SPECIAL PROJECT
FINAL REPORT

All the following mandatory information
needs to be provided.

Project Title:	Convective-scale ensemble data assimilation of humidity- and cloud-related observations
Computer Project Account:	spdeharn
Start Year - End Year :	2015 - 2016
Principal Investigator(s)	Florian Harnisch
Affiliation/Address:	Hans-Ertel Centre for Weather Research, Ludwig-Maximilians-Universtität München Meteorologisches Institut Theresienstrasse 37 80333 München
Other Researchers (Name/Affiliation):	none

The following should cover the entire project duration.

Summary of project objectives

(10 lines max)

The project aims to enable and improve the assimilation of humidity- and cloud-related observations in a kilometre-scale ensemble data assimilation (KENDA) system. The main focus was on infrared satellite observations from the MSG SEVIRI instrument, but visible and near-infrared channels should also be addressed. In addition, the use of GNSS zenith and slant total delay measurements should be evaluated.

Summary of problems encountered

(If you encountered any problems of a more technical nature, please describe them here.)

The project was facing some technical issues implementing the ensemble data assimilation code on the ECMWF computer. The code has been used at other supercomputers (e.g. DWD), but I could not successfully transfer it to the ECMWF computer environment. The ensemble data assimilation code was already implemented in a different special project SPITCONV and I was in contact with the principal investigator Chiara Marsigli to adopt the code.

Experience with the Special Project framework

(Please let us know about your experience with administrative aspects like the application procedure, progress reporting etc.)

I was satisfied with the help offered by people at ECMWF.

Summary of results

(This section should comprise up to 10 pages and can be replaced by a short summary plus an existing scientific report on the project.)

Unfortunately, I was not able to get the KENDA data assimilation code running at the ECMWF supercomputer, and no experiments could be performed to address the objectives. A collaboration with scientists at DWD made it possible to perform experiments on the DWD supercomputer instead, where I was able to run the KENDA system. The experiments performed with the DWD supercomputer helped to derive an observation error model for infrared satellite observations, which was also applied in first data assimilation experiments.

List of publications/reports from the project with complete references

none

Future plans

(Please let us know of any imminent plans regarding a continuation of this research activity, in particular if they are linked to another/new Special Project.)

I am leaving my position at the University in Munich, but there are plans to continue the work on assimilating MSG SEVIRI observations. However, there are no follow up plans for a Special Project regarding this topic.

February 2016