

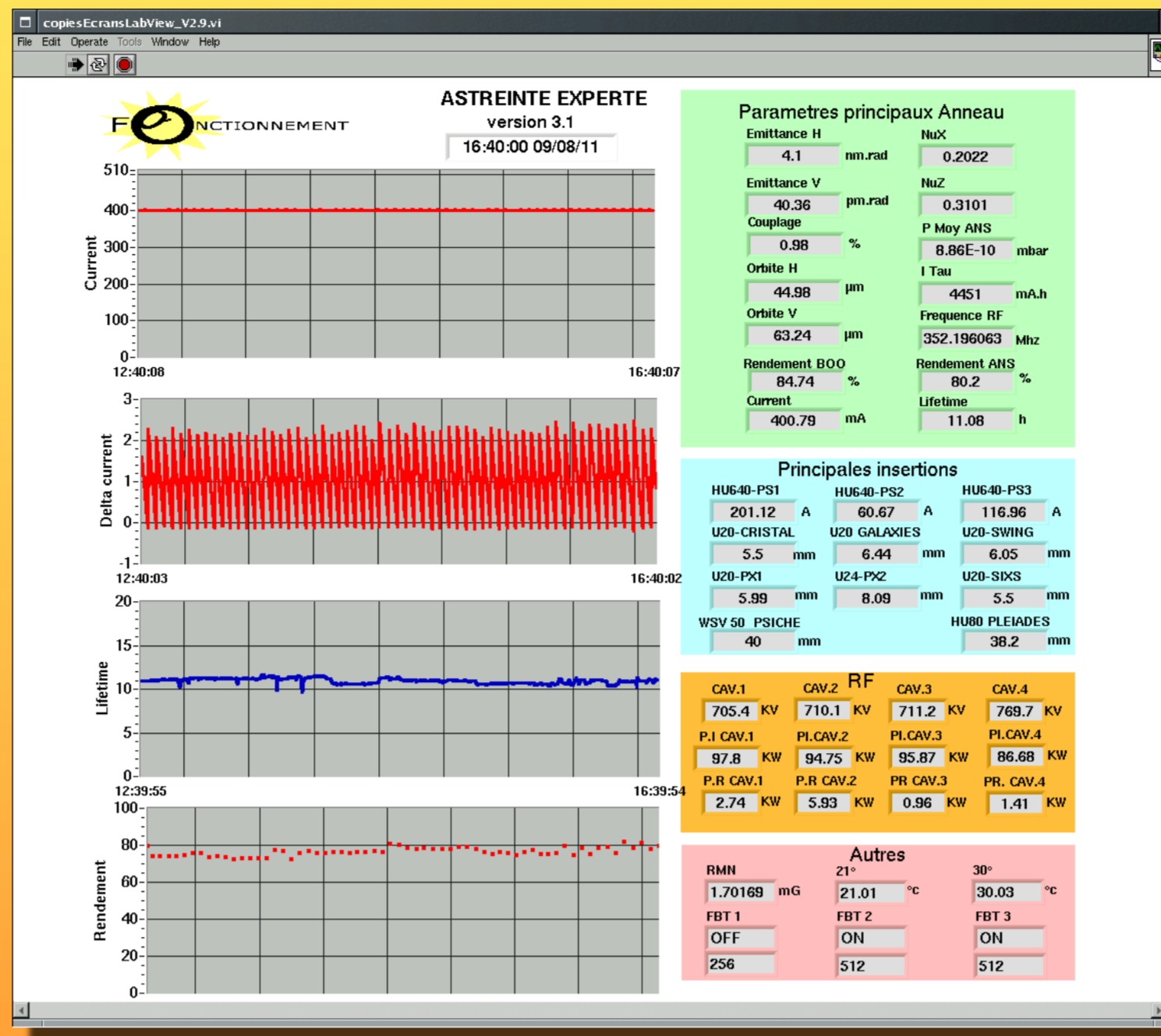


SOLEIL, the 3rd generation French synchrotron light source, has progressively increased activity since 2007. This year, the total beam time has reached 6512 hours out of which 5328 hours were delivered to the 26 beamlines currently in operation.

