India To Build Independent Satellite Navigation System

July 6 2006

ISRO officials met with industry representatives Tuesday to discuss the Indian government's plan to build an independent satellite navigation system using home-grown components. The project, called the Indian Regional Navigation System, will be implemented over the next five or six years and will consist of a constellation of seven or eight satellites, as well as a large ground segment.

All of the IRNS will be under Indian control, ISRO officials said, and the space and ground segments and user receivers will be built in India.

The meeting, organized by ISRO chairman G. Madhavan Nair, presented opportunities for industry to participate in research, manufacturing and software development for the system.

Nair told attendees - who represented about 50 companies - that Position, Navigation and Timing services constitute a vital economic component provided by global-positioning satellites. With small hand-held receivers helping to determine the user's position anywhere in the world, such services soon will become as ubiquitous as mobile phones.

Nair, who also serves as India's secretary of space, said satellite-based PNT service has emerged as an important space business area, involving applications such as mobile telephones, surface transport, intelligent highway systems, maritime and rail transport, oil and gas production, agriculture and fisheries, survey and marine engineering, science, electricity networks and leisure.

It also constitutes one of the main components of the Communication, Navigation and Surveillance/Air Traffic Management system that has been adopted by the International Civil Aviation Organization for worldwide implementation.

When completed, the CNS/ATM system will provide seamless navigation services across geographical boundaries and eventually will replace different types of ground-based navigation, ISRO said in a news release.

India's Department of Space serves as the lead agency for all matters connected with satellite navigation, and ISRO/DOS has identified satellite-based navigation as an important focus area for investment under the nation's 11th Five Year Plan.

ISRO also is developing a satellite-based navigation system for civil aviation with the Aviation Authority of India. Called GAGAN, the system consists of a space segment and a ground segment.

The space segment will be a dual frequency (L1 & L5) GPS-compatible payload on India's GSAT-4. The ground segment consists of eight Indian Reference Stations, a master control center, a land uplink station and associated navigation software and communication links.