

Digital Communication Innovation Square (DCIS) under Champion Services Sector Scheme (CSSS)

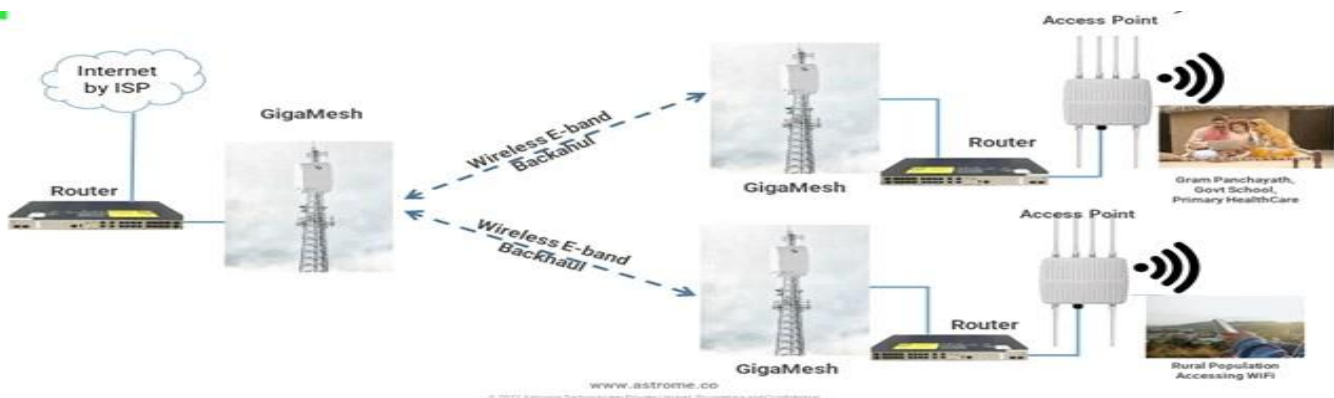
17 GRANTEES SHORTLISTED



Astrome Technologies Private Limited



Astrome has pioneered the World's first Multi-beam E-band product, GigaMesh that packs Multiple Point-to-Point E-band radios in one thereby distributing the cost of the device over multiple links. The underlying technology is our patented millimeter wave multi-beam technology which offers powerful features like automatic link alignment, dynamic power allocation between links and remote link formation to help operators achieve significant OpEx cost reduction as well. The product is ideal for rapid deployment of rural broadband and 5G.



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CDSpace Robotics Private Limited



We have developed ISR (Intelligence Surveillance and Reconnaissance) Camera payload for UAV (unmanned Aerial vehicle) application. With this project, we have achieved TRL 8 from TRL 6. The camera payload is gimbal stabilised for use with UAV. The stabilization helps get clear camera feed in a high vibration environment like onboard UAV. The payload has capacity to zoom upto 30x and can provide Full HD (1080p) video. The tracking is also implemented and a demonstration can be found at <https://youtu.be/acr3EUSDAxU>

We developed the complete stability and augmentation system, video encoding and target tracking for the gimbal system. The critical technological challenges involved in developing a gimbal payload for UAV

