Contribution ID: **208** Contribution code: **THO04** Type: **Contributed Oral Presentation**

# Design of alignment network for the Siam Photon Source II

*Thursday 18 September 2025 14:00 (20 minutes)*

The development of the 3 GeV synchrotron light source in Thailand represents a major advancement in national scientific infrastructure, aiming to provide high-brightness synchrotron radiation for broad scientific and industrial applications. The installation of core accelerator systems, including magnet systems, vacuum systems, and girder systems, requires micrometer-level precision to ensure long-term stability. This study introduces a newly designed alignment network system focused on minimizing measurement uncertainty to meet the tight positioning tolerances of the electron storage ring. Simulations and analyses were performed using Spatial Analyzer software and the Unified Spatial Metrology Network (USMN), integrated with high-precision laser trackers. The resulting network achieves sub-millimeter accuracy within specified tolerances, supporting precise component installation. This work enhances the capabilities of Thailand in reference network design for high-precision systems and offers an adaptable framework for future advanced technology applications.

## Footnotes

## Funding Agency

Synchrotron Light Research Institute (Public Organization)

**Author:** Ms SAETIAW, Jullada (Synchrotron Light Research Institute)

**Co-authors:** RITTAPROM, Kamthon (Synchrotron Light Research Institute); RATTANAWICHAI, Peerawoot (Synchrotron Light Research Institute); PRUEKTHAISONG, Piyawat (Synchrotron Light Research Institute); PRAWANTA, Supachai (Synchrotron Light Research Institute); SRICHAN, Supawan (Synchrotron Light Research Institute)

**Presenter:** Ms SAETIAW, Jullada (Synchrotron Light Research Institute)

**Session Classification:** New Facility Design

**Track Classification:** NEW FACILITY DESIGN AND UPGRADE: Assembly and Installation