Why Brahmos Sale to Vietnam is no Violation of Missile Technology Control Regime Commitments

By Dr. Rajeswari Pillai Rajagopalan

Brahmos is a ramjet supersonic cruise missile, developed by Russia's NPO Mashinostroeyenia and India's DRDO.

India expressed interest in selling Brahmos anti-ship cruise missiles to Vietnam in 2011 and six years later, it is possible that New Delhi has finally done it. A few days ago, a Vietnamese news report suggested that Vietnam had taken possession of Brahmos missiles from India. The Vietnam foreign ministry spokesperson Le Thi Thu Hang, when asked on the purchase, said it was "in line with Vietnam's peaceful national defense policies aimed at protecting the country". However, a day later the Indian Ministry of External Affairs spokesperson Raveesh Kumar said"it is not correct" and that the Vietnam's Foreign Ministry had rejected the report. It is somewhat strange that Vietnam makes claims of taking possession of the missiles and on the other hand, the Indian Ministry of External Affairs denies them.

Brahmos is a ramjet supersonic cruise missile, developed by Russia's NPO Mashinostroeyenia and India's Defense Research and Development Organization (DRDO). With a flight range of up to 290 km, and at supersonic speed all through the flight (and thus shorter flight time), it is considered as the world's fastest anti-ship cruise missile. Brahmos carries a *conventional* warhead of 200-300 kg and can be launched from multiple platforms including submarines, ships, aircraft and land.

India and Russia are now considering joint development of the next generation of Brahmos missiles with a longer range of around 600 km in addition to improving the accuracy of the missile. The existing stock of missiles will also be upgraded. An upgraded missile with the extended range was successfully tested in March 2017. Former President and scientific adviser to Defence Minister Dr. APJ Abdul Kalam argued in 2011 for developing "a hypersonic version of BrahMos which can be reused…meaning that the missile should be able to deliver its payload and return to base."

While the discrepancy in the public statements of Indian and Vietnamese officials needs to be addressed, a more important misperception has to be dispelled. There are some questions if India's sale of Brahmos missiles to Vietnam will be violation of MTCR commitments. The answer would appear to be no.

The Missile Technology Control Regime (MTCR), an informal group of like-minded countries, seeks to control the proliferation of missiles and missile technology, specifically those that are relevant as delivery vehicles for weapons of Mass Destruction (WMD). While addressing the concern that the MTCR may be used to constrain national space technology development or international cooperation in space activities, the MTCR Guidelines categorically states that the regime will not impede programmes as long as such programs do not contribute to delivery systems for *weapons of mass destruction*.

MTCR Chairs have reiterated this point as well on multiple occasions. The MTCR Chair's statement at the induction of India into the MTCR in 2016 is a good example, stating that Indian membership "will strengthen the international efforts to prevent proliferation of delivery systems (ballistic missiles or unmanned aircraft) capable of delivering weapons of mass destruction."

Ambassador Piet de Klerk, the MTCR Chair, while speaking at the 23rd Asian Export Control Seminar, Tokyo, in 2016, stated that "The MTCR aims to prevent proliferation of unmanned delivery systems (missiles or unmanned aircraft) capable of delivering weapons of mass destruction, by seeking to coordinate national export licensing efforts."

Similarly, speaking at the 22nd Asian Export Control Seminar in Tokyo a year earlier, Ambassador Roald Næss, then MTCR Chair, said, "it has been the mission of the MTCR from its origin in 1987 to coordinate national export licensing efforts aimed at 'preventing proliferation of unmanned delivery systems capable of delivering nuclear weapons.' In 1992, the scope of the Regime was extended to include delivery means for all WMD." Explaining the expansion of the scope of the MTCR in 1992, Amb. Klerk said, "Initially the MTCR looked only at missiles as delivery vehicles for nuclear weapons. This is also where threshold of a 500 kg payload over a range of 300 km stems from . . . In 1992 it was decided to enlarge the scope to not only missiles but all unmanned delivery vehicles, for all weapons of mass destruction, including chemical and biological weapons." He added that the MTCR was one of the four export control regimes with the Australia Group and the Nuclear Suppliers Group focusing on controlling the flow of WMD itself and the MTCR is meant specifically for "non-proliferation of their means of delivery." Ambassador Klerk makes it abundantly clear that the MTCR is not concerned about unmanned delivery vehicles in general, "but such vehicles in relation to weapons of mass destruction."

