

ISOLDE scientific coordinator's report

ISCC meeting, May 18, 2009

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Status of ISOLDE experiments

Beam requests 2009

Schedule 2009

New and closed experiments at ISOLDE

INTC February 2009

- 10 new experiments: IS484 - IS493
- 363 approved RIB shifts
- 83 experiments after February meeting

11 completed ISOLDE experiments (closed by users)

- IS358, IS390, IS393, IS397, IS398, IS399,
IS400, IS424, IS434, IS444, IS458

→ 72 active experiments for 2009 beam period

Accelerator schedule 2009 (V3.4)

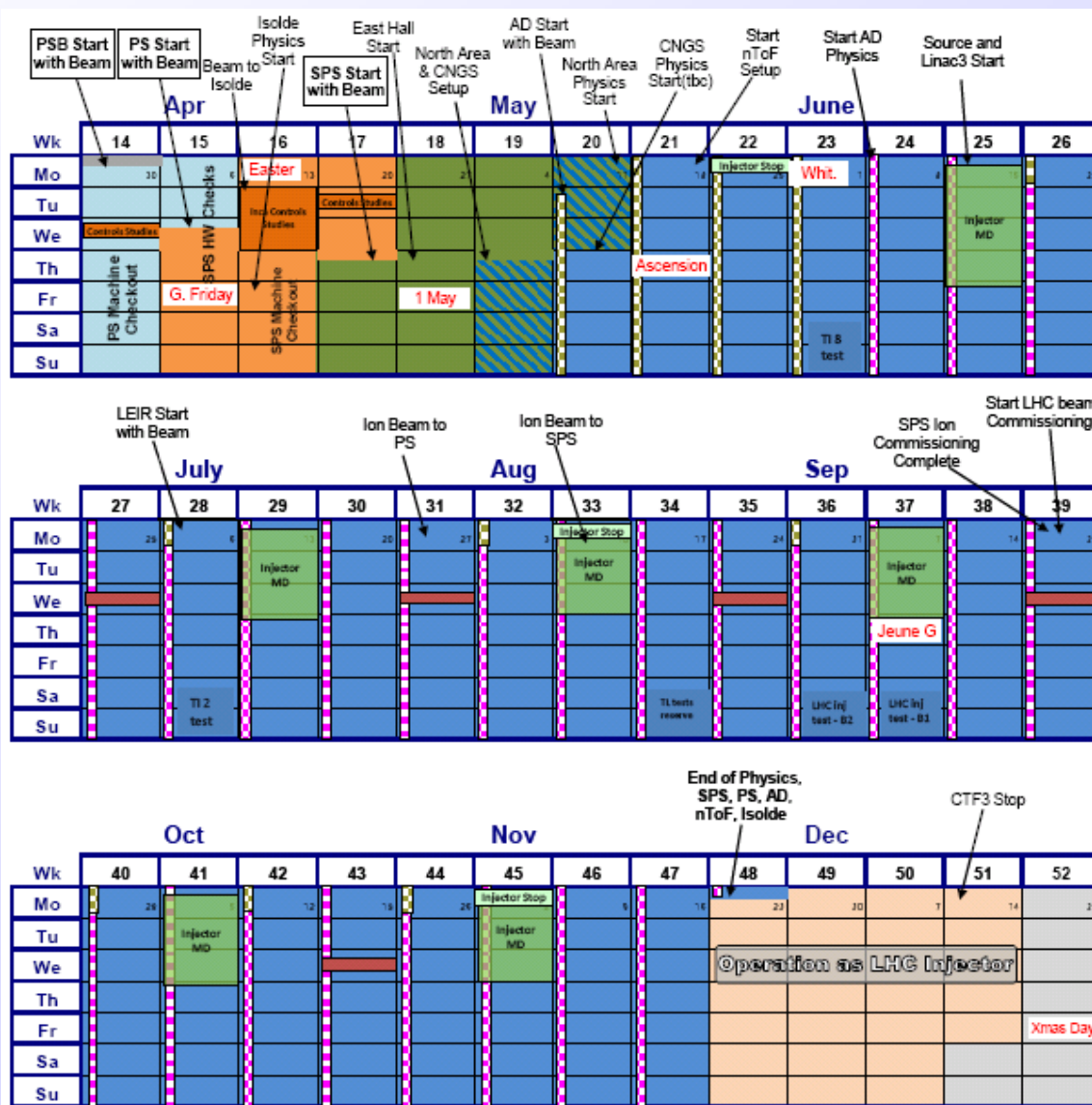
ISOLDE dates:

protons from PSB April 14
 physics start ISOLDE April 20

protons stop November 23
 (i.e. 31 weeks for physics
 as compared to 27 weeks
 in 2008 = 84 shifts more)

