

## Engineering Design Tools Technology

# Preliminary Analysis of Revolutionary Space Exploration Concepts (PARSEC) Collaborative Engineering Environment (CEE)



At NASA's Marshall Space Flight Center (MSFC) a revolutionary new collaborative engineering environment tool has been created to design spacecraft with a significantly shorter design time and with exponentially greater accuracy.

This design tool can incorporate many off-the-shelf software programs as well as NASA proprietary software programs to create a seamless work environment. Design engineers can work on their scope of responsibility with the collaborative engineering tool on their own time schedules and physically can be located around the globe or in the same room allowing for a very flexible design team process. The sharing of the data stored in the tools' database includes designs as well as testing results and multiple scenarios of design options.

### Benefits:

- Seamless integration of existing programs
- User Friendly – easily customizable
- Flexible configurability
- Low cost
- Increases design accuracy
- Reduces potential of human error
- Quicker design time
- Can incorporate existing commercial software applications
- Graphing capabilities
- Also works on Macintosh and Linux OS

technology opportunity



## The Technology

This technology was originally designed to aid in the increasing demands of tighter schedules and stricter safety tolerance requirements as well as the increased quantity of conceptual scenarios. Since the budget remained the same, the engineers needed to become more efficient in their design processes. By evaluating scenarios in greater detail in the early design stages, potential problems are more quickly identified and more practical options can be explored prior to physical prototyping and testing. Each design subsystem can be stored on the database for the next integration of the next stage of design. The compilation continues until the ultimate design option has been configured.

This tool is used on a regular desktop PC utilizing a central database along with a "plug-in-and-play" type of configuration. The plug-in-and-play feature can include any number of commercial off-the-shelf products as well as internal proprietary programs customized for a specific project. This tool also contains some project management capabilities. Chat room features and instant messaging can also be incorporated into the configuration, allowing for a seamless integration for a total design tool solution.

## Commercial Applications

- Aerospace
- Automotive
- Military
- Manufacturing Production
- Communications Systems
- Engineering Design Shops (mechanical, electrical, industrial)
- Medical
- Banking
- Finance

## For More Information

If you would like more information about this technology or about NASA's technology transfer program, please contact:

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## Opportunity

This technology is part of NASA's Technology Transfer Program which seeks to stimulate commercial use of NASA-developed technology. Companies are invited to license the technology to create

a commercial product from it. NASA is flexible in its agreements, and opportunities exist for exclusive, nonexclusive, or exclusive field-of-use patent licensing.