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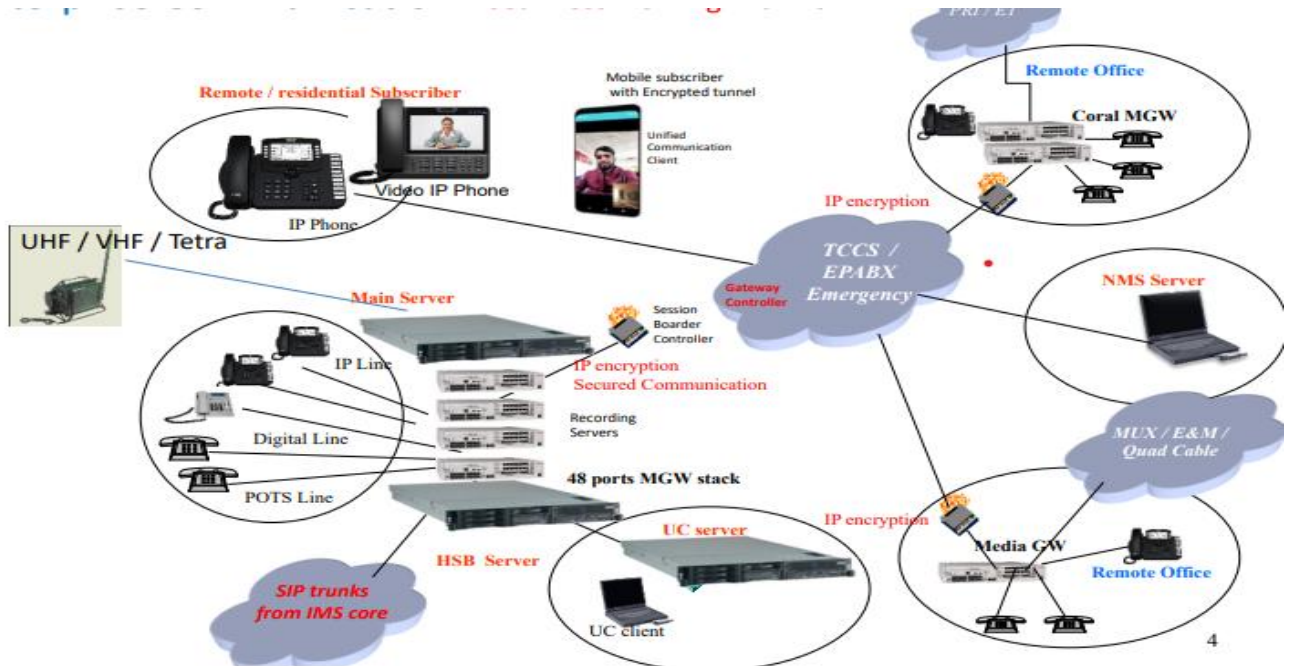
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Coral Telecom Private Limited



Coral Telecom Limited is a leading design and manufacturing company that provide “enterprise communication solutions” with focus on applications for Railways, Metro, Mines, Défense and other similar private communication networks.

Private 5G would be a high bandwidth low latency wireless network that will become the backbone for Industry 4.0. It would find applications in almost every segment and will have innumerable use cases in Ships, Submarines, Disaster management, Railways etc

Elements of Converged Enterprise Network

- Radio Access Network
- Antenna Mounting Structure
- Application and Voice Switching
- Network Management System
- Backhaul Radio
- CPE Device

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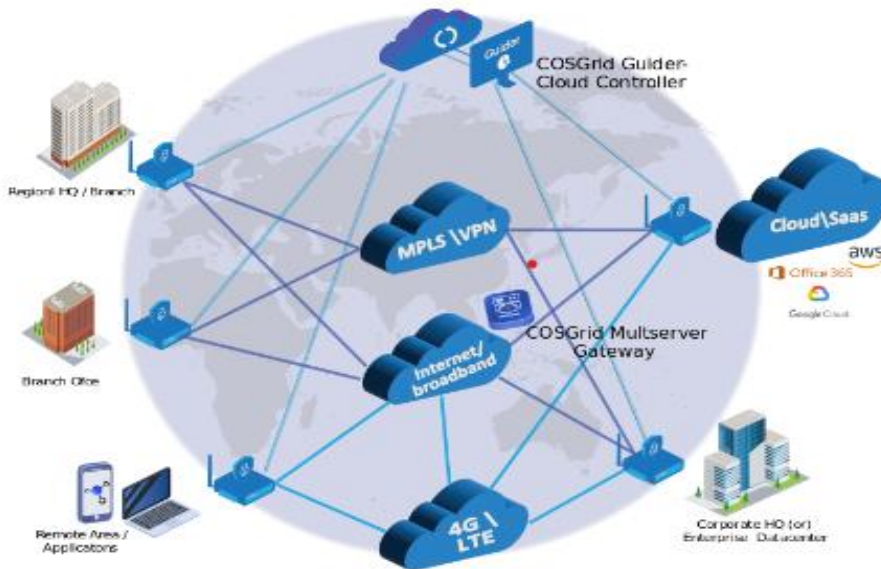
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COSGrid Systems Private Limited



