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## **XBPF design and prototyping**

*Tuesday 16 September 2025 17:00 (1 hour)*

The CERN Beam Instrumentation Group has developed a new scintillating fibre beam profile monitor for the secondary beam lines of the CERN North Experimental Area. This innovative monitor employs plastic scintillating fibres, read out with silicon photomultipliers, to provide a cost-effective and efficient solution for beam profile measurement. The design goals for the new monitor included ease and low cost of production, achieving a particle detection efficiency above 95%, compatibility with beam intensities ranging from 1 to  $10^8$  particles per second, a spatial resolution of 1 mm, a low material budget, coverage of an active area of 10 cm x 10 cm and 20 cm x 20 cm, operability in a vacuum environment, and equipped with in/out motorisation for retracting the equipment from the beamline. A prototype was tested at the CERN East and North Area facilities, demonstrating excellent performance and validating the design for mass production.

### **Footnotes**

### **Funding Agency**

**Author:** MOSER, Benjamin (European Organization for Nuclear Research)

**Co-authors:** ORTEGA, Inaki (European Organization for Nuclear Research); LARSEN, Robert (European Organization for Nuclear Research)

**Presenter:** MOSER, Benjamin (European Organization for Nuclear Research)

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