i am an INNOVATOR

OPEN YOUR MIND

Lyndon B. Johnson Space Center
White Sands Test Facility

National Aeronautics and
Space Administration

NASA

With ~3000 Test and Evaluation (T&E) pressure systems at NASA's Johnson Space Center and White Sands Test Facility (WSTF) combined, systems support testing of hardware for the agency can be complicated because these systems were built using a wide variety of components and with thousands of different model numbers.

An innovative idea for a Standard Parts Database (SPD) was developed for a central location to contain all component information and all calculations. Several key aspects of a component documented in the SPD include:

- All wetted and non-wetted materials of construction including soft goods, whether these components are ASME Code "listed" or not,
- An allowable working pressure, which will be calculated for "unlisted" components or taken directly from the referenced Code listing, and
- Material compatibility assessment information.

The site warehouse will be populated with approved components from the SPD. An engineer building a system can pick compatible components that are code pressure approved, code material approved, and available for system construction. The SPD system will virtually eliminate supplier lead time and will include links to the data for each component stored in the existing or planned databases used by the Oxygen Group and Propellants and Hazardous Fluids Test Group, as well as to the PVS database and Sketch and Calculation database.

The innovation of this database shines in the implementation. The SPD will be directly tied to the WSTF pressure vessel database so all pertinent information can be imported. Because WSTF is a small site, the database and process can be quickly developed and refined. The SPD can then be shared and integrated into all NASA centers so all ground-based test systems eventually become more standardized. The analysis and documentation costs would be shared across the entire agency versus each center trying to repeat the same work on its own.

The SPD team consisted of Max Leuenberger, Bruce Havenor, Kenny Montoya, Martijn Kolloffel, Chris Wojtko, and Erik Skarsgard.