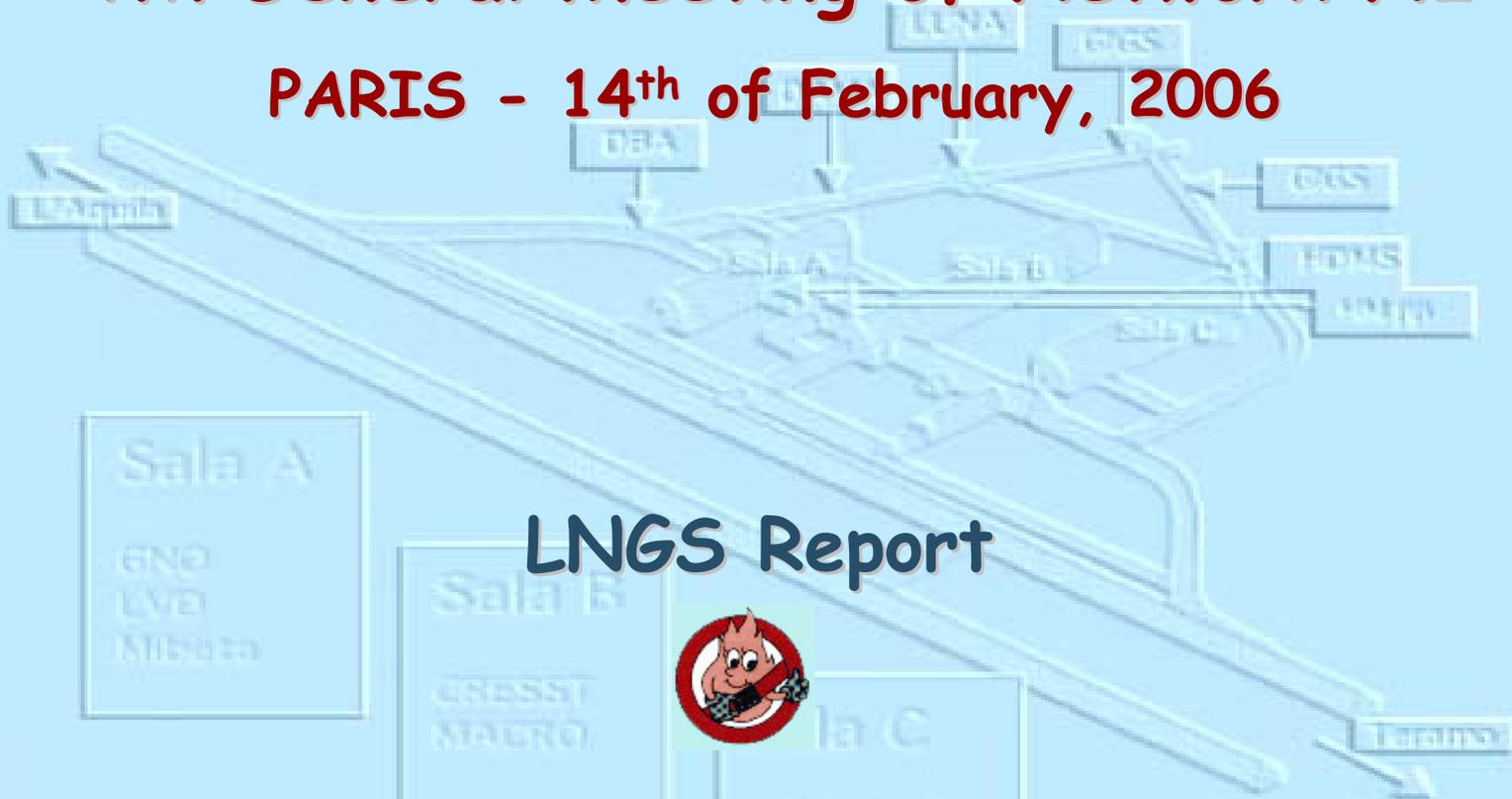


4th General Meeting of Network N2

PARIS - 14th of February, 2006



LNGS Report



Roberto Tartaglia

*LNGS Prevention and Protection Service
(SPP-Safety Group)*

Before beginning... many thanks to...