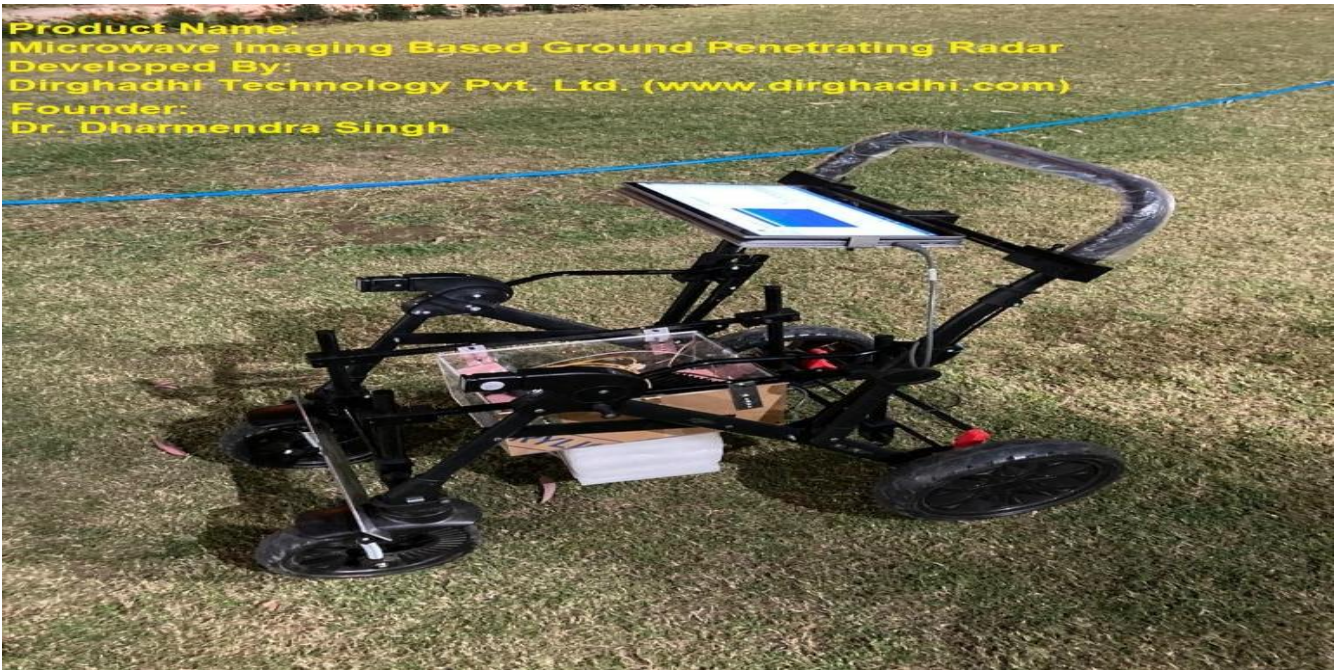
COSGrid Networks provide software-defined network platform for seamless and secure WAN connectivity between branches, WFH users, Cloud and IoT. Benefits include secure network access anywhere, Non-Disrupted Transactions, Superior Customer and User Experience, Easy and Centralised Monitoring and control, intelligent threat detection. The features include Resilient & Responsive Connectivity, Automated & Converged Security and User Experience & Easy Ops.

