

Technical issues for ULISSE extension

Michel ZAMPAOLO

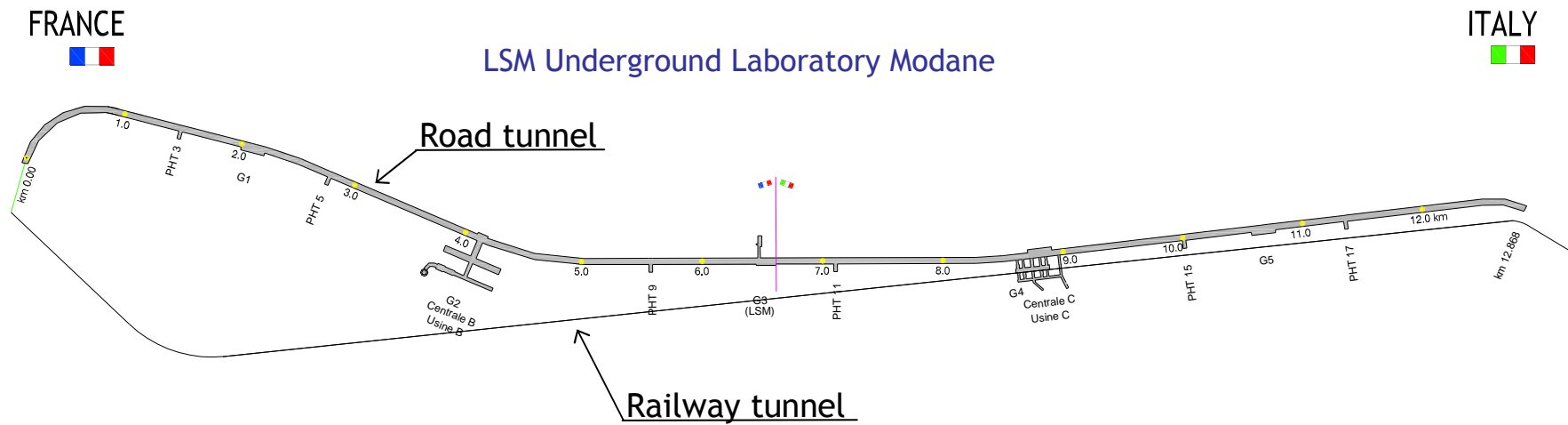
2nd ULISSE workshop
Modane-Valfréjus October 16th, 2009



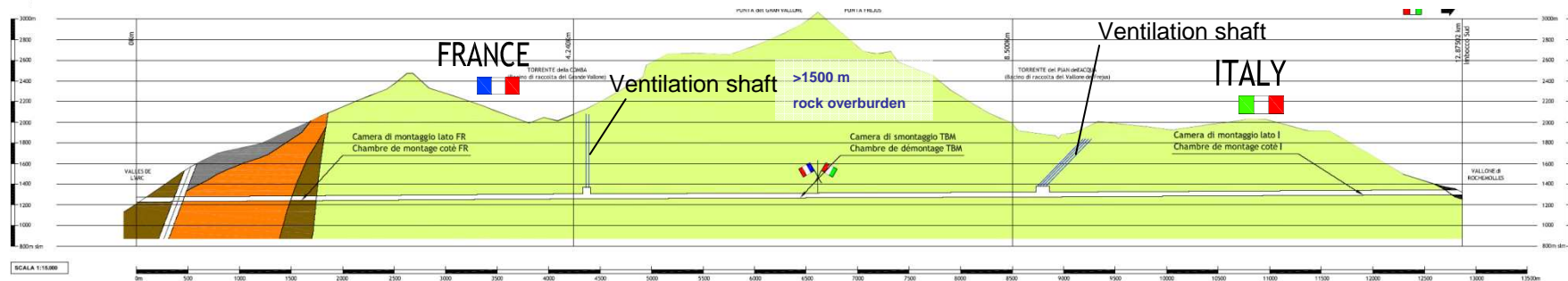
Content

- Current situation of the tunnel
- Project for safety tunnel
- Extension preliminary study
- General arrangement
- Recovery of energy
- Some advantages of the project

