

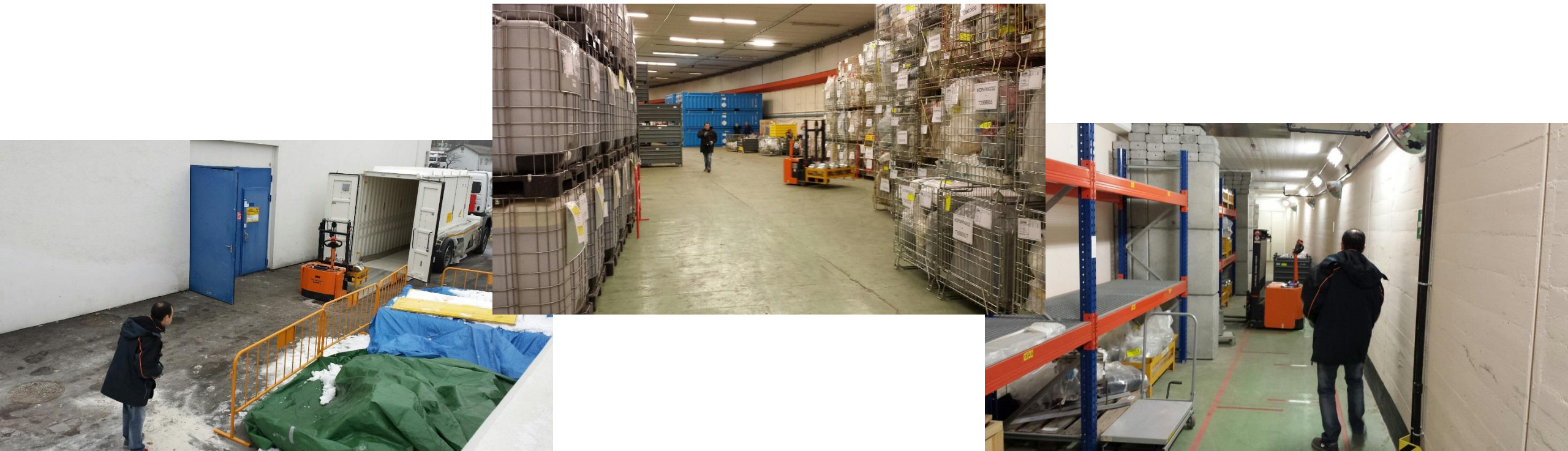
# EYETS Activities at ISOLDE

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78<sup>th</sup> ISCC Meeting  
7<sup>th</sup> February 2017

# Target removal

- All used targets are sent to ISR storage once per year
  - January – to allow for extra cool down
  - Lowers background levels in target area for other interventions
  - 36 targets transported this year



# Target area interventions

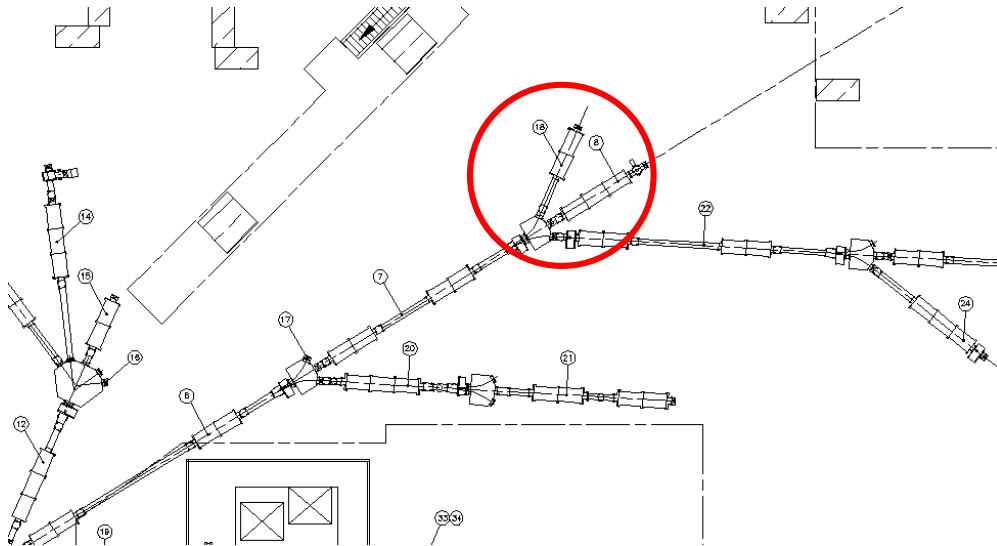
- Finalisation of Montrac system
  - Programming, plc controls, micro-switches and testing
- Program verification of Kuka robots
- Frontend maintenance and modifications
  - 24<sup>th</sup> February to 10<sup>th</sup> March
  - Extraction electrode tip exchanges
  - Faraday cage door servicing
  - Additional compressed air valve to secure FC opening
  - Cleaning..etc
- LIEBE target preparations
  - In anticipation of tests towards the end of the year
  - Verification of handling, installation and removal.