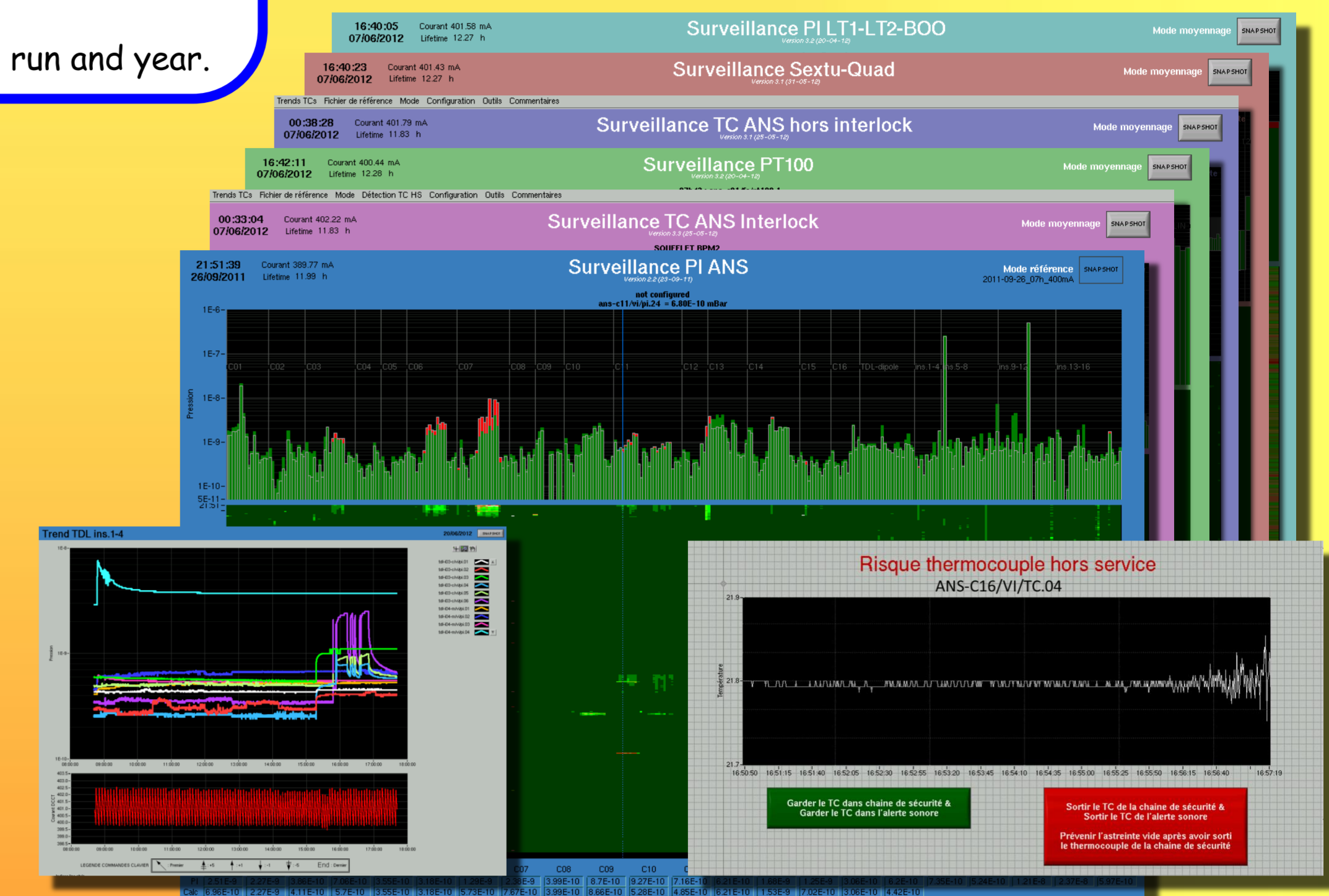
For the operation of the accelerators, a group of 8 operators under the supervision of two people ensures the presence in the control room 24h/24 and 7 days a week. They are assisted by part-time operators who are coming from several division of SOLEIL and mainly from the Machine Division.

Being at the origin of a large number of GlobalScreen (SCADA) applications, useful to the commissioning, operators go on developing applications operation oriented in Labview, Python, Matlab ... and are responsible for installing and monitoring new equipment (temperature measurement, video monitoring and water leak detection in the tunnels, ...).

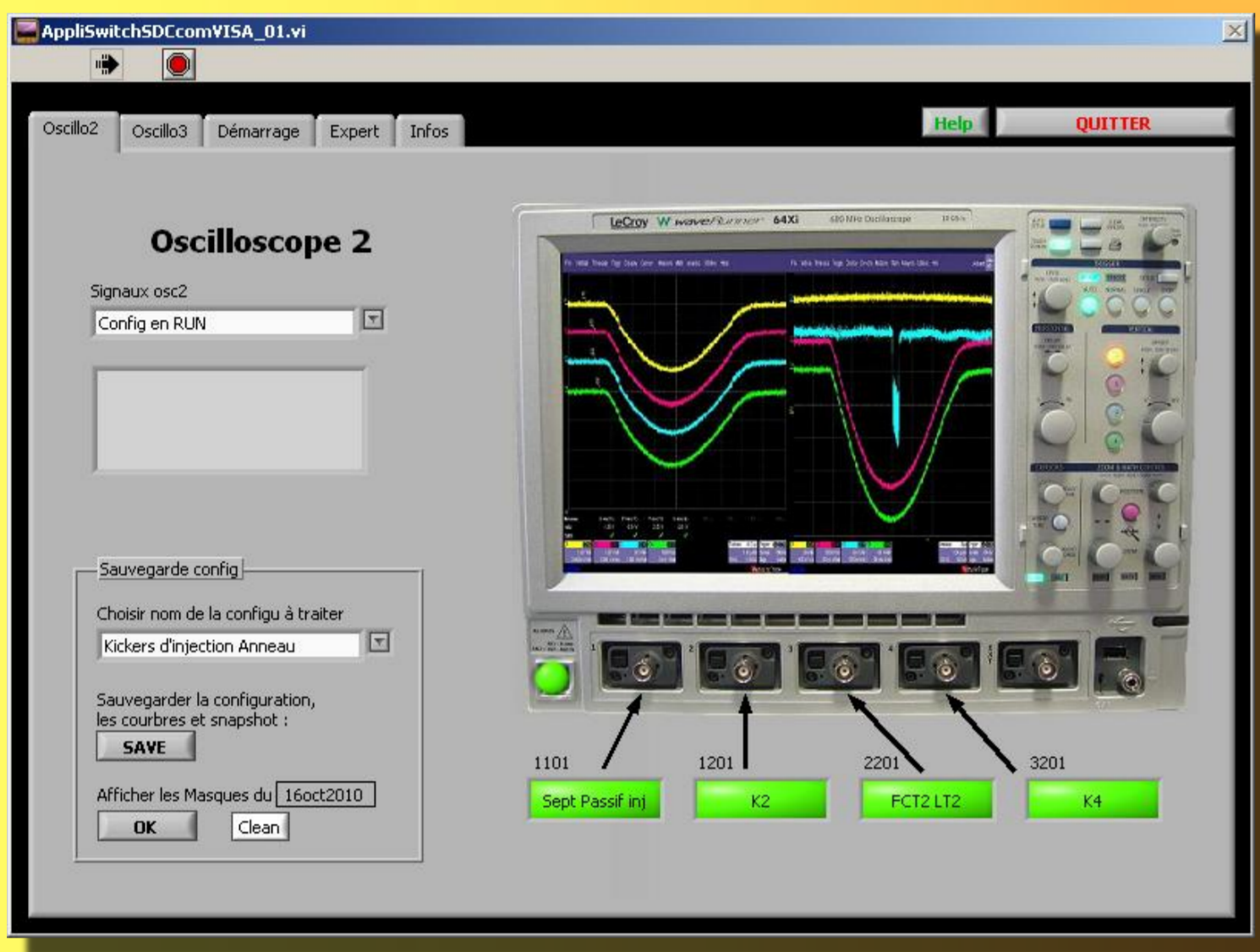
The group describes and archives all the tracking of machine operations through electronic logbooks which provide weekly balance-sheet, at the end of each run and year.



