## P. Craievich: The Polarix TDS project

## **Report of Contributions**

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## The PolariX-TDS project: a novel polarizable X-band TDS

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The PolariX TDS (Polarizable X-Band Transverse Deflection Structure) is an innovative TDS-design operating in the X-band frequency-range. The design gives full control of the streaking plane, which can be tuned in order to characterize the projections of the beam distribution onto arbitrary transverse axes. This novel feature opens new opportunities for detailed characterization of the electron beam including also the three-dimensional reconstruction of the charge-density distribution of the bunch. The prototype of the PolariX TDS, was fabricated at PSI following the high-precision tuning-free production process developed for the C-band Linac of the SwissFEL project. Bead-pull RF measurements were also performed at PSI to verify, in particular, that the polarization of the dipole fields does not have any rotation along the structure. The high-power test was performed at CERN and now the TDS is at DESY and has been installed in the FLASHForward beamline, where the first streaking experience with beam has been accomplished. This contribution gives an overview on the status of the project at PSI and on the first experimental results with beam at DESY.

**Presenter:** CRAIEVICH, Paolo **Session Classification:** Focus report