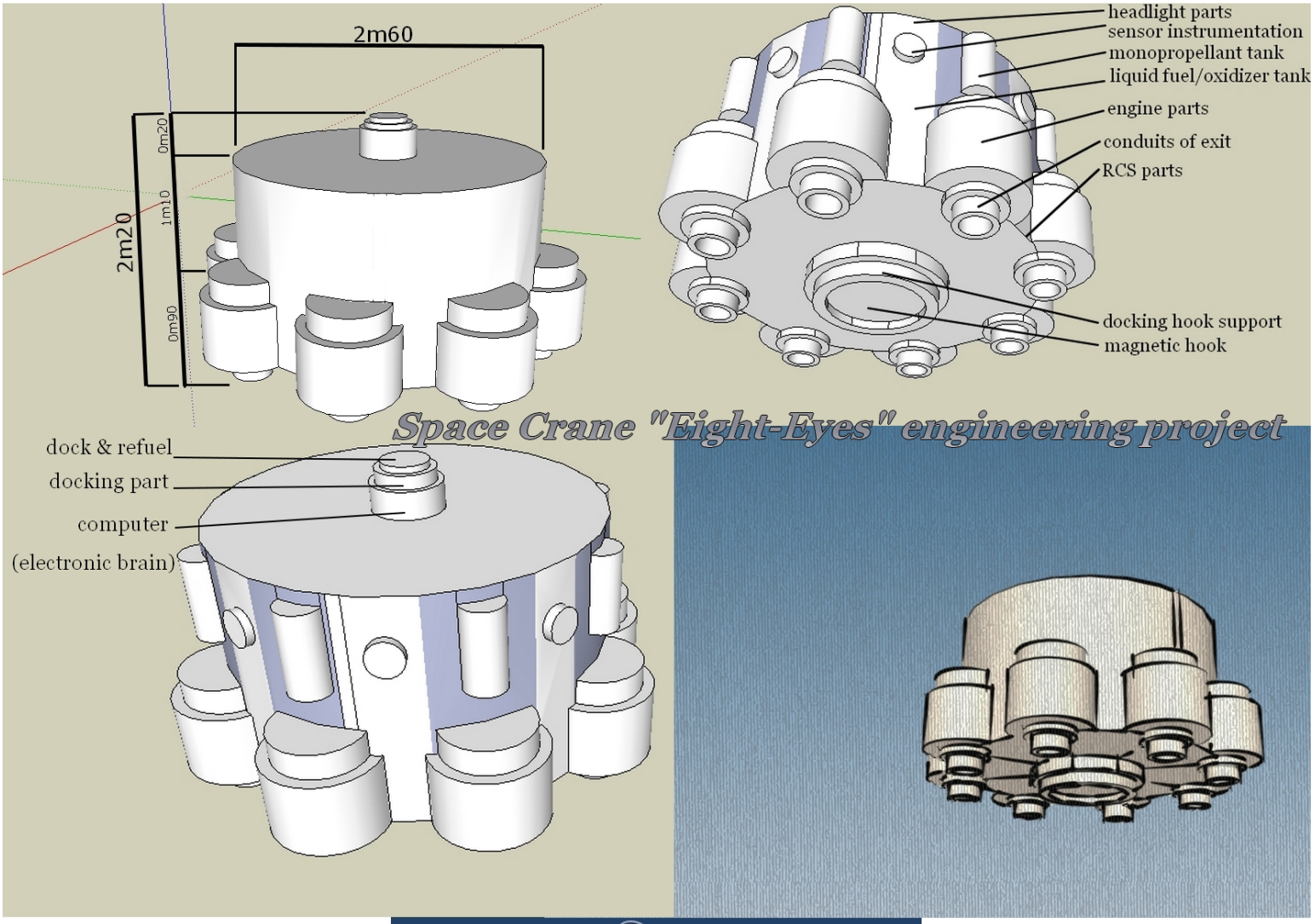
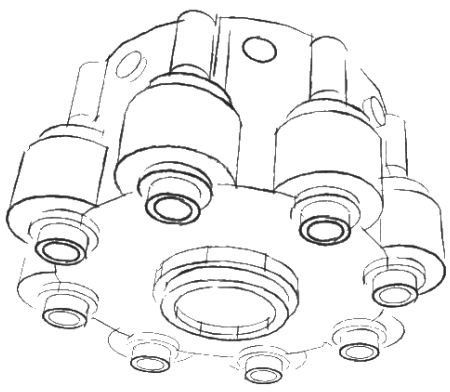
Space & Planetary Exploration Training

