

# Mission Simulation Facility

NASA Ames' Mission Simulation Facility (**MSF**) is designed to meet a development need that is often encountered by researchers in autonomy: how to carry out meaningful testing of autonomy software without a real-world robotic platform. The Mission Simulation Facility offers a simulated testing environment including robotic vehicle, terrain, sensors, and other features. The initial MSF release targets users researching autonomy for Mars rovers; however, the MSF technology solution is applicable to any robotic domain.

The MSF has been developed using a multi-platform distributed architecture that is a specialization of the Defense Modeling Simulation Office (DMSO) developed High Level Architecture (HLA), which allows the simulation to be distributed across multiple machines and laboratories. Multi-platform support allows the MSF to easily integrate with existing simulation software developed on Unix, Linux, and Windows platforms. Among other unique qualities, the MSF is being developed with the goal of distributing the software to outside research groups and universities so that it can be applied to other research applications.

## MSF Architecture