.. To the Organising Committee
Neal and his Collaborators

Sala A
GNO
LVD
Mibata

Sala B
CRESST
MAGRO

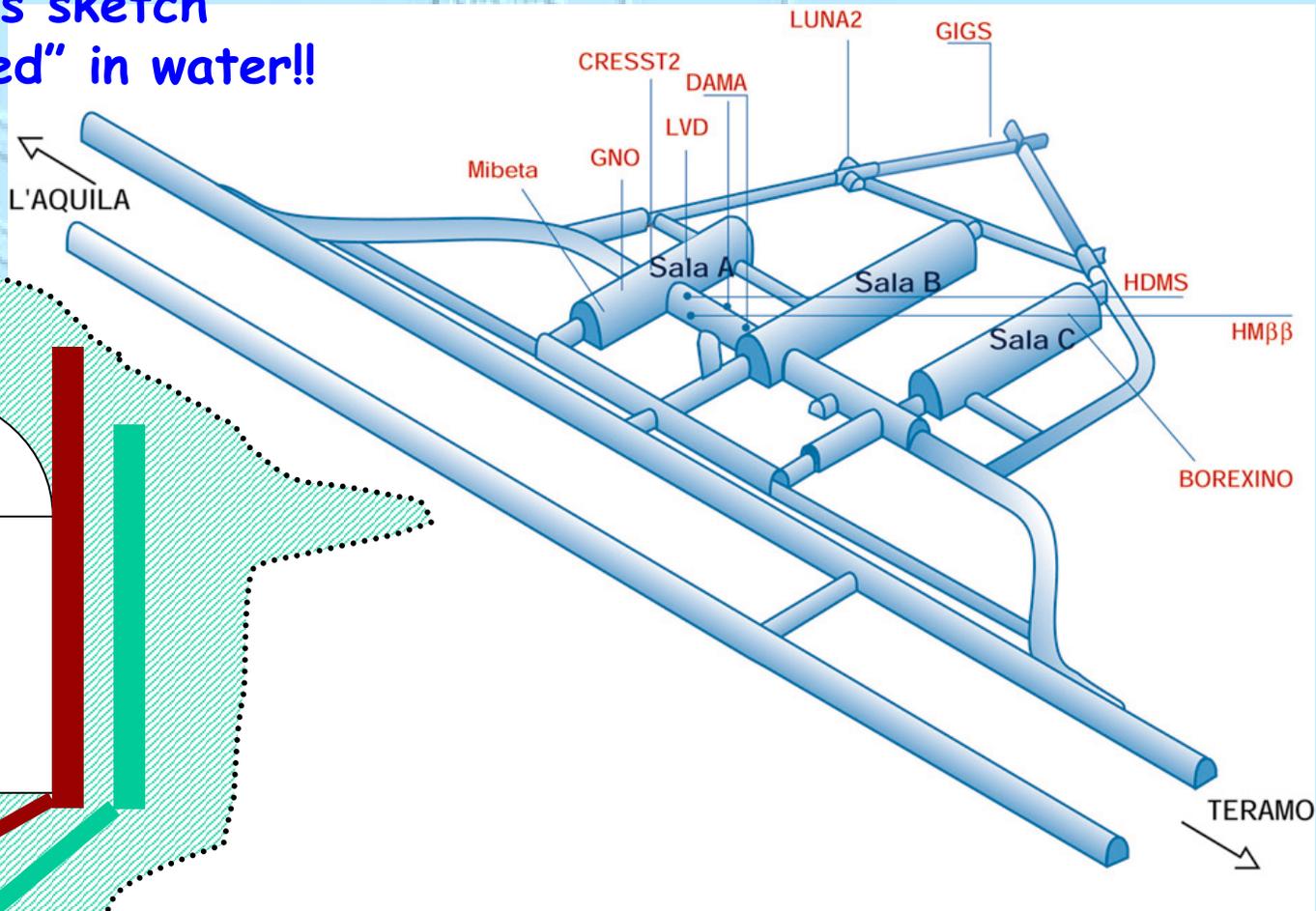
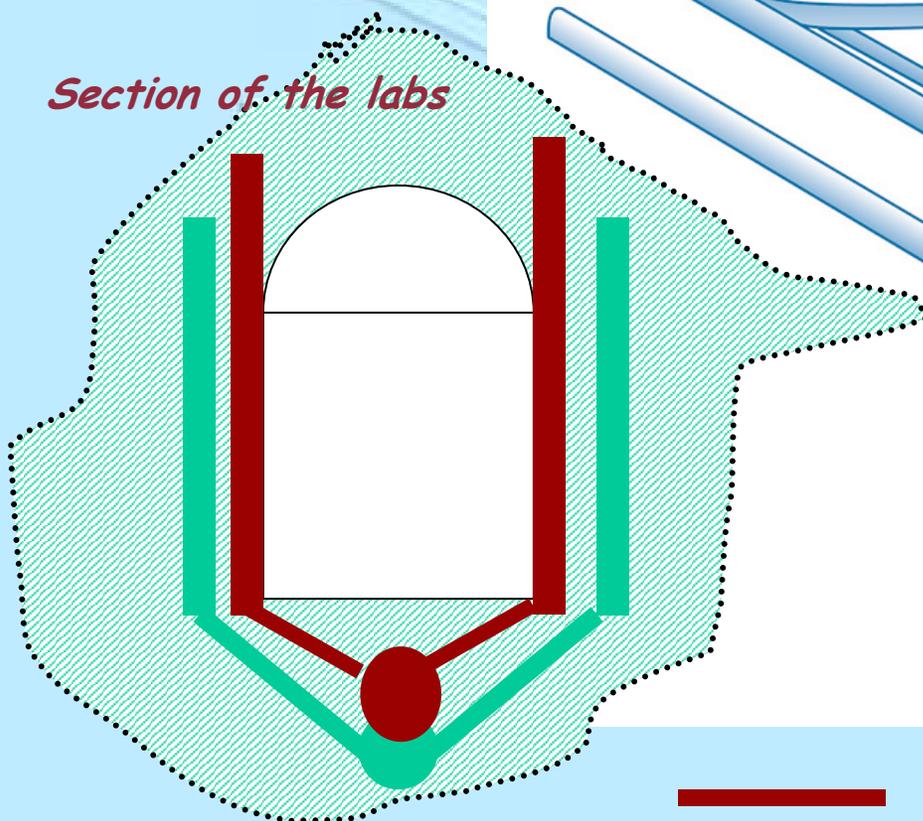
Sala C
BOREXINO
ICARUS
R&D Mibata

Before going on, You have to know...

Underground Labs sketch

We are "immersed" in water!!

Section of the labs



Water drain (pressure on the vaults)



Drinkable water to TE side

A Little Bit of History...

May 2003

Strong doubts concerning the water-tightness of the Underground Laboratories fluid systems versus the ground table and the drinkable water collected from Gran Sasso. The same happened for water drained around the highway tunnels

INFN requested an intervention of the competent Government authorities.

The same day the entire Hall C was placed under seals by the local prosecutor!!

June 2003

The Council of Ministers declared a State of Emergency and appointed a special Commissioner for repairing the Gran Sasso global system (Highway tunnels, Labs., water system).

The Commissioner can take drastic and urgent technical measures and obtain appropriate authorization for operation, reducing bureaucratic delays (and "overruling" some laws)

A Little Bit of History...

End of 2003

First release for the needed design prepared and approved:

- * Stainless steel lining in the ICARUS pit;
- * Resin everywhere in the halls and in the Truck tunnel;
- * Collection pools and system for any spillage in the halls

May 2004

Accident in the highway tunnel: evidence for a new ventilation system as soon as possible!!!! -

11th of August, 2004

Seals removed from the Hall C!!!!

A Little Bit of History...

End of 2004

Safety Audit Panel @ LNGS - Useful experience and very nice working_group_job!!

End of 2004

End of the Legal Inquiry

February 2005

Use of water authorised (water capture and collection but not water drain, up to now..)

March 2005

Gas smell in the highway tunnel:
**Immediate alert for a "nuclear accident" -
Press, Television and so on**

June 2005

One highway tunnel partial closure - Start of the job foreseen for the ventilation pipe and temporary water drainage system

A Little Bit of History...