Publication in HTML format, on intranet, of the main machine parameters.



Displaying, in bargraph and bar chart form, on the latest 8 hours, of all vacuum pressures, temperatures and power supply of the rings equipment. A new feature allows us to avoid failure on a thermocouple default.



Remote control of departed oscilloscopes with touch panel and automatic selection of a signal multiplexer.

In order to protect equipment during machine operation, to ensure monitoring of the beam and minimize the failure time, several systems have been implemented.

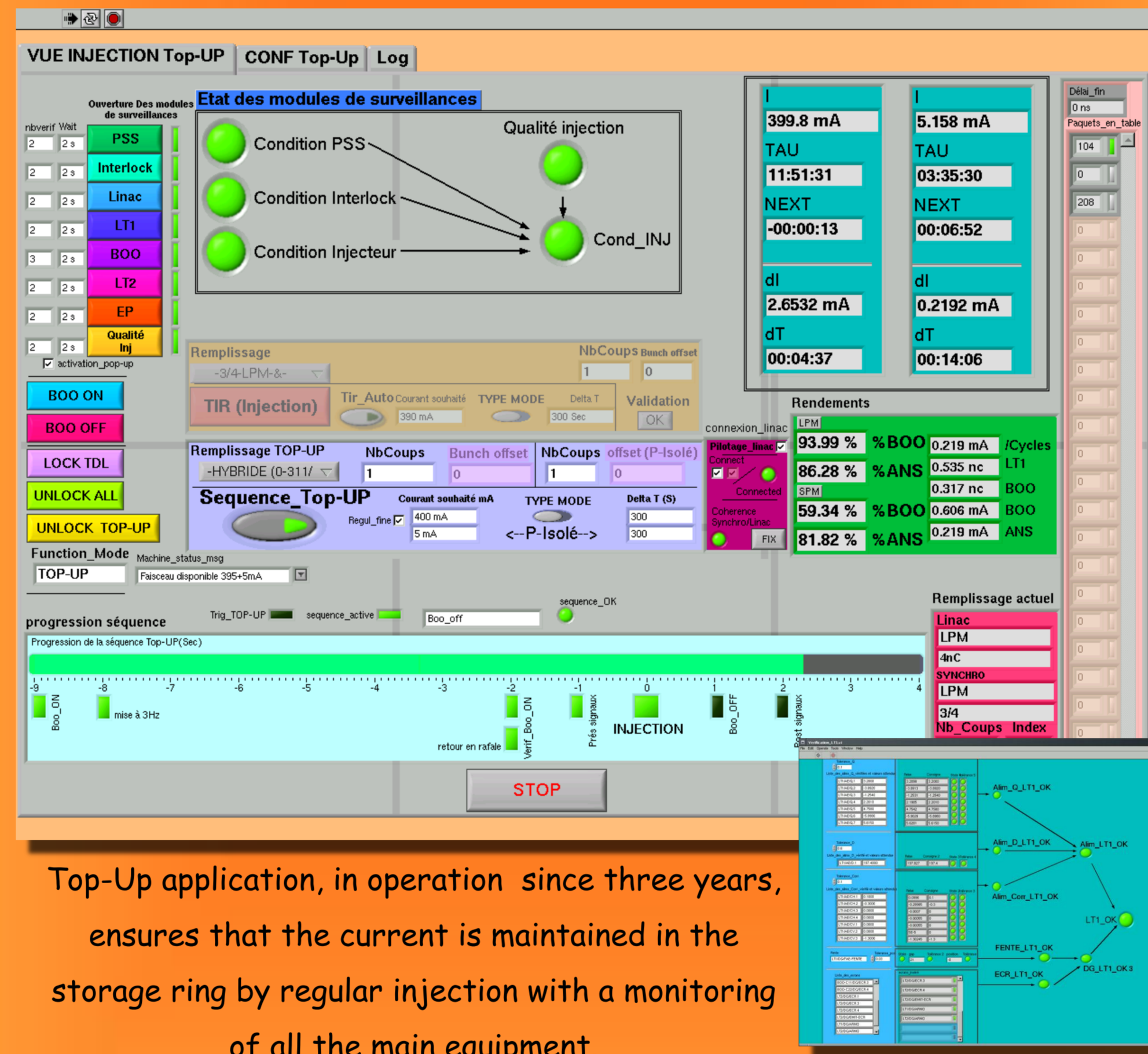
Temperature interlock. Almost 2,600 equipment against failures, such as beam position changes, cooling water failure, vacuum pressure or temperature rises.