CURRENT SITUATION: GENERAL PLAN



Longitudinal section



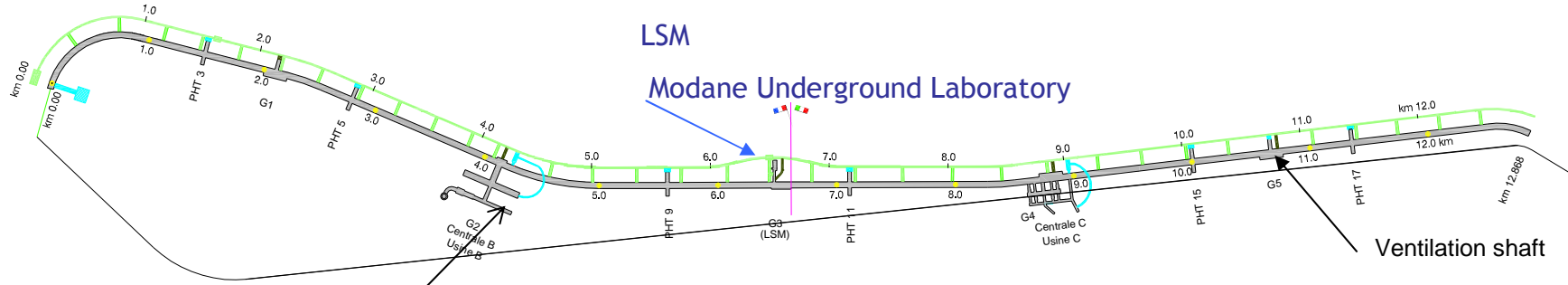
PROJECT FOR SAFETY TUNNEL

(approved 2006 / under construction from France)

FRANCE



ITALY

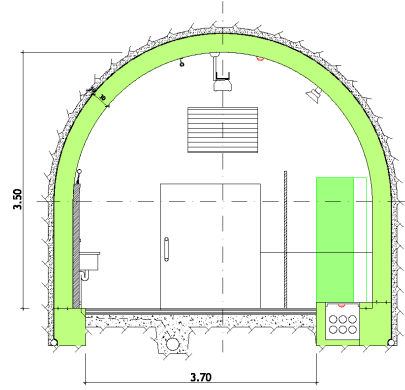
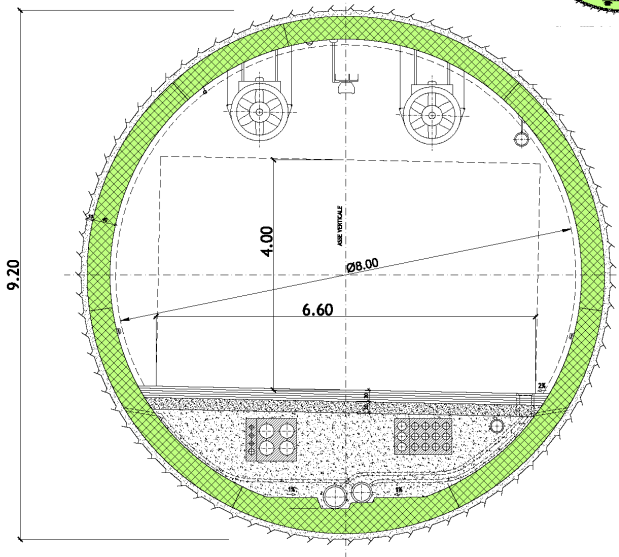
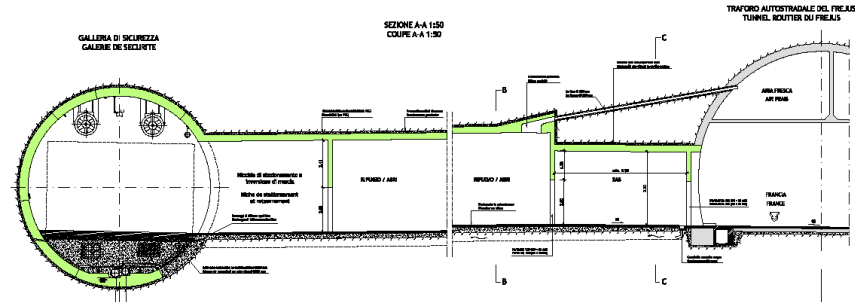


