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**DAILY CURRENT AFFAIRS**

**INDEX**

- **FOREST SURVEY REPORT 2021**
- **U.S. DENOUNCES CHINA'S MARITIME CLAIMS**
- **INDIA EXTENDS \$900 MN AID TO SRI LANKA**
- **PRIVATE SECTOR DRIVES FRESH INVESTMENTS'**
- **THE LITHUANIA-CHINA KERFUFFLE**
- **THE CONTROVERSY OVER INCLUSION OF THE MMWAVE BAND IN 5G AUCTIONS**
- **INDIA, CHINA AGREE FOR MORE LAC TALKS**
  - 14TH ROUND OF TALKS BETWEEN MILITARY COMMANDERS DID NOT YIELD BREAKTHROUGH
  - India and China on Thursday agreed to “stay in close contact and maintain dialogue” to work out a “mutually acceptable resolution” of remaining issues along the Line of Actual Control (LAC), although the latest round of talks between military commanders did not yield an immediate breakthrough.
  - While there was no agreement as yet to disengage in the three remaining areas of difference — on the agenda this week was Hot Springs, while differences in Demchok and Depsang are more pronounced with the prospects of an early resolution there unlikely — exchanges between the two sides during the 14th round of Corps Commander-level talks, held on the Chinese side of the Chushul-Moldo border meeting point, struck a more positive note than the previous round, officials said.
  - In October, the 13th round failed to yield a joint statement with both sides trading accusations, with India saying that China failed to offer any forward-looking suggestions while China described India's proposals as unrealistic. A joint statement released on Thursday in New Delhi and Beijing indicated that progress had been made but that further work was needed to arrive at a resolution.
  - The statement said the two sides “agreed to stay in close contact and maintain dialogue via military and diplomatic channels and work out a mutually acceptable

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resolution of the remaining issues at the earliest” and “also agreed that the next round of the Commanders’ talks should be held at the earliest”.

### **New commanders**

- The 14th round saw two new commanders from each side leading the talks, with the Indian delegation led by Lieutenant-General Anindya Sengupta, who has taken over as General Office Commanding of the Leh-based 14 Corps. The Chinese side was led by Major-General Yang Lin, the new head of the PLA’s South Xinjiang Military District.
- The joint statement said the two sides agreed “to work for the resolution of the remaining issues at the earliest” and that “this would help in restoration of peace and tranquillity along the LAC in the Western Sector and enable progress in bilateral relations”.
- “The two sides also agreed to consolidate on the previous outcomes and take effective efforts to maintain the security and stability on the ground in the Western Sector, including during winter,” the statement said.
- Of the remaining disputes in Hot Springs, Demchok and Depsang, the expectation of a solution in the near-term is likely at Hot Springs. Both sides disengaged from Pangong Tso in February 2021 and from Patrolling Point 17 in the Gogra area in August. The Chinese side in earlier rounds was not willing to discuss proposals to disengage in Demchok and Depsang.
- On Wednesday, Army chief General Manoj Naravane said there had been partial disengagement but added that a threat level remained and the Chinese had put in place a lot of infrastructure in forward areas.
- He said, “It remains to be seen whether they will permanently station themselves there or whether they will be amenable to some kind of de-induction in the times to come.”

### **Unconstructive remarks**

- Asked by a foreign media outlet for a response to the Army chief’s comments, Chinese Foreign Ministry spokesperson Wang Wenbin said, “China and India are in dialogue and communication through diplomatic and military channels to ease the situation at the border.”
- “We hope that certain individual on the Indian side would refrain from making unconstructive remarks,” he added.

## **FOREST SURVEY REPORT 2021**

- Forest and tree cover in the country has increased by 2,261 square kilometres since the last assessment in 2019, according to the India State of Forest Report-2021. The report found that there had been a 1,540 sq. km increase in forest cover and 721 sq. km increase in tree cover since the last report in 2019.
- Releasing the report, Environment and Forest Minister Bhupender Yadav said the total forest and tree cover was 80.9 million hectares, which accounted for

24.62% of the geographical area of the country. The report said 17 States and Union Territories had more than 33% of their area under forest cover.