September 2005

One highway tunnel total closure - Start of the job foreseen for the ventilation pipe and water drainage system

February 2006

Highway tunnel re-opening
Completion of most of the job on the highway floor. New ventilation pipe installed and tested. No vents engines on the AQ side.

May - June 2006

Partial completion of the job inside the underground labs. Short description ahead, if requested.

COMMISSIONER PROGRAM OF WORKS

1 - Specific Actions for Gran Sasso Global System



New drinkable water collection system



New drainage water system



Collection pools + monitoring system +
+ filtering system on the TE side

2 - Up-grade of the tech. infrastructure



Floor leak-proofing



Leaks containment wells



Ventilation system



Cooling system



Power supply and distribution



Global Monitoring system

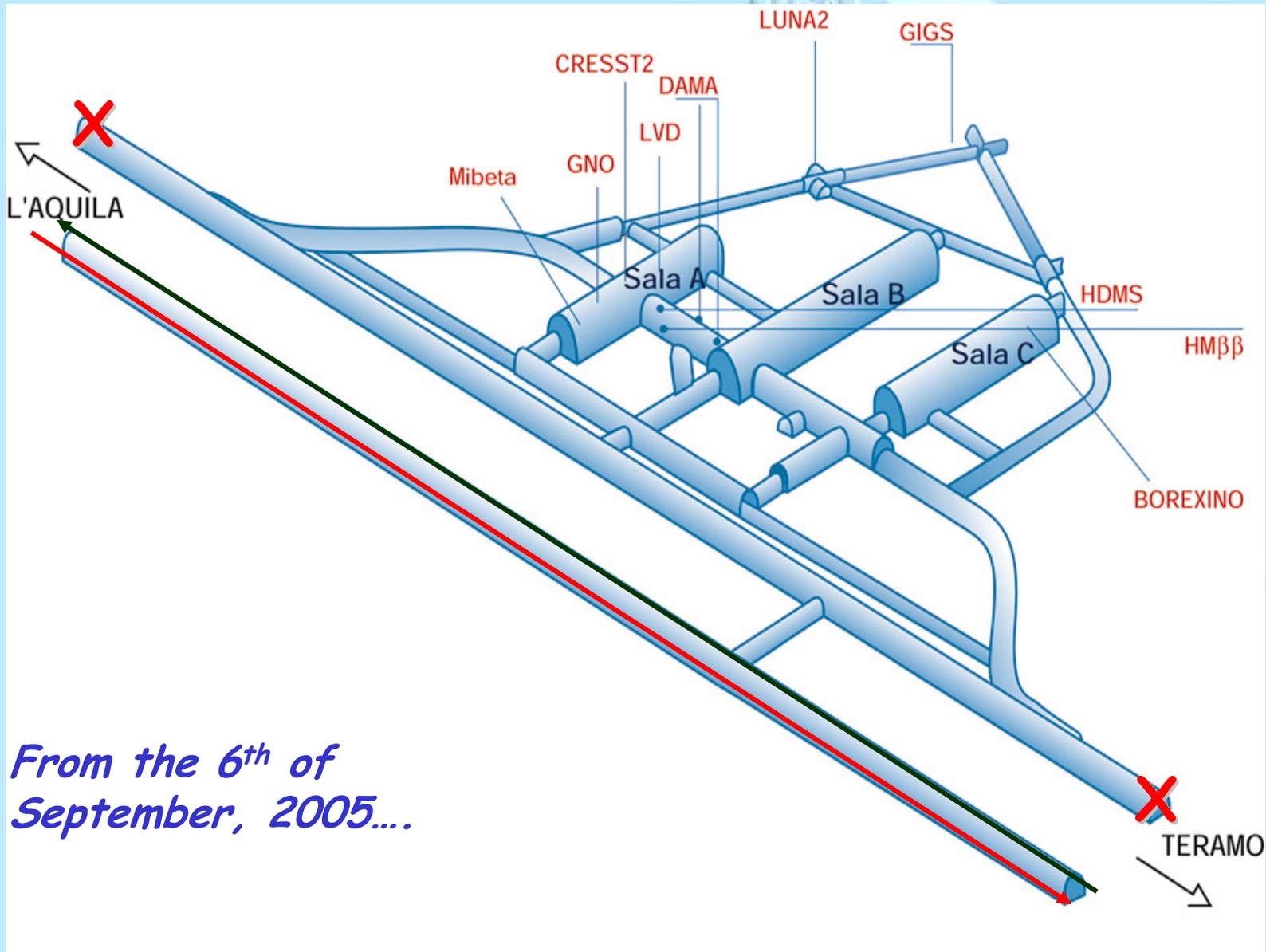
OBJECTIVES

RESTART THE SCIENTIFIC PROGRAM OF LNGS

IMPROVE THE OPERATIONAL AND SAFETY LEVEL OF LNGS FOR THE INSTALLATION AND OPERATION OF EXPERIMENTS OF THE SECOND GENERATION