COSGrid RefleX RPN is a smart VPN client in Desktop and mobile form factors, which securely authenticate the user with enterprise WAN Systems and seamlessly connect the device or the enterprise WAN or the Cloud through reliable, high performance and encrypted tunnels.

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Dirghadhi Technology Private Limited



- Handheld Man Portable
- Ability to detect various metallic and non-metallic targets up to a depth up to 2 m approx.
- It can also classify various buried targets.
- Useful for Geophysical /horticulture/defense etc application

The product is completely hardware and software based which needs the fund for development of Prototype, so it can be go to the users for demo purpose. Release has helped a lot for developing the complete system.

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Elena Geo Systems Private Limited

Elena focuses on working in NavIC domain and has the entire range of products from antenna to processor to equipment to systems, that an user will require to use NavIC.



The objective of our project was to develop Timing Devices that would function using the Timing reference that is available in the NavIC / IRNSS signals. These can be directly converted to IST. Since coverage of NavIC / IRNSS is continuous without any break, unlike GPS, the timing circuit will be very simple and would not need a separate internal clock. The cost of these products was also expected to be very less.

Contracts executed during Scheme.

- Supplied Reference stations to L&T for DGNSS project of Shipping Ministry.
- Supplied IRNSS receiver and Map Display system to BEL, Machilipatnam.
- Supply of marine receiver and Map Display System for Goa Shipyard under progress.
- Supplied IVTS to Army units in Jaipur, Bangalore.
- Revenue Grown from 72 lakhs to about 400 Lakhs.
- All POs received after project started.

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Evelabs Technologies Private Limited



Evelabs work on wireless infusion monitoring and controller for hospitals Their pilot and homecare. product dripo is a wireless infusion monitor that can be clamped monitor to IV set to drip rates. It sends information and alerts on the status of drip to nursing station enabling nurses to monitor IV drips maintaining safety and efficacy.

Infusion Therapy is the most common procedure for treatment in 75 hospitals with more than per cent of patients receiving it. Most of the IV infusions require constant monitoring are error prone leading to patient morbidity

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Innogle Technologies Private Limited

A women Led startup - Innogle, bootstrapped with 3.5 crores, started in 2019 and with 6 Years of research behind it, brings to the market “An Award winning Ocean Deeptech company , selected as one of the Best 5G usecase by DoT .



Innogle , Presenting Kadalcompass Device providing an Innovative solution for Reducing by-catch and carbon footprints for the fishing boat owners, also helping save Millions of lives at sea and mine granular data to collaborate and fine tune data gathered by satellite for the Government agencies towards better managing the Ocean wealth about climate action , Cleantech and enabling a Digital Ocean using an emerging technology of 5G to create Digital Ocean integrated with IoUT(Internet of Underwater things) and AI vision, to provide comprehensive solution to sector of fishing Industry, Coast Guards and For Ocean Researchers.

“By implementing this solution 14 Million fishermen will be benefited in india by Availing the profitable fishing and Life safety on the ocean in real time”.

“Our mission is to create a 5G Integrated digital ocean and digital under water solution and establishing two-way communication by creating intra-net between the vessels using 5G enabled Kadalcompass device and which will also act as Communication switch.

