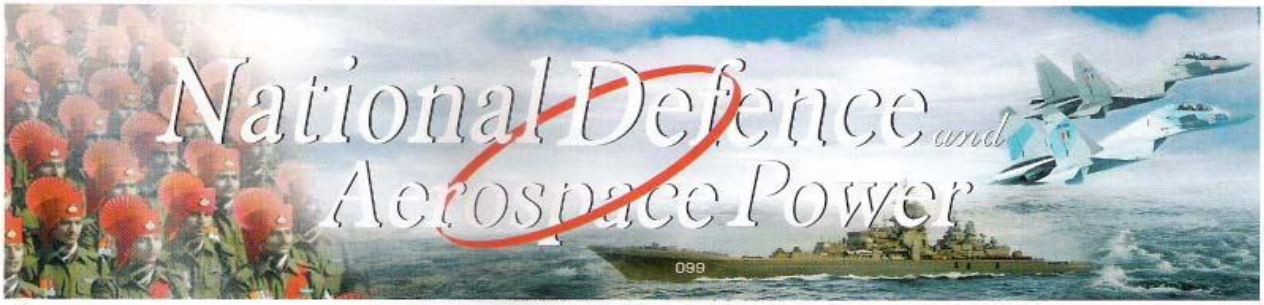

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The Need for India to go Slow on a National Space Policy and Even Slower on a National Space Security Policy

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Space capabilities impact India in many more ways than one. They impact civil development, commerce and national security in equal measure and as we progress further, our dependence on space capabilities would only rise. In our unique case, space capabilities evolved for civil development unlike in the case of Russia, United States or China wherein space capabilities were introduced primarily for military purposes and later evolved to enable civil development. Thus, India's quest has been largely for satellite communications and earth observation that serve its civilian developmental goals. Accordingly, a sketchy policy related to satellite communications and remote sensing data policy has been placed on the website of Indian Space Research Organisation (ISRO).[1]

However, the policy appears inadequate as it fails to cover all the other important areas of space ranging from applications like navigation, search and rescue, to scientific exploration, launch, international cooperation or the linkages with other departments, implementation etc. Put briefly, it is a satellite communication and remote sensing policy and not a national space policy in letter and spirit.

That apart, a unique vision of space enabling national growth and civil development exists. This has apparently served the nation well and going by past trends is most likely to continue serving it well. At least, there appears nothing drastically wrong that demands a space policy at the earliest. There also appears no crying need that demands the services of national space policy. The above notwithstanding, one is witness to a rising clamour for an Indian national space policy and also a military space policy from a few quarters.[2] At first glance, such a policy is most certainly desirable, it would serve a variety of purposes and there can be no argument against it. However, one needs to be deliberate, cautious and timely in such endeavours that have enormous national and international ramifications. This brief does not argue against the need for an Indian Space Policy but advocates a deliberate, purposeful approach rather than a knee-jerk response.

The Greatest Possible Happiness of the Greatest Possible Numbers

Policy making is known to be an inherently time consuming and complex endeavour. The complexities multiply in case of an inherently complex subject such as space and become especially more complex when both the subject (space) and the object (populace) are to be bound together by a comprehensive policy aimed at serving a nation of over 1.25 billion[3] people. Of these billions, around 300 million are below the poverty line, an equal number are on the line and many more keep straying above and below the

line. Space is omnipresent and impacts poverty, well-being, day-to-day life, civil and military development in equal measure. It is hence a precious commodity eagerly coveted by one and all. At the same time, space capabilities are neither common place nor transient; evolving capabilities take time, the gestation periods related to programmes are high, technology takes time to mature and the return on investment is slow. A comprehensive listing of the factors that go into evolving a national space policy is neither possible nor desirable. For a country with the sheer size, numbers and complexities as India, it would be too ambitious to aim at a comprehensive space policy that satisfies one and all. This is unlike smaller political units like Germany or sparsely populated places like Australia where the policy has no great impact. The overall aim in our case can possibly be to only arrive at the utilitarian goal of the "*greatest possible happiness of the greatest possible numbers* ".[4]