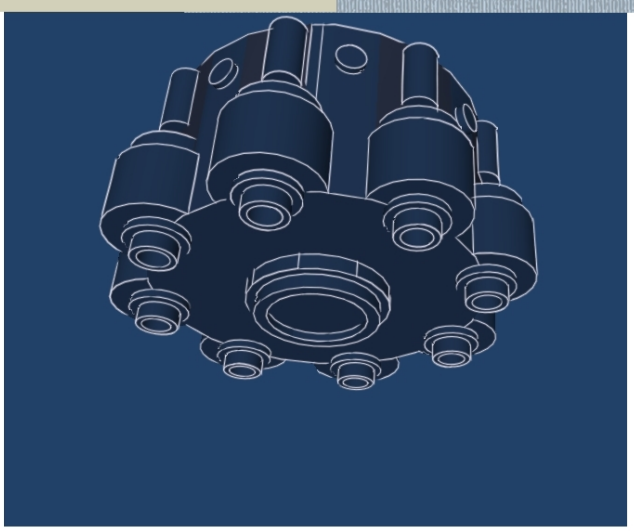
Engineering project

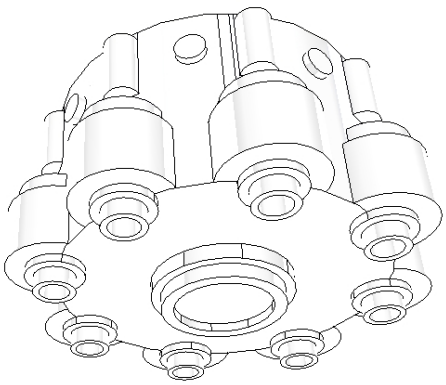
Space Crane "Eight-Eyes" medium/heavy version

The idea of a space crane came by the fact that the next great projects from space exploration as well as the mining missions will need a machine in order to deposit or move heavy equipment on the Moon or in orbit. This space crane could meet this need. Its name "Eight-Eyes" was given by its appearance caused by its eight headlights and its eight sensors which are used for to him to optimize the knowledge of its environment with 360°, but too, a Disneyland Paris ride reference in 1992 with the cast-ride robot "Nine-Eyes". This project has gyroscopic equipment as well as autonomous or semi-autonomous system. Two models were thought according to the utility or the weight for operations.