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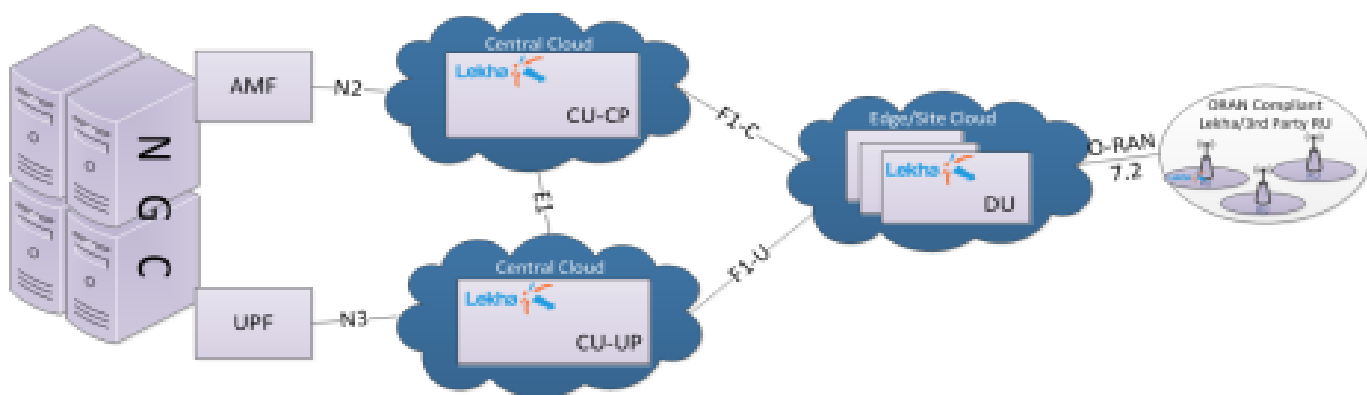
Lekha Wireless Solution Private Limited

Lekha's O-CU and O-DU are software components which implement the ORAN virtualised CU and DU functionality for 5G deployments.

Lekha's disaggregated ORAN and 3GPP compliant solution includes the Central Unit (CU) and the Distributed Unit (DU).

The CU and DU are Open and virtualized RAN solutions which can run on COTS general purpose hardware. Open interfaces are implemented to interwork with other third party RAN and Core components.

The solution works with Lekha's High-PHY component or Intel FlexRAN. The solution can work as a containerized network function or in a bare-metal environment.



Features Platform Options

- NR release 16 compliant
- Support for 7.2x and Split 2
- Subcarrier Spacing - 15kHz, 30kHz, 60kHz ➤ Upto 100MHz Bandwidth – FR1
- Modulation Schemes – Upto QAM256 ➤ Upto 8 layers
- Duplexing Mode - FDD/TDD
- Support for SA
- X86 Baremetal Processor.
- Containerized to run on virtualized/cloud

Lekha Wireless is a technology solutions company with focus in wireless communication. We have portfolio of products and IPs for 3GPP based and proprietary wireless links. We work with OEMs and operators for deploying wireless communication networks using our HW and SW solutions.

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Log 9 Materials Scientific Private Limited



High Power batteries (Zappup) for Telecom Sectors:

Leveraging its nanotechnology competencies, Log 9 has developed an advanced high power battery technology (ZappUp) which facilitates high charging/discharging rates and offers an elongated battery life of > 15 years (where a conventional battery offers 3-4 years of life). The present solution is capable of providing an extended cycle life (>15000), low maintenance and wide range of operating temperature making it desirable for several high-power applications such as telecom sector, Data Centres, Industrial Power Backups, Business Parks, Military etc. These battery solutions are the best-in class lithium-ion storage systems available in the market, for stationary applications.