Thus it is clear that the MTCR only prohibits transfer of delivery vehicles if they could contribute to WMD proliferation.

India's potential sale of Brahmos missiles to Vietnam is thus not in violation of any MTCR rules or any commitments that India made when it became an MTCR member in June 2016. For one, Vietnam is not a country of concern from a WMD perspective. Vietnam does not have and is not thought to have had at any time any WMD programs. Therefore, there is no reason why the transfer of Brahmos to Vietnam would violate the MTCR rules. Secondly, the fact that Vietnam is not an MTCR member is also irrelevant.

The MTCR Guidelines make no distinction between exports to member states and to non-member states. In addition, MTCR does not make a decision as a group on any sale/ transfers – it is up to the individual member states to make decisions whether a particular transfer or sale will contribute to WMD proliferation cause. Preventing WMD proliferation is the key guidepost for any of these transactions. The only activity that is strictly prohibited by the MTCR Guidelines "is the export of production facilities for Category I MTCR Annex items." There may be political and strategic (or other) reasons to object to India supplying Brahmos, but it is difficult to see any legal obligations to the MTCR being a problem.

(The author is senior fellow and heads the Nuclear & Space Policy Initiative at the Observer Research Foundation, New Delhi. She served at India's National Security Council Secretariat, Government of India from 2003 to 2007.)

The Statesman
PEOPLE'S PARLIAMENT, ALWAYS IN SESSION

Thu, 24 Aug, 2017

North Korea photos suggest new solid-fuel missile designs

North Korea's state media released photos today that appear to show the designs of one or possibly two new missiles. Concept diagrams of the missiles were seen hanging on a wall behind leader Kim Jong Un while he visited a plant that makes solid-fuel engines for the country's ballisticmissile programme. One of the photos clearly showed a diagram for a missile called "Pukguksong-3," which appears to be the latest in its Pukguksong, or Polaris, series.

The other was harder to discern, though it carried a "Hwasong," or Mars, designation name. The photos were carried in the morning edition of the Rodong Sinmun, the ruling party's newspaper, and released by the Korean Central News Agency just two days after the United States and South Korea began annual military exercises that the North claims are a rehearsal for war. Tensions on the peninsula generally ratchet up during the maneuvers and a series of larger exercises held each spring. The KCNA report on the visit said Kim called on workers at the plant to produce more solid-fuel rocket engines and rocket warhead tips.

Michael Duitsman, a research associate at the Center for Non-Proliferation Studies, said the first missile has not been seen before. "The Pukguksong-3 is definitely new," he said in an email to the AP. The missile might be designed to fly farther and to be launched from protective canisters, which allow missiles to be transported more easily and makes them more difficult to locate and destroy in advance.

Solidfuel engines add to that difficulty because they allow for quicker launches than liquid-fuel missiles. It could possibly also boost the North's submarine-launched missile capabilities. North Korea successfully tested the submarinelaunched Pukguksong-1 in August last year. It then followed up with a successful test of the land-based Pukguksong- 2 in February this year. Both are believed to have intermediate ranges that could target Japan and the US bases there but not the mainland United States.

N Korea sending 'chemical weapons' to Syria

North Korean shipments believed to contain chemical weapons have been intercepted on their way to Syria, according to a United Nations report. At least two such dispatches meant for the Syrian government agency responsible for the country's chemical weapons program have been discovered and blocked in the past six months, the report says. This raises fears that dictators Kim Jong-Un and Bashar al-Assad are working together to develop ballistic missiles and new weapons systems.

The revelations comes from a confidential U.N. report on North Korea sanctions violations seen by news agency Reuters on Monday. While it specifically mentions two interceptions, it gave no details on when or where the interdictions occurred or what the shipments contained. The U.N. experts said activities between Syria and North Korea they were investigating included cooperation on Syrian Scud missile programs and maintenance and repair of Syrian surface-to-air missiles air defense systems. "The panel is investigating reported prohibited chemical, ballistic missile and conventional arms cooperation between Syria and the DPRK (North Korea)," the experts wrote in the 37-page report.