Ventilation shaft

Ventilation shaft

Safety tunnel

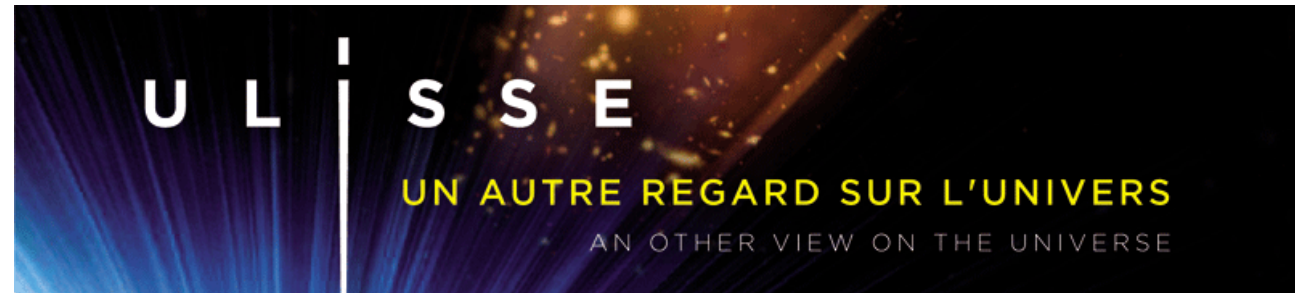
s section safety tunnel



Cross connection

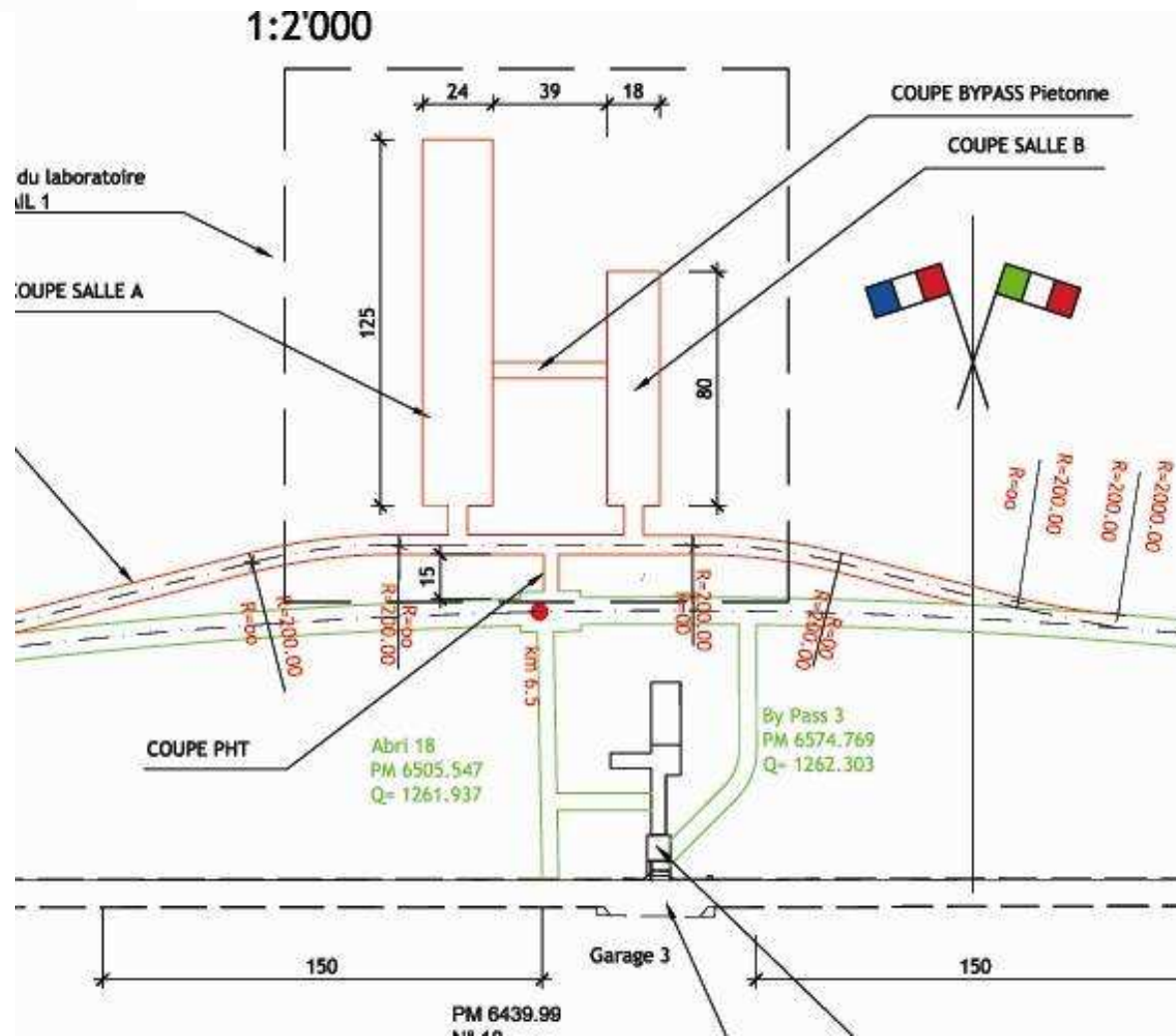






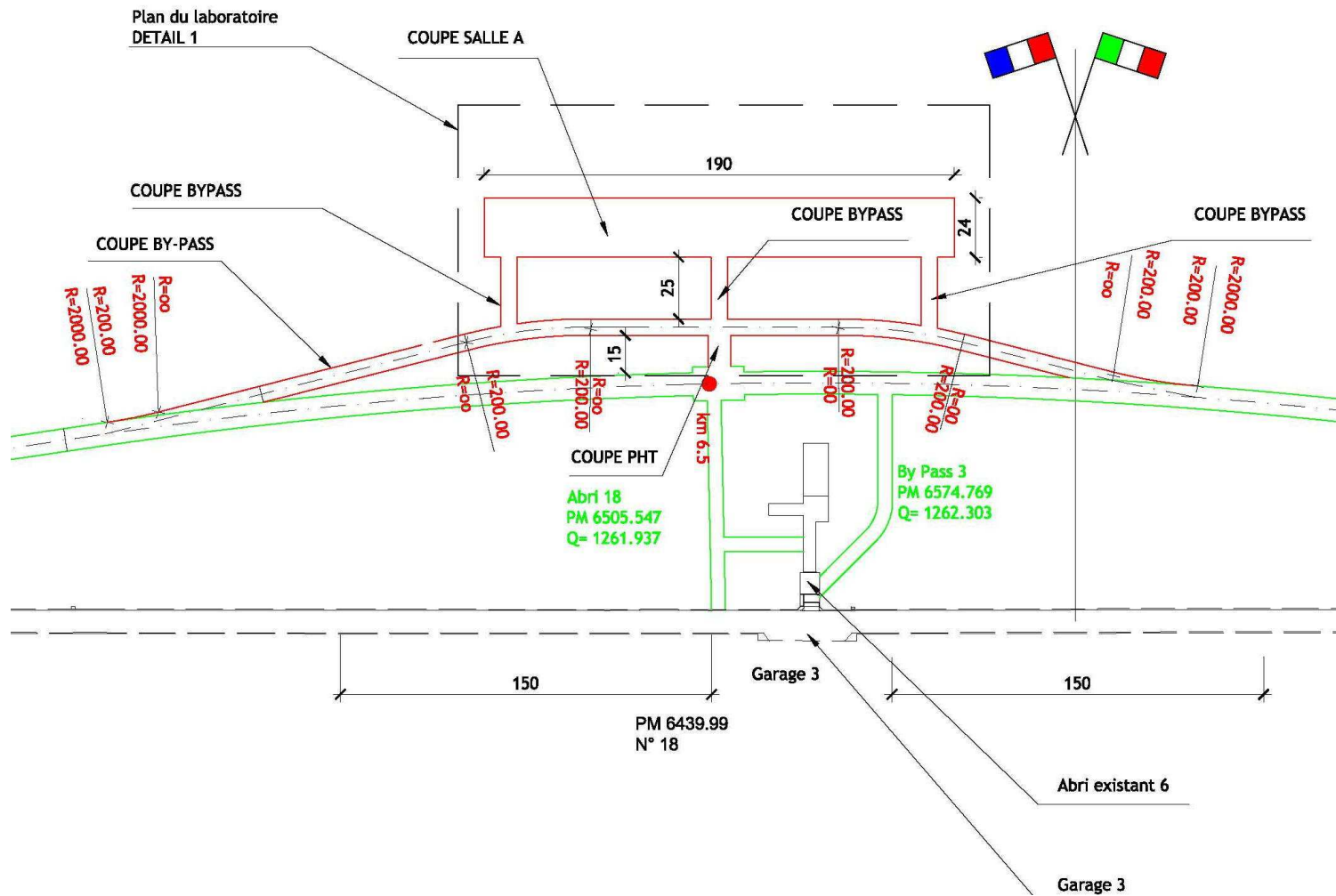
Main dates of the project

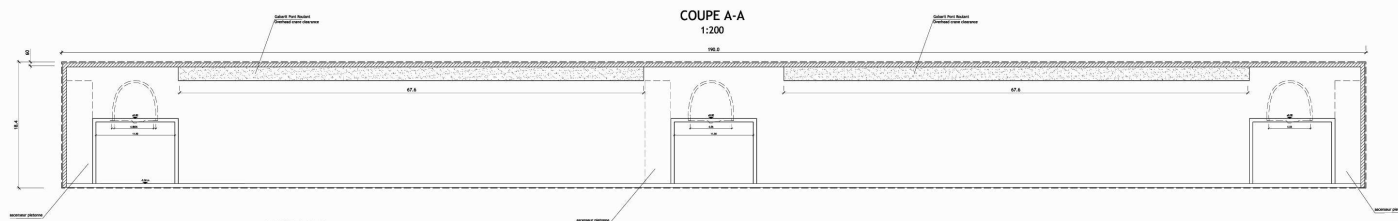
- 2006: approbation of the safety gallery
- May 2009: beginning of the works
- End of 2011: end of civil works
- ULISSE order for excavation: not later than May 2011
