

# Space start-ups over the moon with govt's FDI push, Isro's tech transfer

SHINE JACOB

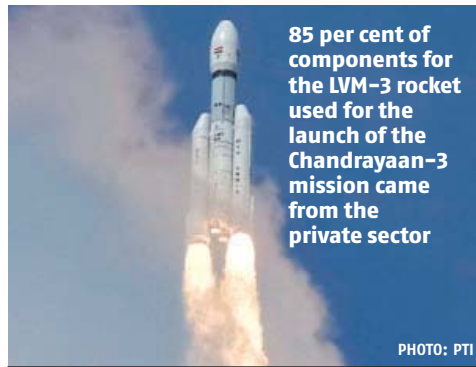
Chennai, 16 July

If successful, the Chandrayaan-3 mission may well boost the space start-up sector in India, which has seen the number of players increasing from a mere 21 in 2020 to 146 now, say industry experts.

The government plans to give it a further boost by increasing the scope of foreign direct investment (FDI) in the sector, while the Indian Space Research Organisation (Isro) is aggressively increasing the pace of technology transfer to the private sector.

Just days before the Chandrayaan-3 launch, Isro's commercial arm IN-SPACE (the Indian National Space Promotion and Authorisation Centre) invited an expression of interest to transfer its Small Satellite Launch Vehicle (SSLV) technology to the private sector.

From the 1980s, Isro has transferred over 400 technologies to around 235 industries. At least 200



technologies were transferred in the past few years only, say sources.

"We are taking a very aggressive stand regarding the transfer of technology to the private sector," said

## THE GROWTH STORY

Number of start-ups

2020: 21

2021: 47

2022: 111

2023: 146

Funding (in \$/mn)

Up to 2017 38

2018 3.08

2019 6.05

2020 22.5

2021 67.2

2022 119.52

2023\* 0.12

\*till April Source: ISPA, industry

Pawan Goenka, chairman of IN-SPACE, which acts as a bridge between private space firms and Isro.

"In-SPACE is playing the role of facilitator. The biggest thing that we announced a few days ago was

the transfer of SSLV (technology). There are nine or ten key technologies that are currently under our consideration. The purpose of this move is to handhold the private sector."

Goenka said the next big move to follow the government's Space Policy announced in April will be to boost the space start-up sector through the new FDI Policy that the government is working on. It's thought the plan will allow FDI in segments such as sub-system manufacturing, launch vehicle operations, and satellite operations and establishments.

The rising interest from the private sector was evident during the preparations for the Chandrayaan-3 mission, which saw around 85 per cent of components for the LVM-3 rocket coming from the private sector. Many of the critical systems were developed under the GOCO model

(government-owned companies operated). According to industry estimates, there are over 1,500 micro small and medium space enterprises, in addition to 146 start-ups.

After the sector opened up to private companies in June 2020, it has seen funding to the tune of around \$175 million, a large figure given that the total received by the sector so far has been \$258 million.

Among the companies that attracted foreign investment were Agnikul, Skyroot, Dhruva, and Pixxel. The transfer of technology is expected to add more steam to this trend.

"For Isro, monetisation is not the objective of the move. The idea is to get the private sector more engaged in space. For them to start from scratch will be very expensive. This allows them to carry forward the work done by Isro," said Goenka.

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## Space...

N Sudheer Kumar, director, capacity building programme office on space opportunities at Isro, said the space agency has developed a lot of technologies that are useful for many industries. "It is a usual practice as these technologies are developed using public money. It is normal for any scientific organisation to transfer technology for commercialisation,"

said Kumar.

One example of a technology transfer for wider purposes is Isro sharing the fire retardant paint that it developed for its mission with industry.

The Space Policy is targeting more private sector participation in the entire value chain of the space economy. The policy assumes that Isro will encourage new-generation entities to participate in space exploration, including even a human presence in outer space, and also envisions collaboration with domestic and international stakeholders.