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## DESY SRF R&D towards a possible High Duty Cycle upgrade of the European XFEL

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The construction of the European X-ray Free-Electron Laser (XFEL) in Hamburg was finished in 2017. Since then the facility is successfully operated and delivers photon beam for many scientific experiments. The XFEL is driven by a 17.5 GeV superconducting linac, a machine which is the worldwide largest installation based on superconducting radio-frequency acceleration. Other large-scale projects like LCLS-II at SLAC, SHINE at Shanghai, and others are based on the important developments made for the European XFEL. The so-called TESLA technology is a great effort of the worldwide SRF community. Based on the meanwhile eight years of extremely successful operation, DESY is looking into the future and studies possible upgrade scenarios with emphasis on High Duty Cycle operation. This talk will highlight new ideas, present plans and –in a non-exhaustive way –will also give results on cavities, accelerator modules and SRF gun development.

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