- “Increase in forest cover has been observed in open forest followed by very dense forest”.
- *India’s State of Forest Report* is a biennial publication. The report for 2021 was released by Union Minister for Environment, Forest and Climate Change, Bhupender Yadav January 13, 2022.
- The report has classified India’s forests into four categories. One of them is Very Dense Forest (with tree canopy density of 70 per cent or above).
- The Union territory (UT) of Jammu and Kashmir, which had very dense forests of 4,270 square kilometres (sq km) area in 2019, had 4,155 sq km of the same forest category in 2021. This is the highest loss of very dense forests anywhere in India.
- Another category of forest as defined in the report is Open Forest (tree canopy density of 10 per cent or above but less than 40 per cent).
- Jammu and Kashmir has lost very dense forests but gained open forests, according to the report. This has led to an increase in the UT’s total forest area to 21,387 sq km in 2021, from 21,358 in 2019. The increase in open forests is led by commercial plantations.
- The total forest area of Himachal Pradesh, another mountainous state, has increased by 9 sq km. But there has been loss of open and Moderately Dense Forest (tree canopy density of 40 per cent or above but less than 70 per cent). Moderately dense forests are usually close to human habitations.
- Himachal Pradesh had an area of 7,126 sq km under moderately dense forests in 2019. This reduced to 7,100 sq km in 2021. The state had open forests spread across 5,195 sq km of its area in 2019. This reduced to 5,180 sq km in 2021.
- The report has attributed the loss of forest cover in the Himalayas and North East to an increase in developmental activities as well as agriculture.
- The report has also mapped climate change hotspots in Indian forests, based on projections for 2030, 2050 and 2080.
- It predicted that Himalayan states and UTs like Ladakh, Jammu and Kashmir, Himachal Pradesh and Uttarakhand will record the maximum increase in temperature and also possibly experience decrease in rainfall.
- Extreme rainfall may also increase in the states of the North East.
- Madhya Pradesh had the largest forest cover, followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra. The top five States in terms of forest cover as a percentage of their total geographical area were Mizoram (84.53%), Arunachal Pradesh (79.33%), Meghalaya (76%), Manipur (74.34%) and Nagaland (73.90%).

### **Mangrove cover**

- The total mangrove cover in the country had increased by 17 sq. km, to reach 4,992 sq. km. The total carbon stock in forests was estimated to be 7,204 million tonnes, an increase of 79.4 million tonnes from 2019.

### **Pan-India scenario**

- The total forest area in the country is 713,789, which is 21.27 per cent of the country's land area. This figure was 712,249 sq km in the 2019 report.
- India's moderately dense forest area decreased by 1,582 sq km to 306,890 sq km in 2021, from 308,472 sq km in 2019.
- Odisha lost the most area under moderately dense forest. It decreased to 20,995 sq km in 2021, from 21,552 sq km in 2019. Odisha ranks among the top five states in India in terms of increase in total forest area.

### **Five Indian states where total forest area has increased**

State	Total Forest Area 2021	Total Forest Area 2019	Increase (in sq km)
Andhra Pradesh	29,784	29,137	647
Telangana	21,214	20,582	632
Odisha	52,156	51,619	537
Karnataka	38,730	38,575	155
Jharkhand	23,721	23,611	110

### **Five Indian states where total forest area has decreased**

State	Total Forest Area 2021	Total Forest Area 2019	Decrease (in sq km)
Arunachal Pradesh	66,431	66,688	257
Manipur	16,598	16,847	249
Nagaland	12,251	12,486	235
Mizoram	17,820	18,006	186

Meghalaya	17,046	17,119	73
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- The area under very dense forest in India increased by 501 sq km and open forest area by 2,621 sq km as compared to 2019. The very dense forest area of the country in 2019 was 99,278 sq km. This increased to 99,779 sq km in 2021.
- The open forest area was 304,499 sq km in 2019, which has increased to 307,120 sq km in 2021.
- Three southern states (Andhra Pradesh, Telangana and Karnataka) and two eastern states (Odisha and Jharkhand) have recorded the highest increase in forest cover.
- States in the North East have recorded the highest loss in forest cover.
- There has been a reduction in the total forest area of Delhi too (.44 sq.km). The total forest area of Delhi in 2021 was found to be 195 sq km. Mostly open forest area has been damaged.