Several long periods of MD
 partly with parasitic beam to
 ISOLDE (not guaranteed)

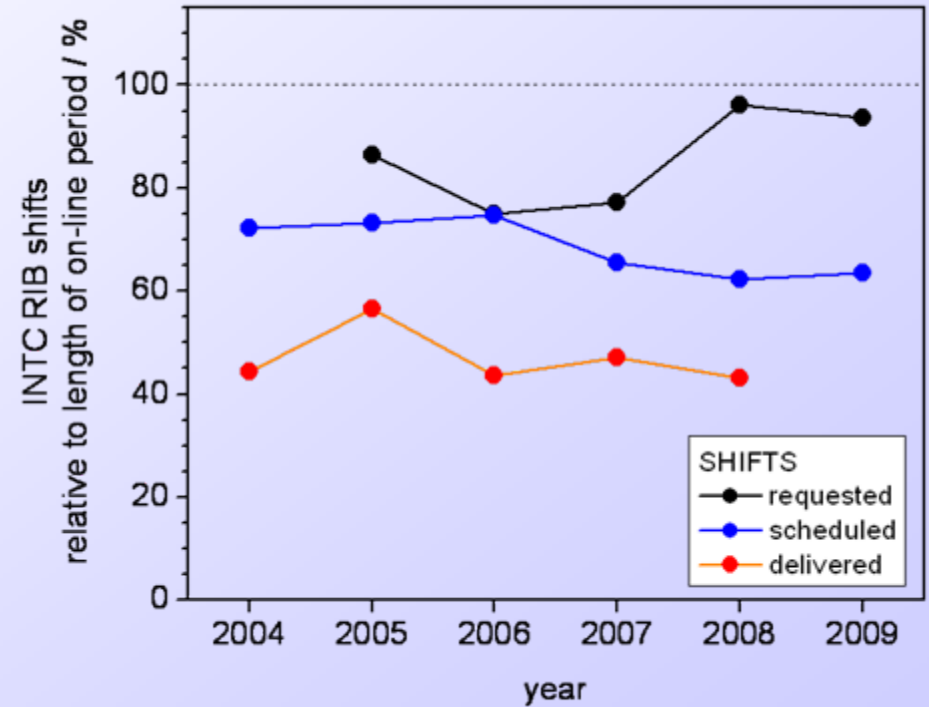
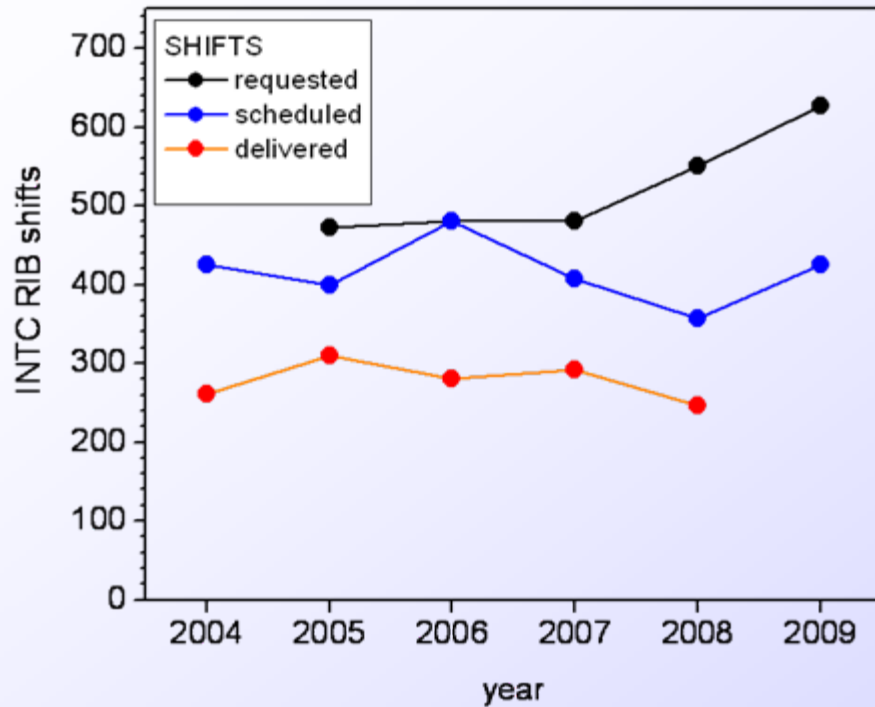
During winter only LHC
 operation (incl. injector
 chain) – not ISOLDE



