The Jason-1 satellite is carrying a state-of-the-art GPS receiver to support precise orbit determination (POD). The GPS receiver is developed at CNES under contract with Gaido Alliances. The POD system (GDS, Global Dynamic System) successfully tested its GPS approach independently on several spacecraft (ATOS / VEGA / NOA / MIRAS). The phase and carrier data from the GPS satellites (IGS / GLONASS) is transmitted to the spacecraft through Ka-band downlink. The POD system (GDS, Global Dynamic System) has been validated on a number of missions where it has shown to surpass other POD systems. The POD system (GDS, Global Dynamic System) has been selected for the Jason-2 mission to improve the accuracy of the orbit determination.

The Jason-1 satellite has been designed to achieve a higher accuracy in its orbit determination, thereby providing more precise measurements to support oceanographic and atmospheric research. The GPS receiver is an essential component of the POD system, as it provides the necessary data to accurately determine the satellite's position in space. The POD system uses this data to refine the satellite's orbit, enabling more accurate predictions of ocean currents and other important parameters.

**Comparison with other POD systems:**

- **ATOS:** The ATOS POD system has been tested on several missions and has shown good performance, with an accuracy of around 10 cm in the radial direction.
- **VEGA:** The VEGA POD system has demonstrated an accuracy of around 5 cm in the radial direction.
- **NOA:** The NOA POD system has achieved an accuracy of around 2 cm in the radial direction.
- **MIRAS:** The MIRAS POD system has been tested on the MIRAS spacecraft and has shown an accuracy of around 1 cm in the radial direction.

These results highlight the importance of the Jason-1 POD system in achieving high accuracy in orbit determination, enabling more precise measurements for scientific research.

**Conclusion:**

The Jason-1 satellite's POD system, with the GPS receiver, is expected to provide more accurate measurements compared to existing systems. This will be critical for advancing our understanding of ocean dynamics and atmospheric processes, contributing to the broader field of Earth observation and climate change research.