Several RF, BPM and TFB Post-mortem systems allow an immediate diagnostic of a failure. 10,000 main parameters can be analyzed through an archiving systems whose periods range from second to several years.

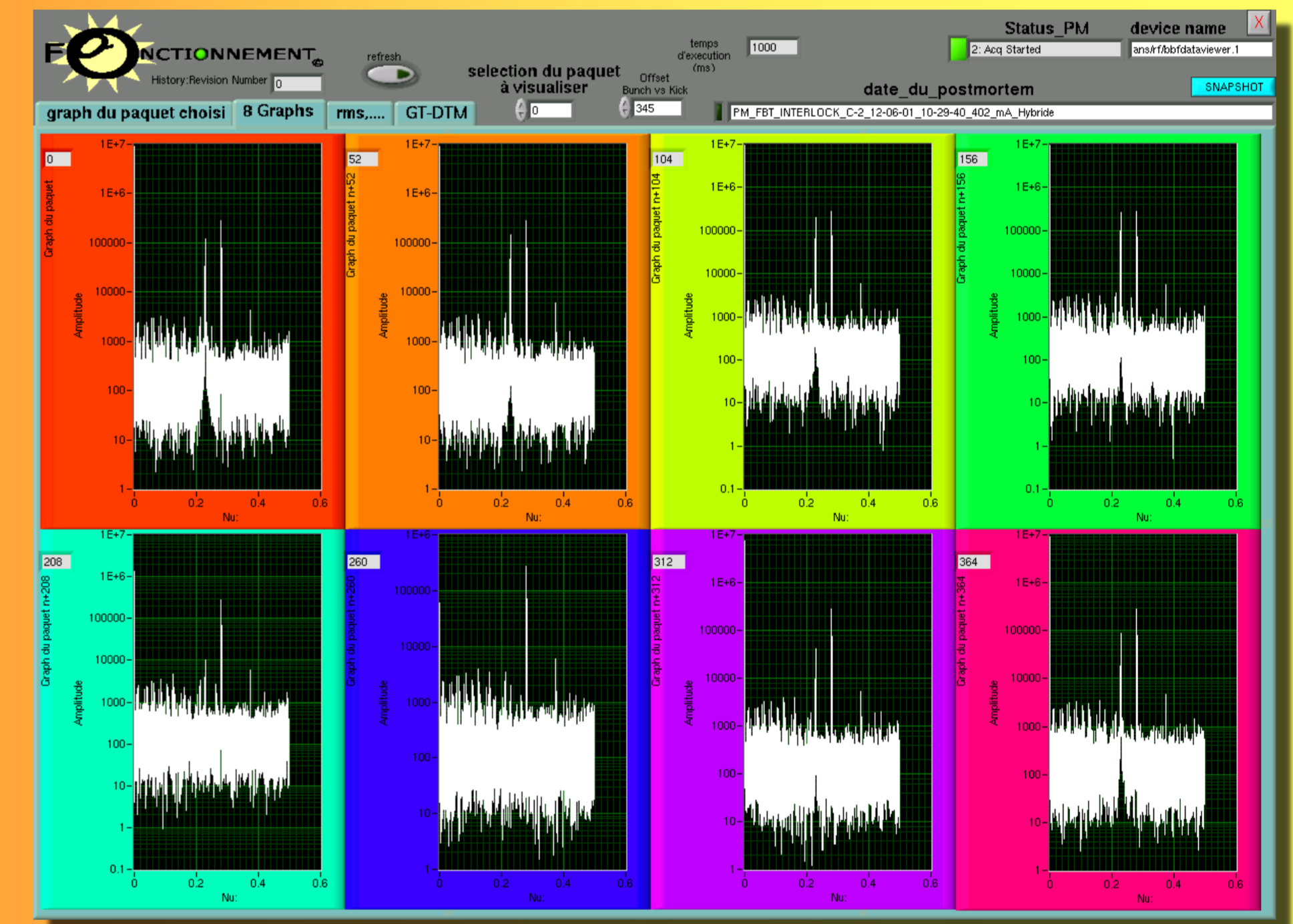
Many applications have been developed in the control room to improve monitoring and the safety of the equipment.