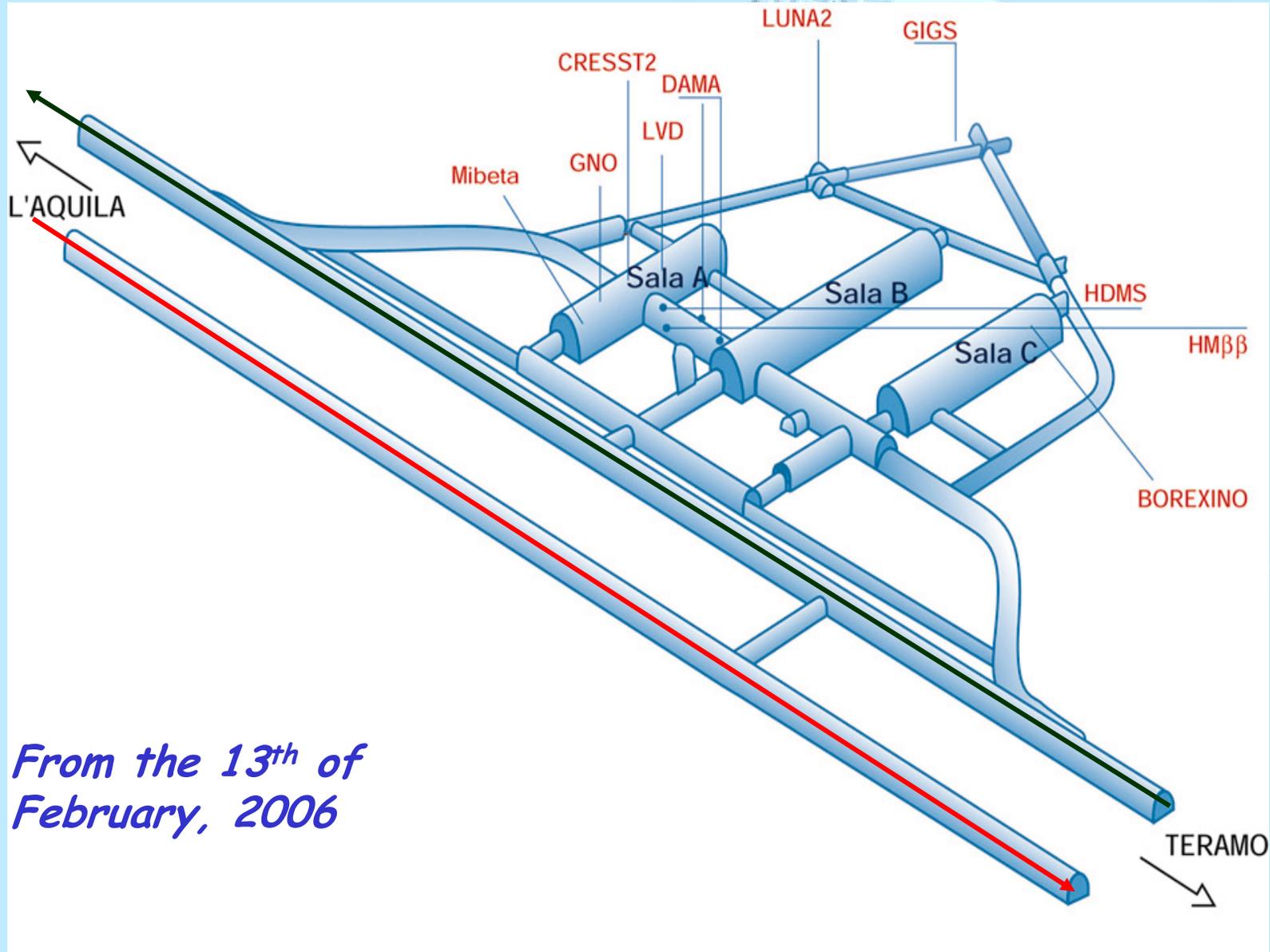
FULLY REALISE THE SCIENTIFIC PROGRAM OF LNGS IN PARALLEL WITH THE COMMISSIONER WORKS

A Little Bit of History...



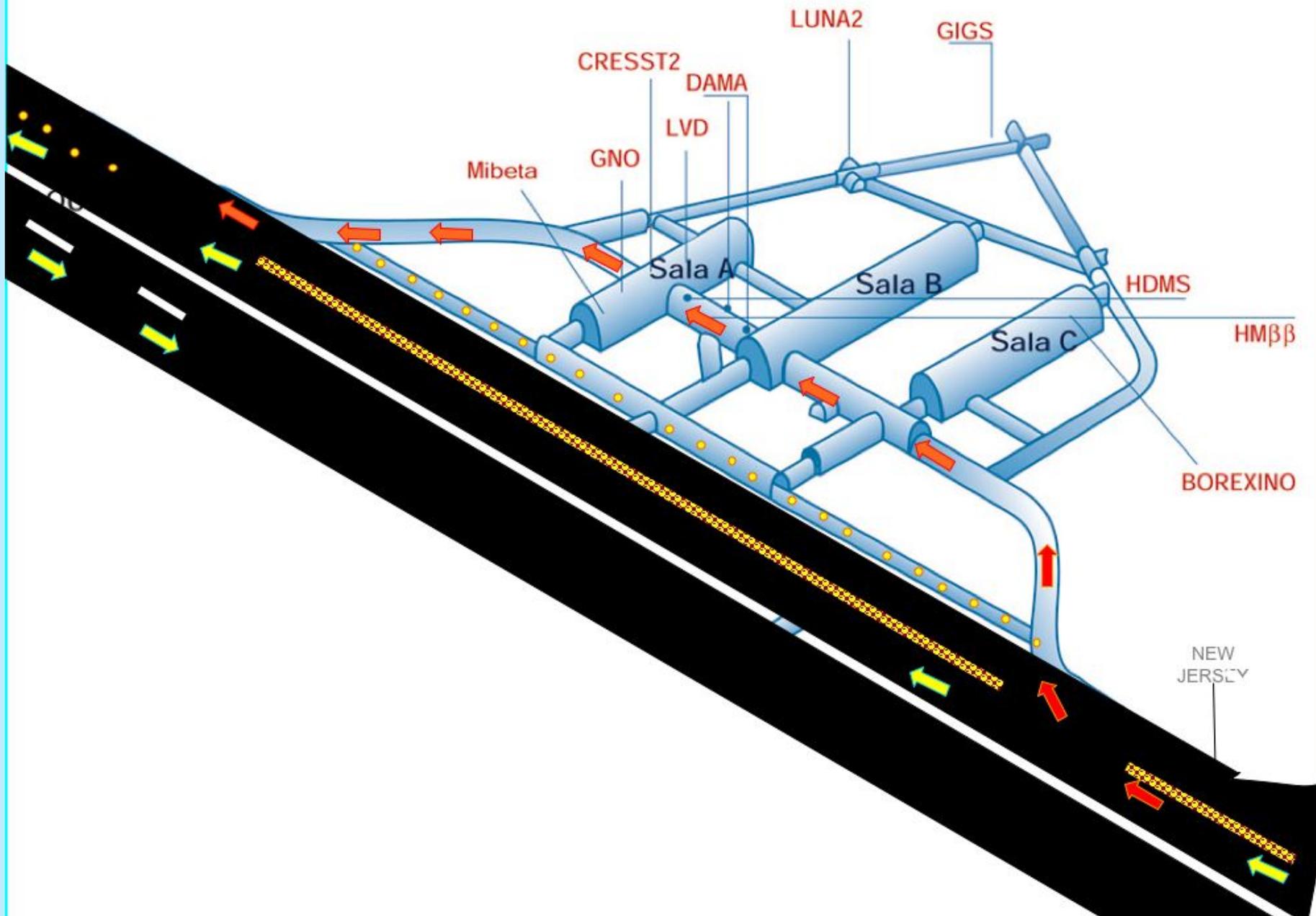


A Little Bit of History...



