



NASA SBIR 2008 Phase I Solicitation

X5.02 Surface System Dust Mitigation

Lead Center: GRC

Participating Center(s): GSFC, JPL, JSC, KSC, LaRC, MSFC

Lunar lander and surface systems will likely employ common hatch and airlock systems for docking, mating, and integration of spacecraft, habitat, EVA, and mobility elements. The large number of EVAs will require hatches that are safe if non-pressure assisted, and do not have to be serviced or replaced regularly.

Lunar lander will require materials and mechanisms that do not collect dust and do not abrade when in contact with lunar regolith. Technologies are also needed to remove lunar regolith, including dust, from materials and mechanisms.

Lunar Surface systems will require EVA compatible connectors for fluid, power, and other umbilicals for transfer of consumables, power, data, etc. between architecture elements that will maintain functionality in the presence of lunar regolith, including dust.

Lunar surface systems (power, mobility, etc.) will require gimbals, drives, actuators, motors, and other mechanisms with required operational life when exposed to lunar regolith, including dust.

Radiators and other thermal control surfaces for lander and surface systems must maintain performance and/or mitigate the effects of contamination from lunar regolith, including dust.
