

Mobile IoT networks for Industries of the future

4G for Industry 4.0 is about the digital transformation of the industrial infrastructure using IoT. Let's take a look at how implementing VNL's Network in One Box (NiOB) based mobile broadband network for Industrial IoT can change the way we mine, manufacture, operate, power & service.



Private and enterprise connectivity depends on wires and IT-based wireless solutions, which are not robust, reliable, or secure. VNL's NiOB based mobile broadband network for industrial IoT applications can help realise a truly connected industry and open up new business models for wireless internet service providers (WISP).

Overview

Over the last few years, the industrial sector has changed immensely by engaging in a steady revamp by leveraging ICTs. Industry 4.0 revolution is about implementing a reliable communication layer capable of dealing with an increase in the number of assets, volume, variety of information and improving reaction times.

A reliable high-speed mobile broadband communication network enables the "Factories of the Future" by accelerating manufacturing efficiency. It provides the unified communication platform needed to disrupt new business models. It overcomes the shortcomings of the current IT communication technologies.

Wireless solutions such as Wi-Fi have failed to meet the expected requirements of industrial applications. They are well suited for day-to-day communications but are limited in reliability, security, predictability, mobility and capacity for critical connectivity. For example, at mines, and airports the requirement of the area to be covered, interferences caused by buildings, keeping a constant connection while the vehicles are moving - there is no way the Wi-Fi can ensure a QoS for a consistent voice, video and data.

Considering various IoT use cases, it is evident that communication for the manufacturing industry is one of the most demanding verticals regarding ultra-low latencies, ultra-high availability and reliable coverage in harsh environments with ultra-low operational costs. The current technologies clearly lack these capabilities.

Why do you need a 4G/LTE based Mobile Broadband Network for Industrial IoT?

Public networks do not readily support the use cases of organisations that can significantly benefit from private LTE NiOB based Mobile Broadband Networks. Other than challenges like coverage and cost, control over their security is a big challenge that several industries face.

VNL's 3C Advantage

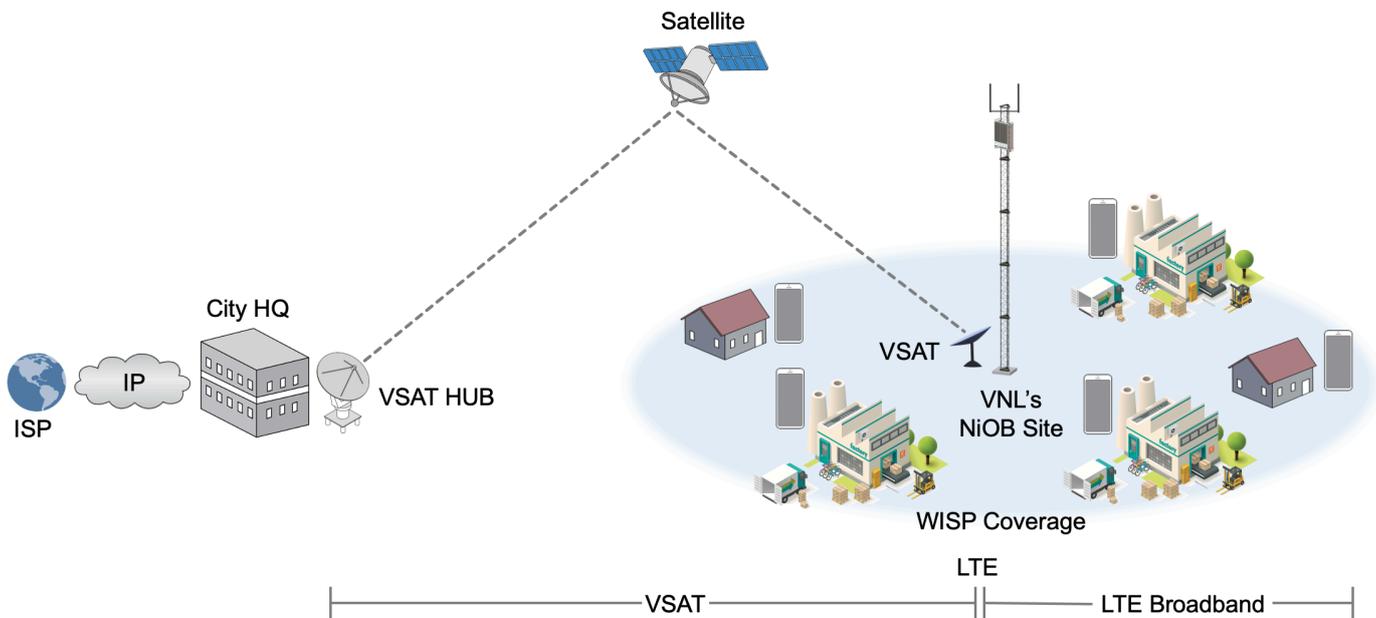
Industries and WISPs can leverage following advantages by deploying VNL's NiOB based private mobile broadband network:



Coverage: Industrial locations are often not covered well by public mobile networks. