ACH feedback on support tasks requested for 2027

Tasks recommended for ACH support in 2027:

Project Acronym	Project Coordinator	Institution	Priority	PM's requested	PM's estimated	ACH team members	Tasks required	Comments
CINCOMP27	R. Hatzkly	IPP	High	15	15	S. Mochalskyy (12 PM) + R. Hatzky (3 PM)	Regular benchmarks on Pitagora to help identify and resolve performance limiting issues. Additionally, the hpcmd performance-monitoring tool will be deployed to continuously evaluate the efficiency of user codes and overall system performance, thereby supporting the ongoing optimization of computational workloads.	Prolongation from 2021/22/23/24/25/26
EIRON	D. Borodin	FZJ	High	12	12	O. Lappi (6 PM) + V.-M. Yil-Suutala (6 PM)	Continue parallelization and domain decomposition studies for EIRENE using the EIRON code with extensions to potential GPUisation.	Prolongation from 2026
EUTERPE	R. Kleiber	IPP	High	15	15	M. Borchardt (3 PM) + R. Hatzky (6 PM) + R. Remmerswaal (6 PM)	High-order finite element exterior calculus (FEEC) discretization of the quasi-neutrality equation and Ampère's law on a stellarator domain with a disk-like (polar) coordinate singularity; improve the performance of EUTERPE on AMD GPUs (Pitagora).	Prolongation from 2026
GEMPICX	E. Sonnendrücker	IPP	High	14	6	E. Poulsen	Measure and improve the computational efficiency of GEMPICX, and help with redesigning the GEMPICX maintenance framework to manage the workload in the presence of AI assisted contributions.	Prolongation from 2026
GENE	T. Görler	IPP	High	6	6	C. Lalescu	Support for further GPU porting and code speed-up / optimisation primarily wrt to adding further OpenMP capabilities as well as general code infrastructure assessments and revisions.	Prolongation from 2026
GRILLIX	A. Stegmeir	IPP	High	8	6	C. Lalescu	With GRILLIX's field solver already on GPUs, we aim to port the remaining components following the same strategy. This involves refactoring the code into C++ for broader GPU programming support, targeting 5–20× speedups.	Prolongantion from 2026
GVEC	F. Hindenlang	IPP	High	6	6	T. Ribeiro	The open-source 3D MHD equilibrium solver GVEC was recently extended to compute free-boundary equilibria. The algorithm allows to overlap the external field computation with the remaining components. This project aims to enable such parallelism within the Python layer.	Prolongation from 2026
Management	R. Hatzky	ACH-MPG	High	3	3	R. Hatzky	Management of ACH activities	
ORB5	T. Hayward-Schneider	IPP	High	6	6	V.-M. Yil-Suutala	The porting and optimization of the ORB5 code to run on GPUs using OpenMP should be continued, until production-level performance on Nvidia and AMD GPUs from a single-source can be obtained.	Prolongation from 2026
REFMUL3	F. da Silva	IPFNIST	High	6	6	T. Ribeiro	Generalisation of REFMUL3 to simulate arbitrarily connected domain regions, in order to exclude computationally non-relevant regions (where no electromagnetic waves propagate). Significant performance gains are expected from the increase in efficiency of the resource usage.	Prolongation from 2026
			Total	**91**	**81**			

Rejected Projects

Project Acronym	Project Coordinator	Institution	Priority	PM's requested	PM's estimated	ACH team member	Tasks required	Comments on reasons for rejection
			Total	0	0			

Comments