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Data Management needs in Hydrometeorological Institutes

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Impacts of weather to the societies are growing due Climate Change. Also Societal Infrastructure is getting more vulnerable to weather. Therefore it is needed to improve weather services. The services itself must be easier to use and have more information, but it is important to have more accurate forecasts. When the forecasting time step is getting shorter and as well the forecasting grid denser, it is needed to have more observations with shorter time interval. When the observation data amount is growing, it is needed to have data management to take care of securing quality and archiving the data as well maintaining the observation networks.

The use of the observation data can be divided into two categories: operational and climatolo0gical use. For operational use the latency (collecting data from station to the database and ready to use) is the most critical value, for example in Flash Flood cases. Another important issue is to have Real-Time Quality Control to get rid off false information from broken sensors. For climatological usage the quality and consistency of the data are the most important values. For both uses the reliability of the data flow from station to database is highly important.

There are many tools and ways how to solve data management issues, so this study tries to draw the overall picture of the data management challenges and give general requirements and suggestions how to handle the issue.