

ISOLDE scientific coordinator's report

ISCC 23 May 2005

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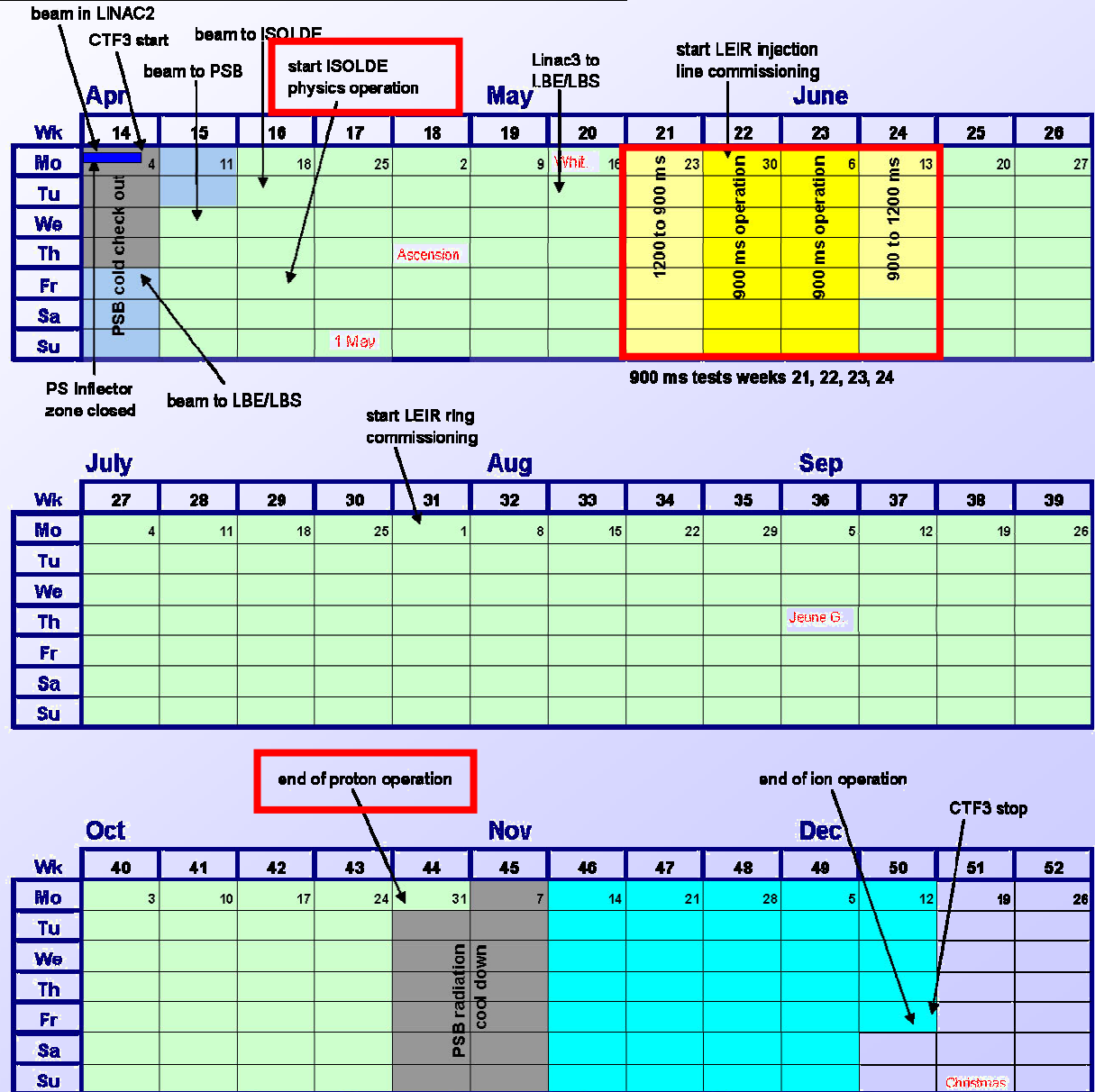
Schedule 2005

Accelerator schedule 2005

**25 April →
31 October
[25 weeks]**

**Sole in operation
900 ms tests**

- 12 4-hour periods access to PS
- 6 8-hour MDs for PSB
- 2/12 cycles for parasitic MD for PSB every Wed.



