IST Planning East Area

B. Raë
### B.352 IST:

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Test cooling circuits</td>
<td>EN-CV</td>
<td>1 day</td>
<td>Mon 27.01.20</td>
<td>Mon 27.01.20</td>
<td></td>
</tr>
<tr>
<td>Commission the Demin Cooling Circuits b.352 (Require dummy loads) - Phase 1</td>
<td>EN-CV</td>
<td>2 wks</td>
<td>Mon 04.05.20</td>
<td>Fri 15.05.20</td>
<td></td>
</tr>
<tr>
<td>Commission the Magnets in b.352 (Individual tests)</td>
<td>TE-MSC</td>
<td>3 wks</td>
<td>Tue 09.06.20</td>
<td>Mon 29.06.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commissioning of vacuum system in b.352</td>
<td>EN-EA</td>
<td>1 wk</td>
<td>Tue 09.06.20</td>
<td>Mon 15.06.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commissionning of the Beam instrumentation in b.352</td>
<td>BE-BI</td>
<td>2 wks</td>
<td>Tue 09.06.20</td>
<td>Mon 22.06.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commission the Beam stoppers in b.352</td>
<td>EN-STI</td>
<td>1 wk</td>
<td>Tue 09.06.20</td>
<td>Mon 15.06.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commissioning the WIC in b.352</td>
<td>TE-MPE</td>
<td>1 wk</td>
<td>Tue 15.09.20</td>
<td>Mon 21.09.20</td>
<td>To be confirmed</td>
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</tbody>
</table>

### B.251 IST:

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commissioning GS and SN</td>
<td>EN-EL</td>
<td>1 wk</td>
<td>Thu 25.06.20</td>
<td>Wed 01.07.20</td>
</tr>
<tr>
<td>Commission the Water Cooling B.251</td>
<td>EN-CV</td>
<td>1.5 mons</td>
<td>Tue 12.05.20</td>
<td>Wed 24.06.20</td>
</tr>
<tr>
<td>Power Converters F61 IST</td>
<td>TE-EPC</td>
<td>2 wks</td>
<td>Tue 01.09.20</td>
<td>Fri 18.09.20</td>
</tr>
</tbody>
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## Primary Area:

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Commission the Ventilation Primary Area (EN-EL Power required)</td>
<td>EN-CV</td>
<td>25 days</td>
<td>Mon 19.10.20</td>
<td>Fri 20.11.20</td>
<td></td>
</tr>
<tr>
<td>Test Primary Area Ventilation (1 day without access zones)</td>
<td>EN-CV</td>
<td>2 wks</td>
<td>Mon 04.01.21</td>
<td>Fri 15.01.21</td>
<td></td>
</tr>
<tr>
<td>Commission Ventilation Functional acceptance</td>
<td>EN-CV</td>
<td>15 days</td>
<td>Mon 18.01.21</td>
<td>Fri 05.02.21</td>
<td></td>
</tr>
<tr>
<td>Commission the airtightness of the primary area</td>
<td>EN-EA</td>
<td>1 wk</td>
<td>Mon 15.02.21</td>
<td>Fri 19.02.21</td>
<td></td>
</tr>
<tr>
<td>Commission the Collimators</td>
<td>EN-EA</td>
<td>2 days</td>
<td>Fri 27.11.20</td>
<td>Tue 01.12.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commission the Absorbers</td>
<td>EN-STI</td>
<td>1 wk</td>
<td>Fri 27.11.20</td>
<td>Fri 04.12.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commission the Targets</td>
<td>EN-STI</td>
<td>1 wk</td>
<td>Fri 27.11.20</td>
<td>Fri 04.12.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commission the Beam stoppers</td>
<td>EN-STI</td>
<td>1 wk</td>
<td>Fri 27.11.20</td>
<td>Fri 04.12.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commission the Magnets in b.157</td>
<td>TE-MSC</td>
<td>4 wks</td>
<td>Fri 27.11.20</td>
<td>Fri 08.01.21</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commissioning of the BI</td>
<td>BE-BI</td>
<td>2 wks</td>
<td>Fri 27.11.20</td>
<td>Fri 11.12.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commission the primary area access system (req. EIS readiness)</td>
<td>BE-ICS</td>
<td>2 wks</td>
<td>Fri 05.03.21</td>
<td>Fri 19.03.21</td>
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</tr>
</tbody>
</table>

