

# SIS18 September 2018 Commissioning Time Table

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## Version 2

### Week 1: Goals

- **critical system commissioning with beam to confirm its operational readiness**
- **establish slow extracted to HADES, and FRS if time permits**

### Day #1

#### Frühe shift

- establish Ag beam in the UNILAC: IQ+LINAC+HKR
- establish injection to SIS18: HKR with SIS18 expert (on call)
  - pattern: SIS18 slow extract to HHD
  - check the readiness of SIS18 injection system including required beam instrumentations
    - availability of corresponding experts on request
- Commissioning SIS18 timing in relation to UNILAC: FESA+DataSupply experts
  - preparation including setting up diagnostics
  - check the synchronization between SIS18 and UNILAC with different UNILAC operation mode, i.e. different # of virtual accelerators

#### Abend shift

- Continue the commissioning of SIS18 timing if needed
- If the timing is shown operational, then continue establishing slow extracted beam to HHD (resonant extraction)
  - SIS18 extraction expert + HEBT expert + experts of required beam instrumentations

#### Nacht shift

- carry out specific task (test/measurement etc) with clear instructions

### Day #2

#### Frühe shift

- Continue the commissioning of SIS18 timing if needed: FESA+DataSupply experts
- If the timing is shown operational, then continue SIS18 tuning with SIS18 slow extract to HHD pattern. Once reasonable condition is established, call Ring RF experts and give them the beam time to do their fine tuning of the Ring RF, in particular the switch between NA and MA cavities
  - Ring RF + corresponding LSA expert

- **For this, the RF experts need a few days in week 35 (better a full week) of RF operation without beam and dedicated LSA ramps would be necessary for a full calibration of all RF cavities**

#### Abend shift

- Continue Ring RF fine tuning
- parasitic UNILAC tuning to improve the beam quality at the end of TK, momentum spread, shot to shot variation, etc. Observable, the SIS18 Schottky spectrum at injection

#### Nacht shift

- Based on the availability of the experts, either continue the UNILAC tuning or carry out specific task (test/measurement etc) with clear instructions: HKR

### Day #3

#### Frühe shift

- If the timing is operational, then continue SIS18 tuning and establish beam slow extracted to FRS ( HEBT expert + experts of required beam instrumentations ). Otherwise, complete SIS18 timing tuning
- Commissioning of IPM. Parasitic if possible: IPM experts

#### Abend shift

- Continue establish slow extracted beam to HADES
  - HEBT expert + experts of required beam instrumentations

#### Nacht shift

- carry out specific task (test/measurement etc) with clear instructions: HKR

### Day #4

#### Frühe shift

- Ring RF commissioning continues
- In case Ring RF commissioning is completed on Day#2, then continue SIS18 tuning and establish slow extracted beam to HADES
  - HEBT expert + experts of required beam instrumentations

#### Abend shift

- Continue SIS18 tuning and establish slow extracted beam to HADES
  - HEBT expert + experts of required beam instrumentations
- establish slow extraction quality detectors: BI experts

#### Nacht shift

- carry out specific task (test/measurement etc) with clear instructions: HKR

### Day #5

#### Frühe shift

- Continue tuning of SIS18 slow extracted beam to HADES, and achieve focused beam on target
  - HEBT expert + experts of required beam instrumentations

#### Abend shift

- Commissioning of KO

#### Nacht shift

- carry out specific task (test/measurement etc) with clear instructions: HKR

### Weekend

If goals in week 1 are achieved, provide beam to HADES and FRS if requested or desired

#### Week 2, Goals:

- **continue commissioning of non-default slow extraction systems, i.e. KO, spill structure instrumentations: 1-2 days?**
- **establish slow extraction feedback (or feedforward?): 1 day?**
- **fine tune of SIS18 and its slow extraction setup: 2 days?**
  - **sextupole strength vs. slow extraction quality**
  - **bunched beam vs. un-bunched beam**
  - **other ideas?**
- **provide beam for experiments overnight if desired**

### Weekend

If goals in week 2 are achieved, provide beam to HADES and FRS if requested or desired

#### Week 3:

- **if all the goals in 1<sup>st</sup> two weeks are achieved, then continue with Pb setup for FRS if Pb is still preferable**
- **Otherwise, Bi setup? If Bi not possible, test Pb4+ with 6.2 volts of HSI RFQ**
- **commission MMTI for accumulation as well as ESR experiment**