

A Consortium for COnvection-scale modelling
Research and Development

Organising user-developer interaction in ACCORD

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ACCORD All Staff Workshop, 27-31 March 2023, Tallinn, Estonia

Outline

- Why at accord level?
- Challenges
- Solutions
- Discussion

Why at consortium level

Expected added value

- for developers (steering, management, developers):
 - awareness of performance in different conditions/for different purposes
 - awareness of user needs
 - help in efficient resource allocation
 - monitor progress
- for users:
 - shared experiences of many teams
 - better understanding of model capabilities and limitations
 - more influence on development

Challenges

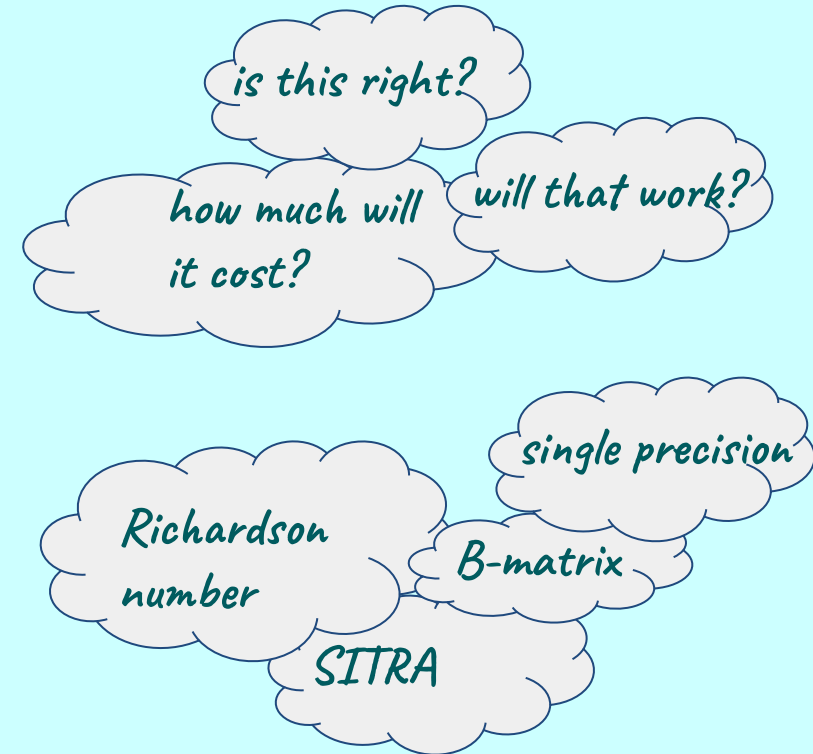
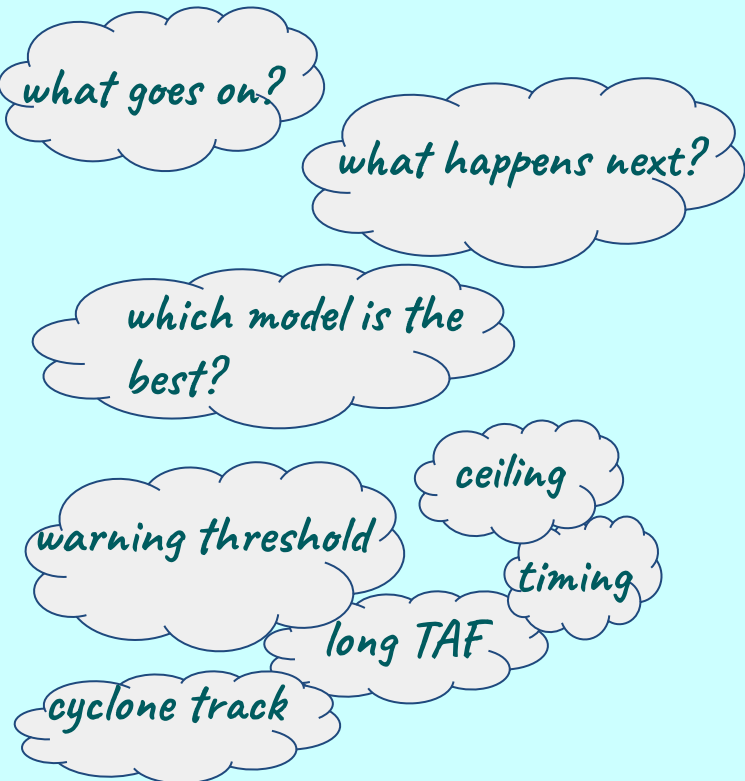
How to ensure that the feedback is relevant to users **AND** developers

