HL-LHC WP4 TE-VSC items to UK

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Let’s focus on the RFD - SPS

PIMs – Plug – in modules *

BS – Beam Screens

VM – Vacuum Modules

* Short CWTs; Long CWTs; Inter-cavity module; Inter-beam screen module;
## Items to be produced / procured by TE-VSC

<table>
<thead>
<tr>
<th>ID</th>
<th>Component</th>
<th>Image</th>
<th>Quantity</th>
<th>Date of Delivery</th>
<th>Technical Contact</th>
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<tbody>
<tr>
<td>3</td>
<td>Beam Screen</td>
<td><img src="image" alt="Beam Screen" /></td>
<td>2</td>
<td>Oct-20</td>
<td>TE-VSC</td>
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<tr>
<td>11</td>
<td>Sector valve DN100 (aperture Ø80mm) Extremity chamber type 2 with RF insert</td>
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<td>TE-VSC</td>
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<tr>
<td>13</td>
<td>Cavity cold warm transition long with RF insert</td>
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<td>14</td>
<td>Cavity cold warm transition short with RF insert</td>
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<td>Penning DN40</td>
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<td>Pirani DN40</td>
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<td>Multiport bloc 3xDN40 for gauges &amp; rupture disk</td>
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<td>TE-VSC</td>
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<td>32</td>
<td>Roughing Angle valve DN63 for beam vacuum</td>
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<td>Ion pump</td>
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<td>Spring relief valve</td>
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Beam Vacuum components

Vacuum Chambers

- 2 X RFD aC coated beam screens;
- 2 X CWT + 1 interbeam screen bellows;
- 2 X CWT + 1 inter cavities bellows;
- 4 X extremities vacuum chambers;

Ancillaries

- 2 X DN40 manifolds;
- 1 X DN40 Tee;
- 2 X DN40 + DN16 manifolds;
- 1 X DN16 Tee;
- 4 X Penning Gauges;
- 2 X Pirani Gauges;
- 4 X Sector valves;
- 2 X Right Angle Valves;
- 2 X Burst Disks;
- 2 X Ion Pumps;
Beam Vacuum components: crabbed and beam screen lines

- Beam screen line:
  - Beam screen delivered inserted in the cavities, under N2 and pinched off;
  - CWTs and inter beam screen bellows delivered under N2, double bagged with aluminium protective flanges and transport tooling;

- Crabbed line:
  - CWT and inter beam screen bellows assembled in clean room and delivered under N2, double bagged with aluminium protective flanges and transport tooling; (all CWT are identified with their assets numbers pointing to the drawings).

- Vacuum modules:
  - Delivered without the screen mounted; doubled bagged and under N2;
Beam Vacuum components: ancillaries

- Ancillaries
  - Manifolds and Tees are cleaned according to UHV CERN standards;
  - 2 Sector valves for the crabbed line will be conditioned for clean room (ISO4) at CERN;
  - 2 Sector valves will be delivered to UK as manufactured;
  - Screws, washers and nuts will be delivered as well;
4 configurations, according to these integrations; The DN40 vacuum drift will not be provided for the string assembly (not needed in SPS).
Insulation vacuum components

- 1 X DN160 ISO-K spring safety valve;
- 1 X multiport block for pirani and penning;
- 1 X pirani;
- 1 X penning;
- 1 X membrane gauge
Delivery plans

- PIMS, extremity vacuum chambers and all ancillaries will be sent together with the RFD2 cavity;
- Transport foreseen for the second week of August;
Conclusions

- Ancillaries ready to be shipped to UK;
- PIMS → blank tests & assembly phase. Planning being revised according to the tooling readiness and the compatibility with clean room activities planning;
- Delivery to UK foreseen for the 2\textsuperscript{nd} week of August.