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### Space architecture: Design aspects for extended space travel

**Antoine G Faddoul**

Tony Sky Design Group, USA

The conventional aspects of design reach distinctive levels when considering extended space journeys. Although space travel and associated architecture started over 50 years ago, space design has been limited to short distance and short term trips. While the longest and most distant manned-journey to space was to the moon lasting several days, extended space travel aims to reach further destinations within our solar system and beyond. How does a design team approach the scheme for a spacecraft to travel far beyond all human journeys? How to manage sustainable designs with longer durability, minimal maintenance, energy self-sufficiency, and capability of accommodating remote improvements? Designing interstellar mechanical spaceships, habitable spaces, architectural furniture, fashion clothing, practical equipment, and accommodating gadgets is barely different from the daily “earthly” design aspects that involve a product’s function, budget, esthetic and lifecycle. However, time, distance, and uncommon survival requirements become of extreme aspects to the design. It is not the typical design project that could be developed by analyzing the program and functions and comparing them to previous projects. To carry such an unusual task, over a hundred design items related to three main areas (Structure, Environment, Human needs) were evaluated assessing their essentials to achieve sustainable spaceship that would function for hundreds of years. They were analyzed according to their status whether current technology, developing technology or future technology. Each item was mapped according to how the science, technology, and design behind it would evolve in tens of years and how we expect the correspondence product to function in the future. The items are mostly associated with functions of Earthlings daily needs, yet re evaluated to be suitable to function in space for long periods of item. Only few items are designed solely for space travel, and much less are those only needed for a star ship without earthly corresponding usage. This design approach helps in finding answering further questions such as: What will be the status of the equipment, energy, and gadgets after decades of use on a spacecraft? Do we have the material, technology, and craftsmanship onboard to maintain and upgrade a distant spacecraft? How do the inhabitants of the space vessel foster their daily/future functions and needs?