



Contribution ID: 8

Type: **Talk**

# The LibreCube Ecosystem: How to Use it, How to Contribute

*Monday, 24 September 2018 12:40 (20 minutes)*

The LibreCube Initiative has the objective to promote and develop open source projects that form modular and space-ready elements, which then can be used for earth and space exploration missions, mainly CubeSat missions. To achieve this, LibreCube is based on three pillars: open source, standardization, and a reference architecture.

While the open source aspect of LibreCube is a very important ingredient (and applies likewise to the outputs but also to all the tools used for producing the outputs), the other two aspects are of equal importance to enable true collaboration and sharing among the community.

Standards (in particular interface standards) are essential to ensure that LibreCube elements are compatible to each other. It is not that the engineering world is short of standards. However, usually standards are hard to read and it is not easy to decide which standard to apply. LibreCube has defined a clear policy on what standards to choose. They must be openly available (downloadable from internet), free of costs, and preferably based on space heritage. The two major organizations that publish such standards are the European Cooperation for Space Standardization (ECSS) and the Consultative Committee for Space Data Systems (CCSDS).

While standardization and open source path the way for collaboration, it is the definition of a common space system architecture that allows contributors to work on different parts of the system in parallel - ensuring that eventually it will fit into a large system. The generic reference architecture provides the big picture for this and ties all the efforts together.

This presentation will thus give an overview picture on the standardized interfaces and data exchange protocols for space and ground elements, as defined by LibreCube. It will then outline the development cycle of prototypes and elements, to show how projects materialize from idea to operational product. For the potential users of LibreCube elements it will be presented on how to reproduce (assemble) and operate them. Finally, for potential developers it will be explained how to contribute to new or ongoing prototypes and elements.

**Primary author:** SCHOLZ, Artur (LibreCube)

**Presenter:** SCHOLZ, Artur (LibreCube)

**Session Classification:** Talks

**Track Classification:** Communities, Regulations, and Business Models