

IAF SPACE EXPLORATION SYMPOSIUM (A3)
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SPACE ACCESSORIES FOR LUNAR MOBILITY AND EXPLORATION VEHICLE

Abstract

1.Introduction Worldwide space programs will involve the landing on the Moon and the permanent presence of humans on Moon surface. Every project of Moon Village will include Lunar Surface Mobility organized with different vehicles with different missions and different applications: from the mobility inside the village using non-pressurized vehicles to the surface long range exploration using pressurized vehicles. All these vehicles will be equipped by seat and seatbelts built with microgravity characteristics to make the work of astronauts easier. 2.Solution Sabelt is a manufacturer company focused on lightweight composite seats for automotive, where the low weight is critical for better performance, especially for electric cars, where mass reduction means higher distances achievable. Starting from our best weight seat (9kg – including adjusting/rails - fully ECE17 approved) and thanks to our knowledge in carbon fibre processes, we are able to develop specific space seats for any kind of lunar surface vehicle. All of them equipped with a very light seatbelts configuration. 3.Advantages We are able to study specific ergonomics for microgravity application releasing trimmcover with suitable density, compression and hardness. The carbon fiber shell can be ultralight with big advantages for launch, logistics and mission cost reduction. The functionality could be respected with a packable/foldable geometry making possible the shipment with a reduced volume and final configuration built on-site. 4.Potential The possibility to create a family of seats, with integrated seatbelt, fully dedicated to space mobility application. Safe, light, comfortable, easy to use.