*From the 13th of
February, 2006*

Nuova Viabilità @ LNGS



STATUS OF COMMISSIONER

1 - Specific Actions for Gran Sasso Global System



New drinkable water collection system
all the job in the tunnel completed



New drainage water system
definitive pipe completed



Collection pools + monitoring system +
+ filtering system on the TE side
completed - test still to be done

STATUS of COMMISSIONER PROGRAM

2 - Up-grade of the tech. infrastructure



Floor leak-proofing

completed Hall B and C - next step will be the completion in the hall A and most of the truck tunnel; the big tanks in the pit in the Hall A (100 m³ each) just arrived the last week.



Leaks containment wells

on the way



Ventilation system

-Pipe installation completed

New ventilation centre to be realised in Assergi (L'Aquila side)

STATUS of COMMISSIONER PROGRAM

2 - Up-grade of the tech. infrastructure



Cooling system

all the pipes and connection realised in the highway tunnel; all the net inside the labs must be realised



Power supply and distribution

all the cables in the tunnel and outside have been completed; some minor connections are on the way



Global Monitoring system

completed and tested; official test and approval must be performed

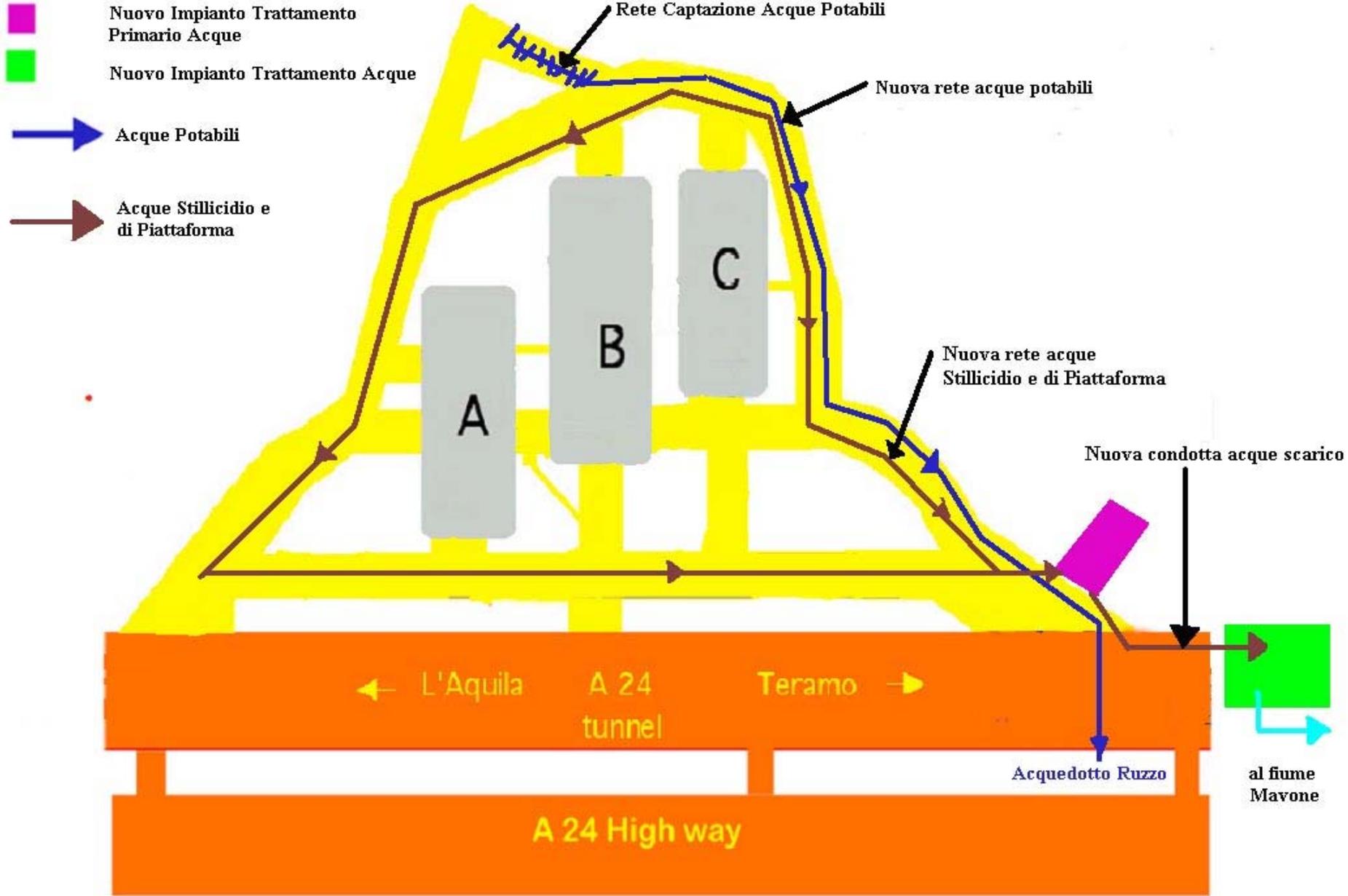


Global Security

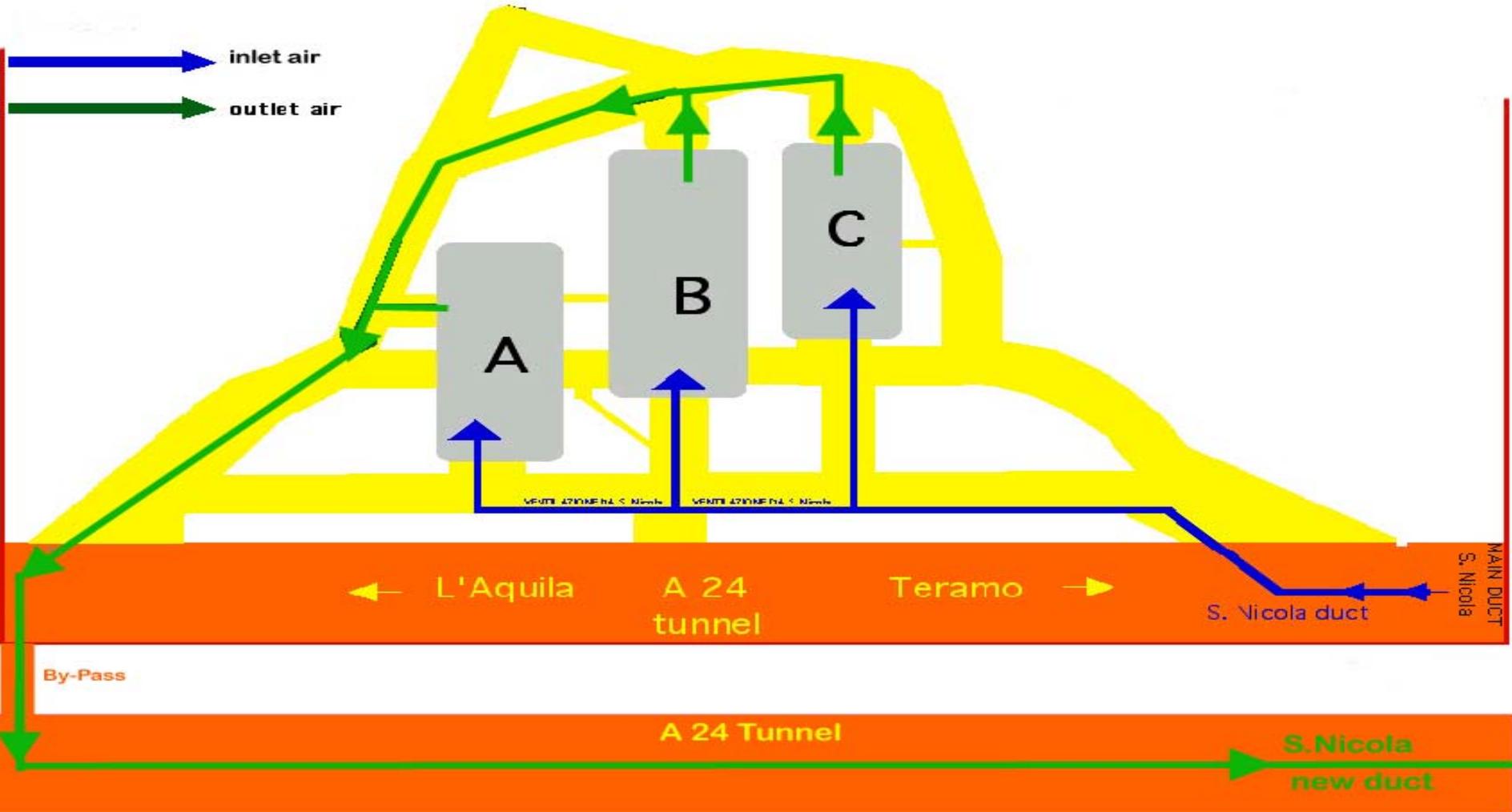
design completed - funds needed - access control and the tracking of any badge (or palm-pc)



