

15th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT (D3)

Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and Development (1)

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STRATEGIES FOR A LOW COST MOON VILLAGE

Abstract

The Moon Village is envisioned as a paradigm shift that requires a fundamental change in our thinking about the way we design and govern international space exploration projects. Recently a workshop hosted by Silicon Valley VC Steve Jurvetson explored whether a lunar settlement could be possible for a few billion dollars (rather than the tens of billions, or more, regularly cited). The workshop concluded that it would cost \$3-5 Billion USD to create a self-sustainable human settlement for two humans. However, outdated approaches are holding back progress.

To explore together we also need to design new ways of working together. The Moon Village is a pivotal setting for demonstrating human, technology, institutional and financial cooperation for doing differently things not only on the Moon, but as a precedent for other destinations on Earth and in space. The Moon Village Alliance will unfold in the context of a truly unique governance scheme by integrating from the very beginning the perspectives and interests of all different stakeholders. At a moment in history that's likely to be remembered for its alarming divisiveness, the space community has the unique opportunity to coordinate efforts to create a powerful symbol of unity, a partnership wider and stronger than the ISS, promoting cultural inclusivity.

But how do we establish this international Moon Village Alliance? Complex system innovations like the Moon Village initiative often encounter stiff resistance from intended beneficiaries and stakeholders, because they disrupt existing behaviors, organizational structures, and business models. How can we collectively prepare for novel, low-cost and agile programs for space settlement and allow for space agencies, developing countries, donors, and commercial space to create an integrated, mutually reinforcing strategy? Historically, settlement architectures have been presented as static documents that represent a snapshot of thinking and capabilities at the time of its release. These architectures cannot evolve over time to incorporate new developments, preventing them from being a functional resource. What if we could create an open, modular, and dynamic online repository of key components required for Lunar settlement, such that different solution sets can be explored, opportunities and gaps identified? This new open source architecture framework could leverage transparency to create a public discourse and global tribal identity around the idea of a Lunar settlement, increasing public support, and creating a feedback loop to build a sense of urgency and accountability for world leaders.