



Image credit: NASA

[Download Image Here](#)

Russia's Soyuz Spacecraft

Since the retirement of the US Space Shuttle program in 2011, Russia's Soyuz spacecraft has been the exclusive means of transport for cosmonauts and astronauts traveling between Earth and the ISS.

The Soyuz system has proven itself to be very safe and reliable over multiple decades. While its communication and navigation systems have been updated numerous times to take advantage of evolutionary leaps in electronics, the vehicle's basic structure has changed very little since its first appearance in the mid-1960s.

The vehicle consists of three separate segments. The white segment at the bottom is the Instrumentation and Propulsion Module, which houses the vehicle's main engine. Solar panels charge a bank of batteries within the module that supply power to the electronics. In the center of the vehicle is the Descent Module, which is the only part of the Soyuz spacecraft that re-enters Earth's atmosphere at mission's end, with its crew safely aboard. The spherical segment at the top of Soyuz is the Orbital Module. It provides just enough living and working space to keep three crew members healthy and productive for the duration of their flight, including food preparation and lavatory facilities, experiment stations, and supply storage.

At least one Soyuz vehicle is docked with the ISS at all times to facilitate evacuation of the space station in the event of an emergency.

