

Abstract
MANAGEMENT OF THE MARS GLOBAL SURVEYOR MISSION

by

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The Mars Global Surveyor (MGS) mission, the first of the Mars Surveyor missions, has only two years for implementation and a severe cost cap. These considerations call for a management approach that departs significantly from that applied to previous planetary missions.

An independent NASA review team recently concluded (June 1995) that "the review team is very favorably impressed with the management approach which is being utilized for the conduct of the MGS spacecraft development and mission implementation which is direct response to NASA's better, faster, cheaper philosophy..."

This paper discusses the important factors in the MGS management approach which consist of:

1. Sharing technical responsibilities with our industrial partner.
2. Maintaining a risk management approach wherein JPL, in concert with our industrial partner, assess the programmatic and technical risks on a quarterly basis, assigning a probability of occurrence and an estimated cost of mitigation. It is then shown that there are reserves to cover the entire probabilistic cost of the risk mitigation.
3. Maintaining strong system engineering at the project level to handle inter-system issues and trades on a technical and programmatic basis,
4. Allocating reserves to each of major system managers (spacecraft, science, and mission), and to project management for intra-system problems. The project manager also holds reserves in two other categories: one for inter-system problems and another for risk reduction.
5. Maintaining clear monthly assessments against baseline plans in both cost and schedule using earned value and critical path methods.
6. Pushing responsibilities to the lowest levels, and avoiding micro management from the project office.
7. Operating to a "cost driven" paradigm wherein meeting budget commitments is paramount, and schedule compliance is secondary but firm. If there is chance of not meeting budget or schedule, performance is decoupled to recover. The on-orbit award fee for our industrial partner incorporates this philosophy also.
8. Carefully recording potential encumbrances against the reserves and assessing how reserves are spent on a monthly basis.
9. Assessing and acting on a series of technical progress metrics on a monthly basis.