

Novel Problem Solving – the NASA Solution Mechanism Guide

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Over the past five years, the Human Health and Performance (HH&P) Directorate at the NASA Johnson Space Center (JSC) has conducted a number of pilot and ongoing projects in collaboration and open innovation. These projects involved the use of novel open innovation competitions that sought solutions from “the crowd”, non-traditional problem solvers. The projects expanded to include virtual collaboration centers such as the NASA Human Health and Performance Center (NHHPC) and more recently a collaborative research project between NASA and the National Science Foundation (NSF). These novel problem-solving tools produced effective results and the HH&P wanted to capture the knowledge from these new tools, to teach the results to the directorate, and to implement new project management tools and coursework.

The need to capture and teach the results of these novel problem solving tools, the HH&P decided to create a web-based tool to capture best practices and case studies, to teach novice users how to use new problem solving tools and to change project management training/. This web-based tool was developed with a small, multi-disciplinary group and named the Solution Mechanism Guide (SMG). An alpha version was developed that was tested against several sessions of user groups to get feedback on the SMG and determine a future course for development. The feedback was very positive and the HH&P decided to move to the beta-phase of development. To develop the web-based tool, the HH&P utilized the NASA Tournament Lab (NTL) to develop the software with TopCoder under an existing contract. In this way, the HH&P is using one new tool (the NTL and TopCoder) to develop the next generation tool, the SMG.

The beta-phase of the SMG is planned for release in the spring of 2014 and results of the beta-phase testing will be available for the IAC meeting in September. The SMG is intended to disrupt the way problem solvers and project managers approach problem solving and to increase the use of novel and more cost and time effective problem solving tools such as open innovation, collaborative research, and virtual collaborative project centers. The HH&P envisions changing project management coursework by including the SMG in the teaching of project management problem solving tools.