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# ISRO mulls tie-up with industrial partners

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**BENGALURU:** The Indian Space Research Organisation (ISRO) is planning to magnify the role of its industry partners by starting joint ventures with them and readying them to do entire tasks like satellite launches, its Chairman A.S. Kiran Kumar has said.

The agency has sounded out its commercial arm, Antrix Corporation, to explore such opportunities for specific projects. Internal teams are being formed to draft a plan, he told *The Hindu* in a recent interview.

For one, Antrix might form ventures with public or private entities that had already been supplying for the space programme. The extent of financing and equity would be decided later. "We hope to have a clear picture in about a year. We have asked Antrix to identify industries and requirements and have initiated discussions internally," said Mr. Kiran Kumar, who is also Secretary of the Department of Space.

## Backlog

One reason is the backlog of communication satellites that urgently need indigenous GSLV launchers to put them in space. In mid-May, the government sanctioned 15 smaller PSLV launchers, worth Rs. 3,090 crore, which would be built during 2017-20. The ISRO now plans to do two GSLV launches, one commercial and two to three PSLV launches in a year, all requiring intensive engagement with the industry.

Furthermore, if the industry took on bigger roles, Mr. Kiran Kumar said, the ISRO could focus on developing superior technologies for next-generation satellites and launch vehicles.

Already, about 80 per cent of the stages and systems of the PSLV and the GSLV are being made by Godrej, L&T, MTAR, Hindustan Aeronautics Limited or Bharat Electronics. The ISRO centres assembled them.

The ISRO would like industries to do the entire chain all the way up to the launch. It may straightaway rope in a reliable partner to work with it through the whole launcher process and ready it for the task in a couple of years — as it is being done in the West.

For instance, HAL's Aerospace Division is now making liquid rocket engines. The ISRO wants it to make the GSLV's GS2 stage and the PSLV's PS4 stage and then do all the stages. HAL is also partner for the GSLV cryogenic engine.

"The best thing to do is to completely transfer [launches] to industry; we just provide the launch pad. It would be wonderful if we can reach that stage," Mr. Kiran Kumar said.