## Secondary/Mixed Area:

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commission the Skid (EN-EL Power required)</td>
<td>EN-CV</td>
<td>6 wks</td>
<td>Mon 04.05.20</td>
<td>Tue 16.06.20</td>
<td></td>
</tr>
<tr>
<td>Commissioning of the BI Secondary Beam Area</td>
<td>BE-BI</td>
<td>2 wks</td>
<td>Fri 27.11.20</td>
<td>Fri 11.12.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commission the Magnets Secondary Areas</td>
<td>TE-MSC</td>
<td>4 wks</td>
<td>Fri 27.11.20</td>
<td>Fri 08.01.21</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commission the WIC in b.157</td>
<td>TE-MPE</td>
<td>2 days</td>
<td>Fri 27.11.20</td>
<td>Tue 01.12.20</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Commission the Demin Cooling Circuits Secondary + primary areas</td>
<td>EN-CV</td>
<td>1 mon</td>
<td>Wed 19.08.20</td>
<td>Wed 16.09.20</td>
<td></td>
</tr>
<tr>
<td>Commission the SUSI/SALTO access system</td>
<td>BE-ICS</td>
<td>1 wk</td>
<td>Fri 04.12.20</td>
<td>Fri 11.12.20</td>
<td></td>
</tr>
<tr>
<td>Commission the secondary access system (req. EIS readiness)</td>
<td>BE-ICS</td>
<td>1 wk</td>
<td>Mon 04.01.21</td>
<td>Fri 08.01.21</td>
<td></td>
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</table>
BACK UP SLIDES
## HW tests

### B352:

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commission the WIC in b.352</td>
<td>TE-MPE</td>
<td>1 wk</td>
<td>Tue 15.09.20</td>
<td>Mon 21.09.20</td>
</tr>
<tr>
<td>Power converters HW Tests</td>
<td>TE-EPC</td>
<td>3 wks</td>
<td>Tue 22.09.20</td>
<td>Mon 12.10.20</td>
</tr>
<tr>
<td>Magnet Commissioning HW</td>
<td>TE-MSC</td>
<td>1 wk</td>
<td>Tue 13.10.20</td>
<td>Mon 19.10.20</td>
</tr>
</tbody>
</table>

### B.157

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Converters B157 HW</td>
<td>TE-EPC</td>
<td>11 wks</td>
<td>Wed 04.11.20</td>
<td>Tue 02.02.21</td>
</tr>
<tr>
<td>Perform General DC Circuit Tests in b.157</td>
<td>EN-EA</td>
<td>1 mon</td>
<td>Fri 19.03.21</td>
<td>Tue 20.04.21</td>
</tr>
</tbody>
</table>
How the slides are done

• IST by workpackages (Cf. EARP WBS: 
  https://edms.cern.ch/document/1730966)

• Prerequisite = What is needed before doing the tests?

• Needs = What is needed during the tests?

• Tests = What does the tests consist in? (Date used in the planning)

• Proposal with earliest dates possible: To be negotiated / validated with groups
ISTs: Beam instrumentation, BE-BI (EAR 4)

- Prerequisite:
  - Beam instrumentation installed
  - Cabling work completed
- Needs during tests:
  - Electrical power
  - Network available
  - Vacuum (Not for all beam instrument)
- Tests:
  - Reception tests without beams
  - Tests done by the **08/05/2020**