ISOLDE schedule 2005

✓ Conditions

→ **Reduced to 25 weeks of operation (26 in 2003, 27 in 2004)**

- 900 ms cycling test from 24 May 2005
- 2 more weeks with risk of interruptions

→ **Expected HRS and GPS running in pull/push mode**

→ **REX available from May**

- Weeks 25 & 26 are booked for changes at REX power supply controls
- MD time for beam development

→ **MINIBALL**

- available from 20 May to the end of the running period
- 2 configurations

→ **RILIS:**

- Limited manpower: limit on ~150 shifts for Physics
- ~2000 hours last year (on- & offline + tests)

→ **Target construction: UC_x ...**

ISOLDE schedule 2005

✓ Experiment shifts for ISOLDE:

- **579 outstanding shifts from 2004**
- **~130 approved 1st INTC meeting 2005**
- **TISD: Target and Ion Source Development**
- **REX Machine Development (MD)**

TOTAL of ~700 Physics shifts to be scheduled

→ **225 REX-ISOLDE physics (32%)**

- **150 with MINIBALL**

→ **38 more to be discussed in the present INTC**

✓ Users requests for 2005: 500 shifts

- **Includes specific TISD requests**
- **Does not include REX-MD time**
- **300 shifts require UC_x targets !**
- **200 shifts requested using RILIS !**
- **170 shifts for REX experiments !**

GPS 2005

	Apr			May						Jun			
Wk	14	15	16	17	18	19	20	21	22	23	24	25	26
Mo	4	11	18	25	UCx W ₂	IS401 9	Whitsun 16	23	30	6	13	20	27
Tu					LIS Mg	Cooling period							UCx C
We				IS401									LIS Ni
Th				IS390	Ascen 8								
Fr			Su HP	IS425	9 May 8	UCx CP				IS405			
Sa				IS425	IS427		IS415						
Su				MayDay 1						IS401			

Preliminary →

	Jul			Aug			Sep						
Wk	27	28	29	30	31	32	33	34	35	36	37	38	39
Mo	4	TSD 14	IS435 18	Cooling period 25	LIS Sn 1	8	15	22	29	LIS Be ₆ 5	12	19	26
Tu		LIS Cu	IS401			Pb/Bi HP		Ta W					
We			IS368	LaC ₂ W			IS419						
Th	IS412		IS431						IS367	Jetris Ge			
Fr		IS435			IS418		IS360		IS371	IS430			
Sa			TISD										
Su	IS413												

