**From PP C2I:**

**5.6 Forecasters' feedback**

The main goal of the task Forecasters' feedback is the evaluation of ICON-LAM forecasts by forecasting departments and the translation of this feedback to the COSMO-ICON community,

in particular:

\_ An assessment of the added value of ICON-LAM compared to the COSMO-model.

\_ Identification of decreased model skills for certain regions or certain weather regimes.

\_ An assessment of the added value of ICON-LAM compared to the COSMO-model in case of severe weather situations.

\_ Additional requirements of ICON-LAM users with respect to data format and output meteorological variables.

This goal is achieved by providing forecasting departments and, if available, other COSMO/ICON-LAM users with regular surveys. These surveys are collected and processed by a WG4 representative from each of the participating institutions at the end of phase 3. Using the outcome of these surveys, an assessment will be created that includes the subjective evaluation by forecasters and the objective verifications obtained by task 5.5 (see subsection 5.5). A comparison of the subjective and objective verification results is then made.

**It is recommended to provide the forecasting departments with the ICON-LAM forecasts and the survey only after a data assimilation procedure is established.**

Deliverables:

A report containing the outcome of the surveys as well as a comparison with the objective results from task 5.5 at the end of phase 3.

|  |  |  |  |
| --- | --- | --- | --- |
| **Country, Institute** | **Status of ICON-LAM** | **Provided to forecasters** | **Planned time of survey distribution** |
| **Germany, DWD** | Running operationally, but no representative | Yes |  |
| **MCH, MeteoSwiss** | No? | No |  |
| **Italy, COMET** | Case studies | No? |  |
| **Italy, ARPA-Piemonte** | Running regularly (operationally?) | ? |  |
| **Italy, ARPAE-SIMC** | No | No |  |
| **Greece, HNMS** | Running operationally | Yes? |  |
| **Poland, INGW** | Running since April | Yes? |  |
| **Romania, NMA** | Running operationally | Yes |  |
| **Russia, RHM** | Running in test mode | No |  |
| **Israel, IMS** | Running in test mode | No? |  |

**The COSMO-ICON-LAM forecasters’ survey (draft)**

***It is recommended to distribute the survey once per year.***

Institute, Country

Contact point

e-mail address

1) Specify the step range of COSMO/ICON-LAM forecasts you are using.

2) Which ICON-LAM direct model output (DMO) products are you using?

3) Do the ICON-LAM forecasts arrive timely?

*□*Yes

*□*No

*□* Additional comments (e.g., almost timely)

4) Do you have additional requirements with respect to ICON-LAM data format and output meteorological variables?

5) Do you need any other specific products derived from ICON-LAM numerical weather forecasts? Please, specify the products

6) Which types of visualization do you use:

*□* maps

*□* meteograms

*□* other plots

7) Are you satisfied with this visualization?

*□*Yes

*□*No

If not, what do you suggest that would be helpful?

8) Do you use ICON-LAM for the regular aeronautical /sea route forecasts for the Meteorological Center in your country?

*□*Yes

*□*No

If Yes, Is there added value compared to COSMO?

*□*Yes

*□*No

9) Do you need more postprocessing (e.g., convective indices plotted in meteograms) on the graphical ICON products?

*□*Yes

*□*No

If Yes, please, indicate which ones

10) Estimate the overall ICON-LAM model guidance

*□ very good guidance, very useful*

*□ good guidance, useful*

*□ rather poor guidance, misleading*

*□ very poor guidance, very misleading*

*□* additional comments to the choice above, especially if answer is c or d

11) Is there an added value of ICON-LAM model guidance compared to COSMO?

*□*Yes

*□*No

*□* Additional comments

12) If you notice the added value for particular meteorological variable, please, indicate the variable.

13) Does ICON-LAM performance differ for different seasons, months, weather situations? (Indicate with ones) Is the performance better/worse than COSMO in specific meteorological situations? If yes, please, indicate the variable.

14) Is there an added value of ICON-LAM for predicting high impact weather (HIW) situations, such as:

*□* thunderstorms

*□* frost

*□* fogs

*□* max wind gusts

*□* strong winter storms

*□* frontal precipitation

*□* road icing

□ other (indicate which HIW event)

□ I don’t predict HIW

Please, specify what kind of ICON-LAM output was particularly helpful for forecasting these situations. At which lead times?

15) Do you notice a systematic difference between different ICON-LAM forecast runs? Are ICON-LAM runs from a particular initial time more/less successful? Please, indicate the initial time and the variable they are most successful for.

16) Is there enough verification information for ICON-LAM?

17) What other kinds of ICON-LAM verification products would you consider useful?

18) Do you apply correction to ICON-LAM forecasts? In which weather parameters? In which weather conditions and regions in your country?

19) If yes, how do you perform this correction? If you don’t perform this correction by yourself, where do you get the corrected results from?

20) Do you use ICON ensemble prediction systems (EPS)?

21) Is there an added value of ICON EPS compared to other EPSs you uses?

*□* Yes

*□* No

22) Do you use post-processed ICON-EPS products? (E.g., upscaled probabilities)

*□* Yes

*□* No

23) Any other comments you would like to give?

24) Do you also use ICON global for your forecasts? Is there an added value from using ICON global NWP?