

5G phones to be NavIC-enabled by '25

Mobile device manufacturers assure govt of implementation, differ on additional cost of embedding

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Mobile device makers have assured the government that they will be able to implement NavIC, the country's home-grown navigation system developed by the Indian Space Research Organisation (Isro), on new 5G mobile devices by January 1, 2025.

The Indian Cellular and Electronic Association (ICEA), which represents most of the leading global and local mobile brands operating in the country, gave this commitment at a recent meeting between top officials of the Ministry of Electronics and Information Technology (MeitY), the department of telecommunication (DoT) and Isro, as well as representatives of mobile devices and chip makers. NavIC is to be an alternative to the popular GPS.

At the meeting, held by MEITY at the request of DoT to freeze the timelines for NavIC implementation on mobile phones, it was decided that the latter would soon provide a comprehensive document with essential specifications, while Isro will provide the technical support for embedding NavIC on smartphones. However, opinion is divided among mobile

ABOUT THE IMPLEMENTATION

► **Isro says new satellites to be launched for NavIC will support the L1 band, which is used by mobile phones for offering GPS services**

► **The first of these satellites will be launched this year-end and the next ones in the next 2-2.5 years**

► **Once done, 4G smartphones can also support NavIC**



device makers as to the additional cost they would have to incur to enable NavIC on mobile phones. Some say it will be marginal, while others expect it to require additional investment.

With seven active satellites in orbit, the navigation satellite system covers India and stretches another 1,500 km around it. The aim is to increase the cover all over the globe, like the US-based GPS system. NavIC offers navigation, timing, mapping, disaster management and data capture services, amongst others, and is of strategic importance for the country.

Apart from GPS, the other navigation systems include the European

Union's Galileo, China's Beidou and Russia's GLONASS.

At the meeting, mobile device makers wondered if NavIC can be run on the L1 satellite band, being used to support other navigation systems such as GPS. However, Isro representatives clarified that the existing NavIC satellites do not support the band, but assured that all upcoming satellites will have the L1 band. Some of these are likely to be launched by the end of the year, and others within 2-2.5 years.

Isro said they expected the L1 band to be introduced in 2024-25. Once that happens, mobile device makers say they will be able to equip even 4G phones with NavIC. "A lot will depend

on when Isro launches these satellites which support only L5 and S bands, but will also now support L1. We expect that it will take 5-6 months for the new satellites to stabilise. That is why January 2025 is a reasonable time frame. We can do it even before, provided ISRO has satellites with the L1 band up and running earlier," says a senior executive of a mobile company.

As for the cost of embedding smart phones with NavIC, some mobile device makers say that it would be less than \$1 initially, and with larger volumes, it will come down to a few cents.

But not all share this view. A Samsung representative at the meeting argued that in addition to the chip set, NavIC support requires antenna, filters and related radio frequency components, which would add to the cost, as hardware design changes are also required, along with additional investment to support devices specific to India. Besides, he said, companies have already prepared for models to be launched in 2024.

A representative of Oppo said while no research and development and design will be needed for the L1 band, additional R&D will be required for the L5 band, adding to the cost. The company said that it can plan better if specific bands are designated

for NavIC, but added that upgrading old mobile phones for NavIC support would be a challenge. It suggested that the technical challenges, if any, should be fixed by Isro's NavIC team.

However, representatives from Isro clarified that the mandate will apply only to new devices. They added that they wanted mobile devices being marketed in India to support NavIC and were not specifying any band.

Chip design companies, however, say that since their chipsets already support NavIC, there should not be any issue. For instance, most of Qualcomm's chipsets have been supporting NavIC since 2020. But the devices using these chipsets would require radio frequency support for the L5 band to enable NavIC. The company has been working with ISRO for the past two years to enable NavIC on their chip sets.

Representatives of Taiwanese chip design maker Mediatek pointed out that in the next two years, 80 per cent of phones will be on 5G. They said that all the chipsets of the company support NavIC on 5G, with certain additional hardware and some cost enhancement. Further, the L1 band is required to support 4G devices. They also said GPS is not supported by feature phones even today.