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beam stoppers installation in b.352</td>
<td>EN-STI</td>
<td>1 wk</td>
<td>Mon 10.02.20</td>
<td>Fri 14.02.20</td>
<td>63,441</td>
</tr>
<tr>
<td>&quot;Lissage&quot; in b.352</td>
<td>EN-SMM</td>
<td>1 wk</td>
<td>Mon 20.04.20</td>
<td>Fri 24.04.20</td>
<td>448</td>
</tr>
<tr>
<td>Commissionning of the Beam instrumentation in b.352</td>
<td>BE-BI</td>
<td>2 wks</td>
<td>Mon 27.04.20</td>
<td>Fri 08.05.20</td>
<td>443,449</td>
</tr>
</tbody>
</table>
• Cabling work:
  • Prerequisite:
    • B. 352 (PS), B.157, B.251 : Cabling installation done
  • Needs during tests:
    • Access to both end of cables
  • Tests:
    • Reception at the end of installation
  • Test done by 03.07.2020

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabling of new DC Cables at 352 (including manchon)</td>
<td>EN-EL</td>
<td>2 wks</td>
<td>Mon 10.02.20</td>
<td>Fri 21.02.20</td>
<td>441</td>
</tr>
<tr>
<td>Cabling of new DC Cabling at 251 (including all manchons)</td>
<td>EN-EL</td>
<td>2 mons</td>
<td>Mon 10.02.20</td>
<td>Fri 03.04.20</td>
<td>508</td>
</tr>
<tr>
<td>Install the Power Converters</td>
<td>TE-EPC</td>
<td>4 wks</td>
<td>Mon 06.04.20</td>
<td>Fri 01.05.20</td>
<td>509</td>
</tr>
<tr>
<td>Lugs Mounting + Tests of DC Cables accessing both extremities</td>
<td>EN-EL</td>
<td>3 wks</td>
<td>Mon 15.06.20</td>
<td>Fri 03.07.20</td>
<td>511;449;10;535</td>
</tr>
</tbody>
</table>

Tests done in b.352

B. Raë 25/02/2020

IST Planning East Area
ISTs : Electrical infrastructure, EN-EL (EAR9)

• Electrical infrastructure :
  • Prerequisite :
    • B. 352 (PS) : Not applicable
    • B.157 : Transformers, Switchboard, cabling done
    • B.251 : Transformers, Switchboard, cabling done
  • Needs during tests :
    • Electrical power
  • Tests :
    • Reception done through the installation (Transformers reception, HV cabling reception, Cabling reception, ...)
  • Test can be done after previous test → to be confirmed

Needed for tests in b.352, not done in b.352

B. Raë 25/02/2020
ISTs : Cooling, EN-CV(EAR 10)

• Piping work :
  • Prerequisite :
    • 352 (PS) : Piping, Skid (157), magnets installed (If possible also in primary area)*
    • 251 : Piping, power converters installed
    • 157 : Piping, magnets installed
  • Needs during tests :
    • Electrical power
    • Cooling station operational (B.355)
  • Tests :
    • X-Ray tests done without specific needs
    • Pressure tests

*If magnets in primary area are not installed, commissioning of the circuit will be done with dummy load

Tests done in b.352

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install the demineralized cooling circuit in B.352</td>
<td>EN-CV</td>
<td>2 wks</td>
<td>Mon 04.11.19</td>
<td>Fri 15.11.19</td>
<td></td>
</tr>
<tr>
<td>Movement to final location (CERN Activity) - Skid Installation</td>
<td>EN-CV</td>
<td>1 wk</td>
<td>Mon 09.12.19</td>
<td>Fri 13.12.19</td>
<td>137</td>
</tr>
<tr>
<td>Magnets installation in b.352</td>
<td>TE-MSC</td>
<td>4 wks</td>
<td>Mon 16.12.19</td>
<td>Fri 24.01.20</td>
<td>68;69;71;72;77;78;431</td>
</tr>
<tr>
<td>Install the Power Converters</td>
<td>TE-EPC</td>
<td>4 wks</td>
<td>Mon 06.04.20</td>
<td>Fri 01.05.20</td>
<td>509</td>
</tr>
<tr>
<td>Commission the Water Cooling B.251</td>
<td>EN-CV</td>
<td>1.5 mons</td>
<td>Mon 04.05.20</td>
<td>Fri 12.06.20</td>
<td>511</td>
</tr>
<tr>
<td>Commission the Demin Cooling Circuits b.352(Require dummy loads) - Phase 1</td>
<td>EN-CV</td>
<td>2 wks</td>
<td>Wed 04.03.20</td>
<td>Tue 17.03.20</td>
<td>430;437;432;440</td>
</tr>
</tbody>
</table>
ISTs: Beam stoppers, EN-STI (EAR 5)

