HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Governmental Human Spaceflight Programs (Overview) (1)

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THE DECISION FOR INDIAN HUMAN SPACEFLIGHT PROGRAMME - POLITICAL PERSPECTIVES, NATIONAL RELEVANCE AND AND TECHNOLOGICAL CHALLENGES

Abstract

In recent times, debate is intense for an Indian Human Space flight programme. An assessment of the challenges in the development of a human space flight transport system has been studied by India - centering on development of indigenous launch capability for a two-member crew to low earth orbit and return safely to pre-determined destination on earth. However, India has yet to take a decision for a human space flight programme.

At National Institute for Advanced Studies (NIAS), a study looked into the decision-process that could lead to the crucial decision. Establishing a political perspective for commitment, building a national consensus and also addressing the technological challenges are important steps. This paper addresses these in a holistic manner:

• a critical factor of engagements at political level to obtain commitment for long term implications - of almost 20-30 years, needs to be initiated. The democratic, multi-party framework of India - which has to deal with aspirations of Indian society will also have to decide on the long-term development of Indian human space flight programme. It will be a critical exercise to build the political perspectives.

• consider the financial implications of a long-term human space-flight programme development - not just the one-time investments required for demonstrating national capability BUT also for continued human space flight pursuit with national gain. The assessment of returns and benefits has to be clearly articulated.

• key technological challenges - crew module design, environmental control and life support system, mission management with human in-loop, crew escape system, launch facilities, astronaut training etc. We also feel that strategic options are important - in terms of indigenous technology development cycles, technology acquisition, collaborative synergies at international level or even alignment/competing with growing global private initiatives in human space-flight programme.

The papers outlines the above and identifies some key parameters that would determine decision and goals for India to pursue human space flight - including, attraction for long term commitments and deepening investments at the cost of competing priorities, articulation of economic outcomes, apportionment of benefits across diverse political interests and time-frames, various risk management dimensions and ascertainment of public perceptions, impact on social objectives, international cooperation and positioning, achieving high technological excellence in multiple sectors. The paper finally depicts the path that still needs to be pursued for the national decision.