LINAC	BOOSTER	LT2	ANNEAU
DATA SOCKET LINAC	surveillance alims	surveillance alims	surveillance alims
PERMIS	BOUCLE DE COMP	DIPÔLES	DIPÔLES
UTILITES	surveillance EP	surveillance VIDE	surveillance VIDE
RESEAU 8°C = 20.62	EXTRACTION	EQUIPEMENTS	EQUIPEMENTS
RESEAU 17°C = 17.01	surveillance VIDE	surveillance alims	surveillance alims
RESEAU 21°C = 20.99	EQUIPEMENTS	INTERLOCK LT2	INTERLOCK LT2
RESEAU 30°C = 30.00	surveillance alims	surveillance alims	surveillance alims
TEMP RG1 = 19.05	TEMP RG1	TEMP RG1	TEMP RG1
TEMP RG2 = 12.53	TEMP RG2	TEMP RG2	TEMP RG2
INTERLOCK MACHINE LT1	INTERLOCK MACHINE LT1	INTERLOCK MACHINE LT1	INTERLOCK MACHINE LT1
surveillance VIDE	surveillance VIDE	surveillance VIDE	surveillance VIDE
EQUIPEMENTS	EQUIPEMENTS	EQUIPEMENTS	EQUIPEMENTS
surveillance alims	surveillance alims	surveillance alims	surveillance alims
ALIMENTATIONS	ALIMENTATIONS	ALIMENTATIONS	ALIMENTATIONS
ARM	ARM	ARM	ARM
DIPÔLE 1	DIPÔLE 1	DIPÔLE 1	DIPÔLE 1

State summary of each machine equipment family through a single application. More than 3,000 monitored equipment.



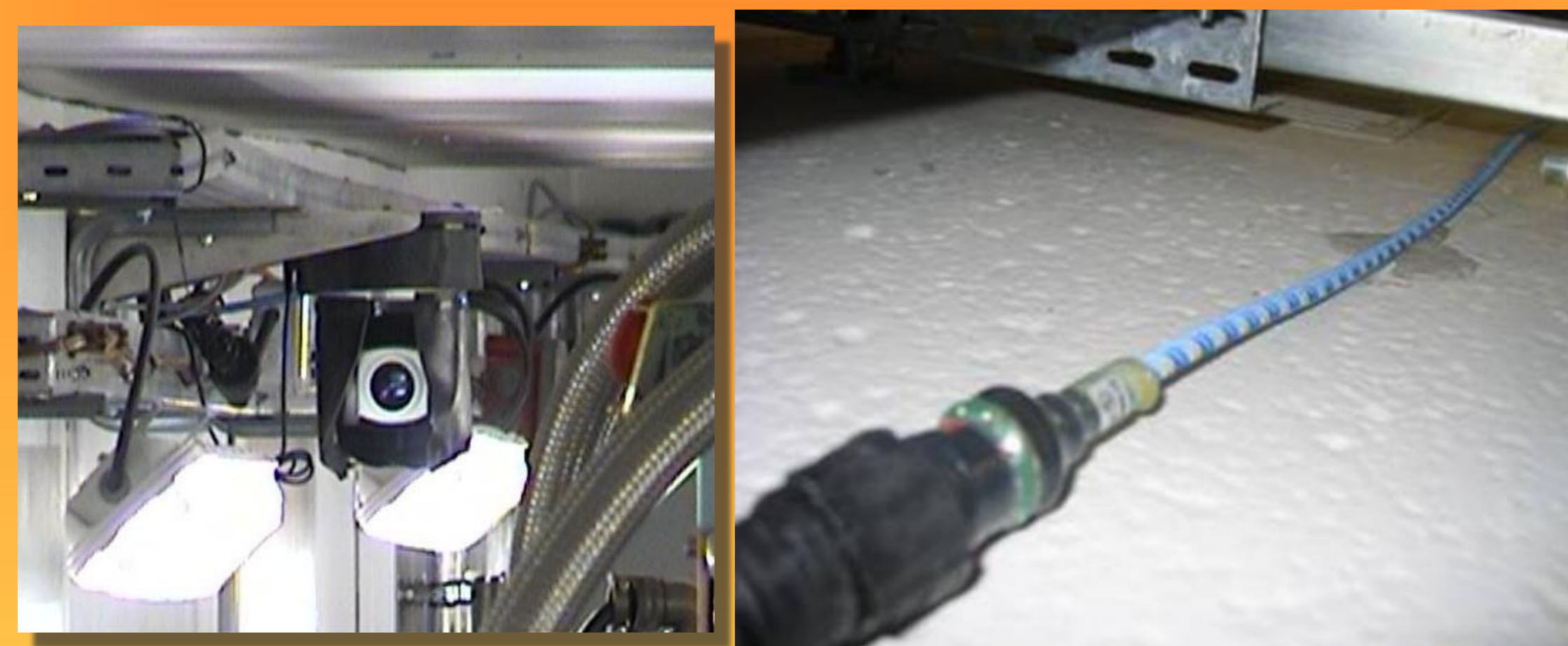
Top-Up application, in operation since three years, ensures that the current is maintained in the storage ring by regular injection with a monitoring of all the main equipment.