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To arrive at the above utilitarian dictum, it would still be essential firstly to identify the key stake holders, the partners, the areas of priority, the resources (existing and potential), and a host of other factors that translate into cross-linking with a variety of governmental agencies that are directly and indirectly linked to acquisition, development and optimal exploitation of space capabilities. For instance, space capabilities have enormous impact on telecommunications, agriculture, hydrology, resource planning and management, town planning, defence, environment, rail, road and air transportation, commerce and industry etc. Consequently, all these myriad agencies (both governmental and non-governmental) that have sets and subsets of common challenges and opportunities would have to be consulted, inter-linked and satisfied to a certain extent to ensure optimal usage of space capabilities. Secondly, all these departments would have their existing policies in place and it is imperative that an all pervasive subject like space blend seamlessly with existing and foreseen policies. The above is only an illustration, the actual national canvas of development and security is vast and hence this would inherently involve enormous interaction and inter-mingling amongst governmental agencies, international agencies and also the private sector since future trends clearly indicate a greater role for commerce and industry. The policy making process would need involvement of all the concerned agencies during formulation so as to make policy implementation swift, seamless and effective. Quite clearly, the task is mammoth, complex and regardless of institutional inertia or alacrity, time consuming. One would need to be rooted to the realities of policy making in India to arrive at a policy that is purposeful and implementable. The need is to not only formulate the right all-encompassing policy but also to implement and stick by it.

The challenges notwithstanding, a variety of purposes would be served and overall the policy can be expected to be aimed at:

(a) Arriving at a coherent, fairly comprehensive documentation that provides policy directions for most efficacious conduct of the nation's civil, commercial and military space programme.

(b) A policy that covers its relations with national departments, the public and international agencies and clarifies the roles, responsibilities, inter-relationships of various Ministries and Government departments.

(c) A policy that declares and clarifies the Government's stand on conduct of national space activities.

All of these and a host of other activities brings one back to the fact that the endeavour demands enormous liaison, coordination and is consequently time consuming and complex. The point being made is that a knee-jerk endeavour that fails to factor in the various dynamics amongst the numerous entities is not likely to serve our interests in any manner. It would only do the opposite; obfuscate rather than clarify issues, delay rather than expedite issues etc. and hence it is pertinent that an attempt to reach out to all possible stake-holders is made while the time and opportunity exists. The process would certainly be time consuming and yet once

SPACE FARING NATIONS WITH FULL COMPLEMENT OF LAUNCH, MANUFACTURE AND GROUND SYSTEMS		
NATION	**SPACE POLICY**	**REMARKS**
US	Yes	2006 policy replaced by 2010 policy.
Russia	No	Policy document Federal Space Programme 2006-15 became 2016-2025 delayed & likely "in near future".
China	No	No policy documents, only white papers on space.
France	No	
India	No	
Japan	Yes	Basic plan for Space Policy released in 2009.
NATIONS WITH PART COMPLEMENT OF LAUNCH, MANUFACTURE AND GROUND SYSTEMS		
Canada	Yes	Canada's Space Policy Framework
Israel	No	
Britain	No	
Germany	Yes	Federal Space Strategy of 2010
Italy	No	
Australia	Yes	Principles for National Space Industry Policy
Brazil	No	
South Korea	No	
South Africa	No	

completed would be as all-encompassing and comprehensive as possible. While the process trundles on, the existing mechanism like the prevailing national legislation, the civilian charter on space, the existing satellite communication, remote sensing policy and a variety of other guidelines would continue to guide actions.

Only 5/195 Nations have a National Space Policy

Additionally, in order to gauge how emergent it is to release a national space policy, it would also be good to look at how many nations have a space policy across the world. The table above briefly sums up the situation.

From the table, it is clear that of the 195 nation-states recognised by the United Nations and who use space in a variety of ways, only five nations deem it fit to have a national space policy. The figure is even lesser amongst space faring nations. Apart from the US, that evolved its policies over a period of time and has been refining its national space policy in line with its overall national agenda, most other nations are yet to put their blocks in place. Going by the Russian experience, the process is both time consuming and fraught with delays. Consequently, it would be essential that India takes into account the experience of other nations on the issue and pursues a balanced strategy of refining existing mechanisms while

It would be essential that India takes into account the experience of other nations on the issue and pursues a balanced strategy of refining existing mechanisms while working deliberately, purposefully and cautiously on the building blocks. It would serve our purpose to go slow on words and fast on action. Right now, a space policy is less important than what we do with space assets.

working deliberately, purposefully and cautiously on the building blocks. It would serve our purpose to go slow on words and fast on action. Right now, a space policy is less important than what we do with space assets. While the policy making process trundles on, we should not lose sight of the original developmental vision of Vikram Sarabhai that has served our nation so well in the past. Our progress in space should grow with knowledge and experience rather than be tied to a hastily put together space policy whose life is as uncertain as its impact.