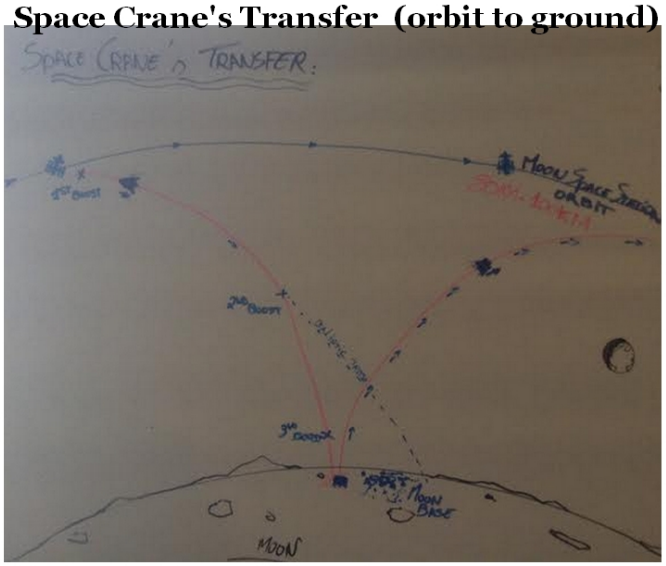






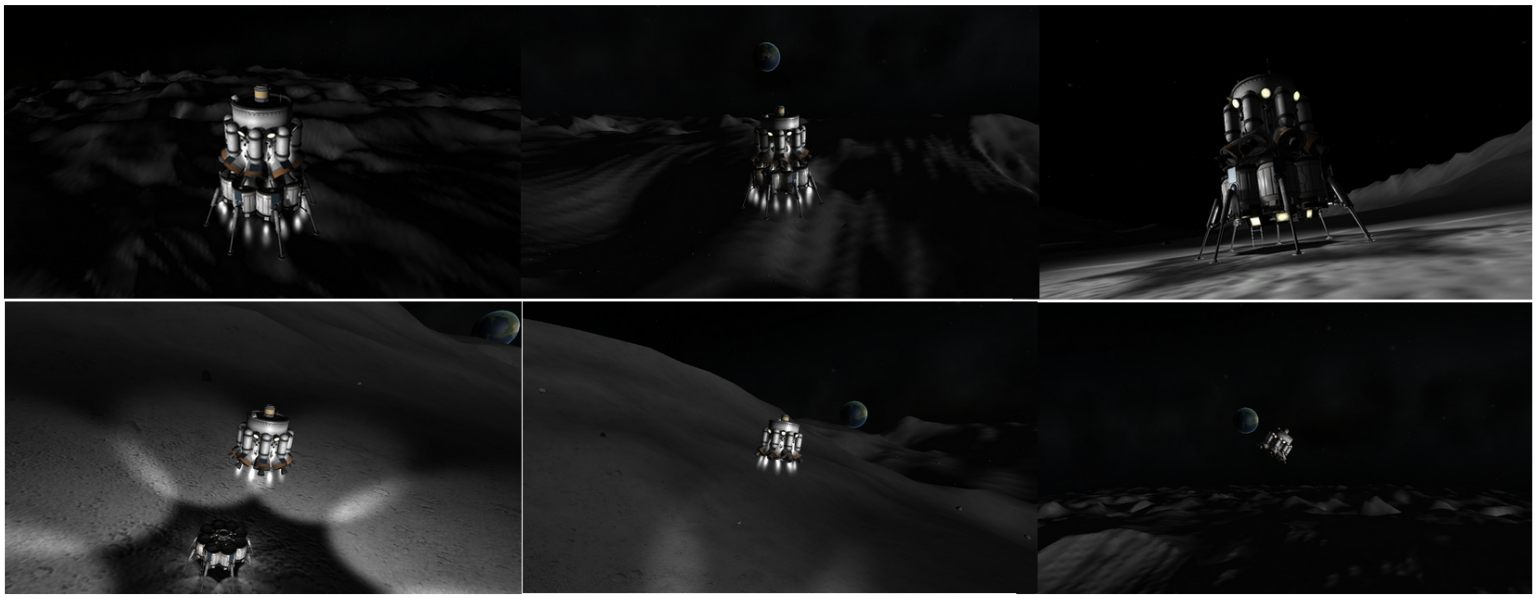
. Principal applications of the space crane : - displacements of loads in lunar orbit
- transfers of charge between the orbit to the lunar ground
- transfers ground to the lunar orbit for docking (refuel)

Space Crane's Transfer (orbit to ground)



Earth-Moon Transfer

Our Space Crane "Eight-Eyes" project is tested with Kerbal Space Program. Following pictures result from a Heavy model.



Refuel Station in Moon orbit

After use, the Space Crane must return to its refuel station, docking to remain in carpark until new use. This refuel module can be complementary to a space station inhabited and thus there docking or as a close relation orbits of this one. This system allows one long life of equipments as well as use.