"Two member states interdicted shipments destined for Syria. Another member state informed the panel that it had reasons to believe that the goods were part of a KOMID contract with Syria," according to the report. KOMID is the Korea Mining Development Trading Corporation. It was blacklisted by the Security Council in 2009 and described as Pyongyang's key arms dealer and exporter of equipment related to ballistic missiles and conventional weapons. In March 2016 the council also blacklisted two KOMID representatives in Syria. "The consignees were Syrian entities designated by the European Union and the United States as front companies for Syria's Scientific Studies and Research Centre (SSRC), a Syrian entity identified by the Panel as cooperating with KOMID in previous prohibited item transfers," the U.N. experts wrote. SSRC has overseen the country's chemical weapons program since the 1970s. Daily Mail

Commander of US Seventh Fleet Replaced After Fatal Collision

The US Navy on Wednesday said it had removed Seventh Fleet Commander Vice Admiral Joseph Aucoin after a series of collisions involving its warships in Asia as the search goes on for 10 sailors missing since the latest mishap. Aucoin's removal comes after a pre-dawn collision between a guided-missile destroyer and a merchant vessel east of Singapore and Malaysia on Monday, the fourth major incident in the US Pacific Fleet this year. "Admiral Scott Swift, commander of US Pacific Fleet, today relieved the commander of Seventh Fleet, Vice Admiral Joseph Aucoin, due to a loss of confidence in his ability to command," the US Navy said in a press release.

Swift, who travelled to Japan to relieve Aucoin, ordered his deputy Pacific Fleet commander, Rear Admiral Phil Sawyer, to immediately take command of the powerful US force. Aucoin was due to step down next month, with Sawyer, a submariner by trade, already slated to succeed him. Aucoin came up through the Navy's air wing as an F-14 navigator. "I support Admiral Swift's decision to bring in new leadership. The new Seventh Fleet Commander must help move his team forward, focusing efforts on safe and effective operations," US Navy Chief of Naval Operations Admiral John Richardson said in a statement. The Seventh Fleet, headquartered in Japan, operates as many as 70 ships, including the U.S. Navy's only forward-deployed aircraft carrier, and has around 140 aircraft and 20,000 sailors.

Business Standard

Data is more than just numbers

By Prukalpa Sankar

With data-driven governance it is possible to have all the information needed to make important decisions

Ihave your dashboard open. Can you explain the reasons of the rejection chart to me?" Minister of State for Petroleum and Natural Gas, Dharmendra Pradhan was curious.

He was referring to a real-time dashboard that pulled and compiled data from each of the country's 18,000 LPG distribution centres every day to drive faster and better execution of the Pradhan Mantri Ujjwala Yojana, launched to provide LPG subsidies to women living below the poverty line. The dashboard compiled key metrics — how many new applications oil marketing companies had received under the scheme, how many had been accepted or rejected and how many women had finally been given LPG connections. This allowed the scheme administrators to dive deeper to identify where processes were getting stalled and needed to be fixed. The chart the minister was referring to laid out in detail why distributors were rejecting applications. The reasons were many, ranging from incomplete information to applicants not having an Aadhaar card. A big reason that came to light was that women lacked bank accounts, a mandatory requirement under the Ujjwala scheme. Pradhan immediately suggested: "Why can't we carry out Jan-Dhan Yojana camps in areas where women are getting rejected due to the lack of bank accounts?"

The solution was ridiculously simple. Today, the number of women getting rejected due to lack of bank accounts is down to almost nil. This is data-driven governance at its core — having the information you need to make important decisions at your fingertips.

Around the world, data science is remaking governance; hard data — rather than opinions, lobbying or influence — is driving policy decisions. With all the data they need readily available — always — policymakers and other strategic decision makers can identify focus areas, increase transparency and track the actual outcomes of their initiatives. Be it designing a national health scheme, identifying the best locations for opening new stores, or investing in female empowerment initiatives, data can transform anything.

