Boeing Team Wins Future-X Pathfinder Cooperative Agreement From NASA

Boeing was selected today by NASA for a four-year cooperative agreement to develop the Future-X Pathfinder flight demonstrator vehicle.

Plans are for the Future-X Pathfinder to be an unpiloted, autonomously operated test vehicle capable of traveling up to Mach 25 while demonstrating aircraft-like operations.

Jim Albaugh, president of Boeing Space and Communications, said, "The technologies we're developing will advance the NASA and Boeing goals of dramatically reducing the cost of access to space. Fully autonomous landing, rapid ground turnaround capability and modularity of key systems represent a few of the important features that are going to lead to substantial operational cost improvements."

The reusable vehicle is being developed to serve as a technology test bed that balances both aeronautics and astronautics needs. This is achieved by demonstrating 29 advanced airframe, propulsion and operations technologies that can support multiple space-system architectures.

The Future-X Pathfinder cooperative agreement, valued at approximately $150 million, is a cost share by Boeing and NASA. Both parties view the venture as an investment in future space transportation technologies.

"The primary focus of Future-X is to help technologies mature in relevant environments that will provide significant reductions in space transportation costs, and to stimulate new market expansion," said Ron Prosser, vice president of Advanced Space and Communications for Boeing Phantom Works.

"Future-X will push the envelope of architecture-independent space transportation technologies for a broad range of national programs by addressing airframe, propulsion and operational needs over the broadest range of flight conditions -- orbital-to-landing," Prosser said.

"These advanced technologies will eventually make routine, safe, low-cost access to space possible with high reliability, fast turnaround and minimal operational crews," said Rick Stephens, vice president and general manager of Boeing Reusable Space Systems. "We view this program as a key step toward achieving NASA's goal of $1,000 per pound to orbit."

"Our company's goal is to make space travel much like aircraft travel. We want it to be on demand, low cost and highly reliable," Albaugh said. "Achieving these goals requires the development and demonstration of exciting new technologies and operational approaches, as well as a paradigm shift in how we view space transportation today. We believe the NASA/Boeing Future-X Pathfinder, a modern day X-15, will be the testbed to achieve these goals."

The winning Boeing proposal emphasizes operability and supportability and permits testing of a wide variety of experiments and technologies, including a highly durable, high-temperature thermal protection system; storable, non-toxic liquid propellants; and important new aerodynamics features. Designed-in modularity allows testing of both current and future technologies within the same vehicle, providing significant long-term cost savings.

The Boeing team includes partners at both NASA and Department of Defense centers, including the U.S. Air Force research laboratories in Dayton, Ohio, and seven NASA centers: Marshall Space Flight Center, Huntsville, Ala.; Ames Research Center, Moffett Field, Calif.; Dryden Flight Research Center, Edwards AFB, Calif.; Goddard Space Flight Center, Greenbelt, Md.; Kennedy Space Center, Fla.; Langley Research Center, Hampton, Va.; and Lewis Research Center, Cleveland, Ohio.

Rapid prototyping of the Future-X Pathfinder will be conducted within the Boeing Phantom Works organization's locations in Southern California and St. Louis, with assembly, integration, check-out, and test planned at the Boeing facility in Palmdale, Calif., in 2000 and 2001. Flight testing is planned for Spring 2001 at NASA's Dryden Flight Research Center at Edwards AFB, Calif. A Space Shuttle test flight is planned for early 2002, making the Future-X Pathfinder the first-ever experimental vehicle to be flown in both orbital and reentry environments.

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