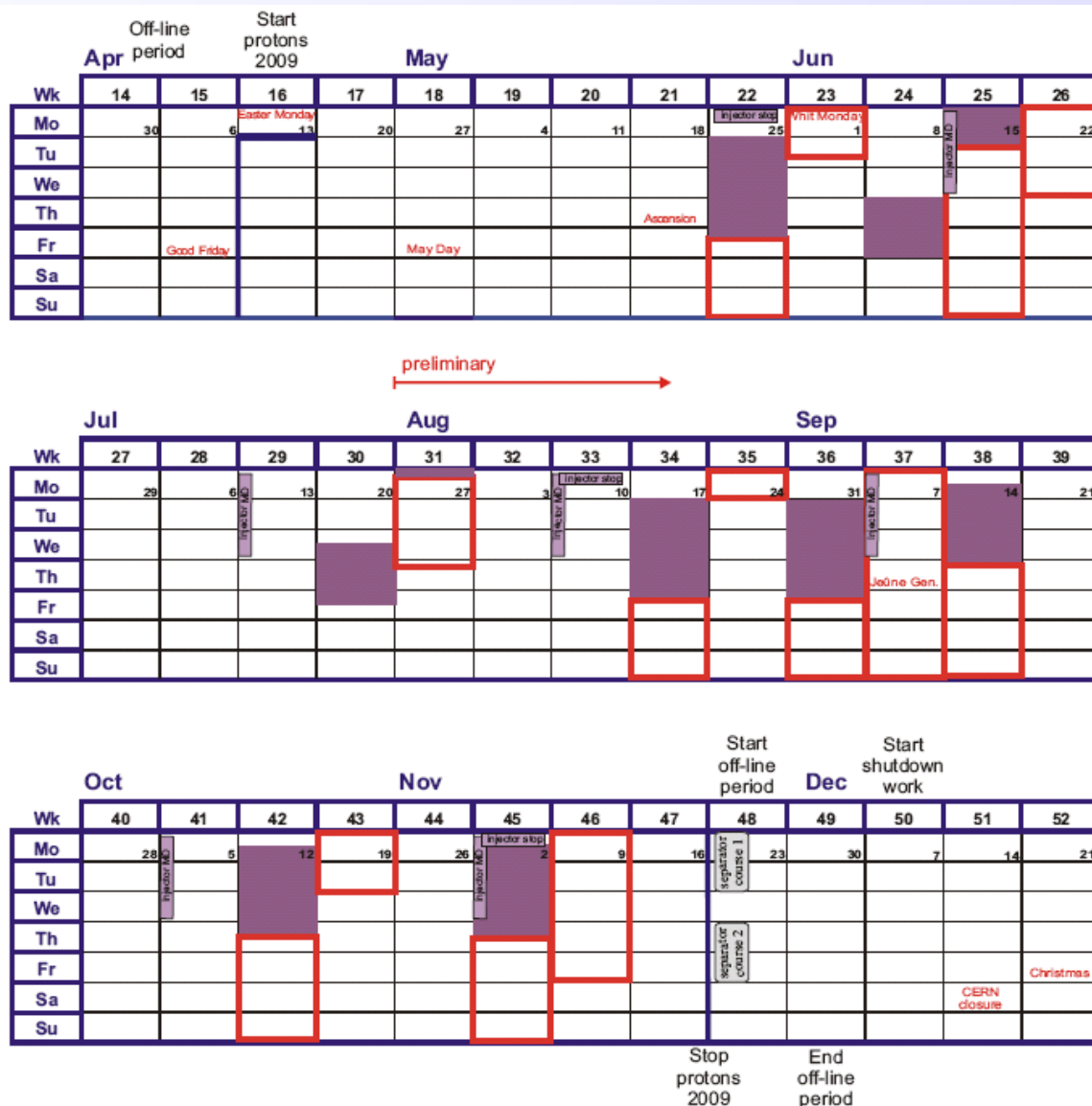
ISOLDE beam requests 2009

- **Beam requests:**
 - **627 RIB shifts** requested by **51 experiments**
 - compare to 551 RIB shifts requested in 2008
 - requested **RILIS shifts: 359** → >50% (337 in 2008)
 - requested **RIB shifts with UC target: 460** → ~70% (410 in 2008)
 - Requested **REX-ISOLDE RIB shifts: 273**
 - **Additional ~30 shifts** for TISD, LOIs + off-line MD ...
- **Scheduled runs (present status):**
 - **450 RIB shifts** in total (669 shifts for running period incl. PSB setup)
 - **425 RIB shifts** for **39 experiments**
 - **63 different beams**
 - **12 experiments** not scheduled
 - **235 RIB shifts** with RILIS operation (>50%)
 - **282 RIB shifts** with UC target (>60%)
 - **8 REX-ISOLDE runs** for **9 experiments** with **171 RIB shifts** (~40%)

