

MoonVillage: Frame & Opportunity for Space Economy

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Abstract

We shall discuss the frame and opportunity for space economy in the context of elaborating the concept of a Moon Village with the goal of a sustainable human presence and activity on the lunar surface [1-3] as an ensemble where multiple users can carry out multiple activities. This enterprise can federate all interested Nations and partners, in particular from terrestrial and non space commercial sectors .

Previous MoonVillage projects

The Moon represents a prime choice for political, programmatic, technical, scientific, operational, economical and inspirational reasons. COSPAR and its ILEWG International Lunar Exploration Working Group (created 20 years ago) have been supporting opportunities of collaboration between lunar missions and exchange on future projects [4-8]. A flotilla of lunar orbiters has been deployed for science and reconnaissance in the last international lunar decade (SMART-1, Kaguya, Chang'E1&2, Chandrayaan-1, LCROSS, LRO, GRAIL, LADEE). De facto, collaborative opportunities and elements of a Robotic Village on the Moon exist, as China landed in 2013 the Chang'E3 and its Yutu rover, and from 2017 other landers are planned (GLXP, Chang'E 4&5, SLIM, Luna 25-27, LRP, etc..)

Open MoonVillage

The ESA DG has declared: "The Moon Village is open to any and all interested parties, private or public – villagers of every nationality are more than welcome. There are no stipulations as to the form their participation might take: robotic and astronaut activities are equally sought after. One might envisage not only scientific and technological activities taking place there but also activities based on exploiting resources, and even tourism. It is precisely the open nature of the concept which would allow many nationalities to go to the Moon and take part while leaving behind them on Earth any differences of opinion they may have. Not only that, but you would no longer have to worry about

the need for a common docking port." Previous roadmaps and technical studies held in international groups [4- 15] such as COSPAR, ILEWG, ISECG, IAF, IAA or national and regional groups (eg LEAG). We shall discuss the opportunities for developing space economy in the vision and implementation of a Moon Village.

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