✓
Non Specific to EXP			
- Power needed; power provision	✓	✓	✓
- Water needed + provision	✓	✓	✓
- Ventilation system	✓	✓	✓
- Air Conditioning system	✓	✓	✓
- Temperature and Humidity control	✓	✓	✓
- Pre-design of whole UF (buildings, services etc.):	✓	✓	✓
- Estimate of time of construction (at 30%)	✓	✓	✓
- Cost estimate of Full Design (at 30%)	✓	✓	✓
- Cost estimate of Full Construction (at 30%)	✓	✓	✓
	✓	✓	✓

Mainly at Surface

	WC	LS	LA
Specific to Experiment			
- Pre-design of liquid plants: Liquid Nitrogen, LArg production, LArg purification, LArg purification, ...		✓	✓
- Communications with UF/MDC (piping, pumps, others)		✓	✓
- Pre-design of Building / s for Control-Room, Offices, Meeting rooms, Workshops, Storage etc.	✓	✓	✓
- Communications with UF/MDC (personnel, material)	✓	✓	✓
- Legal / environmental issues (related to most appropriate location of the buildings)	✓	✓	✓
- Estimate of time of construction (at 30%)	✓	✓	✓
- Cost estimate of Full Design (at 30%)	✓	✓	✓
- Cost estimate of Full Construction (at 30%)	✓	✓	✓