ASTROME

Company Overview

2022

ASTROME AND 5G NETWORKS

Growth in the traditional Telecom network is unable to keep pace with the exponential increase in demand for bandwidth from corporate and consumers. Low speed microwave links, the slow to expand fiber infrastructure and the expensive previous generation satellite based technologies cannot usher in the rapid deployment of 5G.

Millimeter wave wireless technology removes these bottlenecks and Astrome has a demonstrated solution that can deliver much higher bandwidths, at affordable costs that can help roll out 5G at a rapid scale.

Astrome's patented millimeter-wave wireless technology is being implemented in three products:

- **GigaMesh** is the World's first Multi-beam E-band radio that distributes multi-Gbps backbone capacity from a fibre connected cell-tower to multiple surrounding cell-towers, wirelessly.

- **GigaSat** is a satellite user terminal that is capable of connecting to multiple satellites simultaneously through a flat panel transceiver.

- **SpaceNet** is a W-band satellite payload suitable for delivering up 180Gbps from a single mini-satellite.

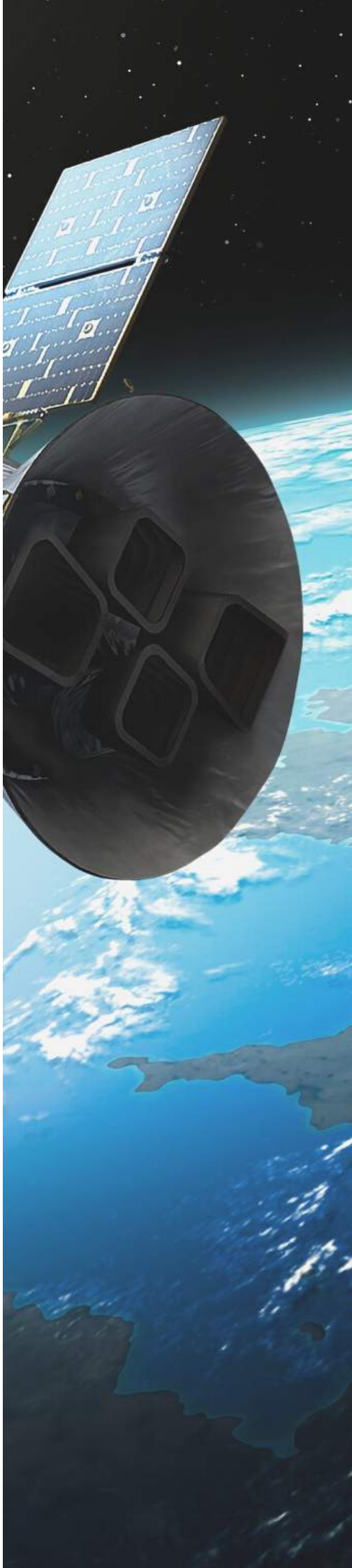
THE COMPANY

Started by Dr Prasad Bhat and Dr Neha Satak, alumni of Indian Institute of Science (IISc) in Bangalore and Texas A&M University, Astrome was incubated at IISc in 2015 with a modest seed fund from the institute. The company has pioneered research and development of millimeter-wave wireless technologies for both terrestrial and satellite networks. In a short span of time Astrome has been recognized by Cisco, the United States-India Science and Technology Endowment Fund (USISTEF) and International Telecom Union (ITU) as the Most Scalable Conectivity Solution. Astrome won two contracts from the Indian Defense establishment for its GigaMesh and GigaSat products.

MISSION AND VISION

Astrome's goal is to be a leading player in millimeter-wave technology by creating an ecosystem of manufacturers, suppliers, and operators through licensing and collaborations in terrestrial wireless, satellite communications, and customer premise equipment markets.

Astrome also aims to research and innovate cutting edge millimeter wave communication technology to enable satellite broadband internet service to all developing countries.



