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11/10/2005

## Installed HLS Measurement System in SPEAR3

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### 1. Set up

To detect a tilt of the insertion device (ID) 6, one sensor has been placed on each end of the support structure along the beam, see Figure 1 and Figure 2. To look at the floor movement along the path of beam line 6 one HLS sensor has been installed near the mirror, see Figure 3. Further down the ring one HLS sensor has been installed on both sides of ID 4 on the floor, see Figure 4 and Figure 5. All the sensors are connected to each other to detect relative floor movements.

The sensors are connected with CAT5e cables to a rack outside in Bldg 131 (Rack number B131-601 and B131-602), see Figure 6.

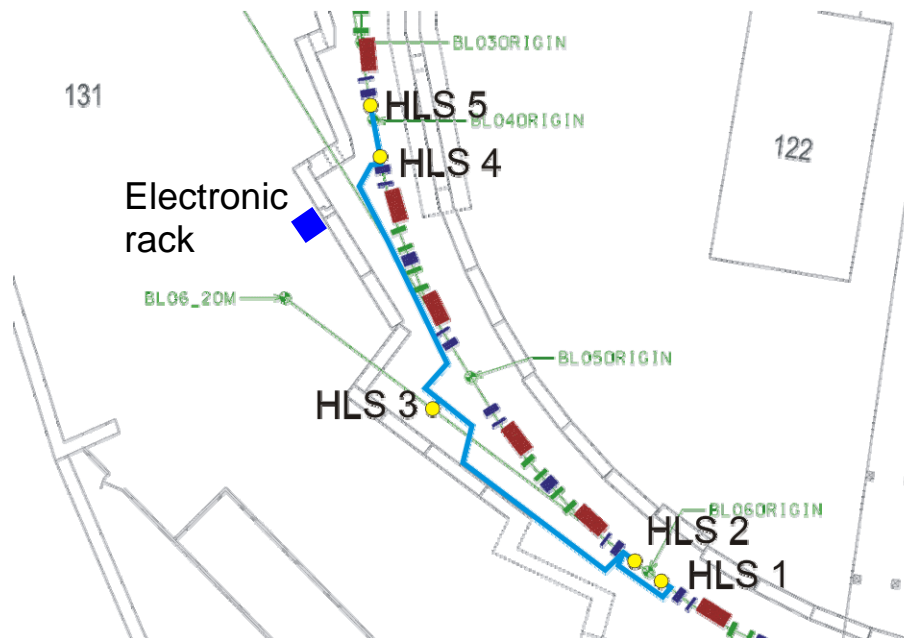
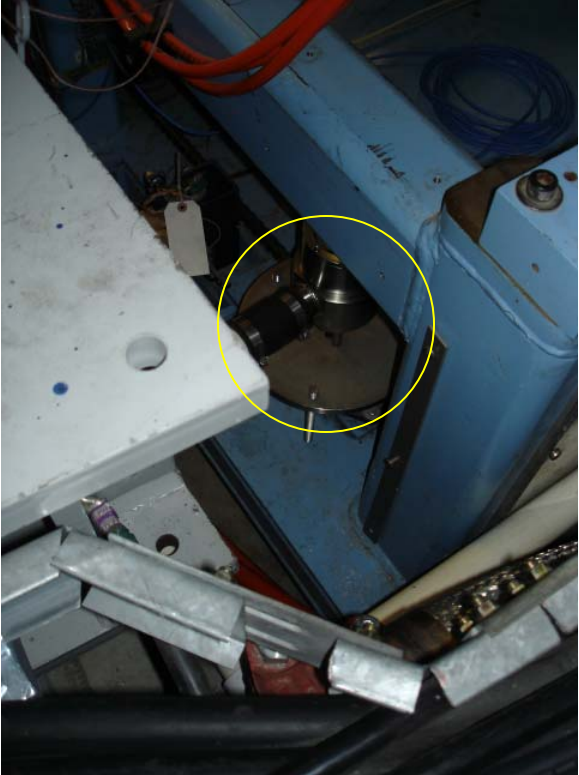
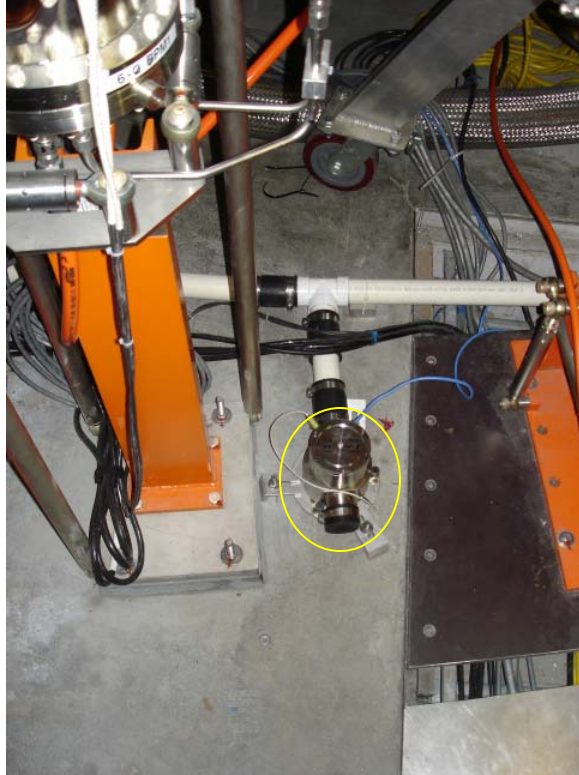


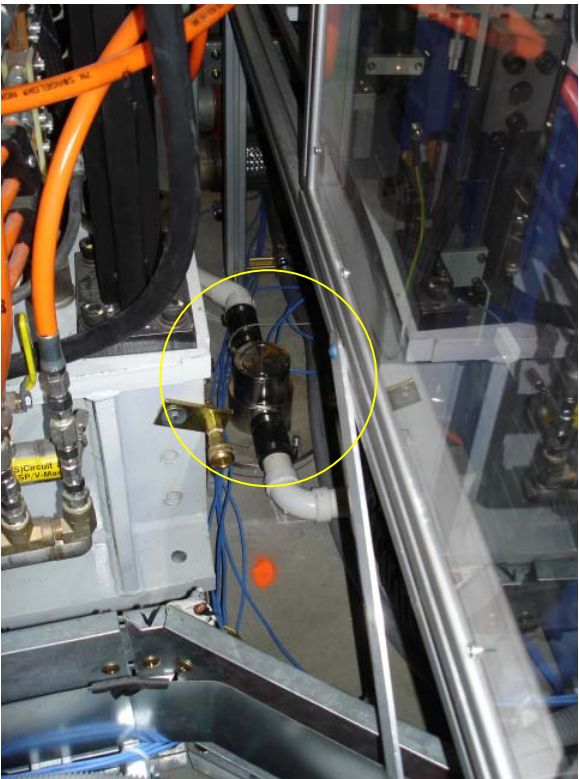
Figure 1: Set-up of the HLS sensors



**Figure 2: HLS 2 situated at the downstream side of ID 6**



**Figure 3: HLS 3 situated along BL 6**



**Figure 4: HLS 4 situated at the upstream side of ID 4**



**Figure 5: HLS 5 situated at the downstream side of BL 4**



Figure 6: Electronic rack B160-131 with HLS computer and TCP/IP switch

## Appendix:

Table 1: Serial numbers of the sensors installed in SPEAR3

HLS sensor	Serial number
1	130
2	25
3	128
4	48
5	129