- Excavation of new lab: 6 months
- Technical facilities: 12 months
- 2013 lab is ready for erection of first experiments
- 2013 safety gallery in operation



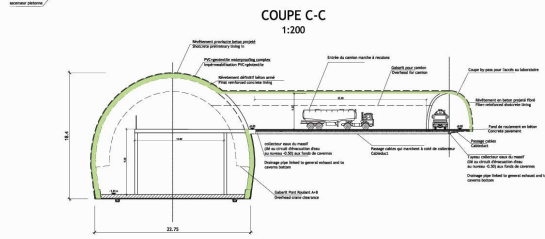
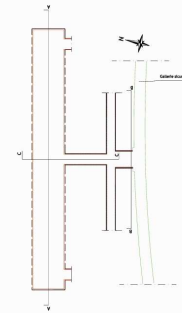
LOCALISATION NOUVELLES SALLES LSM ET TRACE GALERIE DE SECURITE

1:2'000

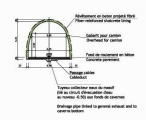




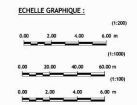
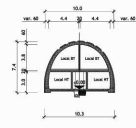
PLAN DE SITUATION
NOUVELLES SALLES LSM
1:1000



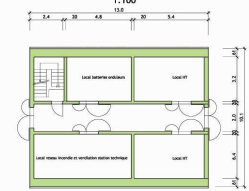
COUPE BY-PASS
1:200



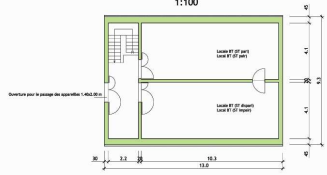
COUPE B-B
1:200



PLAN DU LOCAL TECHNIQUE LSM
REZ DE CHAUSSEE
1:100



PLAN DU LOCAL TECHNIQUE LSM
1ER ETAGE
1:100



LABORATOIRE SOUTERRAIN DE MODANE | **LOMBARDI SA**
 Trifora Autorizzata del Friuli / Tunnel Roccia
 COSTRUZIONE GALLERIA DI SICUREZZA / COSTRUZIONE GALLERIA DI SICUREZZA

