

SSETI: The Student Space Exploration & Technology Initiative

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The Office for Educational Project Outreach Activities of the European Space Agency (ESA) has started a new initiative called the Student Space Exploration & Technology Initiative (SSETI). The main objective of this initiative is to create a network of students, educational institutions and organisations (on the Internet). This will facilitate the distributed design, construction and launch of (micro)-satellites. Ambitious projects, such as a Moon-lander, can be realised by the distribution of many small locally achievable tasks.

Several missions are foreseen, as part of a phased approach, starting with Earth-orbiting satellites, and eventually leading to a final Moon landing or beyond. University students have previously expressed interest in these types of missions. The student's commitment to realising the spacecraft will be voluntary. ESA's efforts are concentrated on the central role of communication, steering, verification and testing activities, while also facilitating the launch and essential operations. This scheme could lead to the involvement of a significant number of students: a target is set of some 10,000.

During the design and building of the spacecraft participants of SSETI will be located all over Europe. This will result in an unconventional, new communication approach which is called Distributed Development. The main characteristic of this approach is that modern communication tools will be used for discussion and communication, to enable the spacecraft to be designed using 'Concurrent Engineering'. The ESA Office for Educational Project Outreach Activities has a dedicated and extensive communication database and Excel models of ESA spacecraft in development.

This paper reports on the set-up of SSETI, the implementation, aspects on communication, outreach and Information Technology, the SSETI activities, its future plans and results from workshops and design sessions.