

INVITED TALK: BUILDING INTELLIGENT SPACE EXPLORATION MISSIONS

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Talk summary

NASA's new age of space exploration augurs great promise for deep space exploration missions whereby spacecraft should be independent, autonomous, and smart. Nowadays NASA increasingly relies on the concepts of autonomic computing, exploiting these to increase the survivability of remote missions, particularly when human tending is not feasible. Autonomic computing has been recognized as a promising approach to the development of self-managing spacecraft systems that employ onboard intelligence and rely less on control links. We describe our work on developing self-management concepts inspired by biological concepts and formally specifying these with particular reference to a NASA concept exploration mission.

About the speaker

Mike Hinchey is Director of Lero—the Irish Software Engineering Research Centre, a multi-institutional research centre funded by Science Foundation Ireland, and Professor of Software Engineering at University of Limerick, Ireland. He was previously Director of the NASA Software Engineering Laboratory at Goddard Space Flight Center and continues to serve as a NASA expert consultant. He is editor-in-chief of *Innovations in Systems and Software Engineering: a NASA Journal* (Springer) and is currently a Vice President of IFIP and Chair of the IFIP Technical Assembly.