# Cold check out part 1

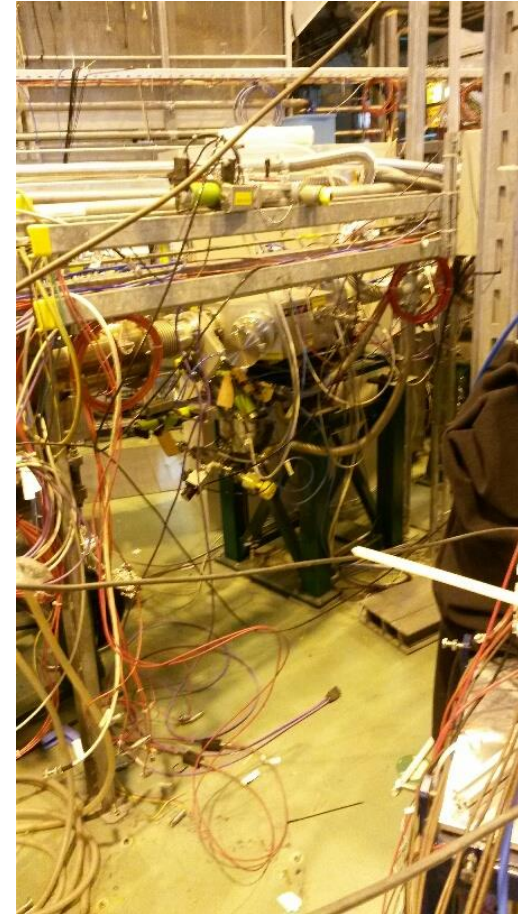
- Water back on the 23<sup>rd</sup> January
- First beams out of the separators as from ~27<sup>th</sup> January 2017.
- Allows for initial testing equipment and fault finding
  - Magnet controls
  - Beam instrumentation
  - Extraction electrode
- Both separators will be stopped as from 24<sup>th</sup> February for ~10 days
  - For Frontend maintenance
  - Re-start 10<sup>th</sup> March



# LC0 beam line removed



As requested in the last ISCC  
Allows for more space in the CRIS area  
To be stored in building 275



# Other hall interventions

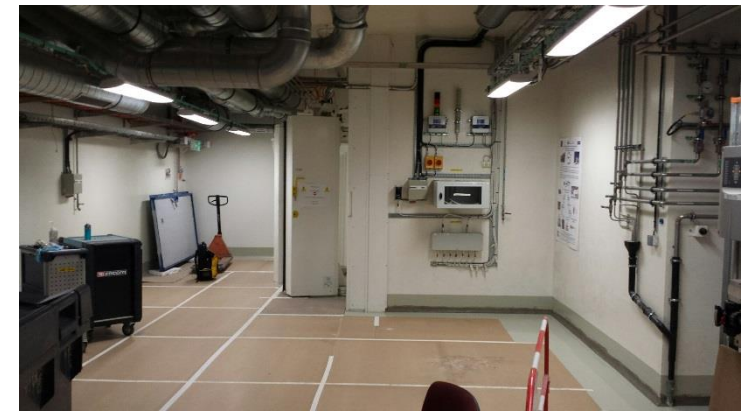
- Water distribution panel above GPS shielding
  - Valves to be changed and panel to be shielded especially towards visitor's window.
- RFQ investigations with the aim of reinforcing insulators to attain 60kV energy
  - Two roughing pumps have to be exchanged.
- BE-BI to install two prototype beam scanners for testing
  - Beginning of April
  - Other BI equipment to be repaired/replaced.
    - As from the first week in March