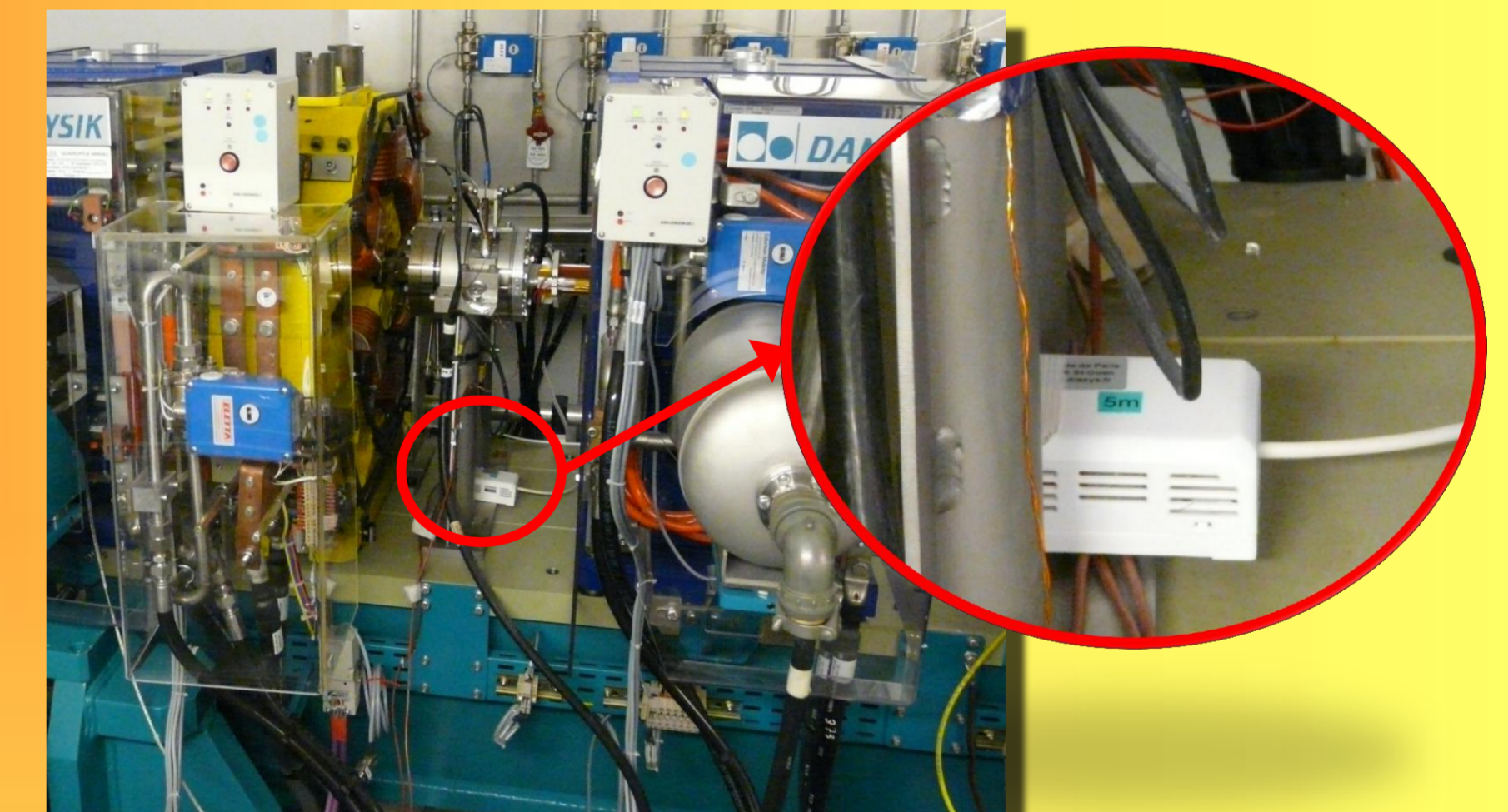
TFB postmortem determines the evolution of the bunches phase, instabity efficiency damping and if beam losses are caused by H. or V. instability. Information are visualized either in temporal (depth of 47 ms) or spectral.



Monitoring of gamma ionization chambers to rapidly detect any anomaly and avoid, if it is possible, interlocks

