

Autonomy for Aurora's Mars Missions

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ESA's Aurora programme incorporates a strategy for European involvement in future robotic and human exploration of our Solar System. The Aurora roadmap calls for a series of robotic and ultimately manned missions leading to a human mission to Mars by 2030. Major technological advances will be required to support the necessary operational requirements such as stand-alone robotic rovers, multiple robotic teams and collaborative human, robotic operations. Agent technology will therefore be a key component of the programme. Currently however, deep-space missions have limited autonomy beyond the execution of routine tasks. In order to address this, SciSys have carried out a series of studies with Heriot-Watt University and the University of Strathclyde for ESA/ESTEC. Our goal is to demonstrate the feasibility of on-board planning and scheduling for near-term missions such as the ExoMars rover. This presentation provides a brief overview of the Aurora programme and this thread of ongoing work.