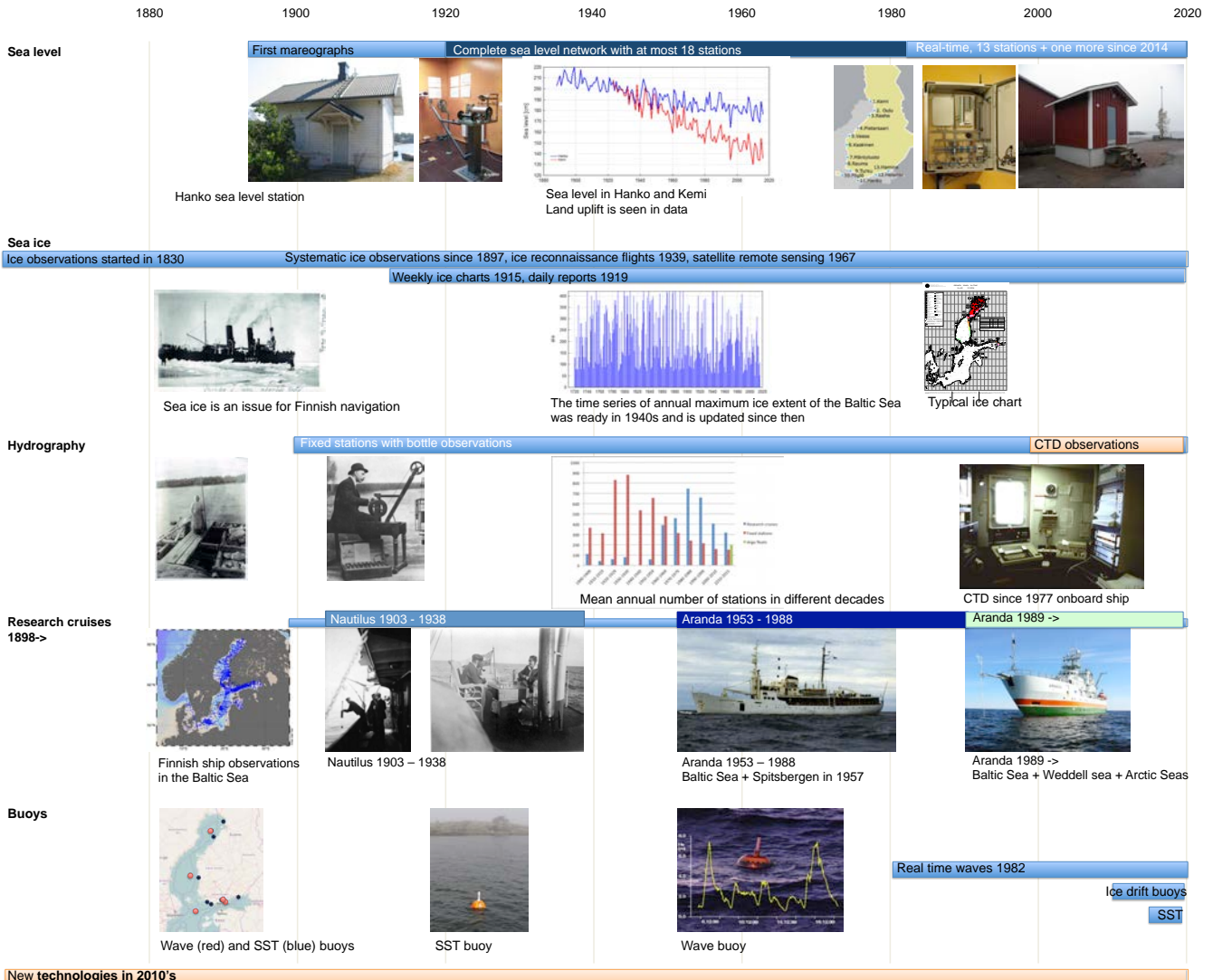




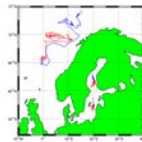
Evolution of physical oceanography observations in Finland

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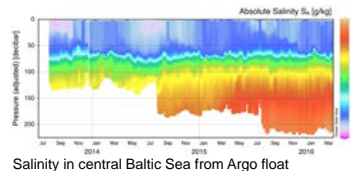
Finnish physical oceanography observations were started for practical needs and scientific interest. Winter navigation needed information of ice and coastal building and land uplift needed knowledge on sea level. Some ice observations were started in 1830's and regular sea level observations began in 1887 in Hanko. Already in 1920's the sea level station network covered the coasts of Finland. In early 1900's variable number of fixed oceanographic stations was in use along the Finnish coasts. The number of fixed stations has reduced to present 5 because of the lack of observers in the outer archipelagoes. First Finnish research cruise to the Baltic Sea was done in 1898. Research cruises were conducted with Nautilus in 1903-1938, Aranda 1953-1988 and present Aranda since 1989. Older Aranda did a cruise to Spitsbergen in 1957 and new Aranda has visited Weddell Sea twice and Arctic Seas several times. During the 2010's new technologies have been taken into operative use. Finland has had Argo floats in the North Atlantic from 2010 and took modified Argo floats into use in the deep areas of the central Baltic Sea and in the Bothnian Sea in 2011-2012. Finland is now Euro-Argo partner and is devoted to operate Argo floats continuously. In 2016 Finland started operations with an own glider after testing one in 2013. Also in this decade Finland has built the long term fixed station at Utö island to a multidisciplinary marine observation station that is also an ICOS station.



Argo floats 2011 ->



Finnish Argo float routes



Salinity in central Baltic Sea from Argo float

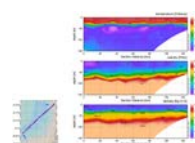


Utö atmospheric and marine station

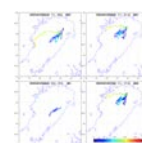
Glider test 2013, operations 2016 ->



Glider routes



Glider data section



Sea ice drifter routes