

GHG-CCI QSR October-December 2015

1. Overall progress

During the reporting period the project proceeded as planned. No major issues have been identified. A progress meeting has been held on 15-16 October 2015 at University of Leicester. Focus of the reporting period was on finishing the new satellite-derived GHG data set called Climate Research Data Package No. 3 (CRDP#3). This task was completed as planned mid of Nov. 2015. Team members started to analyze this data set with the initial focus to find out if there are any major issues which need to be addressed before the detailed validation and initial user assessment will be carried out. Also this task has been successfully completed and the ongoing focus is on validation and user assessments. These activities will be completed in March 2016 followed by a public release of this new data set including documentation.

2. Readiness for operational ability

This topic has been discussed in detail at the 6th CCI co-location meeting, which took place during the reporting period. At that meeting the GHG-CCI Science Leader presented a GHG-CCI document entitled “How operational are the CCI ECVs?” - a question asked to all CCI projects during the 5th CCI co-location meeting. This document contains criteria for being “operational” (e.g., proven capability to generate state-of-the-art products, regular product delivery, documentation, version tracking, etc.) and based on these criteria the GHG-CCI team members conclude that GHG-CCI is operational (note also that GHG-CCI team members generate and deliver GHG data products to the European MACC/CAMS projects in quasi-near-real-time). It has also been highlighted that R&D is a mandatory parallel activity during an operational phase. For GHG-CCI this is the case because (i) not all user requirements are met, (ii) to solve future problems (e.g., instrument degradation) and (iii) to extend the time series by using new sensors. At that meeting the GHG-CCI Science Leader but other CCI Science Leaders expressed their concern that appropriate funding required to cover the mandatory R&D aspects will likely not be available after this ongoing phase of the CCI program as the foreseen focus of the proposed follow on program CCI+ will focus on other ECVs. For GHG-CCI this would likely imply that the successful activity to generate long-term satellite-derived GHG time series meeting GCOS requirements has to stop in Europe or will at least dramatically slow down.

3. Technical information

3.1 Publications since last QSR

Detmers, R. G., O. Hasekamp, I. Aben, S. Houweling, T. T. van Leeuwen, A. Butz, J. Landgraf, P. Koehler, L. Guanter, and B. Poulter, Anomalous carbon uptake in Australia as seen by GOSAT, *Geophys. Res. Lett.*, 42, doi:10.1002/2015GL065161, 2015.

Massart, S., A. Agusti-Panareda, J. Heymann, M. Buchwitz, F. Chevallier, M. Reuter, M. Hilker, J. P. Burrows, F. Hase, F. Desmet, D. G. Feist, and R. Kivi, Ability of the 4-D-Var analysis of the GOSAT BESD XCO₂ retrievals to characterize atmospheric CO₂ at large and synoptic scales, *Atmos. Chem. Phys. Discuss.*, 15, 26273-26313, doi:10.5194/acpd-15-26273-2015, 2015.

Noël, S., K. Bramstedt, M. Hilker, P. Liebing, J. Plieninger, M. Reuter, A. Rozanov, H. Bovensmann, and J. P. Burrows, Stratospheric CH₄ and CO₂ profiles derived from SCIAMACHY solar occultation measurements, *Atmos. Meas. Tech. Discuss.*, 8, 11467-11511, doi:10.5194/amtd-8-11467-2015, 2015.

Zhou, M., B. Dils, P. Wang, R. G. Detmers, Y. Yoshida, C. W. O'Dell, D. G. Feist, V. Velasco, M. Schneider, M. De Mazière, Validation of TANSO-FTS/GOSAT XCO₂ and XCH₄ glint mode retrievals using TCCON data from near-ocean sites, *Atmos. Meas. Tech. Discuss.*, 8, 10897-10935, 2015.

Full publication list please see: <http://www.esa-ghg-cci.org/> -> Publications (note that publications with GHG-CCI funding explicitly acknowledged are marked with (*) on that website).

3.2 Number of users

Since mid 2011 GHG-CCI is recording the number of users of the GHG-CCI core (ECA) data products. This includes users who registered via the GHG-CCI website and some other (e.g., maintained historical) websites. The number of users is (status 9-Dec-2015): 417.

*** End of Report ***