The TechEdSat NanoSatellites and Exo-Brake De-orbit Mechanisms: Recent Flight Experience

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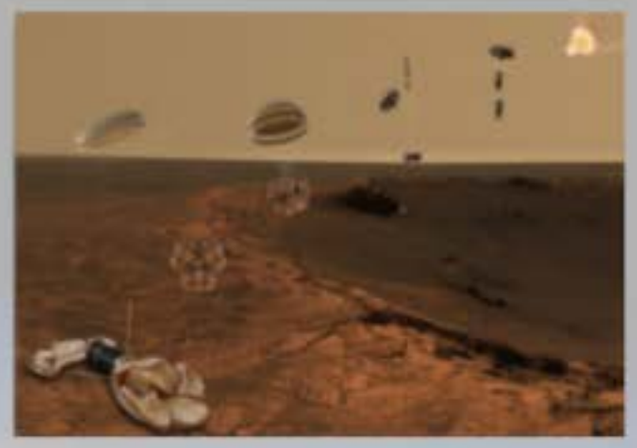
Applications

ISS/Oribital Platform Sample Return
-Recovering 0.1 kg to 3 kg samples

ATROMOS Mars Surface NanoSatellite Mission Concepts
-Exploring critical, high-risk regions of Mars



The Teams

Key Technology Advances

Exo-Brake
-Novel and 'Safe' de-orbit technique
-Advanced targeting through modulation

Advanced CubeSat Com
-Development of a 'TDRS-for-CubeSats'
(Obviating the need for ground stations; rapid uplink command capabilities)

ISS Design/Safety Process Nanosats
-ISS compatible design and testing process for rapid flight opprotunities

SCRAMP/TDRV (Tube Deployed Re-entry Vehicle)
-Self Stabilizing Re-entry Probe
-Shock/Shock interaction/Transpiration Studies

SOAREX-6
May 2008

>High-mach reentry test
>Shock shock interaction analysis

SOAREX-7
May 2009

>First flight of TDRV
>Highly stable self stabilizing reentry probe

TES-1
Oct 4, 2012

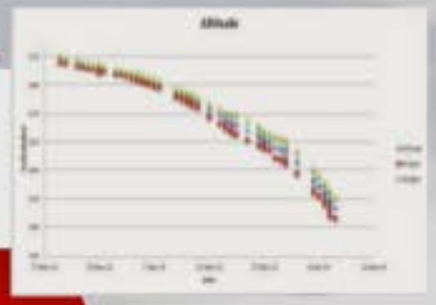
>First US CubeSat deployed from the ISS
>System Verification Test

TES-2
Aug 21, 2013

>First successful test of Iridium satellite to satellite communication

TES-3
Nov 19, 2013

>First 3U deployed from ISS
>First Exo-Brake flight test



TES-4
Expected July 2015

>Evolved Exo-Brake flight test
>Flight material and subsystem investigation