In 2010, when New York City attempted to make data an intrinsic part of its strategy, it hired a chief analytics officer, Mike Flowers. His initiatives, driven by insights gleaned from the city's large amount of untapped data, were a success and led to the creation of the Mayor's Office of Data Analytics (MODA) that today unifies data across city agencies to tackle everything from crime to disaster response to strengthening anti-poverty initiatives.

India is steadily following MODA's lead as key administrators across ministries and governments increasingly champion data-driven initiatives. Though tentative, the move to make data-driven governance mainstream is certain. It may seem improbable but data has always been part of government decisionmaking. The celebrated Arthashastra, the Principles of Government, which prescribed that population statistics be collected for taxation, describes the methods to conduct demographic, economic and agricultural censuses. However, most

government data today is based on small samples of population or is outdated — the Census of India happens only once in 10 years. In today's world of real-time data, that just isn't acceptable any more.

The PM Ujjwala Yojana is arguably one of the largest and fastest executed programmes nationally. Within nine months of being announced, it received applications from 20 million women. The scheme involved drawing upon the machinery of the three oil marketing companies in 13 states, drilling down to 18,000 distribution centres for marketing, receiving and processing applications, and mobilising over 50,000 field mechanics to install connections in houses that need clean cooking fuel the most.

So when the petroleum ministry wanted to promote universal LPG coverage, it saw value in using big data. Rather than struggle with incomplete and outdated existing databases, or guesstimates, it brought in data science to make sense of information across six levels of hierarchy — senior management from head offices > state officers > district nodal officers > distributors > field mechanics > citizens.

This is how data intelligence helped tackle the problem. First, the ministry used 6.4 million data points about LPG penetration, income and population growth, which was transformed into a dashboard identifying locations with the greatest reach. The next stage was monitoring. Data on LPG applications was transformed into an interactive dashboard with the state, district, and village-level comparisons for applications received and rejected and connections installed. In one snapshot, the minister now had all the information he needed on the performance of every state.

Armed with this, he was now able to check the dashboard on his tablet every morning, take stock and call officers, particularly those whose performance was marked "red". During the launch phase, he conducted video conferences directly with the district nodal officers (DNO) — hour-long meetings to strictly discuss data. In one such meeting, DNOs from the remotest corners of Uttar Pradesh tuned in. The minister called out every district by name and asked the officer to provide a quick update, which he then cross-checked with key parameters on his tablet. One officer was praised for his efficiency — the district had cleared the maximum number of connections. Then, another DNO, who claimed that he faced no challenges in execution, was reprimanded — he had processed so few applications!

As 500-plus representatives in Parliament decide on matters of governance and development for 1.2 billion people, it is easy to see how these decisions must be taken in silos, with little real-time assessment of the ground reality. However, that is changing with that ubiquitous tool — the Android phone. Leaders can now tune into the voices of millions in real time. Big data is at hand to aid decision-making.

So when the minister is questioning the data, he is in effect giving voice to the silent majority and closing the vast gap between the corridors of Shastri Bhavan and the remote villages of Baliya.

Is privacy a fundamental right? Nine-Judge Supreme Court bench will rule today

By Ananthakrishnan G

The right to privacy question was referred to the nine-judge bench after a clutch of petitions challenging the Aadhaar Act came up before the five-judge bench. These petitions claimed that the Aadhaar Act violated people's right to privacy.

Do Indians have a fundamental right to privacy? It will be known Thursday when a nine-judge Constitution Bench of the Supreme Court answers this question on a reference from a five-judge bench. The nine-judge bench, headed by Chief Justice of India J S Khehar and comprising Justices J Chelameswar, S A Bobde, R K Agrawal, R F Nariman, A M Sapre, D Y Chandrachud, S K Kaul and S Abdul Nazeer, had reserved its verdict on the matter on August 2 after extensive arguments over six days.

The right to privacy question was referred to the nine-judge bench after a clutch of petitions challenging the Aadhaar Act came up before the five-judge bench. These petitions claimed that the Aadhaar Act violated people's right to privacy.