## NOT POSSIBLE TO DEMILITARISE SIACHEN

Not an ideal scenario in view of stand-off in Ladakh and Chinese build-up: experts

We are “not averse” to demilitarisation of the Siachen glacier but the pre-condition is Pakistan has to accept the Actual Ground Position Line (AGPL), Army chief General Manoj Naravane said on Wednesday, raising a fresh debate over the world’s highest battlefield, with experts saying it may not be ideal in the backdrop of the stand-off in eastern Ladakh and the Chinese build-up.

In contrast to the present comments, the Army chief had two years ago termed Siachen as a point of “collusive threat” between Pakistan and China and so “we should keep control”. However, with the stand-off in eastern Ladakh and massive build-up and expansion by the People’s Liberation Army (PLA) in sub-sector north which is very close to the Karakoram range and Soltoro ridge, several serving officials and experts noted that it would not be possible for India to vacate the crucial positions on the glacier.

At the annual press conference, Gen. Naravane said, “Pakistan has to accept what are their positions and has to accept what are our positions.”

He said the situation had occurred due to a unilateral attempt by Pakistan to change the status quo. The Line of Control (LoC) had been delineated to a point called NJ 9842, and thereafter, the understanding was that it will remain unoccupied. But Pakistan had made an attempt to occupy territory and “we were forced to take our countermeasures”, Gen. Naravane said.

Siachen and Sir Creek have long been termed “low hanging fruits” in the past for resolution between India and Pakistan and the two countries have held 13 rounds of Defence Secretary-level talks on Siachen, the last one in June 2012.

Former Northern Army Commander Lt. Gen. D.S. Hooda said the Indian Army has not been averse to a disengagement at Siachen but it has not happened due to a reluctance by the Pakistan Army to accept the positions that are occupied by the Indian Army.

“Now the situation has completely changed with the PLA aggression in the sub sector north in eastern Ladakh. With the Siachen sector facing threats from both west and east, there is perhaps no question of any disengagement from Siachen,” he told The Hindu.

## **U.S. DENOUNCES CHINA’S MARITIME CLAIMS**

**The State Department asks China ‘to cease its unlawful and coercive activities in the South China Sea’**

- The U.S. on Wednesday laid out its most detailed case yet against Beijing’s “unlawful” claims in the South China Sea, rejecting both the geographic and historic bases for its vast, divisive map.
- In a 47-page research paper, the State Department’s Bureau of Oceans and International Environmental and Scientific Affairs said China had no basis under international law for claims that have put Beijing on a collision course with the Philippines, Vietnam and other Southeast Asian nations.
- “The overall effect of these maritime claims is that the PRC unlawfully claims sovereignty or some form of exclusive jurisdiction over most of the South China Sea,” the paper said, referring to the People’s Republic of China.
- “These claims gravely undermine the rule of law in the oceans and numerous universally recognized provisions of international law reflected in the Convention,” it said, referring to a 1982 UN treaty on the law of the sea ratified by China — but not the U.S.
- Releasing the study, a State Department statement called again on Beijing “to cease its unlawful and coercive activities in the South China Sea.”
- China hit back on Thursday, claiming the report “distorts international law and misleads the public.”
- “The U.S. refuses to sign the treaty but portrays itself as a judge and wantonly distorts the treaty,” said Foreign Ministry spokesman Wang Wenbin at a briefing. “In seeking its own selfish interests it uses multiple standards to carry out political manipulation.” The paper is an update of a 2014 study that similarly disputed the so-called “nine-dash line” that forms the basis for much of Beijing’s stance.