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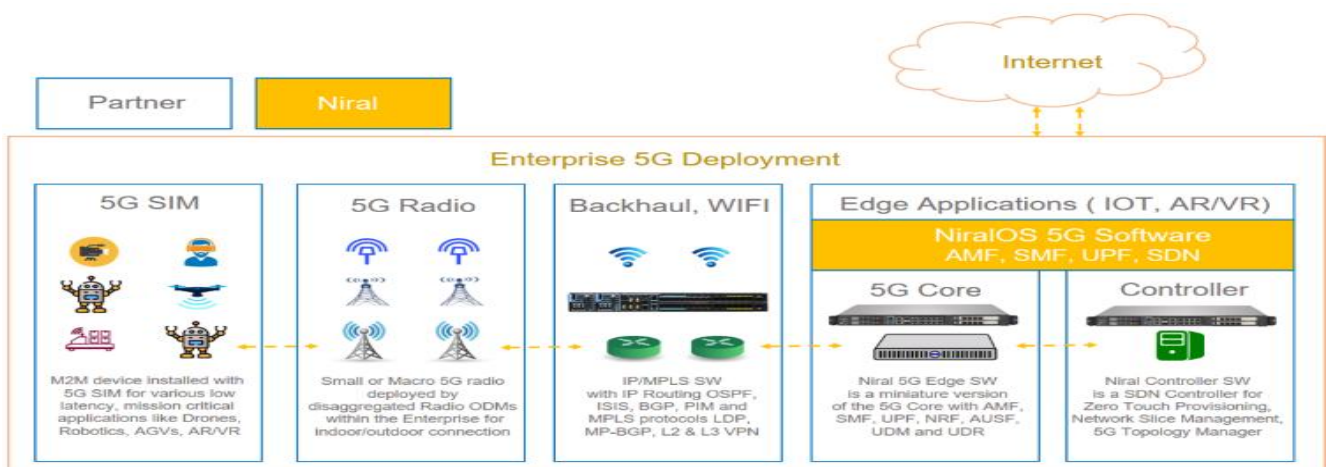
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Niral Networks Private Limited

Niral Networks cloud-native 5G & Edge solution for Enterprise is targeting the USD 517 Billion private 5G + Edge market for faster, low latency, reliable connectivity with mobility that would optimize the use of emerging technologies like IoT, Drone, Robotics, AI/ML, AR/VR, thereby redefining the way people live and work in oil & gas, mining, ports, manufacturing. Niral Networks aims to provide private 5G & Edge platform as a Service (5GaaS) to redefine the future of Enterprise Connectivity by making private 5G as ubiquitous as WIFI.



NiralOS is a Networking Operating System (NOS) for Private 5G & Edge with the following components:

- 1) Niral Private 5G Core** - Cloud-Native Private 5G packet core software for Mobility, Authentication, Session and Policy Management within an Enterprise. Contains 5G Network Functions - AMF, SMF, AUSF, NRF, UPF PCF, UDM. Niral 5G core also provides a compact User Plane Function (UPF) for local breakout within Enterprise when integrated with TSP's centralized 5G Core.
- 2) Niral Edge Cloud** - Kubernetes and Virtualized infrastructure to create a Mobile Edge Cloud (MEC) using existing commodity servers and open APIs to host 3rd party applications like AR/VR, Robotics, Drones, AI/ML, Video Analytics for low latency, high bandwidth and privacy.
- 3) Niral Centralized Controller** - Centralized management, orchestration, zero touch provisioning and monitoring of multi site Private 5G and Edge Cloud. The controller can be hosted in the public or telco cloud to centrally manage and monitor multiple private 5G networks.

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Nunam Technologies Private Limited

At Nunam, we enable a unique path to reuse end of life EV batteries introducing circular economy in battery ecosystem and decarbonize the telecom energy sector. We envision to provide sustainable and cost effective clean energy solutions for smooth transition towards green telecom. Reuse battery can last more than 5 years enabling cost and carbon footprint reduction by 30% to 50%. Each battery goes through a nine step grading and testing mechanism developed indigenously by Nunam over 3 years of extensive R&D. We comply with global recommendations such as UL 1974 and tested at CPRI, Bengaluru.

NESS



Product Showcase (Single module)



Model	UF414
Capacity	4.5 kWh
Nominal Voltage	48V DC
Dimensions	440mm x 600mm x 150mm
Weight	45Kg
Cycle life	3000 @80% DoD
Parallel connection	Yes
Cloud connectivity	Yes

Mounting options



Wall Mount



Rack Mount

Nunam have deployed our batteries in a BSNL's tower site in Jayanagar, Bengaluru. The tower is a hub site and the installed battery size is 9kWh. Each of the batteries are powered by Nunam's cloud monitoring platform and can raise alerts and warnings for safety.

The pilot was instrumental in helping us understand the realities of tower operations and helped us develop new features that can ease operation for the ground staff.

