

Giga Mesh

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In news—Astrome, a women-led startup and the Department of Telecommunication have signed a contract the “GigaMesh Network Solution” pilot project with 15 Indian villages.

What is GigaMesh?

- It is a **network solution that wirelessly provides fibre-like backhaul capacity** and **paves the road for 5G**.
- **GigaMesh is world’s first multi-beam E-band Radio that is able to communicate from one tower to multiple towers simultaneously.**
- **A single GigaMesh device can provide up to forty links with 2+ Gbps capacity,** communicating up to a range of ten kilometres.
- This innovative **wireless product gives fibre like bandwidth at fraction of cost of fibre** to help telecom operators deliver reliable low-cost internet services to suburban and rural areas.
- With India’s huge population in the rural segment, Astrome can **help improve domestic internet connectivity.**
- The solution has been **developed by Astrome, a deep-tech startup expediting the implementation of 5G and rural telecommunications infrastructure** through its patented **millimetre wave E-band radios** and satellite communication solutions.
- Under the contract, **plans are afloat to scale the activity to more rural parts of India** on the basis of the pilot.
- **The startup is supported by AI & Robotics Technology Park (ARTPARK), the Technology Innovation Hub (TIH) at the Indian Institute of Science (IISc), which aims to chart the future for millimetre wave wireless communication on Earth and in space.**
- **Astome is also supported by DST-ABI Woman Startup**

Program of the Department of Science and Technology (DST), Government of India proved their millimeter-wave multi-beam technology in the lab in 2018, for which the **company has been granted a patent in India and US.**

- Major original equipment manufacturers (OEMs) like Ericsson, Siklu, Huawei and NEC have developed E-band products.
- **While all of these products can only do point-to-point communication**, requiring a large number of devices which increases the cost of deployment.
- **However, Gigamesh features multiple point-to-point communication in E-Band**, lowering cost and is driven by software to make it easy to deploy, maintain and repair remotely.
- The GigaMesh **packs 6 Point-to-Point E-band radios in one**, thereby distributing the cost of the device over multiple links and hence reduces capital expenditure.
- The radio provides long-range and multi-Gbps data throughput at each link.
- **Features like automatic link alignment, dynamic power allocation between links**, and remote link formation help operators achieve significant operating expenditure cost reduction.

ARTPARK-

- **It is a not-for-profit foundation promoted by the Indian Institute of Science (IISc)**, Bengaluru, with support from the AI Foundry in a public-private collaborative model to promote technology innovations in artificial intelligence (AI) & Robotics.
- It is supported with **seed funding from the Department of Science & Technology (DST), Govt. of India**, under the **National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)** and from the **Government of Karnataka.**
- It is designed to bring about a collaborative consortium of partners from industry, academia, and government

bodies.

- **Besides this, AI researchers at ARTPARK, in collaboration with HealthTech startup Niramai Health Analytix and the Indian Institute of Science (IISc), have also developed XraySetu, a platform that can interpret chest X-rays with 98.86 % sensitivity toward COVID-19 within few seconds.**
- ARTPARK also organised the ARTPARK Innovation Summit that brought industry, academia and the government under one roof to discuss important topics such as how to create next-generation connectivity in rural areas, health AI for Bharat, connecting Bharat with Drones, inclusive learning for the future and building AI and research ecosystem.
- Apart from this, they **participated in an unmanned ground vehicle (UGV) experiment of the Indian Army** and showcased **India's only Legged Robotic Dog.**