Battle of Water Networks

Battle of Water Demand Forecasting (BWDF)

Questions & Answers

(07/12/2023 – rev. 0)

(19/01/2024 – rev. 1)

(21/02/2024 – rev. 2)

Questions & Answers

This document includes the questions received by the Organizing Committee and the corresponding answers.

Q1. Is the population for each DMA the same for all years?

It is assumed that no significant variations in the DMA population occurred between the years 2021 and 2023, so the population can be considered the same for all years.

Q2. Can we tweak our model after the Jan 31st submission?

Model structure cannot be modified after the January 31 submission. The only allowable modification is model re-calibration, i.e., the identification and application of new parameter values based on the new amount of data made available after the first submission.

Q3. Are we permitted to adjust our forecasting models after the first submission? Specifically, can we make structural changes to the models or are we only allowed to re-train them with the newly available data?

Teams are allowed only to re-train the models with the newly available data. Structural changes to the models are not permitted.

Q4. Is it allowed to modify or introduce new input features in our model after the first submission, or do we need to maintain the same set of input features throughout the challenge?

Teams are asked to maintain the same set of input features until the end of the challenge. No input-feature modifications are allowed.

Q5. In the instructions it is indicated that the code must be supplied to check the reproducibility of the method. In our case we are using a combination of engineering judgement and a commercial code. Since the software is available in the cloud, we understand that it will be sufficient to provide an access to such software to be able to execute the data file sent. Is this correct?

Yes, it is possible to make use of commercial software available on cloud platforms.

Q6. Four different predictions must be made. Is it possible to update the method between two different predictions? When new data becomes available, new analyses can be performed leading to the use of the same method with different parameters or the use of an alternative method. Is this possible?

Model structure cannot be modified after the January 31 submission. The only allowable modification is model re-calibration, i.e., the identification and application of new parameter values based on the

new amount of data made available after the first submission. Model structural changes are thus not permitted (i.e. each participating team is allowed to adopt only one model structure).

Q7. I understand that it is required to have the same model structure across all evaluation weeks. However, I need to confirm whether it is permissible to train the model independently for each DMA using the provided data, resulting in 10 trained models, each tailored to a specific DMA. In other words, I may train the SAME MODEL multiple times, once for each DMA, rather than training a single model to generate predictions for all DMAs collectively.

Yes, based on competition rules it is allowed to train the model for each DMA independently of the others, i.e. calibrating the model for individual DMAs.

Q8. Is it allowed to use extra datasets to train the models on, for example for transfer learning? What about using pretrained models whose parameters are trained on data outside the challenge?

The input data exploitable for water-demand forecasting are only those provided on the related webpage. In any case, to choose the structure of a forecasting model - or to set up model parameters - teams can also make use of additional data, but model structure has to be conceived to perform water-demand forecasting by using as input only the data provided on the website.

Q9. Can the additional data we use to re-calibrate the model be synthetic? Is it possible to create two time series from a DMA to re-calibrate the model?

Synthetic data can be used to re-calibrate the model, but the input data exploitable for water-demand forecasting are only those provided in the competition materials, i.e. model structure has to be conceived to perform water demand forecasting by using as input only the data provided on the website.