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Current status of the manufacturing and testing of the BPM electronics for ELETTRA 2.0

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In this paper we are presenting the status of the partnership between Instrumentation Technologies and Elettra Sincrotrone Trieste for the realization of 200 BPM electronics for ELETTRA 2.0. Last year, 200 Pilot Tone Front-End (PTFE) units were successfully developed and produced. During the present year, 100 Digital Acquisition platforms, each one used to digitize and process the signals from two BPM pickups, are in production after the successful pre-series tests.

Elettra Sincrotrone Trieste was more involved in concept design, prototype development, and firmware programming, while Instrumentation Technologies was focused on design for manufacturing, implemented rigorous testing procedures, and handled the production.

During the project, it was also necessary to overcome a period of material shortages, particularly for the chips used in the digital part. Testing during the pre-series and series production phases ensured that each unit met the desired performance criteria necessary for stabilizing long-term measurement drifts in BPM systems. Additional units were produced to account for potential failures and performance variations, ensuring that all units delivered performed to specification.

Footnotes

Funding Agency

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Yes

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