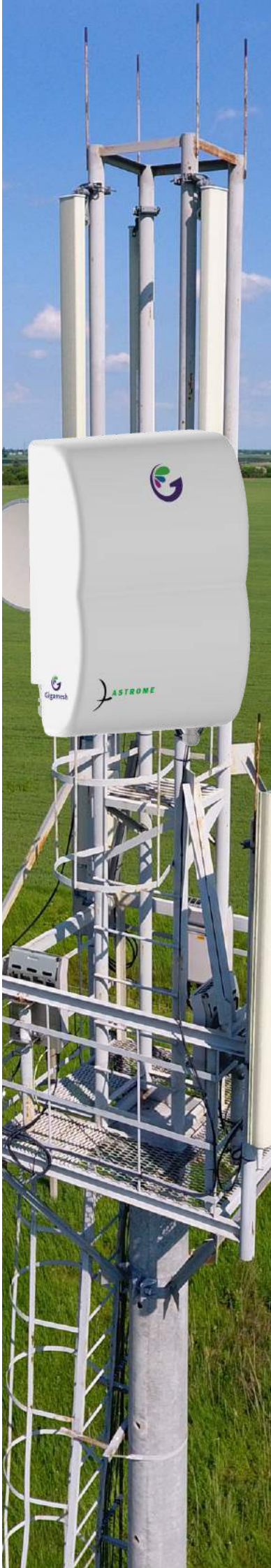
GIGAMESH

GigaMesh is the first E-band radio that features Multiple-Point-to-Point (Multi-P2P) communication, making it the most efficient way to distribute fiber capacity wirelessly. Multiple-Point-to-Point (Multi-P2P) communication means that a GigaMesh radio can simultaneously communicate to multiple surrounding GigaMesh radios while maintaining the multi-Gbps data throughput to each surrounding radio. This feature helps GigaMesh deliver the lowest CapEx cost per link as compared to other E-band products.

Owing to the power of Software over Hardware in the core technology, GigaMesh automates antenna alignment in initial deployment, realignment of link when a fault occurs and formation of link to new towers, hence significantly reducing the OPEX cost. GigaMesh has inbuilt intelligence to support load balancing between links in a Mesh topology.

GigaMesh is ideal for Telecom operators wanting to reduce network congestion and making their backhaul network ready for 5G deployment. GigaMesh provides multi-Gbps mesh connectivity to 5G sites at a fraction of cost of fibre. It reduces time-to-market for deployment of 5G services and fits as fronthaul, midhaul and backhaul.

Internet Service Providers can use GigaMesh to extend the range of their network and deliver services to new customers in new areas.



GIGASAT

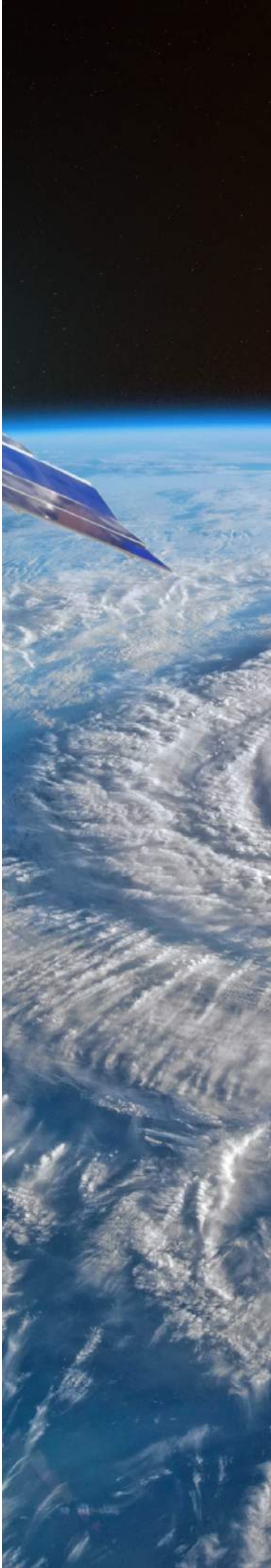
Astrome is developing a Flat Panel Satellite Antenna (FPSA) that focuses initially on mobility services such as Maritime, Aeronautical and Land-mobile applications. Astrome's software-controlled, beam-forming and beam-steering technology implemented in its FPSA is able to create multiple steerable beams and dynamically select frequencies for connecting to a satellite in its sight. This is a key feature that differentiates Astrome from other FPSA suppliers. Astrome is building its first product to operate in the widely used C and Ku-band frequencies. The scalable architecture of the FPSA can be easily modified for the enterprise and consumer broadband market in Ku and Ka-band frequencies, and in V/W-band for its Satellite Payload customers.

CUSTOMISED GROUND SOLUTIONS

We customize the technical specifications of the satellite user terminal for your Constellation/GEO satellites to suit your customer needs. We comply with DVB-S2 and DVB-S2X standards. We can also customize the protocols to get the best performance.

LEO/MEO CONSTELLATION DESIGN

Astrome's key expertise is in constellation design, creating the business plan, and realising the payload and ground terminals. We provide end to end Support to design, apply for regulatory clearance, realise the constellation with the help of partners.



SPACENET

Astrome is developing a fully software-defined payload technology in V/W-band for Low-Earth-Orbit (LEO) satellite constellations. The payload is extremely efficient in managing power and thermal budget of the spacecraft with an ability to deliver 180+ Gbps capacity per satellite. Astrome expects to form partnerships with LEO/MEO/GEO operators to further tune the technology and customize the product design to deliver maximum throughput to customer business.

FEATURES

- ITU Filing support for obtaining Orbital Slots
- Very high throughput Satellite payloads
- High-bandwidth User terminal
- Satellite bus design with an established supply chain
- Network design for maximizing usable capacity and revenue

CONTACT US

Neha Satak
CEO
+91 99169 12037
+1 (760) 880-1557
neha@astrome.co

Venkatesh Kumaran
President
+91 98805 10027
+1 (858) 333-5025
venki@astrome.co

ASTROME TECHNOLOGIES