Beam stoppers

- **Prerequisite:**
  - Beam stoppers installed
  - Cabling work completed
  - Compressed air network installed

- **Needs during tests:**
  - Electrical power
  - Network available
  - Vacuum?
  - Compressed air

- **Tests:**
  - Functional tests (Mouvements)

- Tests Done by 01.05.2020

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Tests done in b.352

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<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beam stoppers installation in b.352</td>
<td>EN-STI</td>
<td>1 wk</td>
<td>Mon 10.02.20</td>
<td>Fri 14.02.20</td>
<td>63,441</td>
</tr>
<tr>
<td>&quot;Lissage&quot; in b.352</td>
<td>EN-SMM</td>
<td>1 wk</td>
<td>Mon 20.04.20</td>
<td>Fri 24.04.20</td>
<td>448</td>
</tr>
<tr>
<td>Commission the Beam stoppers in b.352</td>
<td>EN-STI</td>
<td>1 wk</td>
<td>Mon 27.04.20</td>
<td>Fri 01.05.20</td>
<td>442,449</td>
</tr>
</tbody>
</table>
ISTs : Vacuum, EN-EA(+TE-VSC) (EAR 6)

- Prerequisite:
  - Control rack equipped
  - Vacuum pipes installed and connected
  - Cabling work completed
- Needs during tests:
  - Electrical power
  - Network available
- Tests:
  - Leak tests
  - Done by 01.05.2020
- Vacuum system managed by EN-EA except the first part of F61 (Managed completely by TE-VSC)

### Task Table

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacuum installation in b.352</td>
<td>EN-EA</td>
<td>3 wks</td>
<td>Mon 30.03.20</td>
<td>Fri 17.04.20</td>
<td>446;66</td>
</tr>
<tr>
<td>&quot;Lissage&quot; in b.352</td>
<td>EN-SMM</td>
<td>1 wk</td>
<td>Mon 20.04.20</td>
<td>Fri 24.04.20</td>
<td>448</td>
</tr>
<tr>
<td>Commissioning of vacuum system in b.352</td>
<td>EN-EA</td>
<td>1 wk</td>
<td>Mon 27.04.20</td>
<td>Fri 01.05.20</td>
<td>448;449</td>
</tr>
</tbody>
</table>

Tests done in b.352
**ISTs : DC Circuit tests, TE-EPC/TE-MSC/…., EAR2,4,14)**

- **Prerequisite:**
  - PCs installed
  - Cabling work completed in b.251
  - DC cables installed
  - AC installation completed
  - Magnets connected to power converters

- **Needs during tests:**
  - Electrical power
  - Ethernet network
  - Controls infr. available
  - Converters/magnets cooling
  - WIC
  - Access restricted near magnets

- **Tests:**
  - DC Circuits
  - Done by 04.11.2020

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Groups</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lugs Mounting + Tests of DC Cables accessing both extremities</td>
<td>EN-EL</td>
<td>3 wks</td>
<td>Mon 15.06.20</td>
<td>Fri 03.07.20</td>
<td>511;449;10;535</td>
</tr>
<tr>
<td>Install the Power Converters</td>
<td>TE-EPC</td>
<td>4 wks</td>
<td>Mon 06.04.20</td>
<td>Fri 01.05.20</td>
<td>509</td>
</tr>
<tr>
<td>Commission the Water Cooling B.251</td>
<td>EN-CV</td>
<td>1.5 mons</td>
<td>Mon 04.05.20</td>
<td>Fri 12.06.20</td>
<td>511</td>
</tr>
<tr>
<td>Power Converters F61 IST</td>
<td>TE-EPC</td>
<td>2 wks</td>
<td>Mon 06.07.20</td>
<td>Fri 17.07.20</td>
<td>511;535;452</td>
</tr>
<tr>
<td>DC Circuit tests in B.352</td>
<td>EN-EA</td>
<td>20 days</td>
<td>Thu 08.10.20</td>
<td>Wed 04.11.20</td>
<td></td>
</tr>
<tr>
<td>Commission the WIC in b.352</td>
<td>TE-MPE</td>
<td>1 wk</td>
<td>Thu 08.10.20</td>
<td>Wed 14.10.20</td>
<td>515</td>
</tr>
<tr>
<td>Magnet Commissioning HW</td>
<td>TE-MSC</td>
<td>1 wk</td>
<td>Thu 22.10.20</td>
<td>Wed 28.10.20</td>
<td>463SS+5 days</td>
</tr>
<tr>
<td>Power converters HW test</td>
<td>TE-EPC</td>
<td>3 wks</td>
<td>Thu 15.10.20</td>
<td>Wed 04.11.20</td>
<td>462;536</td>
</tr>
</tbody>
</table>