- **Heterogeneity**
 - several canonical configurations, multiple implementations and applications
 - 26 participating institutes each providing a multitude of services
- **Communication**
 - different points of view: forecasts vs forecasting systems

Different points of view:

forecast

forecasting system



O2R working group

An expert team representing ACCORD families was formed, giving advice on how to meet the challenges of heterogeneity and communication

Composition: *Matthieu Plu, Joël Stein (MF), Gema Morales, Gunnar Noer (HIRLAM), Jure Cedilnik, Kristina Klemenčič Novinc (ALARO), Manal Bouhadi, Fatih Büyükkasabbaşı, Zeynep Feriha Ünal, (former ALADIN institutes), Carl Fortelius (convener, AL MQA)*

Met 5 times during winter 2022 - 2023

Joint meeting with MG on 16. March resulted in a road map outlining proposed **steps for collection and processing of user feedback at consortium level**

Roadmap: collection

User feedback should be:

- **collected regularly**, e.g., seasonally
- primarily from **forecasters**
- **standardized** electronic questionnaire, containing
 - a. use cases, featuring
 - i. focus on **meteorological phenomena or particular cases** related to single-member forecasts or ensembles
 - ii. detailed and specific descriptions of meteorology and NWP system
 - iii. related observations data
 - b. numerical grading of forecast parameters

Roadmap: use cases

- typically or persistently well handled or problematic **meteorological phenomena or particular cases** related to single-member forecasts or ensembles
- **detailed and specific** descriptions:
 - a. relationships to **meteorology**:*
 - i. synoptic situation
 - ii. geographical region or type of landscape
 - iii. time of the year or day
 - iv. other distinguishable characteristics
 - b. particulars about **NWP system** displaying the issue*
 - i. name and version number
 - ii. horizontal grid spacing and number of levels
 - iii. perturbation methods in case of ensemble forecasting
 - iv. cycling and data assimilation, assimilated data
 - v. coupling model and coupling strategy
 - vi. presence of a post-processing step (like statistical adaptation) between the NWP output and the forecast displaying the problem
 - c. as much observational **data** as possible*

Roadmap: user representatives

Collection by **user representatives** nominated at member institutes who shall:

1. compile the use cases and grading together with colleague forecasters and NWP experts
2. liaise with colleagues serving specific application areas (e.g. transportation, hydrology, agriculture, etc)
3. interact with ACCORD MG and experts

Roadmap: processing the feedback

MG takes responsibility of:

1. grouping the reported issues; commenting and reformulating
2. compiling and distributing a summary of all the grouped issues
3. selection of (few) transversal issues to be dealt with at consortium level; formulation and implementation of action plans for the selected issues
4. organizing communication, promoting work and monitoring progress on issues not dealt with at consortium level
5. organizing response to users
6. reporting to ACCORD bodies (STAC)

Roadmap: grouping and selection of issues

For the reported issues:

- reformulate from meteorological phenomenon towards (modelling of) physical processes, algorithms, initialization, use of observations, etc
- **group** together issues that seem to be of similar nature
- **select** for handling at consortium level one or two issues based on their **transversal nature**, i.e.
 - relevance to several CSCs
 - reporting by several teams

or on general interest and **quality of the use case**

Roadmap: consortium level actions (MG)

For the selected issues MG takes the responsibility to:

- contact NWP key experts as required
- define a work plan and frame it within the ACCORD rolling work plan
- monitor the progress of the work plan
- prepare a response to the users

Roadmap: response to users

Recommendations:

- stepwise response:
 - explain which specific items are selected by MG
 - how MG intends to address them
 - later provide progress reporting
- user-oriented vocabulary, explanation of NWP concepts when needed
- use both oral and written form for archiving
- users/NWP joint meetings should be considered

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Feedback, please!

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