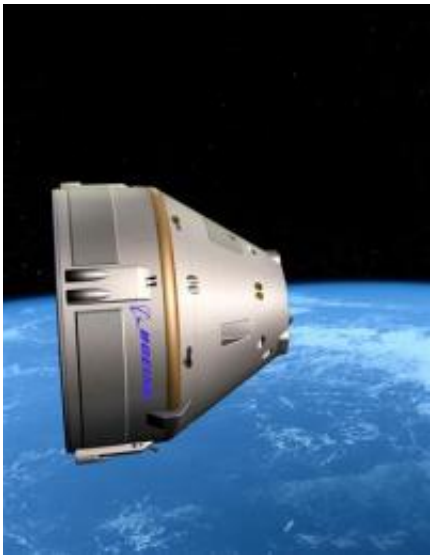
Boeing unveils its commercial capsule spacecraft

July 22 2010, by Lin Edwards



An artist rendering of Boeing's CST-100. Credit: Boeing

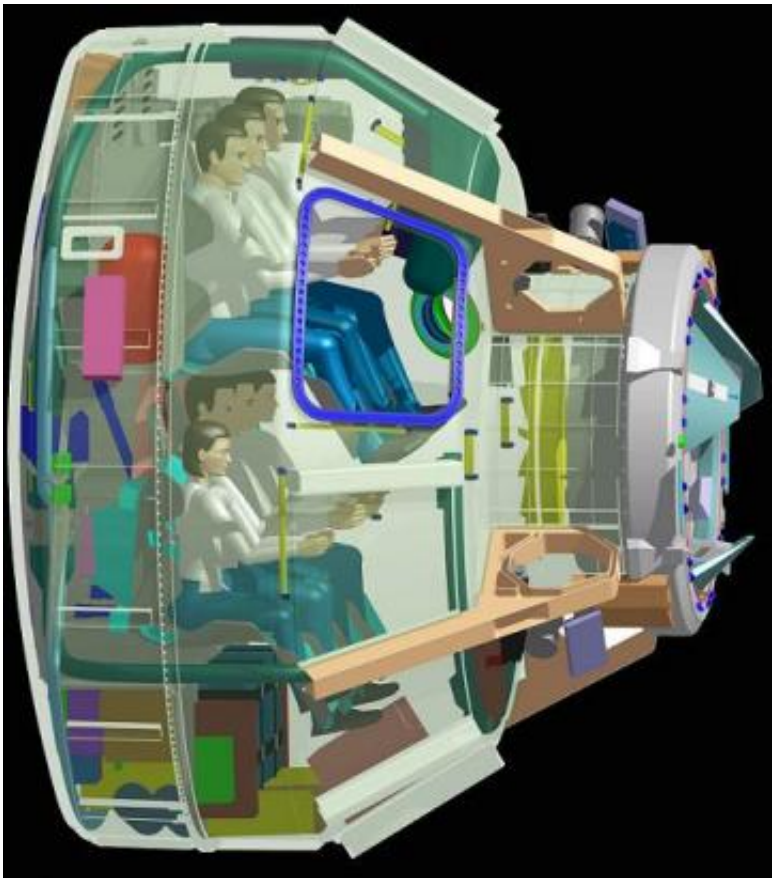
(PhysOrg.com) -- Boeing unveiled its plans for a capsule spacecraft for ferrying astronauts and cargo to space stations at the biennial Farnborough International Air Show in the UK on July 19th. The craft is designed to fill the gap that will be left when the NASA space shuttles are retired from service next year.

Boeing won an award worth $18 million from NASA under the Commercial Crew Development (CCDev) Space Act Agreement, which was intended to help in the development of new commercial systems for

transporting astronauts to the International Space Station and any future private space stations.

The Boeing low-cost craft, Crew Space Transportation-100 (CST-100), is designed to carry up to seven astronauts on short missions up to 100 kilometers above the Earth's surface. The craft resembles the Apollo spacecraft that transported astronauts to the moon in the 1960s and 70s, but is larger.

The craft will be able to remain docked to a space station in orbit up to seven months and will be protected during re-entry by an ablative heat shield. It will then descend with the aid of parachutes to an airbag-cushioned landing on dry ground. The heat shield would be replaced to allow the craft to fly again. The design allows for up to 10 missions for each craft.



Boeing said the first CST-100 will be launched from Florida, possibly as early as 2014 if enough funding is available. The design is compatible with a range of rockets including the Atlas V, Delta IV or SpaceX's Falcon 9 rocket, but the final choice of rocket is not yet decided.

NASA will not be Boeing's only customer, as the company has also partnered with Bigelow Aerospace, which joined the Commercial Spaceflight Federation in June. According to Boeing, Bigelow Aerospace will contribute their expertise in designing and constructing space facilities, as well as being a user of the CST-100.

Robert Bigelow said the idea of the alliance was to make space travel commercial "the way air travel became commercial a century ago." Boeing's vice president Brewster Shaw agreed, saying the company's vision was to become the Boeing commercial aircraft of space flight.

The CST-100 spacecraft approaching a Bigelow space station. Credit: Boeing

Bigelow Aerospace is building two types of space module — the Sundancer and BA330 — that will form part of the world's first commercial space station, called the Orbital Space Complex, which the company hopes to be in orbit and operational by 2015. Bigelow said three-quarters of their revenue from space station customers would go towards the space transportation provider.

Space Exploration Technologies (SpaceX) and Orbital Sciences Corporation are also developing similar spacecraft, with the help of NASA funding.