RIB shift evolution

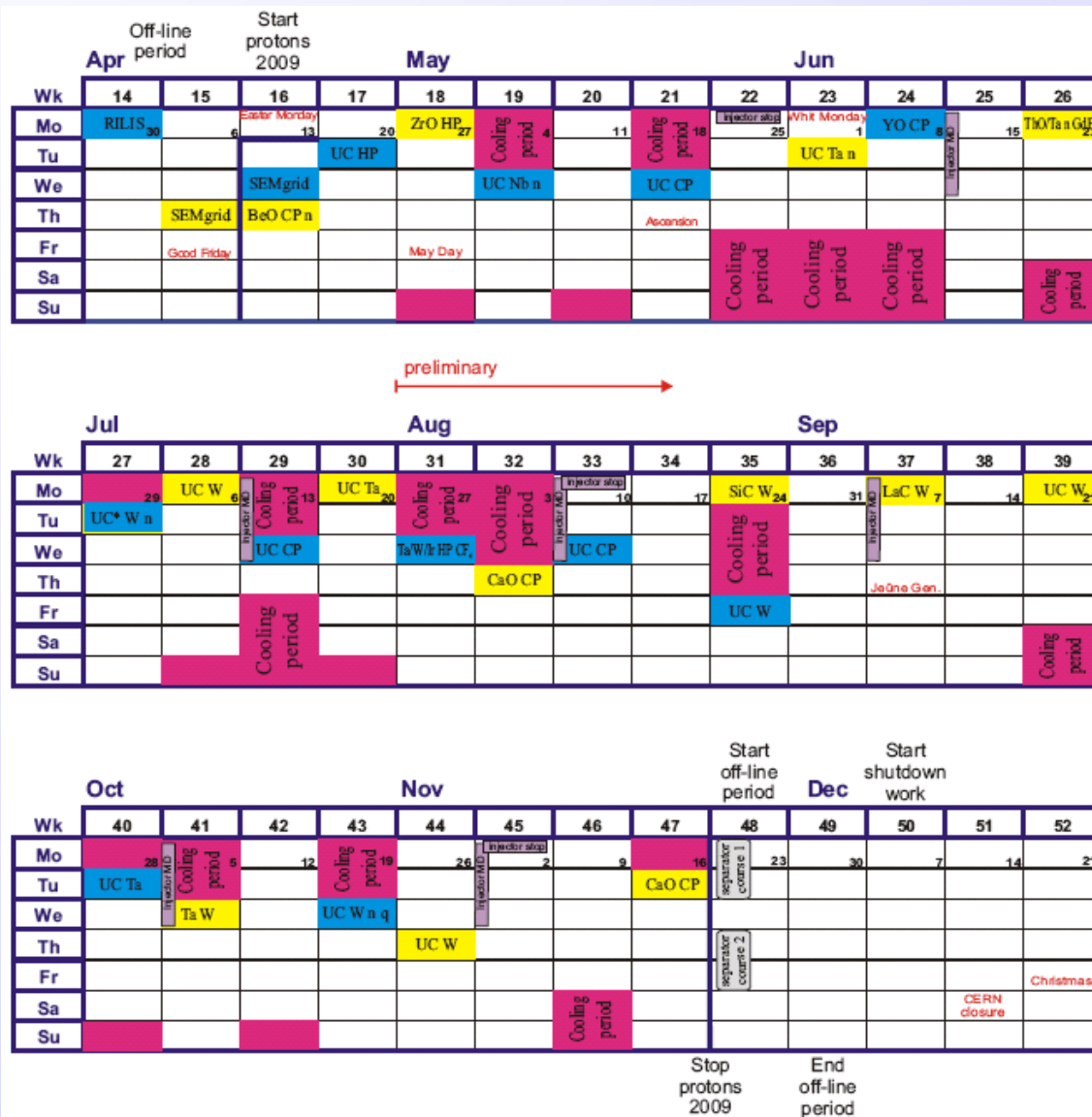


- 20 active REX experiments
- 4 with no beam request
- 10 scheduled
 - 2 share target/setup (but different beams)
 - 2 have same beam
- 8 runs
 - 3 days for setup
- + 2 WITCH runs
 - Need REX-TRAP
 - Operation of WITCH not compatible with EBIS/LINAC operation
- REX training
- Diamond detector tests
- MD throughout the year



