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Status of the Helmholtz Zentrum Berlin Sealab LLRF infrastructure

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The preparation of the LLRF Control equipment of the SeaLab project for the commissioning is going on. The current hardware configuration comprises gun and booster cavities under server PC control and the standalone transverse deflecting cavity controller. The ongoing infrastructure works, i.e. cabling traces termination/patch panels connection, network installation and power lines distribution, are going to lead to the final equipment relocation to the RF equipment hall till the end of this year. The control EPICS system was pre-configured to monitor the LLRF equipment and its status. The hardware upgrade, i.e. exchange by the newer ADC/VM and Mezzanine boards, is planned for this autumn. Beside that the basis for the future scientific studies in the SeaLab become the Xilinx RFSoc. Number of applications are migrating from mTCA equipment to RFSoc, because of more rapid prototyping, reach peripheral devices, and open architecture supported by Xilinx. Among them are system analyzer, detuning control, RF system observer, and self-excited loop. The first RFSoc tests on the Tesla cavity in the Hobicat facility are planned for September and the results are going to be presented.

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