HIE-ISOLDE Status Report

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Outline:

- Status and Schedule for Phase 2B
- Summary
Phase2 Completion YETS 2017/2018

- Additional cryomodule (CM4)

Main activities:
1) Preparations for the installation of CM4
2) Installation of CM4 in the tunnel
3) Cryo dewar functional tests + maintenance of the compressor station and cold box
4) Repair of the Cryo Distribution System by CRIOTEC
5) REX RF maintenance
6) XT00 WIC recommissioning
7) Silicon detector XT02 & XT03 cabling

Others: Installation Solenoid power supply, CM4 RF amplifiers, ISS He filling, tunnel roof fences, REX power supplies consolidation (YETS)
Installation work Dec/Jan

- Preparations XT00 line in the tunnel: Dismount doublet elements and intertank XLN5
- Installation of the CM4 feet and intertank XLN6 support
CM4 transport 23 January
Tunnel installation work Jan/Feb

Tunnel installation work:
- Installation intertank XLN5 & 6 done
- Alignment of CM4 and intertanks done
- Reconnection DC and water done
- Installation of the BCAM system ongoing (wk 5 Feb)
Tunnel status on 5 Feb

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CM4 connection

Planning issues:
- **Vacuum** installation work on CM4 has been delayed due to manpower (YETS shutdown work at all other machines). Starting date moved from 29 Jan to 19 Feb. This does **NOT** affect any other activities on CM4 and milestones for CM4 and Beam commissioning can be kept.

- **Cryogenics** installation work on CM4 has been delayed due to manpower (BA6 Crab cavities installation work (LHC)). Starting date moved from 25 Jan to 12 Feb. This **DOES** affect other activities: other (fragile) CM4 top-plate related work cannot start until cryo work has finished. However due to sufficient margin in the planning the milestones for Cryo cooldown, CM4 and Beam commissioning can be kept.

**CM4 bottom & top-plate infrastructure:**

- Vacuum underneath
- Cryo conn. top-plate
- Cryo flex.& He exhausts
- Top-plate RF, motors, instr.

**Compared to fully installed CM3 bottom & top-plate infrastructure:**
Cryo maintenance

Compressor and Cold Box
- Dewar functional tests done Dec.
- Preventive and corrective maintenance (10,000hr)
- To be ready for cooldown 23 March
CDS repair

Cryo Distribution System repair by CRIOTEC
- Dismounting of all covers for repair inside the Jumper Boxes
- Opening cryo distribution line for repair spacers and isolation and to improve routing inner tubing
- To be ready for reception tests 5 March
REX RF maintenance

REX RF maintenance and repair
- Overall inspection, maintenance water system RF room and tunnel done
- Tuners maintenance and set-up of new tuning ranges done
- Maintenance, cleaning and refurbishment of power supplies and amplifiers done
- IH Structure suspected to have issues with internal water circuits. Manifolds to be replaced. Consolidation points for LS2
- Water (20 degree mixed) bypass installed for easy filter change
- Tests of water circuits and RF tests (LLRF, calibration, tuning ranges) coming up
ISS installation status

ISS at XT02 installation
- Shielding successfully installed Nov 2017
- Field mapping done
- Stable beam tests successfully done using HIE ISOLDE Dbox with FC and Slits. No significant change of shape or intensity when ramping up the ISS magnet (2.5 T)
- End flanges sent off for feedthrough modification (detector cabling)
- Set-up prepared for He filling (wk 12 Feb)
Planning of remaining Phase2 activities

- Change of starting dates for the vacuum work on CM4 and XT00 as well as the Cryo work on CM4 required adaptation of the planning.
- To keep impact on other CM4 top-plate activities minimal Cryo work will start first on the flexibles and He exhausts followed by modification of Jumper Box 5 (bypass)
- Due to sufficient contingency and reshuffling of some of the activities the milestones for Commissioning of CM4 (5 March), Cooldown of the cryo modules (26 March), Machine check-out and beam commissioning (28 May) can be kept.
- Start of physics foreseen as of 9 July.
Summary

Installation of phase 2b is on schedule

- CM4 is installed and aligned.
- Infrastructure CM4 being installed: Vacuum and cryo later starting dates are accounted for on the (modified) planning.
- XT00 modification done (doublet dismounted). Modification requires WIC re-commissioning.
- Cryogenics maintenance ongoing. (aim: 23 March ready for cooldown)
- Cryogenics Distribution System repair by CRIOTEC ongoing and on schedule. (aim: 5 March start of reception tests, 23 March ready for cooldown).

Attention: It became clear to the cryo group that a possible phase 3 will not only require consolidation of the cryoplant but also of the CDS

- REX RF maintenance on track. LS2 consolidation necessary of the water distribution system for IHS (manifolds). Probably also circuits inside IHS.
- ISS integrated at XT02.
- Silicon detector cabling will be installed in March for XT02 & XT03.
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