NEW DRINKING WATER SYSTEM

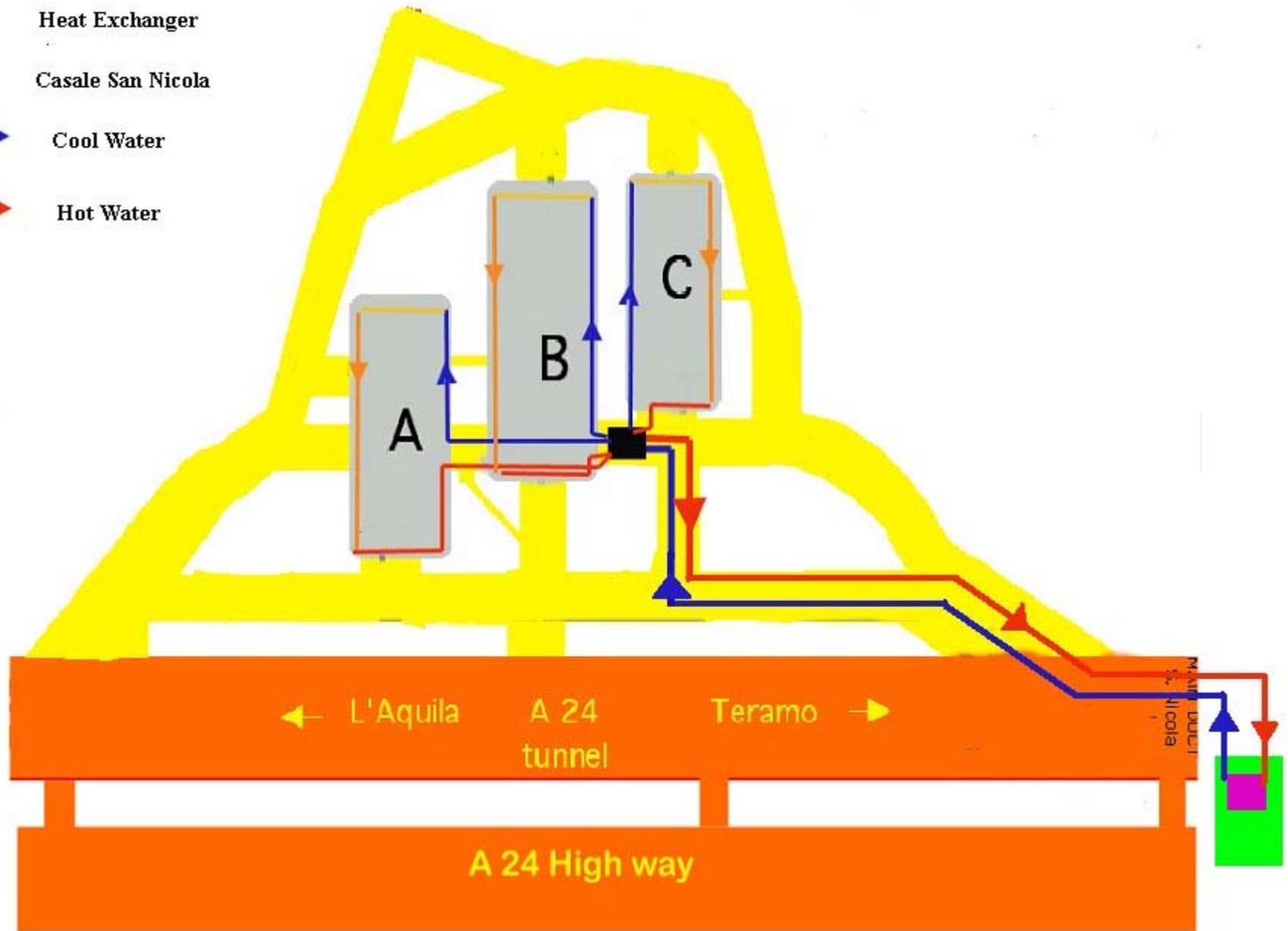


LNGS New Normal Ventilation



LNGS New cooling plant

- Heat Exchanger
- Casale San Nicola
- Cool Water
- Hot Water



LNGS Safety Plants - 1 - ventilation update



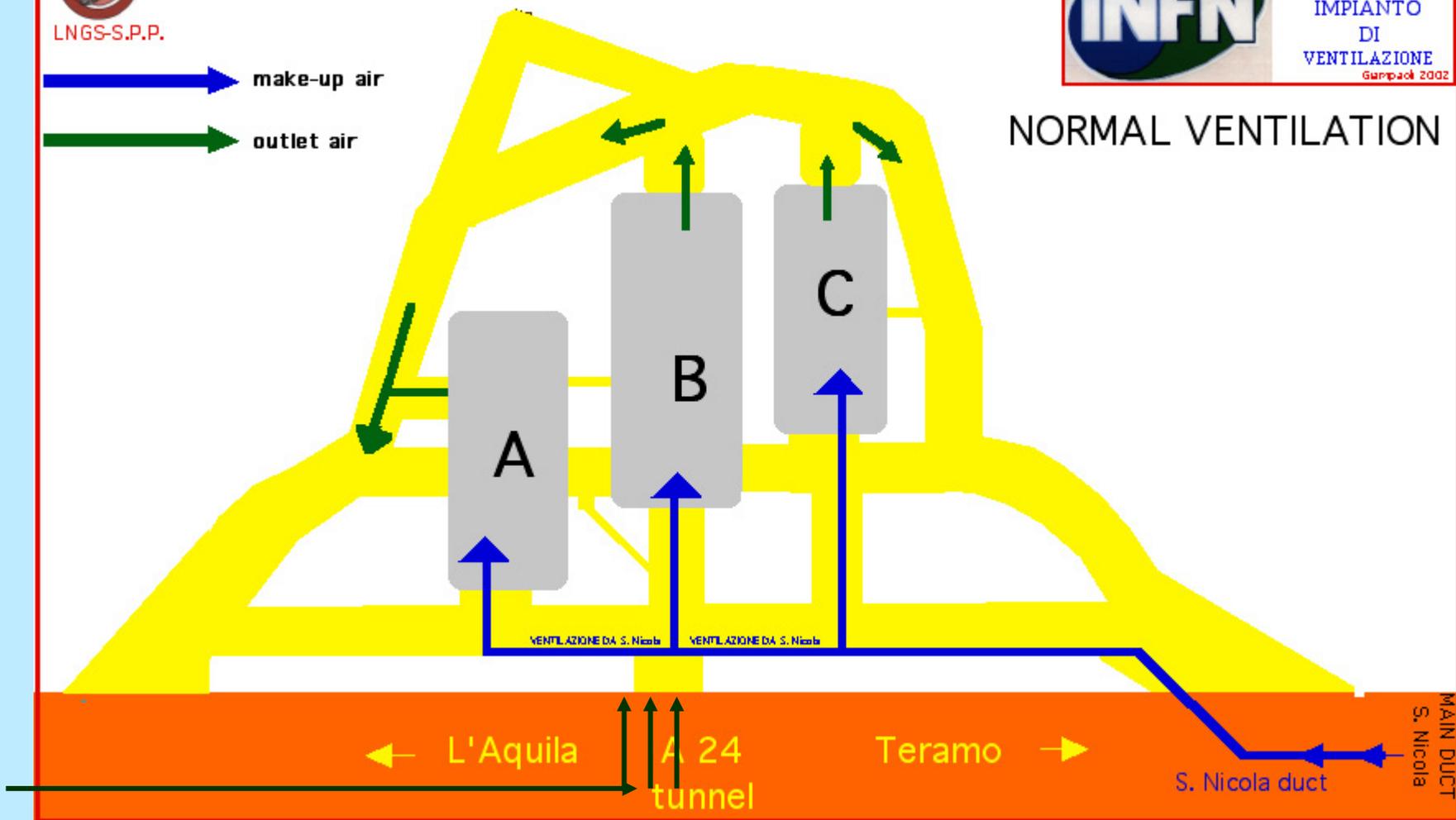
LNGS-S.P.P.



Laboratori Nazionali
del Gran Sasso
Servizio
Prevenzione e Protezione
IMPIANTO
DI
VENTILAZIONE
Giampaoli 2002

 make-up air
 outlet air

NORMAL VENTILATION



Giampaoli 2002

Some nice pictures (April)...



Some nice pictures (April)...



Some nice pictures (April)...



Some nice pictures (April)...



Some nice pictures (July)...



Some nice pictures (July)...



Some nice pictures (July)...



Some nice pictures (July)...



Some nice pictures (July)...



Some nice pictures (Jan 2006)...



Some nice pictures (Jan 2006)...