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Prayogik Technologies Private Limited



Thermolectric Module Static generator DC Power (TMSG-DC) is a highly reliable remote power supply unit working with natural gas or propane. TMSG-DC-generates electrical power converting directly heat energy into electricity. It does not contain moving parts, has an extremely long lifetime and requires minimal service. TMSG-DC is meant for use as an electric direct current (DC) power and heat source as part of an autonomous power supply source (APSS). As the core part of TMSG-DC medium temperature thermolectric module is applied. Best efficiency and reliability, based on modern technologies and know-how provide ultimate parameters. TMSG runs unattended within one year in different climatic zones at an air temperature from -50°C to $+60^{\circ}\text{C}$ and relative air humidity up to 98%. TMSG works in Major Sector like Oil and Gas (converting LPG/CNG to Electricity), Defense Sector (Hybrid with Solar from -40°C to $+70^{\circ}\text{C}$ Celsius), Agriculture Sector (converting biomass to electricity), Aerospace Sector (using radioisotopes to electricity for space exploration), Health Sector (Flexible TEG converting body heat to electricity for Biosensors) , Geothermal Energy (Coal Mines waste heat to electricity) and any Off Grid Sector.

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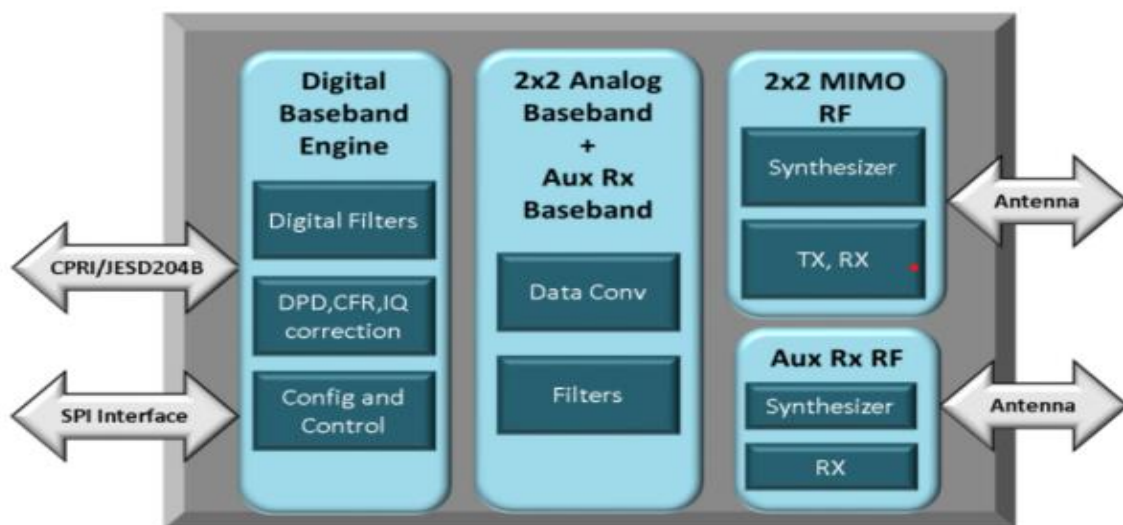
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Signalchip Innovation Private Limited

Signalchip is an Indian Fab-less semiconductor company with its primary focus in the domain of wireless communication. It was founded with the vision to be a World-Class Silicon Systems Development Company with highly motivated people, cutting edge technologies and differentiated products. Led by experts in the semiconductor and wireless domains, Signalchip has been developing chipsets/systems in the wireless domain to compete with the high performing commercial devices world over.



