

[News](#) » [National](#)

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Indian firms to supply parts for billion-dollar telescope

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An artist's rendition of the Thirty Meter Telescope.

Several Indian companies are gearing up to play a major role in the construction of the \$ 1.2 billion Thirty Metre Telescope, which will be the world's most advanced ground-based observatory that will be operating in optical and mid-infrared wavelengths.

The Indian companies will be supplying high-end components such as edge sensors, actuators, segment support assemblies and provide services such as polishing of the mirror segments, and software to control the operations of the telescope, the mirror, and telescope dome, its Project Manager Gary Sanders told newsmen here at the end of a meeting of the Project's Governing Board.

Edge sensors and actuators, in particular, would play a key role in the working of the telescope. Since the primary mirror of the telescope would be made of an array of 492 identical mirror segments, the main challenge in its working would be to ensure that the segments remained aligned properly all the time. The edge sensors and the actuators would help in this task.

Work on producing prototypes of these have already been initiated. While Pondicherry-based General Optics Asia Limited [GOAL] has been asked to produce 25 prototype edge sensors,

Avasarala Technologies of Bangalore, has been engaged to produce 20 prototype actuators, Dr. Sanders said.

Programme Director for the India component of the mega science project, Eswar Reddy noted that Indian companies have been selected following a very stringent process, said the telescope would be 81 times more sensitive and resolve objects by a factor of 3 times better than the largest ground-based telescopes that are available at present across the world.

“The unprecedented light gathering capability and angular resolution of the telescope is expected to help shed new light on many unsolved and challenging problems in astronomy and astrophysics”.

The telescope is being constructed by a consortium consisting of US, China, Japan, Canada and India. India is making a contribution of 10 per cent – 70 per cent of it in kind and 30 per cent in cash.

India presently has a status of an observer and it is in the process of becoming a permanent member. A note for approval of the Union Cabinet in this regard is currently under preparation. Indian funding will be done through the Department of Science and Technology and the Department of Atomic Energy.