

SURFEX Steering committee
7th meeting: 2 March 2017
Toulouse/Davos

Participants:

ALADIN: Rafiq Hamdi
HIRLAM: Ekaterina Kourzeneva
GMGEC: Bertrand Decharme
GMAP: Yves Bouteloup
GMME: Aaron Boone
CEN: M. Dumont
SURFEX team: Stéphanie Faroux, Patrick Le Moigne
+ Clément Albergel (GMME) as data assimilation expert
+ Vincent Vionnet (CEN) as snow modelling expert

No representative from Meso-NH community

Summary written by Patrick Le Moigne

Meeting summary:

Preparatory documents and presentations were sent to participants before the SSC and are available on the SSC web page: <http://www.umr-cnrm.fr/surfex/spip.php?article55>

The SSC took place the same week as the SURFEX Users Workshop 2017. Discussions during the SUW2017 have enabled a lighter program of the SSC since not everything had to be discussed in details.

A. Summary of discussions:

- The need to have the latest scientific documentation at disposal was raised since lot of developments enter the v8 version. Particularly the description of SODA looks expected. Work is ongoing and a complete documentation should be available rather soon.
- As far as Ecoclimap Second Generation is concerned, a huge work has already been performed by S. Faroux. There's room for cooperation on land-sea-mask definition, rivers, lakes and sea-water representation. There's a need of coordination between developments made on the Hirlam side and those made at CNRM. E. Kurzeneva and S. Faroux will get in contact for that.
- Phasing issues related to the developments entering an operational cycle (AROME or HIRLAM for example) based on an older SURFEX version. It was already agreed last year that there is a need to document the developments made for operational purposes and make them available for everyone: this is under the responsibility of people involved in operational applications.
- How will the ongoing work on coupling ARPEGE with SURFEX impact the ALADIN applications which coupling files depend on ARPEGE model? This question was already raised last year and GMAP ensured that the use of SURFEX won't affect the ALADIN partners, at least at the beginning: tools will be developed to make it transparent for partners.
- The first evaluation of SURFEX coupled to ARPEGE-NWP show better scores on average but some locally issues remain, especially for 2m-temperature and 10m-wind.
- A simple ice model was developed in HIRLAM (SICE) and will be available in the next SURFEX release. It was said that these developments would have to follow the SURFEX "standards" way of coding (this was already mentioned during SUW2017). Again, it was also proposed to evaluate the performances of GELATO-1D already available and validated in SURFEX v8. Even if it was agreed at last SSC that Gelato-1d would be tested by Hirlam, it seems that this is not an option (?) anymore.
- Blowing snow has not yet been implemented in SURFEXv8. V. Vionnet will phase his work with the latest SURFEX version and at the same time will introduce his modifications in the atmospheric Meso-NH model.

B. Presentation of the SURFEX team report

1. Status of v8.1

All developments made for this new release are detailed on the SURFEX website:
<http://www.umr-cnrm.fr/surfex/spip.php?rubrique151>

The v8.1 was satisfactorily tested coupled to AROME and Meso-NH model. The version is now tested globally offline to validate CNRM-CM configurations.

Scientific documentation writing is progressing. Up to now, not all contributions have been received. However, already **ISBA** (parametrization of organic matter and permafrost, multi energy budget (MEB), new diffusion scheme ISBA-DIF, snow scheme ISBA-ES, new vegetation radiative transfer module – new ISBA-Ags settings), **TEB** (Building Energy Model, irrigation of gardens in town, solar panels on roofs, module of comfort indices in town, ventilation in buildings), **CROCUS** (New snow metamorphism scheme and new radiative transfer model (TARTES)) have been gathered and introduced. Missing parts are **GELATO-1D** sea-ice model and **SODA** data assimilation.

2. Status of SODA: assimilation in SURFEX

The SSC agreed previously that SODA should be the target for assimilation in SURFEX. GMME has abandoned VARASSIM and is now using SODA and V8 for surface and soil analyses purposes.

The OI_MAIN part of SODA won't be maintained anymore in future SURFEX releases.

3. Next SURFEX releases

After v8.1 official publication, a call for contributions will be launched, where both technical and scientific developments will be welcome. The call will probably be announced around end 2017 for a potential new SURFEX release in summer 2019.

4. Databases

ECOCLIMAP-SG: in order to replace ECOCLIMAP, Météo-France is developing a strategy to build a new database relying on operational products (mainly COPERNICUS). Hence it is envisaged to base this new map on the ESA-CCI land cover map (<http://maps.elie.ucl.ac.be/CCI/viewer/index.php>) and automatic transformations to easily update the map when ESA-CCI updates are published. A significant work has already been done by S. Faroux on this subject.

Work done in Iceland to design a new ECOCLIMAP map could be integrated within current ECOCLIMAP database.

C. Review of activities and plans

SURFEX team

<http://www.umr-cnrm.fr/surfex/IMG/pdf/agenda-2.pdf>

http://www.umr-cnrm.fr/surfex/IMG/pdf/surfex_team-2.pdf

ALADIN

http://www.umr-cnrm.fr/surfex/IMG/odp/aladin_hamdi_surfex_sc2017.odp

HIRLAM

http://www.umr-cnrm.fr/surfex/IMG/pdf/patrick_surfex_toulouse_170227-2.pdf

MESO-NH

GMGEC

http://www.umr-cnrm.fr/surfex/IMG/doc/gmgec_gmgec_steering_march_2017.doc

GMME

http://www.umr-cnrm.fr/surfex/IMG/doc/gmme_gmme_steering_march_2017.doc

GMAP

http://www.umr-cnrm.fr/surfex/IMG/odt/gmap_contribution-surfex-sc-2017.odt

CEN

http://www.umr-cnrm.fr/surfex/IMG/pdf/cen_contribution_cen_ssc_surfex.pdf