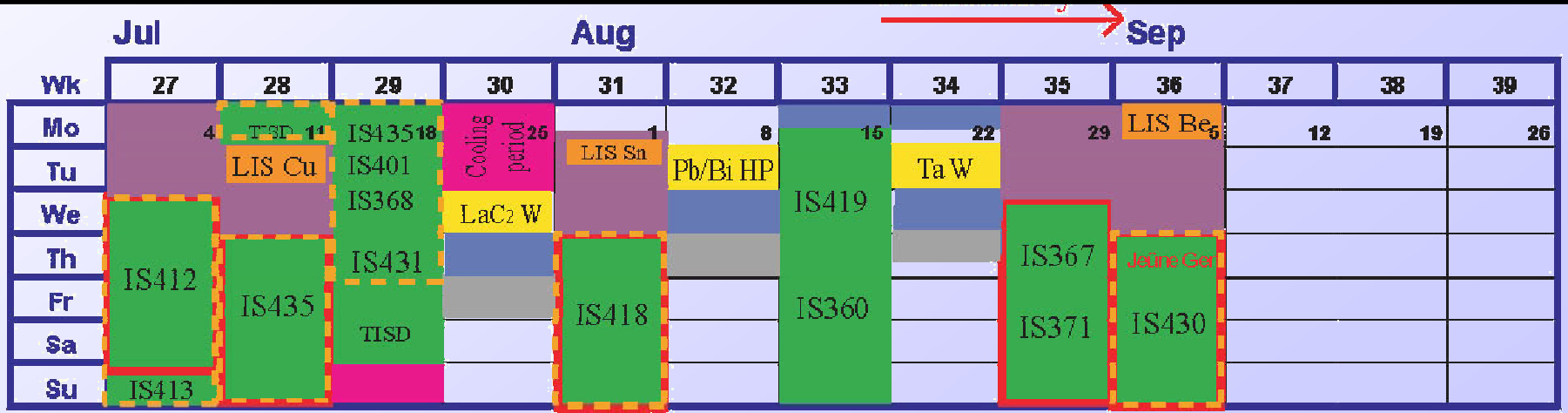
Target change GPS	Target change HRS	Stable beam	Set-up time	ISOLDE Physics GPS	ISOLDE Physics HRS	REX MD REX Physics	Proton sharing GPS/HRS	Protons not available	change RILIS run
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Wk	14	15	16	17	18	19	20	21	22	23	24	25	26
Mo	4	11	18	25	UCx W ₂	IS401 9	Whitsun 16	23	30	6	13	20	27
Tu					LIS Mg	Cooling period							UCx C
We				IS401									
Th				IS390	Asen 8								
Fr			Su HP	IS425	1 May 8	UCx CP				IS405			
Sa				IS425	IS427		IS415						
Su				MayDay 1						IS401			

IS401	P146	Semiconductor Spectroscopy with Short Lived Isotopes
IS390	P132	Studies of Colossal Magnetoresistive Oxides with Radioactive Isotopes
IS425	P179	Radioactive Probes on Ferromagnetic Surfaces
IS427	P183	Nuclear moments and charge radii of Mg isotopes N=8 to N=20
IS415	P166	Magnetic Moments of Coulomb Excited 2^+_{11} States for Radioactive Beams of $^{132}, ^{134}, ^{136}\text{Te}$ Isotopes at REX-ISOLDE
IS405	P149	Obtaining empirical validation of shape-coexistence in the mass 70 region : Coulomb excitation of a radioactive beam of ^{70}Se
IS368	P98	Lattice location of transition metals in semiconductors
IS426	P180	Mn and Fe impurities in $\text{Si}_{(1-x)}\text{Ge}_{(x)}$ alloys
IS432	P190	Diffusion of ^{52}Mn in GaAs

GPS 2005

IS412	P158	Coulomb excitation of neutron-rich nuclei between the N=40 and N=50 shell gaps using REX-ISOLDE and the Ge MINIBALL array
IS413	P160	High precision mass measurements of exotic nuclei with ISOLTRAP
IS435	P193	Coulex of odd-mass and odd-odd Cu isotopes using REX and Miniball
IS401	P146	Semiconductor Spectroscopy with Short Lived Isotopes
IS368	P98	Lattice location of transition metals in semiconductors
IS431	P189	Beta asymmetry measurements in nuclear beta-decay as a probe for non-Standard Model physics
IS418	P170	Coulex of Neutron Deficient Sn Isotopes using REX-ISOLDE
IS419	P171	Measurement of Gas and Volatile Elements Production Cross Section in a Molten Lead-Bismuth Target
IS360	P86	Studies of High Tc Superconductors Doped with Radioactive Isotopes



HRS 2005

	Apr			May					Jun				
Wk	14	15	16	17	18	19	20	21	22	23	24	25	26
Mo	4	11	18	MgO CD 26	TISD 2	9	Whitsun 16	23	30	IS425 IS401 6		20	27
Tu							UC&Nb LIS Pb	1200 ms to 900 ms					IS428
We					SiC IIP	TISD							
Th					Ascen 5				IS407				
Fr					(1 May) 6	IS413							IS413
Sa			TISD	IS413 May Day 1					IS425 IS401	Cooling period			IS428
Su										900 ms to 1200 ms			