National Space Security Policy and Military Space Policy

There exists no laid down commonly accepted definition of space security. What is in vogue is the definition of Secure World Foundation that in its publication Space Security Index (SSI) defines space security as "*the secure and sustainable access to, and use of, space and freedom from space based threats*".[10] Notwithstanding the fact that no commonly agreed definition of space security exists, the SSI definition is remarkably precise, comprehensive and workable. It covers most issues of insecurities related to outer space. Making a policy on a vaguely defined and even lesser understood issue has its pitfalls and is yet critical due to the following factors:

(a) The rise in critical national dependency on space capabilities for day-to-day functioning like telecom, ATMs, TV broadcasting, banking and finance, as also civil developmental functions like town planning, agriculture, hydrology, and military uses like communications, navigation, observation etc.

(b) The rise in demonstrated capabilities that deny the use, access of space capabilities like Kinetic Energy Anti-satellites, Directed Energy Weaponry that burn away satellite optics, cameras, antennas etc. as also satellite communication and navigation jamming, meaconing etc.

Our national dependency on space assets is enormous and there can be no possible argument against a comprehensive policy that enables greater security of our assets in space. And yet, the gravity of the task demands a complete, well rounded rather than a ham-handed job. Understanding the problem in this case is the easier task, the mammoth task lies in obtaining the means and methods to implement and execute the policy.

Again, across the world only two nations have a national space security policy-the US and UK. The US policy is extraordinarily detailed, has great depth and is comprehensive.[11] However, it applies to their unique context and derives from its presidential guidance, grand strategic vision, related national policy, posture review, space policy review etc. The US has over 152 operational military satellites, India has one, the US has common aerospace vehicles like the X-37B, and India has none. The parameters are entirely different and consequently, while the general precepts may apply, transplanting the same in our unique case would be grossly inapplicable and would defeat the very purpose a national space security policy is aimed to serve. Secondly, the details related to the intricacies, details of the means and methods of implementation are not available publicly.

On the other hand, UK's national space security policy is elaborate in recounting the space environment, response and extraordinarily sparse on implementation of policy.[12] Policy implementation at only two paragraphs is delightfully vague in both context and content. The policy foreword, by contrast is as much as two pages. The point being made is that the devil is in the detail for a purposeful space policy and even more so in a national space security policy. What works for a small sparsely populated political unit like the UK may not work for India, especially with regards to details and specifics.

That while our national space policy may have similarities in the general context, the details would be entirely distinct. It is the details that would enable the purpose of the policy to be fulfilled and hence there exists no worthwhile reason to overlook the details in the making of the policy.

Conclusion

In summation, it is clear that while our national space policy may have similarities in the general context, the details would be entirely distinct. It is the details that would enable the purpose of the policy to be fulfilled and hence there exists no worthwhile reason to overlook the details in the making of the policy. Not only would shortcuts

be inapplicable they would be downright damaging to the very purpose intended and hence the process must be allowed its due. Consequently, the need is to be deliberate, specific and purposeful in creating a doctrine that is practical, implementable and satisfying to most quarters.

Secondly, it needs to be borne in mind that a national space policy and space security policy are altogether distinct by themselves. An overlap in some roles and tasks is to be expected, but that by itself does nothing to take away the distinct character and purpose of both. At best, progress on these issues can be initiated alongside to ensure greater synergy, lesser implementation delay and duplication etc.

NOTES

[1]Indian Space Research Organisation, http://www.isro.gov.in/indias-space-policy accessed on 03 Nov 2015.

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[5]National Space Policy of the US, https://www.whitehouse.gov/.../fact-sheet-national-space-policy, accessed on 11 November 2015.

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[7] Canada's Space Policy Framework, www.asc-csa.gc.ca/.../space-policy/canadas-space-policy-framework, accessed on 11 November 2015.

[8]Germany, Federal Ministry of Economy and Technology, "Making Germany's Space Sector fit for the Future: The Space Strategy of the German Federal Government", 30 November 2010, accessed on 07 September 2015.

[9] Australia, "Principles for National Space Industry Policy", Australia Government portal

[10]Space Security Index-2015, http://spacesecurityindex.org/wp-content/uploads/2015/06/executive.summary.2015-electronic.pdf, accessed on 09 September 2015, accessed on 11 November 2015.

[11]For US National Space Policy, see https://www.whitehouse.gov/sites/.../national_space_policy_6-28-10.pd, accessed on 12 November 2015.

[12]For details, see Government of United Kingdom, "National Space Security Policy" April 2014,https://www.gov.uk/.../uploads/.../National_Space_Security_Policy.pdf , accessed on 07 September 2015.

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