

Current Status on CELSS for Human Space Activities - An Introduction of ECLSS on board ISS -

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It is called ECLSS (Environmental Control and Life Support System) that provides suitable environment for human space activities. The smallest ECLSS is a space suit. On the other hand, ISS (International Space Station) has one of the largest ECLSS for long term stay. It looks like a very complicated chemical plant composed of several functions. Still, this ECLSS is a subset of fully CELSS (Controlled Ecological Life Support System). CELSS consists of air revitalization, food production, thermal control, waste disposal, and water recovery functions. The most important and difficult function is the food production. Current ECLSS on board ISS lacks this. However we can't have achieved this CELSS even on the ground yet. Anyway this ECLSS can keep the environment inside ISS comfortable, provide material requirement from human body, and process exhausting material from that. Let's introduce the ECLSS on board ISS as a step to the fully CELSS.

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