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An overview of the SwissFEL LLRF system and its potential use in the SLS

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The digital LLRF system for the SwissFEL was an internal development in the years 2012-2016 and is currently being installed and commissioned in the accelerator. It covers the different accelerating frequencies from S-band to C-band up to X-band and is built up in modular units. The tight SwissFEL requirements for stability demand a LLRF system which is capable to precisely measure amplitude and phase. The developed system fulfills these needs and would therefore also come into consideration for the SLS RF stations.

This presentation gives an introduction to the SwissFEL LLRF system architecture and summarizes its features and performance characterization results. A comparison with the requirements of the currently installed analog LLRF system at the SLS leads to an outlook for a rough upgrade proposal in the SLS.

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