

HyDE Enhancements for ISHM Deployment

Impact Technologies, LLC**Technical Abstract**

Impact Technologies LLC, with the support of Palo Alto Research Center (PARC), proposes to continue developing key enhancements to NASA's Hybrid Diagnostic Engine (HyDE) that represent valuable and, in some cases, critical features for Integrated System Health Management (ISHM) developers in NASA and non-NASA application domains. Specifically, the proposed program will be focused on attaining three milestones. The first goal is to achieve commercial-grade readiness of a HyDE Developers Pack (HyDE DP) to TRL 6 or higher. To facilitate Phase III NASA transition, the second program goal is deploying HyDE DP to Kennedy Space Center's (KSC) Integrated Ground System in support of the Constellation Program. Finally, to facilitate Phase III commercial transition and dramatically improved the embedded capability of HyDE, preparation for Beta-site deployment and tech transition with PARC on a commercial printing platform will be performed. Building off the significant Phase I SBIR accomplishments, the Impact team believes that the proposed Phase II program is the ideal mix of innovative development work in the form of modeling, simulation, validation and verification tools for HyDE DP and tech transition activities designed to position HyDE as the diagnostic and reasoning engine for a broad application space that spans NASA, commercial and military domains.

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Water Reclamation using Spray Drying

NanoMaterials Company**Technical Abstract**

This purpose of this project is to develop a spray drying prototype to for the recovery and recycle of water from concentrated waste water recovery system brine. Spray drying is a one step, continuous process where a solution, slurry, sludge or paste is transformed into a dry solid and clean water. The dry solids powder is easy to transfer and does not foul surfaces. The process is suitable for dewatering brine from the vapor compression distillation processor and other sources. It may serve as a backup processor for one or more existing water recovery systems unit processors. We will employ alternative heating methods and advanced process control.

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