



ESA Sea level CCI

## Quarterly progress report: Q4 2015

Reference: CLS-SLCCI-15-0016  
Nomenclature: SLCCI-QPR-043-15-04  
Issue: 1.0  
Date: December 23<sup>rd</sup> 2015





Chronology Issues:			
Issue:	Date:	Reason for change:	Author
1.0	23/12/2015	First Issue	JF Legeais

People involved in this issue:		
Written by (*):	JF Legeais (CLS)	Date + Initials:( visa or ref)
Checked by (*):	G Timms (CGI)	Date + Initial:( visa ou ref)
Approved by (*):	G Larnicol (CLS)	Date + Initial:( visa ou ref)
Application authorized by (*):	J. Benveniste (ESA)	Date + Initial:( visa ou ref) 31/12/2015

*\*In the opposite box: Last and First name of the person*

Distribution:		
Company	Names	Contact Details
ESA	J. Benveniste A. Ambrozio, S. Dinardo	<a href="mailto:Jerome.Benveniste@esa.int">Jerome.Benveniste@esa.int</a> <a href="mailto:Americo.Ambrozio@esa.int">Americo.Ambrozio@esa.int</a> <a href="mailto:Salvatore.Dinardo@esa.int">Salvatore.Dinardo@esa.int</a>
CLS	G. Larnicol, J.-F. Legeais, M. Ablain, Y. Faugere	<a href="mailto:glarnicol@cls.fr">glarnicol@cls.fr</a> ; <a href="mailto:jlegeais@cls.fr">jlegeais@cls.fr</a> ; <a href="mailto:mablain@cls.fr">mablain@cls.fr</a> ; <a href="mailto:yfaugere@cls.fr">yfaugere@cls.fr</a>
DTU Space	O. Andersen, P. Knudsen	<a href="mailto:oa@space.dtu.dk">oa@space.dtu.dk</a> , <a href="mailto:pk@space.dtu.dk">pk@space.dtu.dk</a>
ECMWF	M. Balmaseda	<a href="mailto:Magdalena.Balmaseda@ecmwf.int">Magdalena.Balmaseda@ecmwf.int</a>
GFZ	T. Schöne, S. Rudenko	<a href="mailto:tschoene@gfz-potsdam.de">tschoene@gfz-potsdam.de</a> , <a href="mailto:rudenko@gfz-potsdam.de">rudenko@gfz-potsdam.de</a>
IsardSAT	M. Roca	<a href="mailto:Monica.Roca@isardSAT.cat">Monica.Roca@isardSAT.cat</a>
LEGOS	A. Cazenave, B. Meyssignac	<a href="mailto:anny.cazenave@legos.obs-mip.fr">anny.cazenave@legos.obs-mip.fr</a> ; <a href="mailto:Benoit.Meyssignac@legos.obs-mip.fr">Benoit.Meyssignac@legos.obs-mip.fr</a>
CGI	G. Timms	<a href="mailto:gary.timms@cgi.com">gary.timms@cgi.com</a> ;
NERSC	J. Johannessen	<a href="mailto:johnny.johannessen@nersc.no">johnny.johannessen@nersc.no</a>
UoH	D. Stammer	<a href="mailto:detlef.stammer@zmaw.de">detlef.stammer@zmaw.de</a> ; <a href="mailto:martin.scharffenberg@zmaw.de">martin.scharffenberg@zmaw.de</a>
NOC	P. Cipollini	<a href="mailto:cipo@noc.ac.uk">cipo@noc.ac.uk</a>
FCUP	J. Fernandes	<a href="mailto:mjfernan@fc.up.pt">mjfernan@fc.up.pt</a>
PML	G. Quartly	<a href="mailto:gqu@pml.ac.uk">gqu@pml.ac.uk</a>
TUD	L. Fenoglio-Marc	<a href="mailto:fenoglio@psg.tu-darmstadt.de">fenoglio@psg.tu-darmstadt.de</a>



## 1. Overall progress of project

The project is on schedule. The development of new algorithms and altimeter standards has been finalized. They have been evaluated through a round robin approach together with external corrections. The SL\_cci team gathered with external experts for the Algorithm Selection Meeting that took place in Toulouse on Nov. 25-27<sup>th</sup> 2015. It was the opportunity to agree on the best standards to be used for the reprocessed ECV (v2.0, planned in 2016). In addition, new sea level products dedicated to the Arctic Ocean have been delivered and the ECV quality assessment performed by the CRG is in progress. The output of this selection meeting will be made available on the project website.