### **INTERNATIONAL RULING**

- In 2016, an international court sided with the Philippines in its complaints over China’s claims.
- Beijing replied by offering new justifications, including saying that China had “historic rights” over the area.
- The State Department paper said that such historical-based claims had “no legal basis” and that China had not offered specifics.
- It also took issue with geographic justifications for China’s claims, saying that more than 100 features Beijing highlights in the South China Sea are submerged

by water during high tide and therefore are “beyond the lawful limits of any state’s territorial sea.”

- Beijing cites such geographic features to claim four “island groups,” which the State Department study said did not meet criteria for baselines under the UN convention. The report was issued as the U.S. increasingly challenges China on the global stage, identifying the rising communist power as its chief long-term threat.
- The South China Sea is home to valuable oil and gas deposits and shipping lanes, and Beijing’s neighbours have frequently voiced concern that their giant neighbour was seeking to expand its reach.

## **INDIA EXTENDS \$900 MN AID TO SRI LANKA**

- It includes a \$400 mn currency swap and deferred payment of \$500 mn
- India on Thursday confirmed a \$400 million currency swap with Sri Lanka while deferring another \$500 million due for settlement to the Asian Clearing Union (ACU), in a move aimed at helping the island nation witnessing an unprecedented economic crisis.
- In a tweet on Thursday, the Indian mission in Colombo said High Commissioner Gopal Baglay met Central Bank Governor Ajith Nivard Cabraal and expressed “India’s strong support to Sri Lanka” in the wake of the Reserve Bank of India extending facilities of \$900 million over the last week.
- India’s assistance follows a request from Sri Lanka during Finance Minister Basil Rajapaksa’s visit to New Delhi in December, for emergency financial assistance, including Lines of Credit for importing essentials and a currency swap to boost Sri Lanka’s draining foreign reserves. Sri Lanka is facing a severe dollar crunch that economists say might lead to a default on external debt and create a food shortage in the imports-reliant nation. Colombo must service over \$7 billion outstanding debt in 2022, including bond repayments of \$500 million in January and \$1 billion in July.
- The Central Bank of Sri Lanka has expressed confidence about paying off the foreign debt. Ruling out an IMF bailout, Governor Cabraal on Wednesday said Colombo is in talks with Beijing for a new loan, in addition to the \$500 million loan and \$1.5 billion currency swap extended by Beijing as pandemic-time support. The request, according to local media reports, was also discussed during Chinese Foreign Minister Wang Yi’s visit to Colombo last week. Sri Lanka owes China over \$5 billion already, and Colombo has requested Beijing to restructure it to provide some relief.
- The developments have prompted political commentators in Sri Lanka to pit India and China against each other, in providing timely assistance to the island nation.
- In July 2020, the RBI extended a similar swap facility — of \$400 million — to help Sri Lanka cope with the impact of the first wave of the pandemic, and later provided a three-month roll over until February 2021, when the Central Bank of Sri Lanka settled it.
- Thursday’s announcement on RBI assistance includes deferring the payment of \$500 that Sri Lanka owes to the ACU, a regional initiative with the Central Banks and Monetary Authorities of Bangladesh, Bhutan, India, Iran, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka.

- Significantly, India's confirmation of the swap comes a week after the two countries signed a long-pending agreement on jointly developing the strategically located Trincomalee oil tank farm along the north-eastern coast of the island. Diplomatic sources had earlier indicated that any financial support from New Delhi to Colombo would have to follow the signing of the deal.

