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Target exchange system for the HBS HiCANS neutron source

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Within the Jülich High Brilliance Neutron Source (HBS) project Forschungszentrum Jülich is developing a novel High Current Accelerator-driven Neutron Source (HiCANS). The HBS generates neutrons using nuclear (p,n) reactions caused by a pulsed proton beam. The target has a design life of one year. Due to the high activation after one year of operation, the replacement process must be carried out remotely. As part of a one-year operating phase of an HBS technology demonstrator, an experimental target exchange system has been built and tested. Based on the experience gained with the existing change system, concepts for an improved exchange system are currently being discussed. The existing concept, lessons learned and the basic concept for a revised process will be presented.

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