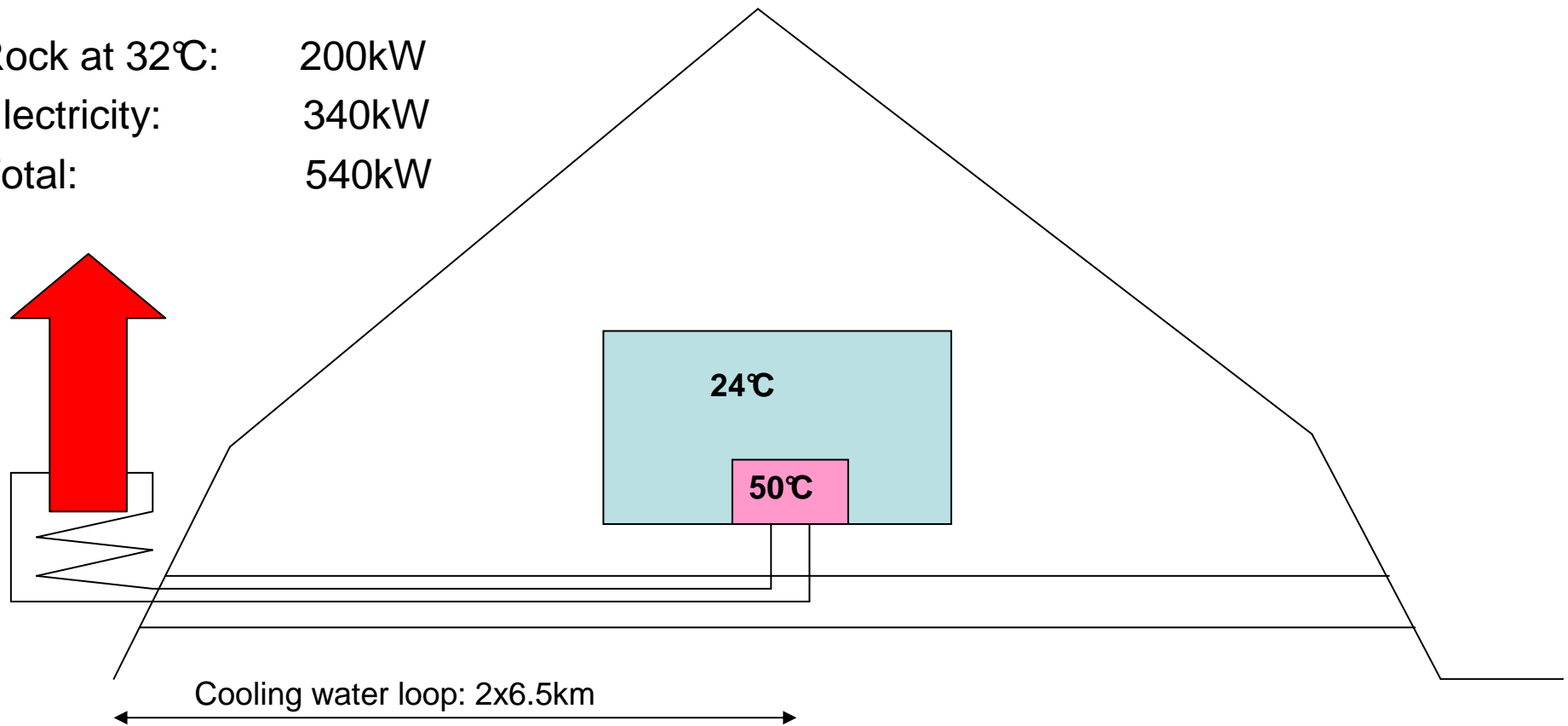
AVANT PROJET
 EXTENSION DE LA GALLERIA RZP3
 COUPES ET PLAN DE SITUATION - Hypothèse 2B

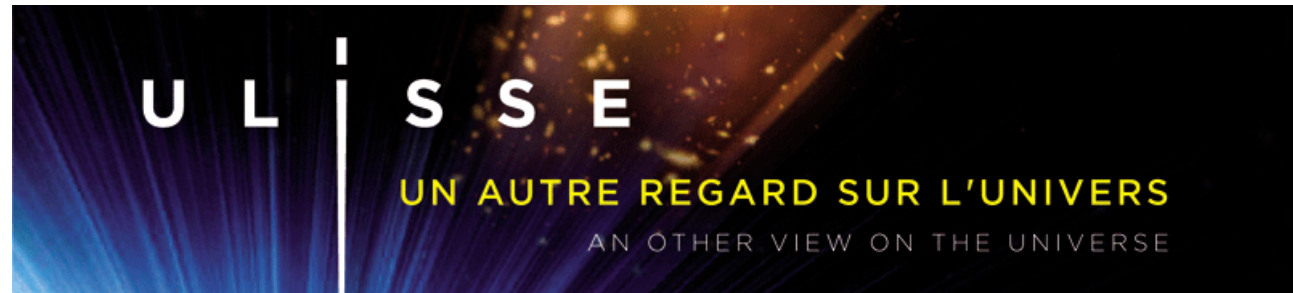
| | | | |
|----------|-----------|--------|----------------------|
| DATE | REVIZIONE | NUMERO | NO. 6145.1-07_2B_BIS |
| PROGETTO | DATA | SCALE | NO. COM. |

PROVVISORE

Energy recovery

Rock at 32°C: 200kW
Electricity: 340kW
Total: 540kW





Some technical advantages of the ULISSE project

- All geological parameters under control
- No limit in the cavern arrangement
- Time schedules in full accordance
- Large part of the risk management shared with tunnel companies
- Improvement of the safety
- Large and comfortable available areas for underground science