# Class A laboratory work

- Refurbishing of entire ventilation ducting
  - Following poor workmanship by the company who originally installed it in 2014
  - Implies no open source handling in labs during January and February
  - UPS installation for Class A labs and MEDICIS
- Removal of equipment and declassifying of labs to allow for ventilation work.
  - To be put back in place in March
- Repair of beam instrumentation as from the 1<sup>st</sup> week of March

# MEDICIS progress in pictures

- Completion of the civil engineering work and provisional installation of Frontend.





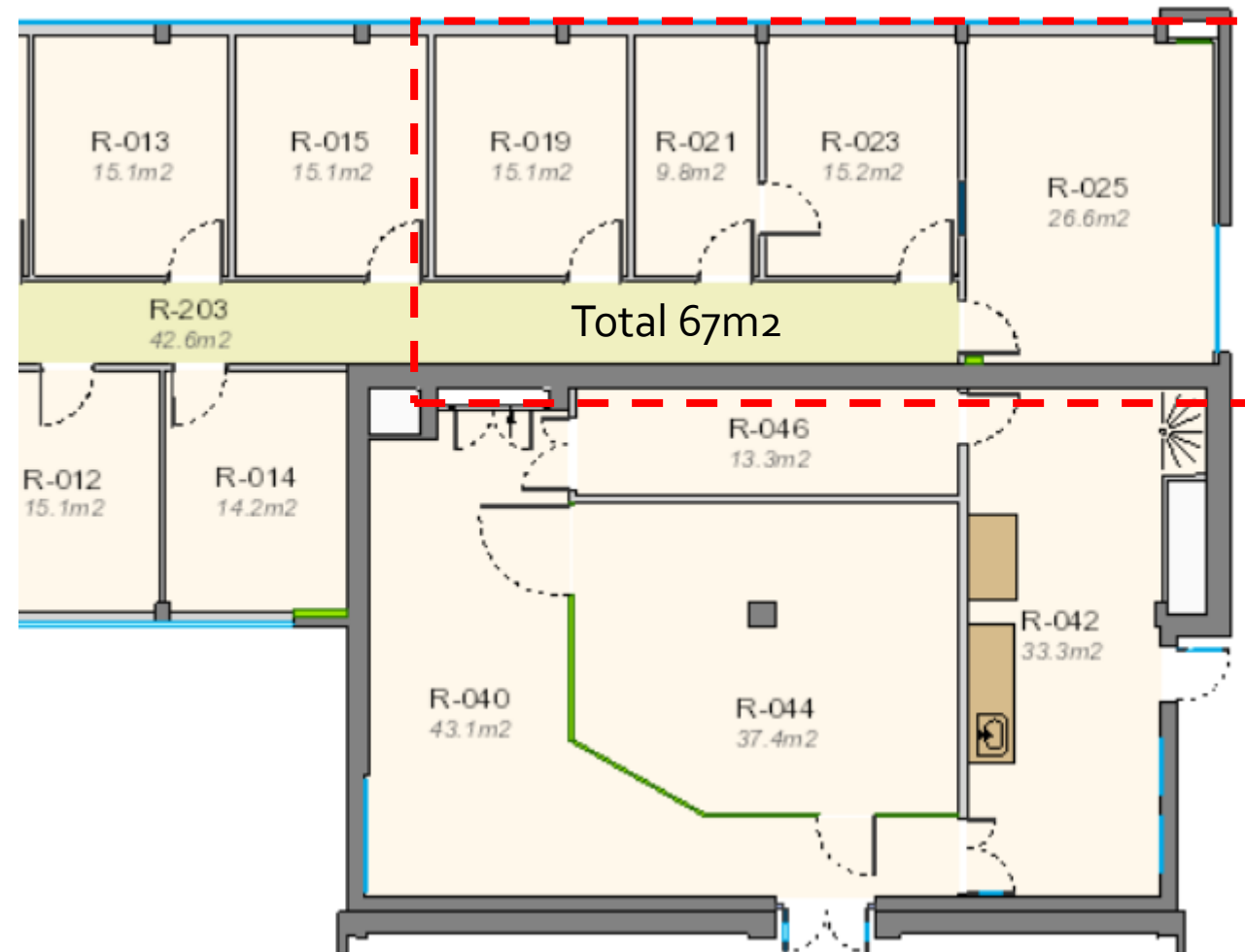
# Status of nano-material production

- Following an incident with the handling of actinide nano-material last year, all production of nano-material targets (with the exception of CaO) is suspended.
- Partly due to a lack of labs to provide a suitable and safe environment for their handling
  - Two labs are required
    - 1 for actinide and 1 for non-actinide
- The scientific program for the following experiments may be jeopardised following this moratorium
- Two propositions have been presented...
  - With full support from EN management
- In the meantime I will ask for a derogation for non-pyrophoric non-actinide materials and investigate a temporary solution for actinide materials.

nano-mat	exp	isotopes
LaCx	IS545	$^{114-118}\text{Cs}$
UCx	P487	$^{133}\text{In}$
	P469	$^{11}\text{Be}$
	P478	$^{28}\text{Mg}$
	P471	$^{78-80}\text{Cu}$
	P470	$^{28,30}\text{Mg}$
	P458	$^{52,53}\text{K}$
	P449	$^{130, 135}\text{In}$
C	P463	$^8\text{B}$
SiC	P459	$^{22}\text{Mg}$
	P366	$^{20}\text{Mg}$

