Contribution ID: **2100** Contribution code: **THPM050** Type: **Poster Presentation**

Study of laser-beam arrival time synchronization towards sub-picosecond stability level

Thursday 5 June 2025 15:30 (2 hours)

In order to achieve laser pulse to electron beam arrival time sub-picosecond stability at the accelerator facilities, a new Low-Level Radio-Frequency system clock generators synchronization architecture is currently under investigation in collaboration between KEK (Japan) and IJClab (France). The system is based on the 10 MHz frequency generator (Stanford Research System), White Rabbit Switch, SkyWorks Si5362 clock generator and IDROGEN boards.
This report demonstrates the measurement results of the long-term and short- term synchronization between clock generators. Also, the architecture details are discussed in this report.

Footnotes

Paper preparation format

LaTeX

Region represented

Asia

Funding Agency

Author: Prof. POPOV, Konstantin (High Energy Accelerator Research Organization)

Co-authors: ARYSHEV, Alexander (High Energy Accelerator Research Organization); KAJI, Hiroshi (High Energy Accelerator Research Organization); TERUNUMA, Nobuhiro (High Energy Accelerator Research Organization); MARTENS, Aurélien (Université Paris-Saclay, CNRS/IN2P3, IJCLab); CHARLET, Daniel (Université Paris-Saclay, CNRS/IN2P3, IJCLab)

Presenter: Prof. POPOV, Konstantin (High Energy Accelerator Research Organization)

Session Classification: Thursday Poster Session

Track Classification: MC6: Beam Instrumentation and Controls,Feedback and Operational Aspects: MC6.T24 Timing and Synchronization