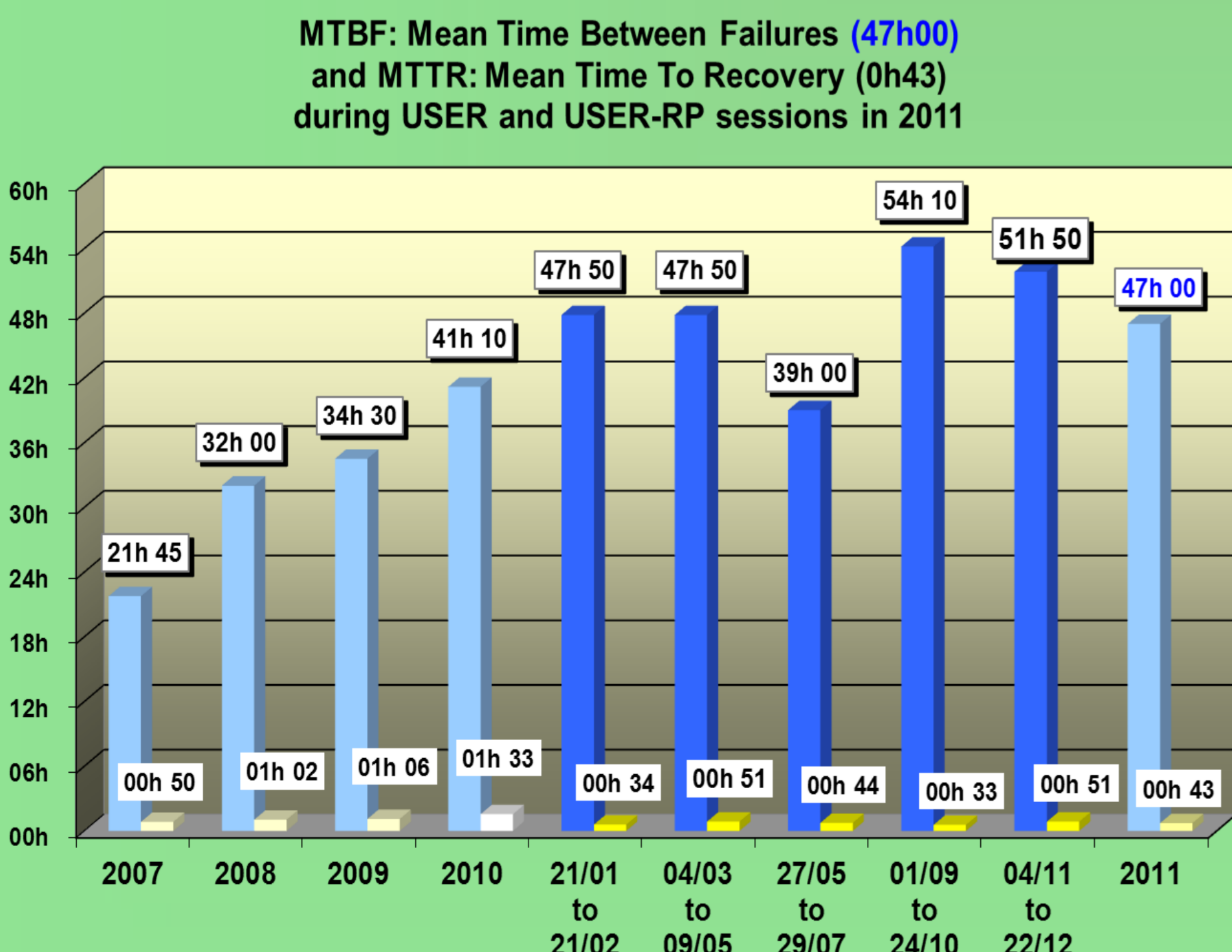


Water Leak Detection Systems in the tunnels. The system is divided into three circuits: Linac/Booster, Storage ring and Front-Ends. Preventive control with camera for each leak detection or fire alarms.