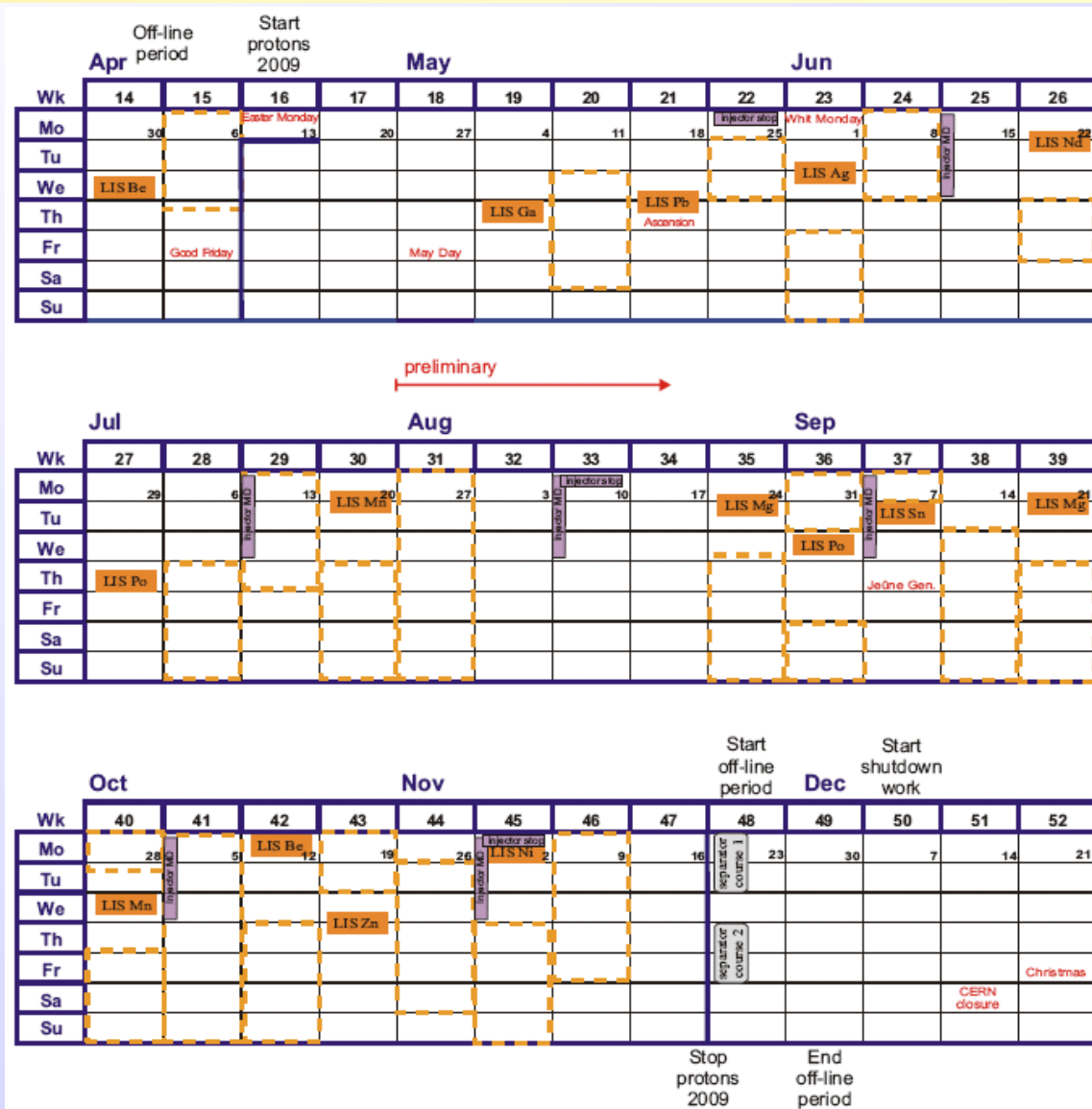
ISOLDE schedule 2009 – Targets

- 27 target units planned
 - 10 for HRS
 - 17 for GPS
 - 4 used target units
 - 12 new UC units (2 used)
- TISD
 - 3 dedicated runs:
 - BeO for ^6He beam
 - low work-function cavities (+Nd RILIS)
 - INFN UC target test



ISOLDE schedule 2009 – RILIS

- 15 RILIS runs planned
 - 1 off-line (be)
 - 1 target test (Nd)
 - dense schedule
 - Mn scheme to be tested
- 235 RIB shifts planned
 - >1800h on-line shifts
 - more than 2300h total



Off-line period and startup 2009

- **ISOLDE maintenance + cold check-out**
 - Shutdown maintenance finished (almost) on time
 - Installation of new ISCOOL rf amplifier delayed
 - Integration of ISCOOL vacuum system ongoing
 - Usual startup problems, incl. vacuum + controls (not as bad as in last year(s))
 - REX-ISOLDE up and running very early in the year
- **1 week of off-line physics/testing**
 - Test of ISCOOL bunching for COLLAPS experiment
 - Only one day for tests due to delay in rf amplifier installation
 - Valuable results for IS449 (although very short time for tests)

Main problems so far ...

- **Power cut (glitch) Sunday, April 26**
 - No major problem, **a few hours delay** in restart of LINAC 2 and PS Booster
- **Controller cards for PISOMOVE system broken**
 - First, only GPS card broken → no target change possible for GPS
