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CMEMS Baltic Sea Landfast Ice Downstream Service

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The Baltic Sea is partly covered by sea ice in every winter. Landfast ice occurs every winter along the coasts of Finland, Sweden and Estonia (Bay of Bothnia, Sea of Bothnia, Gulfs of Finland and Riga). During a severe winter it is also present in the Southern Baltic Sea. Currently, Baltic Sea landfast ice extent and thickness information in fine scale (around 1 km) is not directly available from any source. Finnish Meteorological Institute (FMI) is developing and will demonstrate a new CMEMS landfast ice coastal downstream service for the Baltic Sea. This new service includes a derived product (landfast ice extent and thickness) based on two existing CMEMS Baltic Sea products (modeled sea ice thickness and SAR-based sea ice drift), and additionally on SENTINEL-1 SAR imagery, a thermodynamic sea ice model developed by and run at FMI, completed by available operational in-situ snow and sea ice data. The service will additionally give information on snow thickness on sea ice, ice dynamics (e.g. total deformation) along the landfast ice boundaries, and locate major ship tracks across the landfast ice field. The new Baltic Sea landfast ice service will be developed and produced by FMI. The service demonstration will be hosted at the Finnish National Satellite Data Centre (NSDC) operated and managed by FMI (http://nsdc.fmi.fi/). Targeted end-users include people living along the Baltic Sea coast and on islands needing information on landfast ice properties for recreational and professional activities such as skiing, ice fishing, transportation of people and goods along ice roads and for governmental and local authorities/institutions such as national ice services, icebreaker management, harbor authorities, search and rescue operators, and commercial activities such as tourism and marine wind power design and production. The first service demonstration will be performed during the winter season 2018. In the presentation the service will be introduced, state of the service and the first demonstration during the winter season 2018 will be described and evaluated.