But the existing position of law, as settled by an eight-judge Supreme Court bench in 1954 (in the M P Sharma case) and subsequently by a six-judge bench in 1962 (in the Kharak Singh case), was that there was no fundamental right to privacy in the Constitution. The five-judge bench concluded that the correctness of these rulings would have to be examined first before it could take a call on the petitions challenging Aadhaar. The question was referred to the nine judges.

The contentions of the parties and queries from judges during the hearing have provided a glimpse of what a yes-verdict could mean for the country, especially in the background of technological advances and its encroachment into the lives of people.

Senior counsel Gopal Subramanium, who argued for declaring privacy a fundamental right, propounded the stand that "liberty is a pre-existing law" and "all that the Constitution did is to enumerate it". He said "privacy was embedded in the expressions liberty and dignity as appearing in the Preamble to the Constitution. Liberty is inalienable… all choices are a part of the exercise of liberty… humans cannot exist without liberty… liberty is heart and soul of the Constitution".

Senior counsel Soli Sorabjee, also representing the petitioners, said "non-mentioning of privacy rights explicitly in the fundamental rights does not signify it does not exist. It can be deduced from other fundamental rights mentioned in Part III of the Constitution. Freedom of press too was not mentioned but deduced so".

The Centre, however, took the position that privacy could be a fundamental right, but a "wholly qualified" one, implying that it would be subject to reasonable restrictions like other fundamental rights. Attorney General K K Venugopal said "since the right to privacy consists of diverse aspects and is a sub-species of the right to liberty, every aspect of sub-species will not qualify as a fundamental right". He sought to stress that privacy as a right could not be seen in isolation and was, in fact, a "conglomerate of rights" which had to be treated on case-to-case basis.

Though the question of Aadhaar was not being debated during this hearing, the Unique Identification Authority of India (UIDAI), the nodal agency for implementing Aadhaar and a party in the matter, sought to reassure the court that "privacy and confidentiality were non-negotiable under the Aadhaar Act". It was also pointed out to the court during the hearing that the Constituent Assembly had considered whether privacy should be a fundamental right at the time of drafting the Constitution and decided against it.

Justice Chandrachud wondered whether privacy, if recognised as a fundamental right, would be available only against state action or extend to actions by private individuals too. The challenge before the court, if it decides to rule in favour of privacy rights, will be to balance it vis-a-vis the basket of statutory and Constitutional rights available to citizens and to ensure that stress on privacy doesn't stifle the quest for innovation.

Justice Chandrachud expressed this in as many words: "If privacy is right to make choice, choice in what area — family, sexual orientation, gender identity, surveillance. What all?… For instance, my right to cohabit with my wife is right to privacy but my right to send my children to school isn't. There is some element of autonomy in the exercise of liberty which does not lie in the realm of liberty. It need not necessarily be the case that everything that falls within liberty also falls within privacy," he said.

That the verdict will be one of immense significance was evident when he observed that it could even upset the judgment in the Naz Foundation case which pertained to the challenge to Section 377 of the IPC. In July 2009, the Delhi High Court had read down the section and upheld consensual sex between adults in same-sex relations. But the Supreme Court overturned this in December 2013, saying only Parliament had the power to change law.

Highlighting the need to strike a balance between individual rights with the requirements of the state in the IT era, the court said "…whether we like it or not, we live in a world of big data and the state is entitled to regulate privacy. Privacy is not so absolute or overarching to prevent the state from legislating."

During the hearing, the government informed the court that it had set up a committee under Justice (retired) B N Srikrishna to "identify key data protection issues in India and recommend measures of addressing them".

Scientists don't want to 'piss' away space waste

Washington: Scientists have found a way to recycle human urine into food supplements and plastics, an advance that may make long duration space trips more feasible.

Astronauts cannot take a lot of spare parts into space because every extra ounce adds to the cost of fuel needed to escape the Earth's gravity.

"If astronauts are going to make journeys that span several years, we will need to find a way to reuse and recycle everything they bring with them. Atom economy will become really important," said Mark A Blenner, from the Clemson University.

The solution lies in part with the astronauts themselves, who will constantly generate waste from breathing, eating and using materials.

Unlike people on Earth, Blenner said, spacefarers would not want to throw any waste molecules away.

Researchers are studying how to repurpose these molecules and convert them into products the astronauts need, such as polyesters and nutrients.