## 2. Readiness for operational ability

Among the sea Level ECV products, the monthly maps of sea level anomalies and the associated climate indicators are mature enough to be transferred to operational services.

However, the activities related to the ECV production need to be better characterized. In order to ensure climate-quality products, reaching the GCOS requirements which are not yet met for all elements of the ECV product, some further activities are fundamental. This includes the development of improved algorithms, their validation and selection, the maintenance of historical altimeter missions' databases, the use of reprocessed dataset made available by space agencies as well as the external ECV validation and the link with climate scientists. In addition, this should be noted that some input data required for the computation of the ECV are available with some delay, which prevents us from providing ECV updates at a better rate than approximately one year.

## 3. Technical info

The following **peer-reviewed papers** from the SL\_cci team have been published within the last months:

D'Ovidio, F., A. Della Penna, T. W. Trull, F. Nencioli, I. Pujol, M.H. Rio, Y.H. Park, C. Cott, M. Zhou, and S. Blain (2015), "The biogeochemical structuring role of horizontal stirring: Lagrangian perspectives on iron delivery downstream of the Kerguelen plateau", *Biogeosciences*, Vol 12, pp 5567-5581. doi: 10.5194/bg-12-5567-2015.

Gruber, Ch., Groh, A., Rudenko, S. Validation of GRACE time-variable gravity field by GPS, ICESat, WGHM and altimetry satellites orbits, *International Association of Geodesy Symposia*, submitted, under review.

Kersalé, M., A.A. Petrenko, A.M. Doglioli, F. Nencioli, J. Bouffard, S. Blain, F. Diaz, T. Labasque, B. Queguiner and I. Dekeyser, "Lateral diffusivity coefficients from the dynamics of an SF6 patch in a coastal environment", *Journal of Marine Systems*, In Press.

Quartly, G.D., 2015. Metocean Comparisons of Jason-2 and AltiKa—A Method to Develop a New Wind Speed Algorithm, *Marine Geodesy*, 38(S1):437-448. doi: 10.1080/01490419.2014.988834.

Quartly, G.D., and M. Passaro, 2015. Initial Examination of AltiKa's Individual Echoes, *Marine Geodesy*, 38(S1):73-85 doi: 10.1080/01490419.2014.984882.

Reverdin, G., S. Morisset, L. Marié, D. Bourras, G. Sutherland, N. Ward, J. Salvador, J. Font, Y. Cuypers, L. Centurioni, V. Hormann, N. Koldziejczyk, J. Boutin, F. d'Ovidio, F. Nencioli, N. Martin, D. Diverres, G. Alory, R. Lumpkin, 2015. Surface salinity in the North Atlantic subtropical gyre during the Strasse/SPURS summer 2012 cruise. *Oceanography*, Vol 28, pp 114-123. doi: 10.5670/oceanog.2015.09.

Rudenko, S., Dettmering, D., Esselborn, S. Fagiolini, E., Schöne, T. Impact of Atmospheric and Oceanic De-Aliasing Level-1B (AOD1B) products on precise orbits of altimetry satellites and altimetry results, *Geophysical Journal International*, submitted, under review.

Schabetsberger R., Økland F., Kalfatak D., Sichrowsky U., Tambets M., Aarestrup K., Gubili C., Sarginson J., Boufana B., Jehle R., Dall'Olmo G., Miller M.J., Scheck A., Kaiser R., Quartly G., 2015. Genetic and migratory evidence for sympatric spawning of tropical Pacific eels from Vanuatu. *Marine Ecology Progress Series* 521, 171-187. doi: 10.3354/meps11138



Shutler, J. D., Warren, M. A., Miller, P. I., Barciela, R., Mahdon, R., Land, P. E., Edwards, K., Withers, A., Jonas, P., Murdoch, N., Roast, S., Clements, O., Kurekin, A., 2015. Operational monitoring and forecasting of bathing water quality through exploiting satellite Earth observation and models: The AlgaRisk demonstration service, *Computers & Geosciences* 77, pp. 87-96. Doi: 10.1016/j.cageo.2015.01.010

Xu, W., P.I. Miller, G.D. Quartly, and R.D. Pingree, 2015, Seasonality and interannual variability of the European Slope Current from 20 years of altimeter data with in situ measurement comparisons, *Remote Sens. Env.* 162, 196-207. doi: 10.1016/j.rse.2015.02.008.

**Cumulated number of users and downloads of the SL\_cci ECV and FCDR *since Jan. 2014***