Preliminary →

	Jul		Aug					Sep					
Wk	27	28	29	30	31	32	33	34	35	36	37	38	39
Mo	(TISD) 4	UC&W 11	18	25	IS378 1	LIS Sb 8	Cooling period 15	22	IS414 29	UC&CP 5	12	19	26
Tu					IS368 IS425 IS401	IS425 TISD						Cooling period	
We							UC&W						
Th				IS378		IS434		IS414		Jelina Gen			
Fr	Cooling period		LIS Sn						Cooling period		IS423		
Sa													
Su													

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HRS 2005

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Tu							UC&Nb LIS Pb	1200 ms to 900 ms					
We					SiC IIP	TI&SD							
Th					Ascen 5				IS407				
Fr					(1 May) 6	IS413					900 ms to 1200 ms		
Sa			TI&SD	IS413 MayDay 1					IS425 IS401	Cooling period		IS428	IS413
Su													

- IS413** P160 High precision mass measurements of exotic nuclei with ISOLTRAP
- IS407** P151 Study of the neutron deficient Pb and Bi isotopes by simultaneous atomic- and nuclear- spectroscopy
- IS401** P146 Semiconductor Spectroscopy with Short Lived Isotopes
- IS425** P179 Radioactive Probes on Ferromagnetic Surfaces
- IS428** P153 Laser Spectroscopy study on the neutron rich and neutron-deficient Te isotopes

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HRS 2005

Apr

May

Jun

- IS378** **P113** Decay study for the very neutron-rich Sn nuclides, $^{135-140}\text{Sn}$ separated by selective laser ionization
- IS368** **P98** Lattice location of transition metals in semiconductors
- IS425** **P179** Radioactive Probes on Ferromagnetic Surfaces
- IS401** **P146** Semiconductor Spectroscopy with Short Lived Isotopes
- IS434** **P191** A Study of the r-Process Path Nuclides, ^{137}Sb , ^{138}Sb , ^{139}Sb Using the Enhanced Selectivity of Resonance Ionization Laser Ionization

Preliminary →

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Wk	27	28	29	30	31	32	33	34	35	36	37	38	39
Mo	(TISD) ₄	UC&W ₁₁	18	25	IS378 ₁	LIS Sb ₈	Cooling period ₁₅	22	IS414 ₂₉	UC&CP ₅	12	19	26
Tu					IS368	IS425			IS414			Cooling period	
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Schedule 2005

✓ <http://www.cern.ch/isolde/>

→ **Schedule**

→ **Other useful information**

- Target descriptions and requirements
- Links to Engineer in charge shift plan, eLogbook, ...

→ **Weekly schedule**

- Link in the schedule webpage
- Discussed in PG meetings Tuesday 14:00

Summary of first runs

- ✓ Startup on time for physics runs
 - Tests
 - Target development
- ✓ Performed experiments:
 - Sn target: IS401 + IS390 + IS425
 - IS413: Light mass measurements, N and O
 - MgO + noble gas leak
 - SiC
 - MgO + air leak
 - Target development SiC
 - IS427: Mg (RILIS) for COLLAPS
 - Target failure + SiC backup failure
- ✓ Beam sharing between GPS/HRS in use

Extension of the ISOLDE hall



Extension of the ISOLDE hall



Other issues

- ✓ DHCP (dynamic IP) and Wireless network in the hall
 - Register computer and network card
- ✓ **Data CASTOR: ftp to *wacdr* closed! → *gridFTP***
 - All users will need to have their own *certificates* (file with a key) which they will obtain from their respective (national) certification authorities.
 - **ISOLDE** needs to create a *virtual organisation* that will map all those users' certificates to CASTOR accounts (complex!)
 - Alternative: NA4test, an LDAP-based VO
 - Alternative: Map user certificates to general CERN structure
 - Users will be able to fetch the files using *gridFTP*:
 - Only Red Hat or Scientific Linux
 - CERN offers no alternative!
- ✓ Next INTC dates in 2005:
 - NUPAC meeting 10 – 12 October
 - 31 October – 1 November