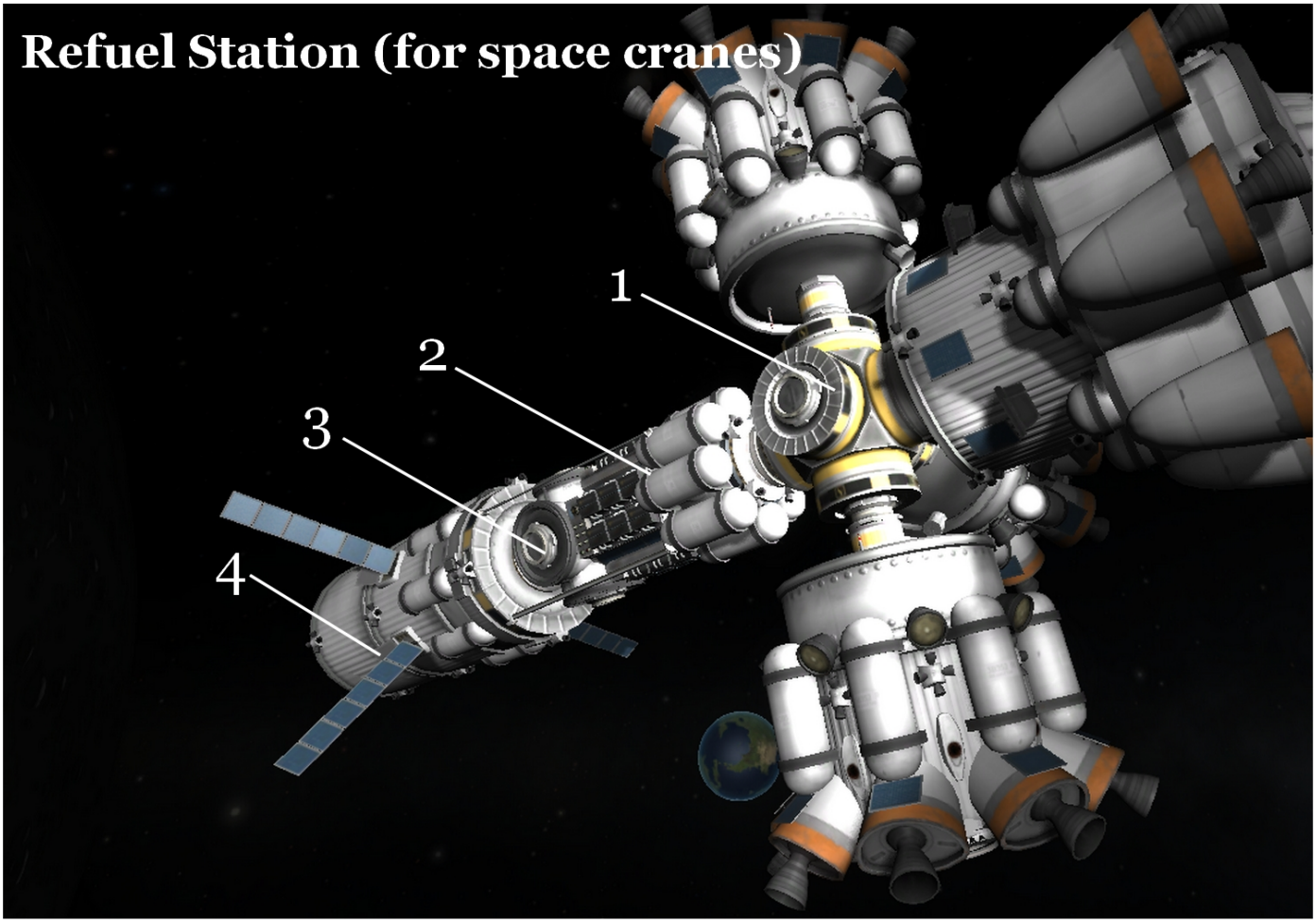
This refuel station is made up of 4 parts:

1- A multi-docking for five space cranes. You can dock five heavy models.

2- A refuel pump system (fuel transfer).

3- Four docks refuel for restocking the station.

4- Command control of the refuel station (+ solar panels).



In conclusion, we strongly believe in this project of engineering because by anticipating the needs for the future missions lunar and mining, the Space Shows off "Eight-Eyes" can answer these waitings. To deposit or move heavy loads orbits about it like on the ground of the Moon in all autonomy or the semi-automatic according to the operations. The availability, the payload and the duration of the life of this system of crane are major assets of this project. We recommend the "Heavy models" directly in order to optimize the tonnage of tranferts. Medium models can be used for an orbit application.

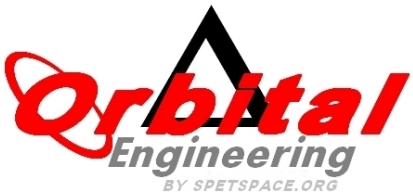
For more informations about this engineering project, contact us : ***contact@spetspace.org***

Credits :

Project Director : Guillaume Mahé

Engineers Directors :

Christophe Dubar / ***Guillaume Mahé***
expert welding & aeraulic **design & simulation VR**



SketchUp Pro

Kerbal Space Program

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