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Sea level is a very sensitive index of climate change and variability. Sea level integrates the ocean warming, mountain glaciers and ice sheet melting. Understanding the sea level variability and changes implies an accurate monitoring of the sea level variable at climate scales, in addition to understanding the ocean variability and the exchanges between ocean, land, cryosphere, and atmosphere. That is why Sea Level is one of the Essential Climate Variables (ECV) selected in the frame of the ESA Climate Change Initiative (CCI) program and kicked-off in July 2010. This program aims to provide an adequate, comprehensive, and timely response to the extremely challenging set of requirements for highly stable, long-term satellite-based products for climate, that have been addressed to Space Agencies via the Global Climate Observing System and the Committee on Earth Observation Satellites. In order to achieve this, the objectives of the Sea Level CCI Project are: to involve the climate research community to collect their needs and feedbacks on product quality, to develop, test and select the best algorithms and standards to generate a climate time series, to provide a complete specification of the production system, and to produce and validate the Sea Level ECV product.

We will present the current status of the ESA CCI Sea Level Project. The 2013 OSTST will be the opportunity to unveil the 18 years climate time-series based on satellite altimetry measurements. We will also describe the different activities that were necessary to deliver the ECV products: collect and refine the user requirements, develop, test and select the best algorithms for climate applications. The production system and a brief description of the main product characteristics are provided as well as results of the product validation and its use, one year after its release.

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