## ‘PRIVATE SECTOR DRIVES FRESH INVESTMENTS’

- Proposals by PSUs dip in April-December, compared with pre-COVID levels: Projects Today survey
- South mojo: Tamil Nadu received the highest additional fresh investment compared with pre-COVID levels
- Fresh investments announced in the country grew 88% year-on-year to ₹12.76 lakh crore between April and December 2021, with the private sector accounting for about two-thirds of these commitments, according to a new report.
- About 7,764 new projects were announced in the first three quarters of the current fiscal. This accounted for growth of almost 47% compared with the same period in 2019-20 (pre-COVID year) indicating recovery in capital expenditure.
- In April-December 2021, the private sector announced 3,357 new projects worth ₹8.70 lakh crore accounting for 174% growth from a year earlier and almost double the investment of ₹4.28 lakh crore announced in April-December 2019-20, according to a survey by Projects Today.
- On the other hand, the public sector investments grew 12.3% from a year earlier to ₹4.06 lakh crore across 4,407 new projects. Compared with the pre-COVID period of FY20, the figure is lower by 7.8%. “At present, the private sector is pedalling forward the capex cycle. To sustain this and to pep up private investment further, the government has to step up its investment in infrastructure, both transport and social, on a large scale,” Shashikant Hegde, CEO at Projects Today said.

### ‘WORRYING TREND’

- He added that while most of the key sectors had shown net gains over the pre-pandemic levels, the worrying factor was the noticeable contraction in fresh investment plans by the public sector units during the first nine months of the current fiscal. “Most of the critical infrastructure sectors, other than roadways, saw lesser fresh investment proposals vis-à-vis pre-pandemic levels.”
- The survey showed that private investment in real estate increased 43.9%, and anticipating increased demand for their produce from the roadways and real estate sectors, cement and steel companies too announced large-scale capacity building plans. Increased capex plans were also seen in petrochemicals, plastic products, electronics and automobiles.
- The decline in public sector investment was mainly because of the cut in fresh investment by State government agencies, whose new proposals fell 32.7% from a year earlier. The pandemic had impacted revenues and spurred expenditure on the healthcare and social fronts.
- Irrigation and water supply projects were the most hit because curtailed capex plans, Mr. Hedge added.

- Based on the net increase in investments compared with April-December 2019, the State of Tamil Nadu topped the charts, attracting additional fresh investment of ₹1,07,610 crore.

## **INDIA, U.K. KICK OFF TALKS FOR FREE TRADE AGREEMENT**

Open to interim pact while talks continue for complete FTA'

- Minister of Commerce and Industry Piyush Goyal and U.K. Trade Secretary Anne-Marie Trevelyan kicked off talks for an ambitious, comprehensive Free Trade Agreement (FTA) on Thursday. Mr. Goyal said the negotiations are expected to be completed within a year.
- "India stands to gain from this multi-dimensional economic partnership with exports growth in leather, textiles, jewellery, processed agri-products," said Mr. Goyal after the start of the negotiation that would cover both goods and services. Sources said bilateral trade of \$50 billion is expected to double to \$100 billion in 10 years. Mr. Goyal had earlier said such discussions were under way with the UAE, Australia, Canada and Israel.
- A joint statement quoted both sides as saying they would consider the option of an 'interim agreement' while negotiations for a comprehensive pact continue.
- "By 2050, India will be the world's third-largest economy with a middle class of almost 250 million shoppers. We want to unlock this huge new market for our great British producers and manufacturers across numerous industries from food and drink to services and automotive," said Ms. Trevelyan. This is the first major negotiation exercise that the U.K. has held with India since Brexit.
- The first round starts on January 17 and subsequent rounds would take place about every five weeks.

## **THE LITHUANIA-CHINA KERFUFFLE**

\Why are Vilnius-Beijing ties on a nosedive? What are its geopolitical ramifications?

- The story so far: In November 2021, a Taiwanese Representative Office was opened in Lithuania, notable because it is for the first time that Taiwan was allowed to use its own name to open an office within the EU. Following this, China has downgraded its diplomatic relations with Lithuania, calling it a violation of the "One China Policy". China has also unofficially boycotted products from Lithuania, whether it is sourced directly or indirectly from the country. Lithuania has so far not backtracked on its actions against China. Taiwan, the U.S. and the EU have expressed their support to Lithuania in what has been termed as a "David vs Goliath" battle.

