XFEL CAVITY PROCUREMENT AS AN EXAMPLE OF TECHNOLOGY TRANSFER

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Abstract

Procurement of superconducting RF cavities for the European XFEL consists of two phases. The preparation phase for the European XFEL cavity production includes: qualification of high purity niobium vendors and potential cavity producers; accommodation of the TESLA cavity design to the XFEL demands; establishing the XFEL treatment process, work out and check the strategy of preparation for the vertical acceptance test; define the documentation and prompt data transfer, qualification of created infrastructure, cavity acceptance criteria and tests. A detailed specification has been worked out on the basis of ca. 50 prototype cavities. Production of 600 cavities is currently contracted on the principle "build to print"; the cavity material will be provided by DESY. DESY will supply vendors with machine for cavity tuning at room temperature and equipment for RF measurement of dumb bells and end groups. The cavity with helium tank has to be built as a component according Pressure Equipment Directive (PED) 97/23/EC. The contracted "notified body" will supervise the material qualification and procurement. Monitoring of the vendor's work will be executed by DESY and INFN (Milano) team.

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