Signalchip is an Indian fabless semiconductor company that has built technology IPs and chipsets from the Baseband processing SoCs to Mixed Signal Devices to RF front ends and has created India's first chipset for 5G NR, 4G LTE and 3G WCDMA standards. It has invested its time and resources into developing and owning almost all the core intellectual property. It has taped out four semiconductor chips for 5G NR, 4G LTE and 3G WCDMA modems in New Delhi, India, further details in the Information Center of the company website. It provides the highest degree of indigenization, customizability, security and ownership at all levels of the communication stack, right from application to RF physical front end at the chip level

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U4U Sociotech Private Limited

U4U is a technology solution company based in Pune. The primary aim is to create technology solution for the betterment of individuals, society, nation and the whole world.



A device similar to Dash camera with inbuilt edge computing, 4g, GPS, G sensors etc which can be mounted on any vehicle which enable any one to report the different imported road data's like traffic violation, garbage, road conditions, etc.

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Velmenni Research and Development Private Limited



Velmenni had a product prototype supported by a robust technology and capital expenditure was required to upgrade the technology to deliver applications as per customer feedbacks and create a product around it. We propose the DCIS team to develop a Light Communication based wireless backhaul P2P link which can deliver 1 Gbps data rates over distance of up-to 1 KM. It required a lot of capex in electronics components, PCB design & manufacturing, product packaging and also optical lenses design & development. These tech enhancements and a robust product was required to make the solution commercially deployable and create value for the telecom network ecosystem and other use cases in varied industry domains.

Velmenni has developed, Point to Point wireless communication links using light spectrum to provide fibre-like speed wirelessly. Our product can be used to solve backhaul (4G/5G) and last mile connectivity (FTTx) challenges in RF congested environments and in areas where laying down fibre cable is challenging or not feasible. We can extend the fiber network wirelessly.

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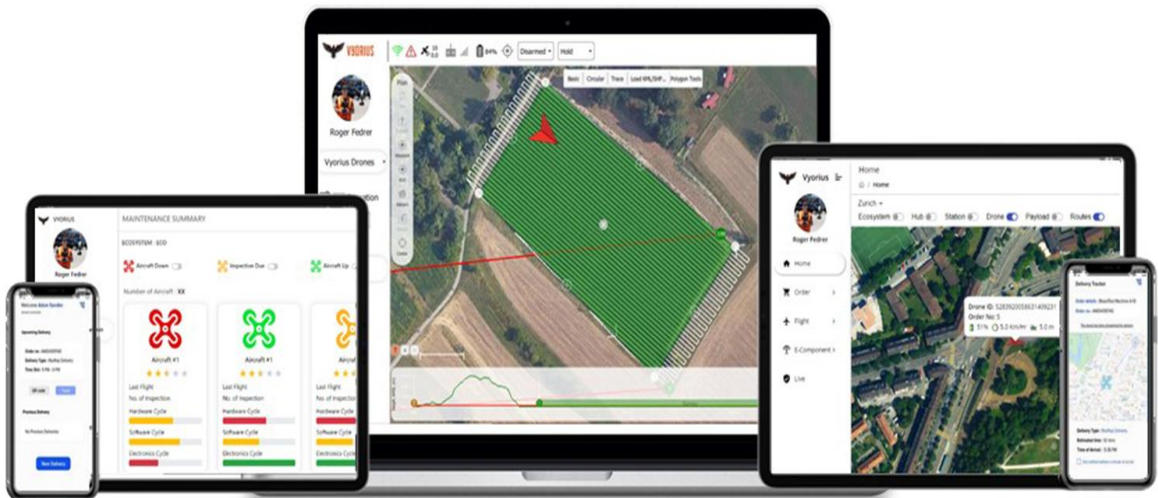
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Vyorius Drones Private Limited

Vyorius is a SaaS platform for mobile unmanned robots, providing direct plug and play while bringing all of the command, control, supervision, management, asset tracking and maintenance tools in one place.



Vyorius is creating an AI enabled backend digital infrastructure for unmanned mobile robotic systems. We are bringing all the control, commanding, remote supervision, tracking, management, video streaming and analysis tools to one single platform. The solution can be utilized in applications like drone delivery, mobility, agriculture, surveying and BVLOS operations.

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