REQUEST FOR A SPECIAL PROJECT 2017–2019

MEMBER STATE: The Netherlands…….………………………………………...…

Principal Investigator[1]: Professor Albrecht Weerts………………………….………

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Other researchers: Florian Pappenberger/ECMWF
Albert van Dijk/ANU
Jan Verkade, Deltares……………………………….……

Project Title: MultiModel Global/Continental Flood Forecasting……………

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If this is a continuation of an existing project, please state the computer project account assigned previously.	**SP** _____
Starting year: (Each project will have a well-defined duration, up to a maximum of 3 years, agreed at the beginning of the project.)	2017
Would you accept support for 1 year only, if necessary?	YES ☒ NO ☐

Computer resources required for 2017-2019: (To make changes to an existing project please submit an amended version of the original form.)		**2017**	**2018**	**2019**
High Performance Computing Facility	(SBU)	250000	250000	250000
Accumulated data storage (total archive volume)[2]	(GB)	3000	6000	9000

An electronic copy of this form must be sent via e-mail to: *special_projects@ecmwf.int*

Electronic copy of the form sent on (please specify date):

……………13/06/2016……………

Continue overleaf

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[1] The Principal Investigator will act as contact person for this Special Project and, in particular, will be asked to register the project, provide an annual progress report of the project's activities, etc.
[2] If e.g. you archive x GB in year one and y GB in year two and don't delete anything you need to request x + y GB for the second project year.

This form is available at:
http://www.ecmwf.int/en/computing/access-computing-facilities/forms

Principal Investigator: Albrecht Weerts……………………………

Project Title: MultiModel Global Flood Forecasting…………………………

Extended abstract

Flood forecasting at the large (continental and global) scale is key to providing overviews and early warnings of flood events across the globe, including regions where no alternative local-scale flood forecasts are available. Recent advances in meteorological forecasting and NWP have moved toward multi-model forecasts and grand ensemble techniques. Programs such as TIGGE89 [The Observing System Research and Predictability EXperiment (THORPEX) Interactive Grand Global Ensemble] have led to advances in ensemble forecasting, predictability, and development of severe weather prediction products in meteorology.

In hydrology, combining models for flood forecasting presents an additional challenge (e.g., due to different river networks and climatologies), but despite this, future applications of flood forecasting should move toward the establishment of grand ensemble techniques (Fan et al., 2015). In the future, increased access to monthly and sub-seasonal (for example, throughthe S2S project) forecasts from multiple centers will enable us to push the limits of predictability through use of these grand ensemble techniques (Fan et al., 2015)

References:

Emmerton et al., 2016. Continental and global scale flood forecasting systems WIREs Water 2016. doi: 10.1002/wat2.1137.

Fan FM, Schwanenberg D, Collischonn W, Weerts A. Verification of inflow into hydropower reservoirs using ensemble forecasts of the TIGGE database for large scale basins in Brazil. J Hydrol Reg Stud 2015, 4:196–227. doi:10.1016/j.ejrh.2015.05.012

It is expected that Special Projects requesting large amounts of computing resources (1,000,000 SBU or more) should provide a more detailed abstract/project description (3-5 pages) including a scientific plan, a justification of the computer resources requested and the technical characteristics of the code to be used. The Scientific Advisory Committee and the Technical Advisory Committee review the scientific and technical aspects of each Special Project application. The review process takes into account the resources available, the quality of the scientific and technical proposals, the use of ECMWF software and data infrastructure, and their relevance to ECMWF's objectives. - Descriptions of all accepted projects will be published on the ECMWF website.