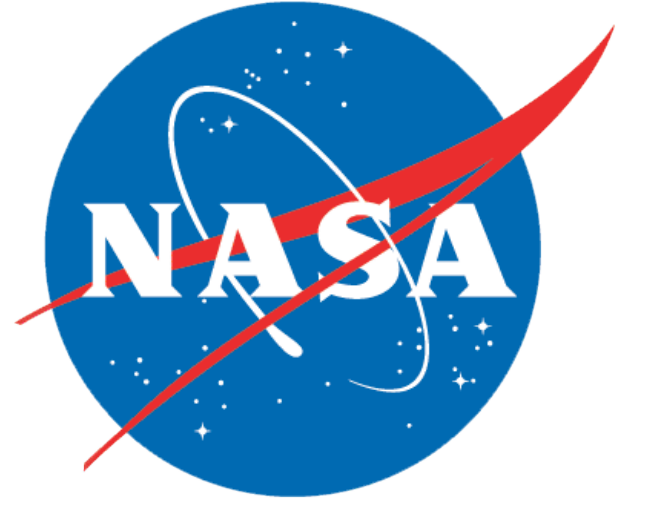




2022 Innovation Fair - Scaling a Smart Sub-metered Electrical Data Solution for the Center

○ Innovation Statement

- Ames Bldg. N232 requires access to Building Automation System (BAS) data to enable data-driven decision making with AIML and to mitigate anomalous energy consumption trends. Data can also be collected from instrumentation deployed to support energy-monitoring activities, separate from the BAS to support critical infrastructure modernization and technology maturation efforts. Ultimately, the goal is to migrate these capabilities to future R&D for space-based habitats. As such, investments in ground infrastructure activities can payoff for future NASA space infrastructure whose stakeholders represent the ultimate end users. The dual use nature of the technologies being developed also offer collateral terrestrial benefits for the Agency's aging strategic infrastructure.

○ Project type: Mission Support

○ Summary

○ Abstract

- This project is poised to support the following
 - An NRSAA with Verdigris Technologies
 - The Agencywide Smart Center initiative
 - The planned conversion of N232 into a building dedicated to offering hoteling spaces for remote workers and heavy telecommuters without a permanent on-site office (in anticipation of an increased demand for plug load monitoring)

○ Project description

- Meets the needs of the Center and Agency as follows:
 - A cloud-based NASA IoT (Internet-of Things) platform developed at LaRC can serve as a single point solution for N232 to enable BAS data to be collected and archived securely (**serves as a departure point for AIML !**)
 - Electrically sub-metered data is also available via the cloud.
 - Together with BAS data, this would enable the cultivation of deeper insights into incipient facility-related issues that would otherwise be overlooked.

○ Expected results

- Would bring powerful tools to:
 - Aid in data-driven decision making to more accurately quantify potential utility costs and investments
 - Inform actionable steps for remediation and resolution of problems with anomalous energy consumption trends
 - Monitor electrical consumption usage at the most granular level in Bldg. N232

○ Deliverables

- Feasibility analysis of how the capability can scale more broadly across the Center and Agency at large.

○ Budget request: \$25k

Project Lead:

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Key Contributors:

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Terry Hines (ARC-JCM, NovaTech sub to Jacobs, Inc. at ARC)

Jeff Brandt (LaRC-B7 [EAST2]), NASA IoT development support)

Verdigris Hardware & Web-Based Interface



IoT Platform Interface Output