### **WHAT HAS LITHUANIA DONE TO PROVOKE CHINA?**

- Lithuania's current wave of assertive moves against China to a certain extent have been attributed to the change of Government in 2020, as well as the growing geopolitical tensions in Eastern Europe over the EU and NATO's fallout with Lithuania's adversarial neighbours, Russia and Belarus. Lithuania, being the first constituent of the Soviet Union to break out as an independent state, has its own historical context and

ideological rationale for standing up to China. The new Government of Lithuania espouses a “values-based” foreign policy based on democracy and freedom, and had explicitly offered support to the cause of Taiwan in 2020 itself. Lithuania has been one of the biggest critics of China within the EU on the Xinjiang and Hong Kong issues. Lithuania supported Taiwan’s pitch to become an observer at the World Health Organization in 2020 against China’s opposition in the wake of the COVID-19 pandemic.

- The growing Sino-Russian partnership against the West has also made Lithuania wary of China. Citing security reasons, Lithuania has advised its population to avoid buying smartphones made in China, and has kept China away from acquiring controlling stakes in its Klaipėda seaport, as well as from its 5G infrastructure bids. Moreover, Lithuania’s rationale that economic relations can be sustainable only with democratic regimes, have heightened tensions between Lithuania and China. In May 2021, Lithuania quit the 17+1 dialogue format (making it 16+1), which was initiated by China in 2012 as a multilateral forum for engagement with the countries of Central and Eastern Europe. Lithuania is the first country in that group to have done so and stated economic non-reciprocity of China and threats to European unity as reasons for its exit.

### **HOW DID CHINA REACT TO LITHUANIA’S ACTIONS?**

- By the end of November 2021, China downgraded its relationship with Lithuania by permanently recalling its ambassador from the country and by downgrading diplomatic relations from ambassadorial level to that of chargé d’affaires. When Lithuania withdrew its diplomatic staff from China expressing safety concerns, China called them fabricated. China is also putting pressure on companies to stop sourcing products from Lithuania for China-bound exports, threatening that they will lose access to Chinese markets if they do so. China has used this strategy previously in scuffles with countries like Norway, Japan and Australia when they were perceived as acting against China’s “core interests”.
- China’s coercion against Lithuania is seen as directed not just against the country, but also against any other country which could potentially stand in China’s way. China alleges that Lithuania is acting in concert with the American efforts of containment by using the Taiwan card, and to spread discord between China and Europe. In addition, the state run Chinese media have held the ruling Government in Lithuania responsible for the fracas, with their pro-Western and anti-Communist ideology purportedly targeting China for political gains.

### **WHAT IS THE IMPACT OF CHINA’S COUNTERMEASURES ON LITHUANIA?**

- China amounts to only one percent of Lithuania’s exports and its imports from China are five times more. This made it easy for the country to take a tough stand against China. However, this put an unexpected strain on its trade with partners in the rest of Europe, which are highly dependent on China. The EU is currently China’s largest trading partner, and about 80-90 percent of Lithuania’s exports are based on manufacturing contracts with the rest of the EU. The customs authorities in China have apparently stopped processing such direct and indirect goods sourced from Lithuania.
- Through this indirect attack, China is seen as trying to weaken European support to Lithuania, and cancel the country out from global supply chains. China’s Foreign Ministry’s statement that “those who insist on acting in collusion with Taiwan secessionist forces will eventually be swept into the garbage bin of history.” can be understood in this context. The projected possibility is that China is putting pressure to

coerce Lithuania into de-escalation and rename the Taiwanese Representative office, though its effectiveness is to be seen. The issue has widened the political differences between Lithuania's current President who seems to be more conciliatory to China and the coalition government which is largely hawkish on China.

