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The New Isolde Tapestation

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The Isolde tapestation lies at the very heart of the facility, and is an essential instrument for both operation and development of radioactive beams. It provides a real-time determination of the radioactive beam yield via a measurement of the time profile with which isotopes are released from the target unit. This information may be correlated with the anticipated isotope production of the target and its diffusion and effusion characteristics, and used to determine target and ion-source performance. Such information is vital to the development of new and improved target types. It is also essential for the routine operation of the Isolde facility, providing assurance that the radioactive beams meet the quality requirements requested by the experiments. In the event of low counting rates, unexpected background, or other breakdown, the tapestation is the first diagnostic tool to be used in determining the source of the problem.

The existing Isolde tapestation has, after more than forty years of service, reached the end of its life and is in need of replacement. I shall present the design of the new high-performance tapestation for Isolde, outline the new features, and give the status of its construction.

The new tapestation will be installed in spring 2016 and will run for one year in parallel with the old tapestation, during which time it will be tested, calibrated and validated. Once this process is complete the old tapestation will be retired and the new tapestation will take its place.

I shall also outline some new proposals, including continuous monitoring of target performance and measurement of integrated target yields.

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