

## Nordic EPOS related activities at SNSN. Automatic and reviewed regional bulletins

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### **Abstract:**

The Swedish National Seismic Network (SNSN) runs 4 different automatic systems for regional seismic event detection: SeisComp (SC), EarthWorm (EW), an in-house system based on Migration and Stacking (MS), and the (multi) South Iceland Lowland (mSIL) system. While mSIL serves as the primary base for the reviewed catalogue, the MS system serves as an auxiliary source for the manual analysis. Both of these systems run as delayed systems with emphasis on sensitivity rather than speed of detection, resulting in a magnitude of completeness of approximately 0.5 in the final catalogue. Reviewed parameter data for events large enough to be detected by neighboring networks are currently made available to EPOS via the institute webpage ([www.snsn.se/data](http://www.snsn.se/data)), in the Nordic format. Efforts are ongoing to also offer the data in quakeML format, which is expected to be in place during the fall of 2021. The SC and EW systems are run in (near) real-time employing, in addition to SNSN's 68 seismic stations, data streams from approximately 100 stations in neighboring countries. Individually, both SC and EW are sensitive enough to detect most events large enough to be felt, while the combination of the two have shown to significantly reduce the number of spurious events. This forms the basis of a near real-time catalogue currently under development at SNSN and expected to be publicly available on our webpage before the end of the year. Further development of filtering procedures and event classification schemes are planned in order to confidently identify automatic events that are likely to be natural earthquakes, which will be forwarded to EMSC. At present, continuous data from 10 of SNSN's stations are available via the European Integrated Data Archive (EIDA) initiative of ORFEUS. From January 2022 Sweden will become a member of EPOS at which point additional data will be made available to EPOS.