### **WHAT IS THE GEOPOLITICAL FALLOUT OF THE CHINA-LITHUANIA SPAT?**

- Taiwan, the U.S. and EU have been calibrating their response to the China-Lithuania row. Taiwan has made efforts to compensate the Lithuanian economy from China's coercion. About 20,000 bottles of Lithuanian rum that had been bound for China was bought by the Taiwan Tobacco and Liquor Corp (TTL), offering a symbolic gesture of support. Taiwan has come up with a \$200 million investment plan to help cover Lithuania's economic losses. This move is also supposedly designed to make Lithuania a gateway to Taiwan for accessing the EU market, especially given the current semiconductor supply shortages. Taiwan is also planning to introduce a \$1 billion credit program aimed at benefiting Lithuanian businesses.
- The European Commission has also warned of raising the Lithuania issue at the World Trade Organization by filing a complaint against China. The U.S. has expressed concerns about China's attempts to coerce Lithuania over Taiwan, along with EU countries like Germany who have expressed solidarity with Lithuania. These developments have arisen in the backdrop of the countdown to the Beijing Winter Olympics. The EU member states are yet to decide on joining a diplomatic boycott of the event, initiated by the U.S. citing human rights concerns. Thus, the China-Lithuania issue appears to perfectly dovetail with the intensifying great power rivalry.

## **THE CONTROVERSY OVER INCLUSION OF THE MMWAVE BAND IN 5G AUCTIONS**

Should India fragment the mmWave band? Can providing excess spectrum pose a downside risk of the bands going unsold or underutilised?

- **The story so far: Before the Telecom Regulatory Authority of India (TRAI)** submits 5G pricing recommendations to the Department of Telecommunications (DoT) in March, the regulator had sought industries' views (till January 11) on topics related to quantum of spectrum to be auctioned off. It had also asked for views on band plan, block size, and conditions for auction of spectrum in new bands, which includes millimetre (mm) Wave band of 24.25-28.5 GHz. An industry body that represents interests of the communication satellite ecosystem in India has voiced concerns over the Government's plan to include the mmWave bands in the spectrum auction, which is slated for later this year.

### **WHAT ARE THE INDUSTRY ASSOCIATION'S CONCERNS?**

- The Satcom Industry Association-India (SIA), in its submission to TRAI, has urged the regulator to limit the inclusion of mmWave spectrum in the 5G auction as 27.5-31 GHz and 17.7-21.2 GHz bands have been preserved for satellite-based broadband services as per the decision taken by the International Telecommunication Union (ITU). The industry body pointed to Europe's "5G Roadmap", which is built on the ITU's decision to hold these bands for satellite-based broadband services.
- The SIA also noted that offering excessive spectrum resources in the upcoming 5G auction will result in Indian citizens being denied the benefits of high-demand, advanced satellite broadband services. In addition to this, it will result in a massive loss

to the Indian economy of up to \$184.6 billion by 2030, along with the loss of foreign direct investment (FDI) and employment generation benefits.

### **WHAT IS A MILLIMETER WAVE BAND?**

- Millimetre Wave band or mmWave is a particular segment of radio frequency spectrum that range between 24 GHz and 100 GHz. This spectrum, as the name suggests, has a short wavelength, and is apt to deliver greater speeds and lower latencies. This in turn makes data transfer efficient and seamless as the current available networks work optimally only on lower frequency bandwidths.
- 5G services can be deployed using lower frequency bands. They can cover greater distances and are proven to work efficiently even in urban environments, which are prone to interference. But, when it comes to data speeds, these bands fail to hit peak potential needed for a true 5G experience. So, mmWave is that quintessential piece in the 5G jigsaw puzzle for mobile service providers.

### **HOW COULD THIS DISRUPT THE SATELLITE COMMUNICATION INDUSTRY?**

- Internet has largely been provided to users via fibre-optic based broadband connectivity or mobile network. Of late, another class of Internet vendors is showing up. These are satellite-based communication service providers. For example, SpaceX's Starlink and Bharti Airtel's OneWeb are some of the players in this market. This segment uses Low-Earth Orbit (LEO) satellites to provide broadband to both urban and rural users. Their service could also be used for weather predictions.
- According to an IEEE Wireless Communications paper on Spectrum Policy, "the 24.25-27.5 GHz band had been the subject of controversy due to out-of-band emissions into the passive satellite band used for weather satellites at 23.6-24 GHz." This issue was later resolved by setting a limit for base station emissions into the satellite band. The limit would become more restrictive in 2027, and any equipment installed prior to that date will be made acceptable. This compromise was reached in the hope that it will allow an immediate rollout of 5G in this band while pressing manufacturers to decrease, in the long term, out-of-band emissions into the nearby passive band where they may impact weather prediction data.
- The satellite communication industry is looking to pre-empt mobile telephony companies' move by ensuring that the bands don't go to them in the first place. But, until 2027, these bands can be auctioned off to mobile Internet service providers.

