Presentation Abstract

Presentation Title	MSL Code Analysis
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Presentation Abstract	The Mars Science Lab (MSL) code is estimated to be 4 million lines of code at completion, including 70-75% generated from autocoders. Of the eight autocoders utilized on MSL, seven are home-grown with six having their first usage on the MSL project. The MSL code uses an asynchronous inter-processor communication (IPC) mechanisms which allows message transfers amongst the 150 MSL modules that comprise the code. The MSL project has augmented its development process through in-house static analysis via the Scrub tool. IV&V addressed these attributes in our IV&V analysis through project interactions resulting in augmented code analysis work instructions incorporating tool applications (workstation test set, Doxygen, profilers) to facilitate analysis. Future activities envisioned are a closer interaction with the requirements MSL IV&V team as code implementing higher level behaviors is implemented, and continued improvement of the semantic analysis and associated IPC challenges. This presentation discusses MSL IV&V challenges, approaches, successes and lessons learned associated with analysis of MSL code.