



SEA equipment lands on the Moon

SEA can now claim its equipment is truly out of this world as the Ka band Transponder Experiment (KaTE) equipment is set to land spectacularly on the moon's surface on 3 September 2006.

SEA's primary involvement with SMART-1 mission was writing the communications sphere where engineers need to develop new and efficient ways to communicate with Earth from deep space, for distant or extended interplanetary missions. SMART-1 tested very short radio waves instead of traditional radio frequencies.

Within the KaTE development, SEA was responsible for the manufacture and assembly of the baseband digital and analog elements of the transponder, together with supporting the overall integration and test, under sub-contract to EADS Astrium GmbH. These were the first space flight PCBs to be produced through the SEA space unit assembly facilities.

The story began in September 2003, when an Ariane 5 launcher blasted off from Kourou, French Guiana, to deliver the European Space Agency's lunar spacecraft SMART-1 into Earth orbit. SMART-1 is a small unmanned satellite weighing 366 kilograms and roughly fitting into a cube just 1 metre across, excluding its 14-metre solar panels (which were folded during launch).

After launch and injection into low Earth orbit, the gentle but steady push provided by the spacecraft's highly innovative electric propulsion engine forcefully expelling xenon gas ions caused SMART-1 to spiral around the Earth, increasing its distance from our planet until, after a long journey of about 14 months, it was "captured" by the Moon's gravity.

The story is now close to ending. On the night of Saturday 2 to Sunday 3 September, looking at the Moon with a powerful telescope, one may be able to see something special happening. Like most of its lunar predecessors, SMART-1 will end its journey and exploration of the Moon by landing in a relatively abrupt way. It will impact the lunar surface in an area called the "Lake of Excellence", situated in the mid-southern region of the Moon's visible disc at 07:41 CEST (05:41 UTC).