Tests done in b.352

B. Raë 25/02/2020

IST Planning East Area
ISTs: Controls, BE-CO (EAR 8)

• Prerequisite:
  - Control HW installed
  - Cabling work completed

• Needs during tests:
  - Electrical power:
  - Air conditioning in the barrack:
  - Ethernet network:

• Tests:
  - Basic reception tests at the end of the installation.
• Test could be done by 12.06.19 → (to be checked with software)

Needed for tests in b.352, not done in b.352
Thanks for your attention!
ISTs : Alarms, BE-ICS (EAR15)

• Prerequisite :
  • Control rack equipped
  • HW installed in the zones
  • Cabling work completed
• Needs during tests :
  • Electrical power
  • Network available
• Tests :
  • Reception tests

Not related to b.352
ISTs : Access, BE-ICS (EAR16)

(B.157)

• Prerequisite:
  • Access system installed (Doors, patrol boxes, racks, PAD/MAD, ...)
  • Beam stoppers installed
  • Power converters installed
  • Cabling work completed

• Needs during tests:
  • Electrical power
  • Network available
  • Access to EIS and zones (May include the PS)

• Tests:
  • Reception tests
  • DSO tests

Not related to b.352 (TBC)
ISTs: Targets, EN-STI (EAR 5)

Targets (B.157)
• Prerequisite:
  • Targets stoppers installed
  • Cabling work completed
  • Compressed air network installed
• Needs during tests:
  • Electrical power
  • Network available
  • Compressed air
• Tests:
  • Functional tests (Mouvements)

Not related to b.352
ISTs: Networks, IT-CS (EAR 7)

- **Prerequisite**
  - IT installation completed
  - Cabling work completed

- **Needs during tests**:
  - Electrical power
  - Air conditioning in the barrack

- **Tests**:
  - Basic reception tests at the end of the installation.

Network (B.157): Installation and reception tests completed on the **07/07/2020** (Not cut in between)

Not related to b.352
ISTs : Ventilation, EN-CV(EAR 10)

• Primary area new ventilation :
  • Prerequisite :
    • Shielding installed (Air tight envelop installed)
    • Duct and AHU installed
  • Needs during tests :
    • Electrical power
    • Cooling station operational (B.355)
  • Tests :
    • Ventilation system reception
    • Airtightness tests

Not related to b.352
ISTs : RP Monitoring (EAR 13)

Monitors in b.157

• Prerequisite:
  • Monitors installed
  • Cabling work completed

• Needs during tests:
  • Electrical power

• Tests:
  • Reception tests without/with beam

Not related to b.352
Collimators (b.157)

- Prerequisite:
  - Collimators installed
  - Cabling work completed
  - Control rack equipped

- Needs during tests:
  - Electrical power
  - Network available

- Tests:
  - Functional tests (Mouvements)

Not related to b.352
ISTs : Gaz , EN-EA (EAR22)

Gaz systems (b.157)

• Prerequisite :
  • Piping completed
  • Gaz area installed
  • ATEX ventilation installed

• Needs during tests :
  • Electrical power
  • Network available
  • ATEX ventilation working

• Tests :
  • Leak tests, functional tests, safety reception

Not related to b.352