

The SURFEX steering committee met on April 12, 2022.

Participants:

SURFEX team: Patrick Le Moigne, Marie Minvielle, A Verrelle

ACCORD Surface Leader: Patrick Samuelsson

CNRM representatives: Matthieu Lafaysse (CEN), Aaron Boone (GMME), Matthias Rocher (GMGEC, in place of B Decharme), Adrien Napoly (GMAP), Quentin Rodier (Meso-NH)

Invited people: Ekaterina Kourzeneva (Hirlam representative), Rafiq Hamdi (ACCORD expert), Joaquim Arteta (GMGEC)

Points to remember:

- The SURFEX team first presented its activities and indicated that the resources allocated to SURFEX were evolving with A Verrelle having 30% SURFEX activity and the recruitment in summer 2023 of a research engineer (permanent position) to work on adapting the code to new HPC architectures.
- In addition, decisions concerning the management of the code were presented, in particular the mandatory use of GIT for future contributions and the publication of more frequent versions. These decisions were well received by the committee members, in particular the good adequacy with the philosophy of the NWP.
- Willingness to reinforce exchanges between the SURFEX and GMAP teams, in order to solve specific surface problems of the ARPEGE and AROME operational chains.
- A common branch for NWP based on V8.1 under GitHub is proposed by ACCORD, as a temporary solution until SURFEX V9 is available under GitHub. After V9 a single contribution from ACCORD is expected (GMAP+HIRLAM...) on the SURFEX GIT repository (GMME).
- ACCORD: many developments have to be integrated in V9, in particular the implementation of SICE (sea ice model) whose call uses Fortran2003 functionalities (object oriented), also used for the call to GELATO. This is questionable because this call to GELATO has never been tested and the compilation in the operational code has not been tested either.
- ACCORD: change of default values for the calculation of relative humidity when temperatures are negative (WMO standard)
- Reminder that GMAP does not have much time to dedicate to surface developments
- Need to set up specific validations in coupled mode in addition to the STRATO database, and need to simplify and update STRATO by the developers under the coordination of the SURFEX team.

Actions to be taken:

- ACCORD to verify that Y Batrak's object-oriented approach for SICE is compatible with the use of GELATO in the operational AROME model (ACCORD Surface Leader)
- ACCORD must verify that the modifications do not incorporate changes to default values in V9 that are not under logical key, otherwise documentation is required (ACCORD Surface Leader)
- The use of openmp is considered in GELATO (presented but not discussed in the meeting): not compatible with the changes of SURFEX which removed all reference to openmp a few versions before, to avoid the complexity of the code: meeting to be set up to discuss it (SURFEX Team)