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CONFIDENT - Met Norway's plan for a new quality control system

Hans Olav Hygen, Abigail Louise Aller, Anette Lauen Borg, Line Båserud, Louise Oram, Nina Elisabeth Larsgård, and Vegar Kristiansen
Norwegian Meteorological Institute, Oslo, Norway (hans.olav.hygen@met.no)

The meteorological observation networks are in rapid change. Among other trends, these changes include: increased frequency in observations, increased spatial resolution of observations, and increased heterogeneity in observation platforms. These changes challenge the current data storage and quality control. MET Norway has implemented a new data storage, ODA, to be able to receive a significant amount more data.

A significant challenge is that the current quality system doesn't scale to the new world of observations. The current quality control system is not built to be modular, thus requires significant work to integrate improvements.

MET Norway is rising to the challenge of the new observation structure and storage renewing the handling of observational networks and the quality control system. Previously there have been strict criteria on how MET Norway should handle data from an observational station, this is changing with the emergence of new, cheap observational platforms. To accommodate this we are structuring the handling of the station in a hierarchical system where some stations will have fully populated metadata and be treated at the highest level, whilst others will have less information down to unknown stations with unknown setup, e.g. Netatmo.

The new quality control system will be modular to ensure the ability to change and upgrade different parts. One major module of the system is an in-house developed library for spatial quality control, Titan (presented at EMS 2019).

Unlike the present quality control, which is a separate entity to the data storage, CONFIDENT will be built to use ODA as data storage to ensure the best information is available for users and CONFIDENT at all times. We are also working on how we can integrate other software performing quality control of the data, e.g. for assimilation.

The project is planned to start in the autumn of 2021 for three years. Spring of 2021 was used to map relevant activities and modules as the foundation of the planned development of the new system. The plan is not to change the current quality system in one go, but to start implementing the different modules in 2022, and phasing out the current system throughout the project period of three years.