 - During intervention also HRS card broken → both front ends blocked
 - After repair of cards target change possible
 - **Only one day lost** for following run (Ta target on GPS)
 - **Additional collections** from ZrO target during intervention
- **Water leak in PS Booster injection septum**
 - Major failure – septum to be replaced with spare
 - HRS run (COLLAPS, IS457) had to finish with only 50% of proton beam intensity – **still successful run**
 - Intervention will start Monday, May 18, 8:00 – unclear when proton beam for ISOLDE will be back ...

... but also good news: First on-line runs in 2009

- TISD: BeO target test (GPS)
 - Production of ${}^6\text{He}$ beam - **successful run**
- IS473 (ISOLTRAP) + collections for IS437 (HRS):
 - **No ISCOOL MD** due to PISOMOVE problem
 - **No ${}^{194}\text{Hg}$ beam** (unclear why) – but other mass measurements done
 - Collections for IS437 **successful**
- ZrO target and SSP collections (GPS):
 - Used High-voltage platform as GLM not working (PISOMOVE problem)
 - **Successful run**
- Ta target for IS417 (${}^9\text{Li}$) + collections for SSP (GPS):
 - **Successful test** of new detectors (IS417)
 - Collections for IS486 and other groups **successful**
 - **Wait for repair of PS Booster septum to finish program**
- IS457 (COLLAPS) (HRS):
 - **Successful run** on neutron-rich Ga isotopes (despite lower proton beam intensity at the end of run)