

Interactive Presentations (IP)  
Topic 6 - Interactive Presentations (6)

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MODULAR COMPONENTS FOR AN AFFORDABLE SPACE TRANSPORTATION AND  
INFRASTRUCTURAL SYSTEM

**Abstract**

During the last ten years a lower cost space accessibility was obtained, by the introduction of reusable boosters by Space X . While much more progress is still needed to allow space accessibility costs to be reduced by another order of magnitude a further contribution to space development affordability can be obtained by introducing new concepts that would simplify and reduce costs and time scheduled for space transportation and infrastructural components. The system proposed consists of standardized space components including service and node modules, rings and spokes , to allow 1G in space stations, and interplanetary transportation systems, specialized containers and functional modules for manned and unmanned missions and space facilities. Such standardized stations and transportation systems would be serviced by a ring shaped container transportation tug for in space missions and lander when servicing land bases in the Moon, Mars or asteroids. Transporting containers modules for each mission manned or unmanned, including simplified docking and transfer system, may change the prospects of space development allowing more affordable and risk free missions with fully reusable components. 3D printed construction modular components for land based settlements are also being considered in an integrated affordable space plan that would include land bases , space stations and , ultimately, space settlements. Such plan, together with the proposed standardized components are described in the paper and can represent a faster and reduced cost alternative to existing plans, including return to the Moon by 2024 as proposed.