### **WHAT DOES SIA-INDIA SUGGEST?**

- SIA-India has noted that the 330 MHz of spectrum in the 3.3-3.67 GHz band is enough to satisfy India's mid-band 5G needs while ensuring a competitive auction. India has three private mobile network operators holding 90% of the total market share. These three will be able to secure the available spectrum, roughly 80- 90 MHz each, while leaving the remaining 10% to state-owned enterprises.
- The industry body also noted that providing excess spectrum could pose a downside risk of the bands going unsold, or even worse, underutilised by terrestrial players at the expense of satellite-based service providers. The allocation of mmWave band is critical to the satellite communication industry, which needs a stronger regulatory support to ensure that 5G operations don't interfere with their existing operations.

**TELECOM REGULATORY AUTHORITY OF INDIA**

- The Telecom Regulatory Authority of India (TRAI) is a regulatory body set up by the Government of India under section 3 of the Telecom Regulatory Authority of India Act, 1997. It is the regulator of the telecommunications sector in India. It consists of a Chairperson and not more than two full-time members and not more than two part-time members. The TRAI Act was amended by an ordinance, effective from 24 January 2000, establishing a Telecom Disputes Settlement and Appellate Tribunal (TDSAT) to take over the adjudicatory and disputes functions from TRAI.

### **HISTORY**

- Telecom Regulatory Authority of India was established on 20 February 1997 by an Act of Parliament to regulate telecom services and tariffs in India. Earlier regulation of telecom services and tariffs was overseen by the Central Government.
- TRAI's mission is to create and nurture conditions for the growth of telecommunications in India to enable the country to have a leading role in the emerging global information society.
- One of its main objectives is to provide a fair and transparent environment that promotes a level playing field and facilitates fair competition in the market. TRAI regularly issues orders and directions on various subjects such as tariffs, interconnections, quality of service, Direct To Home (DTH) services and mobile number portability.
- In January 2016, TRAI introduced an important change in telecommunication that would benefit all consumers. Effective from 1 January 2016, consumers will be compensated for call drops. However, there is a catch, per the rule, mobile users will get compensation of Re 1 for every dropped call but it will be limited to a maximum three dropped calls in a day. This regulation has been quashed by Supreme Court on the ground of being "unreasonable, arbitrary and unconstitutional"

### **SECRETARIAT**

- TRAI is administered through a Secretariat headed by a secretary. All proposals are processed by the secretary, who organises the agenda for Authority meetings (consulting with the Chairman), prepares the minutes and issues regulations in accordance to the meetings. The secretary is assisted by advisors. These include Mobile Network, Interconnection and FixeNetwork, BroadBand and Policy Analysis, Quality of Service, Broadcasting & Cable Services, Economic Regulation, Financial Analysis & IFA, Legal, Consumer Affairs & International Relation and Administration & Personnel. Officers are selected from the Indian Telecommunications Service and the Indian Administrative Service. The current Chairman of TRAI is PD Vaghela, an IAS officer of the Gujarat cadre, batch of 1986.

### **RECENT TRAI INITIATIVES**

- In order to increase broadband penetration in India, TRAI has proposed WANI (Wi-Fi Access Network Interface) architecture. If implemented, it may lead to set up of Public Data Offices (PDOs) where Wi-FI Internet would be available on demand. TRAI relates the same with PCOs which were used to do the voice calls and were very popular hotspots before the mobile phones or home landlines became the ultimate mode of communication.