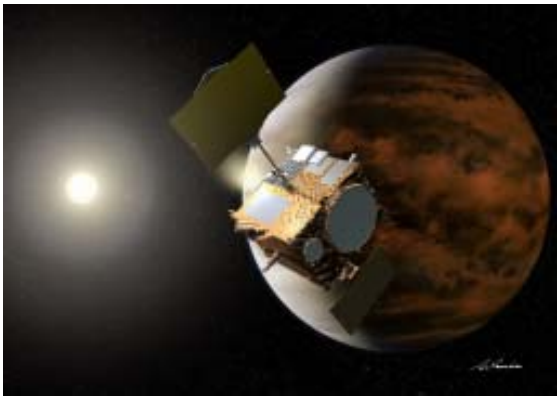
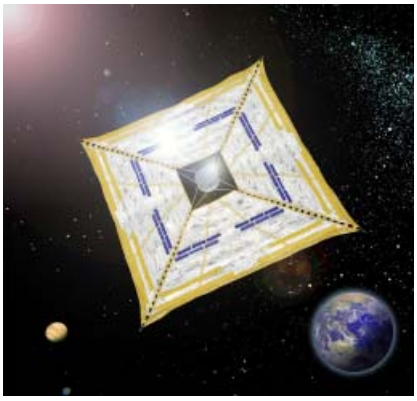
JAXA Selects eSOL's 'eCROS' Software Platform for Venus Climate Orbiter and World's First 'Space Yacht'



Venus Climate Orbiter "AKATSUKI"



Small Solar Power Sail Demonstrator "IKAROS"

Courtesy of Akihiro Ikeshita (the illustration of AKATSUKI) and JAXA (the illustration of IKAROS)

Tokyo, Japan. July 22, 2010 – eSOL, a leading developer of real-time embedded software solutions, announced today that its eCROS integrated software platform is being used in the Japan Aerospace Exploration Agency's (JAXA) Venus orbiter "AKATSUKI" (PLANET-C project) and the Small Solar Power Sail Demonstrator "IKAROS" — both launched on May 21. JAXA selected eSOL's eCROS in order to ensure the reliability and quality of the spacecraft. eCROS also enabled the space agency to develop the spacecraft at lower cost and in less time. eCROS will be adopted in several satellites and orbiters planned to be launched in the future.

AKATSUKI is equipped with five cameras that will take continuous images of the Venusian atmosphere at various altitudes using different wavelengths ranging from infrared to ultraviolet. The eT-Kernel real-time OS, which is the core of eCROS, has been employed in the computer system that controls four of the cameras and processes and records image data.

AKATSUKI’s objective is to help scientists better understand Venusian meteorology through continuous three-dimensional observation of the movement of the planet’s atmosphere by making full use of five cameras. Venus is called Earth’s twin planet because it has quite a few similarities, including size, mass, and distance from the sun. However, the environment on Venus is completely different from that on Earth. Venus is subjected to high heat and high pressure, with temperatures of around 460 degrees Celsius (860 degrees Fahrenheit) as a result of the greenhouse effect caused by carbon dioxide, which comprises 96 percent of the atmosphere on Venus, and atmospheric pressure about 90 times greater than that on Earth. Venus is also covered by thick sulfuric acid clouds. By investigating Venusian meteorological phenomena and comparing it to Earth, scientists expect to find clues that may trace the birth of Earth and its recent climate change. AKATSUKI is scheduled to arrive in Venusian orbit in December, after a journey of six months, and to observe the planet for at least two years.

The eT-Kernel RTOS is also used in the IKAROS computer system to control and deploy the spacecraft’s solar sail, creating, in effect, the world’s first “space yacht.” On July 9, JAXA confirmed that the square sail membrane, measuring 20 meters diagonally, is successfully deployed and is accelerating the speed of the spacecraft solely through pressure from solar particles. IKAROS, the first spacecraft to demonstrate this capability, will fly by Venus on its way to the far side of the sun. Thin-film solar cells on the membrane are also confirmed to be producing electricity for the spacecraft. According to JAXA, IKAROS is “the world's first solar-powered sail craft employing both photon propulsion and thin film solar power generation during its interplanetary cruise.”

The computer systems on AKATSUKI and IKAROS are taking advantage of the compact,

lightweight “Space Cube architecture” for spacecraft computer systems. eBinder, the eCROS integrated development environment, was used to develop some of applications running on the computers.

“JAXA didn’t have any doubt in adopting eT-Kernel in both AKATSUKI and IKAROS because of the reliability, quality and performance the RTOS demonstrated when it was employed in the SpaceWire demonstration Module (SWIM) for Small Demonstration Satellite 1 launched last year,” said Makoto Suzuki, JAXA’s chief scientist. “eCROS is a complete software platform solution that encompasses a real-time OS, development tools, and professional services so that we were able to highly streamline development.”

“We are very excited that our eCROS platform has been adopted in AKATSUKI and IKAROS, which are expected to greatly expand our understanding of the solar system and space technology,” said Nobuyuki Ueyama, the Executive Vice President of eSOL. “We are committed to continue our development of a superior software platform that will enable aerospace manufacturers to build reliable, quality spacecraft at lower cost and in less time.”

About eSOL

eSOL is a leading embedded software developer that enables customers to accelerate development of applications based on high-end embedded processors including multi-core. Our advanced, scalable, multi-profiled real-time operating systems are tightly integrated with

development tools and middleware components to create flexible development platforms used by OEMs and ODMs worldwide in competitive vertical markets such as automotive, consumer electronics, industrial and medical equipment and aerospace. Founded in 1975, eSOL is based in Tokyo, Japan.

For more information, please visit http://www.esol.co.jp

About the eCROS Integrated Platform

The eCROS integrated platform is built upon eSOL's scalable eT-Kernel and PrKERNELv4 RTOSes, which are tightly integrated with the eBinder IDE and a wide selection of middleware components. eCROS helps OEMs and ODMs to quickly create flexible development platforms for their software product lines and enables them to improve time to market, cost, productivity, quality and other business drivers. Our eT-Kernel RTOSes — based on the T-Kernel open source real-time operating system — have been highly enhanced and optimized by eSOL and are available in multiple profiles ranging from basic eT-Kernel/Compact to enhanced eT-Kernel/Extended and eT-Kernel/POSIX, and even multi-core capable eT-Kernel Multi-Core Edition and, most recently, with Memory Partitioning Option to support various application requirements.