SPECIAL PROJECT PROGRESS REPORT

Progress Reports should be 2 to 10 pages in length, depending on importance of the project. All the following mandatory information needs to be provided.

Reporting year	2017………………………………….……
Project Title:	Regional surface re-analysis with MESCAN at high resolution over Europe within the UERRA project
Computer Project Account:	SPFRBAZI……………………………….……
Principal Investigator(s):	Eric BAZILE……………………….……
	……………………………………………….……
Affiliation:	Météo-France/CNRS CNRM/UMR3589…….
Name of ECMWF scientist(s) collaborating to the project (if applicable)	……………………………………………….…… ……………………………………………….……
Start date of the project:	…1/1/2017……………………….……
Expected end date:	31/12/2018……………………….……

Computer resources allocated/used for the current year and the previous one
(if applicable)
Please answer for all project resources

		Previous year		Current year	
		Allocated	Used	Allocated	Used
High Performance Computing Facility	(units)	15000000	~ 8700000	10000000	2800000
Data storage capacity	(Gbytes)				

June 2017

Summary of project objectives

(10 lines max)
This special project aims to continue to create the regional surface re-analysis over Europe in the framework of the UERRA (Uncertainties in Ensembles of Regional Re-Analyses) FP7 project and to investigate the added value of using a cloud resolving model such as Arome (Seity et al, 2011) to downscale the precipitation for the background. The surface analysis, done at 5.5km over Europe, will provide some of the Essential Climate Variables (ECVs) on the European regional scale such as 2m temperature, relative humidity, 10m wind and precipitation. The reanalysis will cover the period 1961-2015.
The uncertainties of the surface re-analysis will be assessed by an ensemble of 6-10 members on a shorter period 2006-2010

Summary of problems encountered (if any)

(20 lines max)
No problem related to the HPC resources
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Summary of results of the current year (from July of previous year to June of current year)

This section should comprise 1 to 8 pages and can be replaced by a short summary plus an existing scientific report on the project
The last 12 months period was divided clearly in two parts:

- the first part (July 2017 -Dec 2017) was only focussed on the surface re-analysis production and to finish the 55 years period (1961-2015) before end of November 2017 (UERRA deliverable). Several parallel streams were used and all the data have been finally archived on MARS (~ 55 Tb) end of December.

- the second part of the period (Jan 2018 -June 2018) was supposed to be used to investigate the impact of the downscaling method between a basic interpolation done with Full-Pos and by using a full model such as ALADIN and/or AROME at 5.5km or 2.5km. However, this activity has been delayed and slightly modified for several reasons: staff resources and the surface re-analysis done at 5.5km with MESCAN-SURFEX should be also produced at least for 2016 and 2017. Therefore during the first month of 2018 was devoted to downscale the 11km HARMONIE-ALADIN background and to start to the production of the surface analysis for 2016 and 2017. Should be finished end of July

List of publications/reports from the project with complete references

Available on the UERRA website www.uerra.eu/publications/deliverable-reports.html
- Bazile, E., Abida, R., Verelle A., Le Moigne P. & Szczypta (2017) : MESCAN-SURFEX surface analysis. Deliverable report D2.8 (22pages)
- Bazile, E., Abida, R., Szczypta C., Verelle A., Soci C. & Le Moigne P. (2017) : Ensemble surface reanalysis report. Deliverable report D2.9 (27 pages)
- Le Moigne P., Verelle A., Besson F., Bazile, E., Abida & Szczypta (2017) : CTRIP Evaluation Deliverable report D4.8 (17 pages)

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Summary of plans for the continuation of the project

(10 lines max)

For the next 6 months, the impact of the downscaling method will be studied in two steps first by running the ALADIN model at 5.5km (instead of the static downscaling) on the same domain and grid used with the UERRA system and then re-run the precipitation analysis and T2m surface analysis. The comparison will be done with the UERRA production.

In addition, a comparison will be done other the French Alps by running the MESCAN-SURFEX re-analysis at 2.5km or1.3km with the UERRA production with the static downscaling and the experiment with the ALADIN model at 5.5km

June 2018