

# REQUEST FOR ADDITIONAL RESOURCES IN THE CURRENT YEAR FOR AN EXISTING SPECIAL PROJECT

Please email the completed form to [special\\_projects@ecmwf.int](mailto:special_projects@ecmwf.int).

**MEMBER STATE:** Sweden

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**Project title:** An enhanced use of passive microwave radiances in the scandinavian HARMONIE-AROME km-scale limited-area data assimilation  
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**Project account:** SPSELIND

<b>Additional computer resources requested for</b>		<b>04/05/23</b>
High Performance Computing Facility	(units)	20 MSBU
Data storage capacity (total)	(Gbytes)	30 000

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<sup>1</sup> The Principal Investigator is the contact person for this Special Project  
 Jun 2019

*Continue overleaf*

## Technical reasons and scientific justifications why additional resources are needed

Additional resources needed for remaining studies for evaluating impact of additional ASW microwave satellite(s) using existing heritage channels and OSSEs. The contribution of SBUS that could be used from local national quotas was overestimated in initial proposal. Project progressd well and now low peaking channels from MW satellites operational at several nordic countries and planned in remaining due to project.

One reason for so much additional resources comes from running 4D-Var, instead of 3D-Var that we have been using almost exclusively until this project.

We are running a total of 10 experiments that each span over 42 days. There are five experiments run in the MetCoOp operational domain, and five in the AROME-Arctic domain. The setting is to investigate the short-range impact of bringing new microwave sounders into the assimilation in limited-area NWP.

The log files indicate that each experiment consumes approximately 0.15 MSBU per day. The total expense of the main runs is about

$$0.15 \text{ MSBU} * 10 * 42 = 63 \text{ MSBU}$$

Additionally we run a warming-up period of 14 days in two of the experiments. During the warming-up period, we don't run long forecast, so it is a little bit cheaper, only approximately 0.10 MSBU per day. The total expense of the warming-up period is then about

$$0.10 \text{ MSBU} * 2 * 14 = 2.8 \text{ MSBU}$$

So in total we expect to consume approximately 66 MSBU. A large part of this will be, or has already been, covered by national quotas.

As it stands now, some of the experiments are almost complete, while some others have up to 21 more days to run. In total we would still need something like ~16 MSBU to finish the production. Considering that we are already > 6MSBU above the original allocation, the request for 20 MSBU right now seems reasonable.