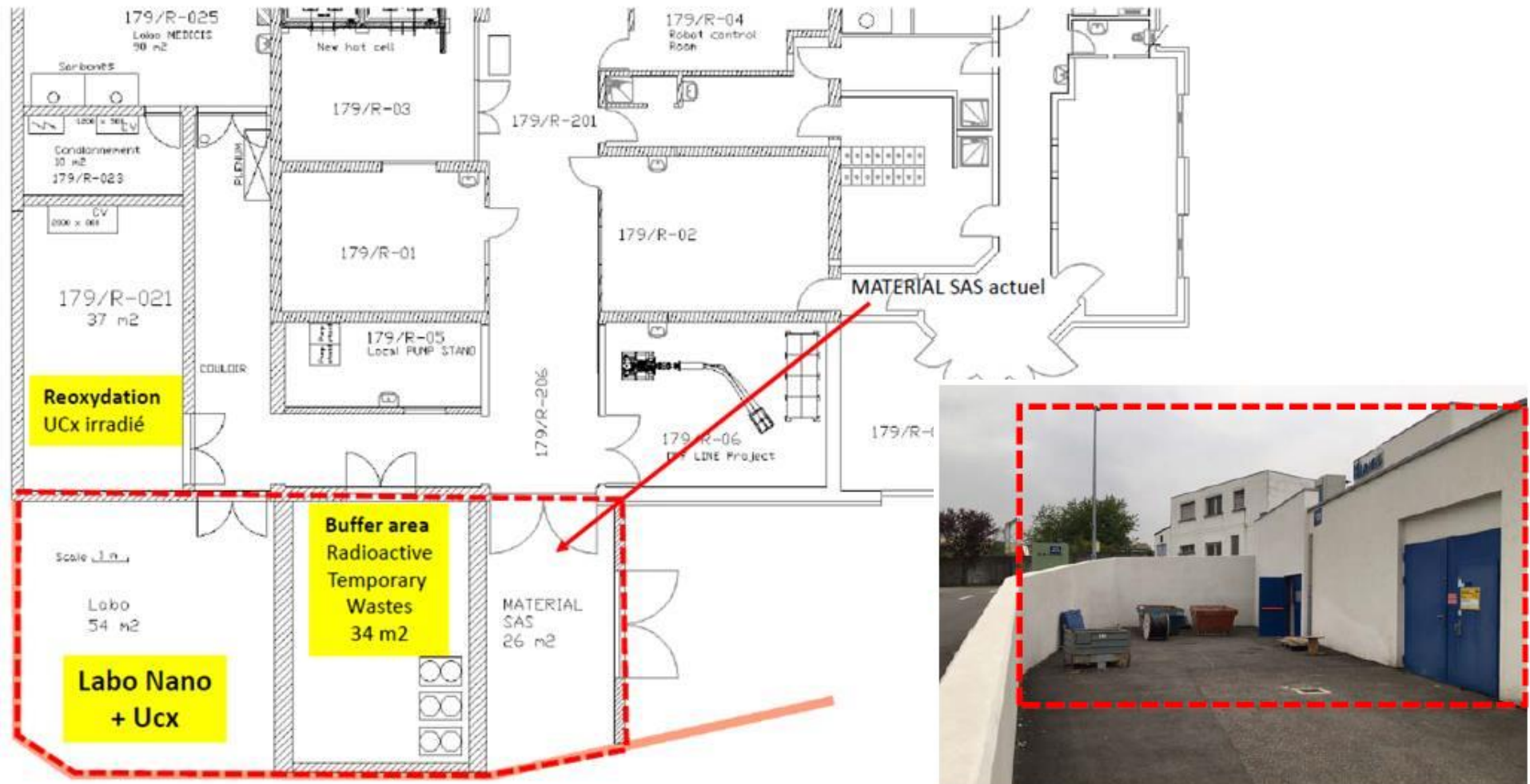
# Non-actinide

Acquisition of 26 - R – 019 – 025 adjacent to off-line separator 2 lab



# Actinide

Extension of Class A laboratory



# RILIS in 2017

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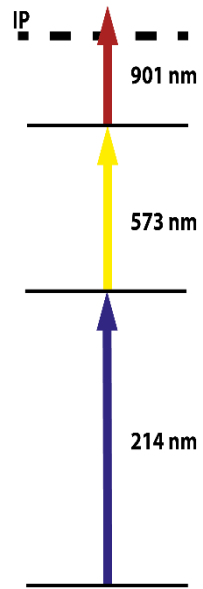
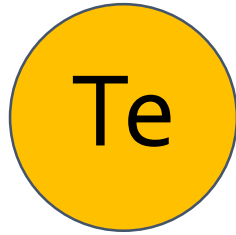
- Consolidation of RILIS lasers:
  - Order of new Nd:YVO4 Blaze laser for driving the ionizing step (40 W at 532 nm)
  - Order of new EdgeWave Nd:YAG laser for pumping the dye lasers (100 W at 532 nm)
  - Repair of the old EdgeWave laser
  - New Ti:Sa lasers from Mainz University
  - Upgrade of Ti:Sa laser motorization (galvo-drivers instead of stepping motors)
- Continuation of RILIS development (plans)
  - New schemes: Silicon, Selenium, Erbium, Lutetium
  - VADLIS study and optimization

**Reduction of RILIS man-power: 3 persons left but only 1 will come**

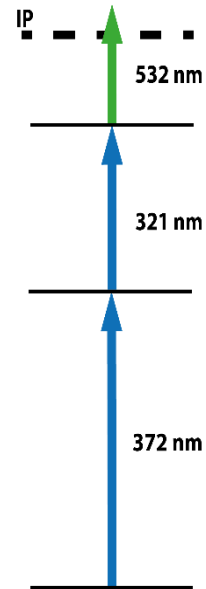
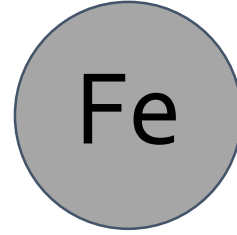