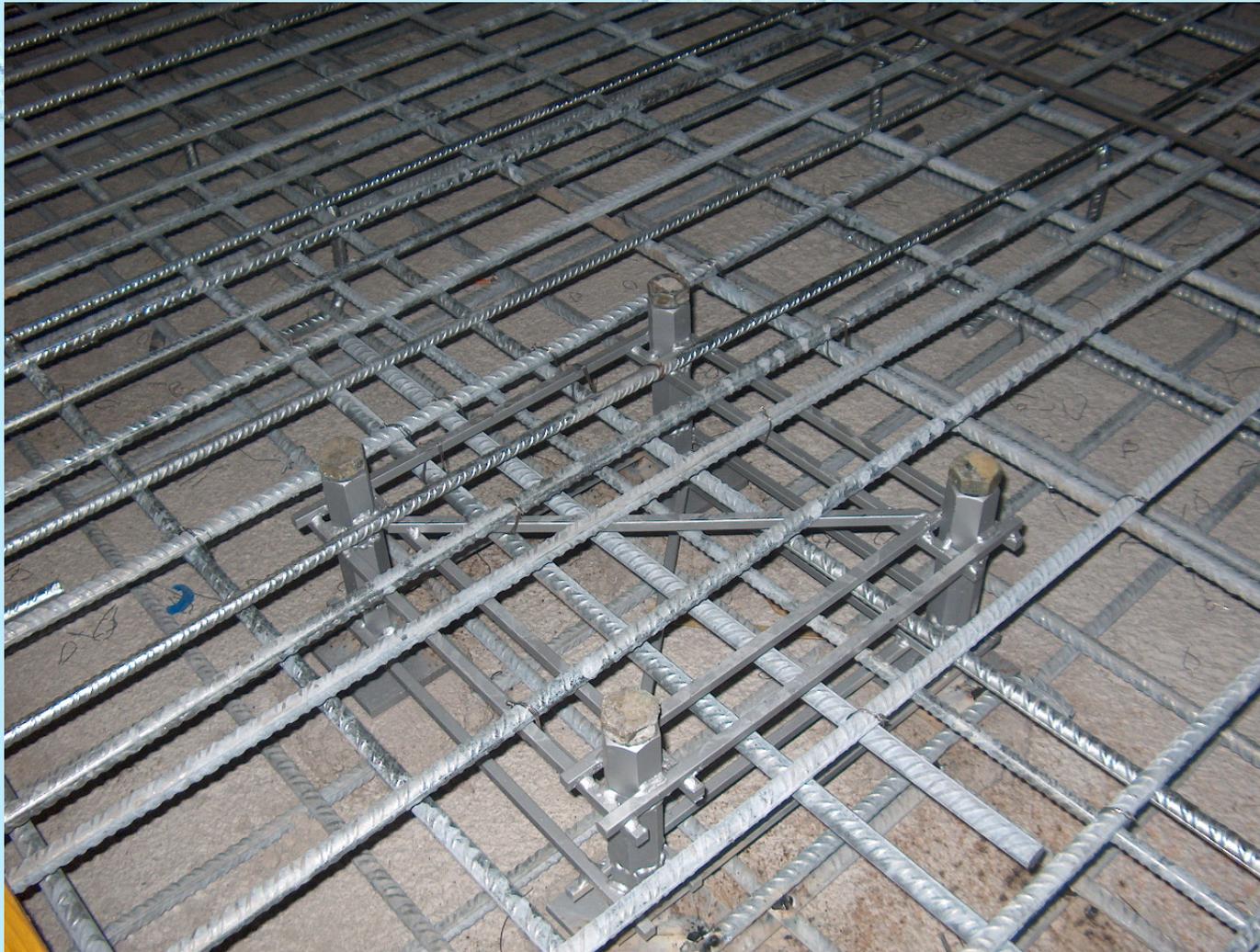
Some nice pictures (Feb 2006)...



Some nice pictures (Feb 2006)...



Some nice pictures (Feb 2006)...



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Some nice pictures (Feb 2006)...



Some nice pictures (Feb 2006)...



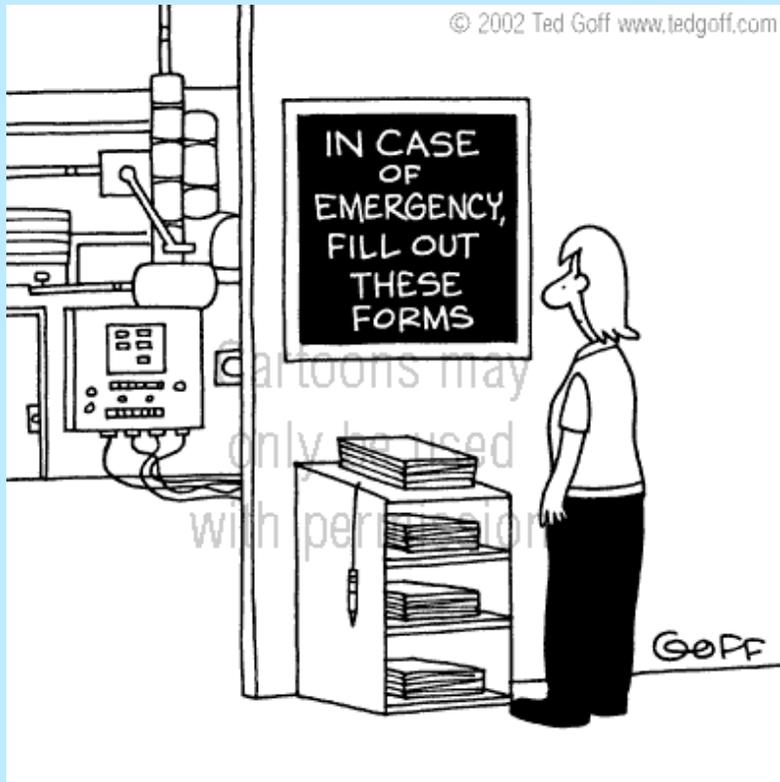
CONCLUSIONS - 1

Gran Sasso National Laboratories are continuing their activities and “re-starting” after suffering a very delicate period.

The scientific program continues: BOREXINO is quite ready to re-start and the new second generation experiments is arriving [OPERA, GERDA, WARP, ICARUS (??)] together with heavy up-grade works as regards the infra-structures.

CNGS related experiments installation is a priority for the Laboratories

Comics...



Thanks a lot for Your attention
and co-operation!!!!

Email: Roberto.Tartaglia@lngs.infn.it