Some essential nutrients, such as omega-3 fatty acids, have a shelf life of just a couple of years, said Blenner. They will need to be made en route, beginning a few years after launch, or at the destination. "Having a biological system that astronauts can awaken from a dormant state to start producing what they need, when they need it, is the motivation for our project," Blenner said.

The biological system includes a variety of strains of the yeast Yarrowia lipolytica. These organisms require both nitrogen and carbon to grow. Researchers discovered that the yeast could obtain their nitrogen from urea in untreated urine. Meanwhile, the yeast obtains their carbon from CO_2, which could come from astronauts' exhaled breath, or from the Martian atmosphere.

However, to use CO_2, the yeast requires a middle-man to 'fix' the carbon into a form they can ingest. For this purpose, the yeast rely on photosynthetic cyanobacteria or algae provided by the researchers.

One of the yeast strains produces omega-3 fatty acids, which contribute to heart, eye and brain health. Another strain has been engineered to churn out monomers and link them to make polyester polymers. Those polymers could then be used in a 3D printer to generate new plastic parts. — *PTI*

WAYS TO RECYCLE

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Centre to set up Alternative Mechanism for bank mergers

The government said in its statement on Wednesday that the idea of consolidation was first suggested in 1991 but gathered pace in 2016.

To expedite public sector bank merger, the Union Cabinet on Wednesday approved a framework for consolidation among PSBs, including a proposal to set up an Alternative Mechanism (AM) to create strong banks. "The decision would facilitate consolidation among the Nationalised Banks to create strong and competitive banks," the government said in a statement. As per the framework, mergers decisions should originate from the banks and these should be based on commercial decisions. The Alternative Mechanism will comprise of senior ministers of the government.

Finance minister Arun Jaitley said the AM will oversee the proposals coming from boards of public banks for consolidation and such a mechanism will enable quick facilitation. "You have large number of banks in the public sector. The object is to create strong banks. Our experience of consolidation has been positive so far," he said.

Finance ministry officials have earlier said that the government sees a scope merging another 3-4 banks, after the State Bank of India merged five of its associate banks with itself last year. "The decision regarding creating strong and competitive banks would be solely based on commercial considerations," Jaitley said.

"The proposals received from banks for in-principle approval to formulate schemes of amalgamation shall be placed before the Alternative Mechanism. After in-principle nod, the banks will take steps in accordance with law and Sebi's requirements," the government said in the statement. The final scheme will be notified by Central Government in consultation with the RBI, it said.

Consolidation will improve capacity of the banking system to absorb shocks, Jaitley said. "The decision is expected to facilitate the creation of strong and competitive banks in public sector to meet the credit needs of a growing economy, absorb shocks and have the capacity to raise resources without depending unduly on the state exchequer," the statement said.

Country's largest lender State Bank of India last year completed the process of merging State Bank Of Bikaner & Jaipur, State Bank Of Hyderabad, State Bank Of Mysore, State Bank Of Patiala and State Bank Of Travancore and Bharatiya Mahila Bank with itself. In the next phase of consolidation, while a merger among relatively strong banks is likely, weak banks are expected to shrink in their size.

The government said in its statement on Wednesday that the idea of consolidation was first suggested in 1991 but gathered pace in 2016. "In 1991, it was suggested that India should have fewer but stronger public sector banks. However, it was only in May 2016 that effective action to consolidate public sector banks began to be taken by announcing amalgamation of six banks into the State Bank of India. The merger was completed in record time, unlike earlier mergers of State Banks of Indore and Saurashtra," the government said.

Mergers are expected to reduce the pressure on the government of providing capital to the banks. In 2015, Centre launched the Indradhanush programme, to infuse Rs 70,000 crore into public banks. The government estimates that public banks would require about Rs 1.8 lakh crore of capital. This year Centre will put in Rs 10,000 crore into public banks.

The RBI Governor Urjit Patel had said in April that the banking system in India could be better off if some public sector banks are consolidated so as to have fewer but healthier entities. Patel had also said that consolidation of banks could also entail sale of real estate where branches are redundant as well as offering voluntary retirement schemes to manage headcount and adding younger, digital-savvy personnel.