



## PRoViScout - Planetary Robotics Vision Scout

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### D4.4.1 TVCR Software Module

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### EXECUTIVE SUMMARY

The purpose of the Decision Module is to manage plans. Plans are initially constructed manually and downloaded to the executive. During execution, the Decision Module monitors the progress of the execution of the plan and responds to discrepancies in the execution process by modifying the plan. If, during execution, science opportunities are detected (during planned science assessments), the Decision Module is called upon to modify the plan, if possible, to exploit each opportunity as it is discovered. The most likely change to the plan will be to insert the new actions that exploit the opportunity, modifying the context in order to accommodate this change. In principle, plan modification is constrained by several factors: primarily, the availability of resources (power and time are foremost of these), but also the relative priority of activities within the plan and the opportunity itself.

The Decision Module modifies the plan by applying standard plan modification operations. These operations include insertion, deletion, linking and clearing. In order to avoid searching large numbers of alternatives, which is impractical on-board a platform with limited computational resources, the Module is designed to consider plan modifications in a standard sequence and greedily arrive at an executable and effective plan.

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