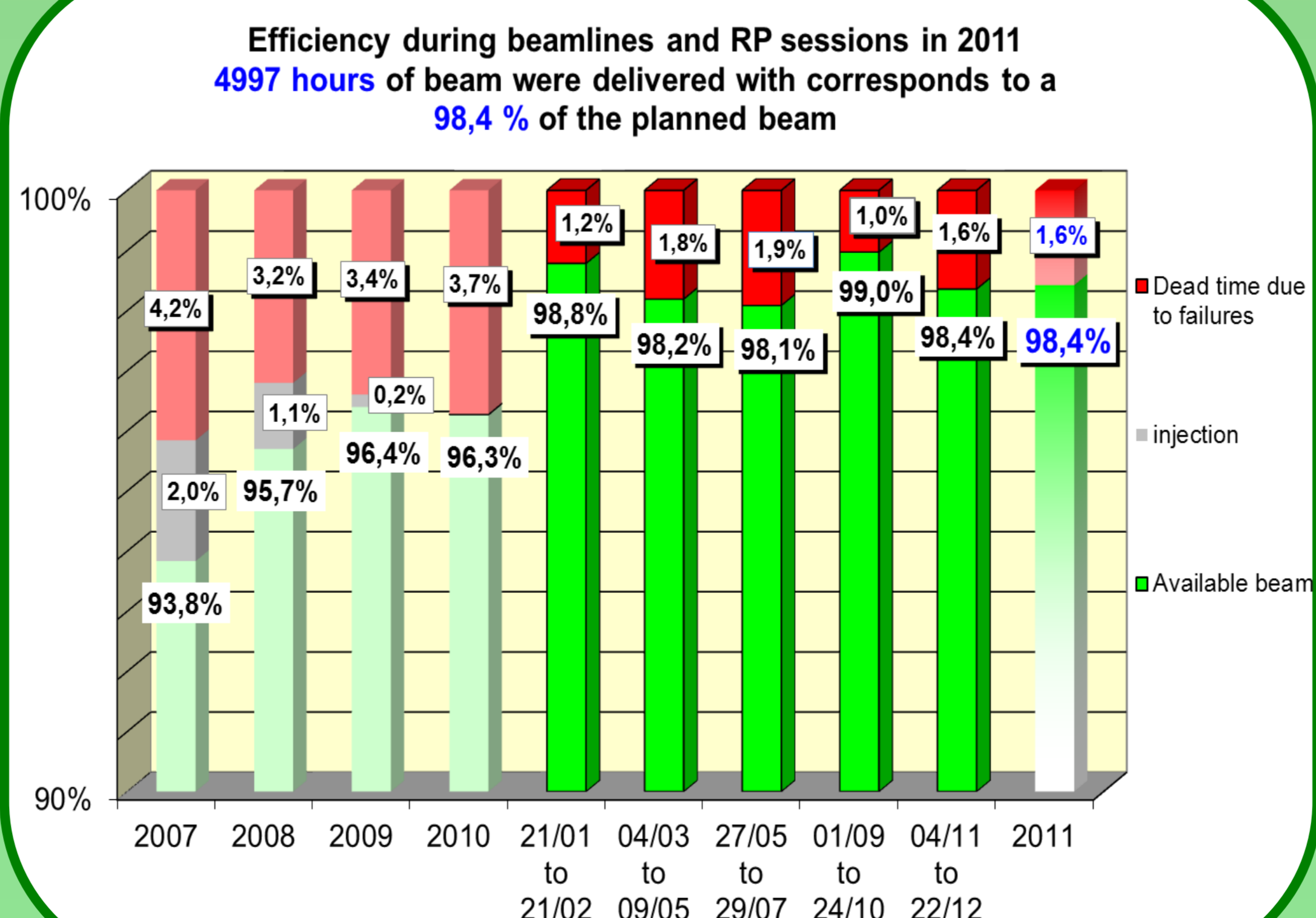


Ambient PT100 temperature sensors are installed at BPMs level all around the storage ring. 157 probes, out of 256 possible, are installed. This helped us to map the tunnel for a better adjustment of air conditioning.

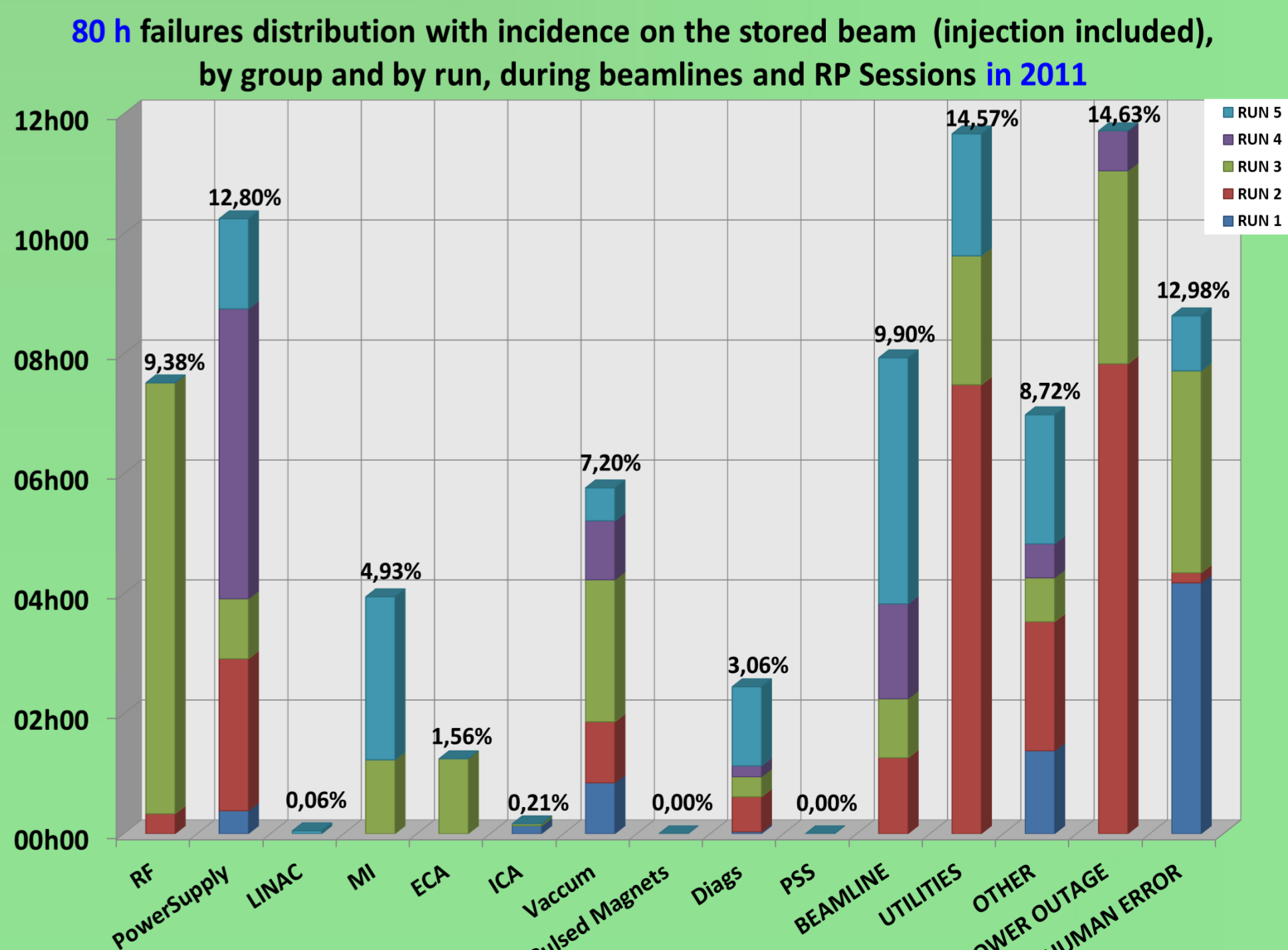
Balance-Sheet in 2011



In 2011, MTBF, during USER and USER-RP sessions, reached up to 47h. It was 5h50 better than in 2010. In the same way, MTTR dropped to 00h43.



Efficiency during beamlines and RP sessions in 2011. 4997 hours of beam were delivered with corresponds to a 98,4% of the planned beam



This year, power outage is the leading cause of failures. Impacted groups refine their equipment protection in order to be less sensitive. Human error, which is the third cause of failures, is an axis of rapid improvement.