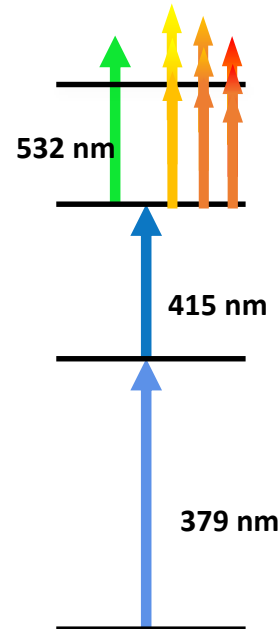
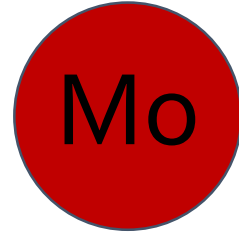
# Development of ionization schemes in 2016



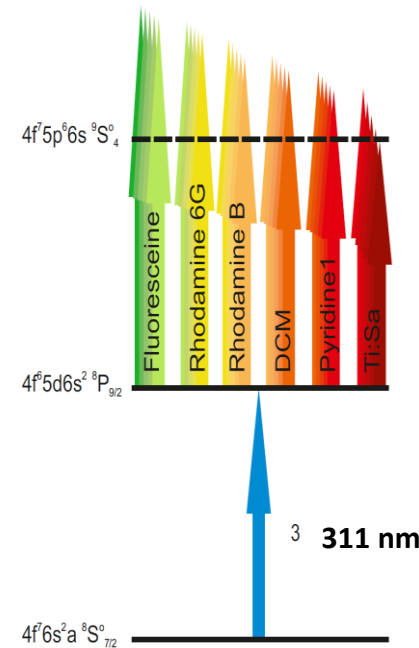
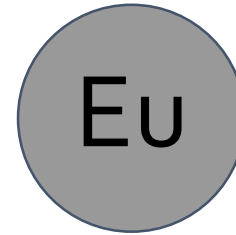
Ionization efficiency >18%



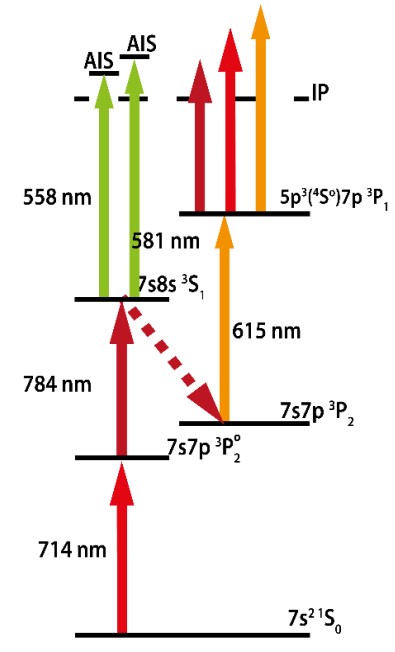
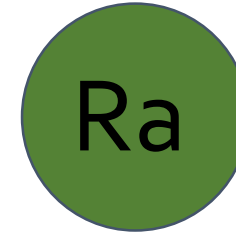
First RILIS beam of Fe



Ionization of refractory metal



Many transitions to autoionizing states



1st RILIS scheme using optical pumping

# RILIS operation in 2016

- **130** days of RILIS operation (mostly 24-hr operation)
- **22** separate RILIS runs => **75% of ISOLDE Physics**
- **14** different elements:  
Be, Cr, Cu, Mg, Ni, Dy, Mn,  
In, Bi, Sn, Ra, Cd, Al, Zn
- **1** laser failure which required a factory repair  
(it did not adversely affect operation)

## Isomer selective ionization of Indium isotopes

