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Generic Entry Probe Program (GEPP) – an international initiative promoting the development of European descent modules dedicated to the in situ exploration of giant planets

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The international consortium GEPP has been set to conceptualize probe designs with appropriate payloads that would remain within the typical budget allocated for ESA M-class missions (currently 500 M€). The aims of the consortium are i) to conceptualize a line of generic planetary entry probes that could be targeted to the giant planets with very few modifications, ii) to make the international science community, ESA and its member states, conscious that there is an opportunity to supply a series of entry probes as part of future international collaborations, for example as part of the future NASA flagship mission towards Uranus (Uranus Orbiter Probe) or to any future NASA-led mission to the outer planets for an affordable budget, and iii) to demonstrate that an M-class budget could even fund several entry probes with well-prioritized science objectives. The model payload capabilities of each concept will be defined according to a carefully-designed science traceability matrix. Two extreme concepts shall be investigated by the GEPP Consortium, namely a highly capable parachute-descent probe including a typical payload of 30 kg of scientific instruments down to 10 bars, and a smaller parachute-descent probe designed to address top priority science objectives with selected key measurements that would address the ESA Cosmic Vision 2050 science objectives. This presentation will detail the scientific objectives for each entry probe design, as well as the content, organization and planning of the study, which is assumed to be completed by the end of 2025.

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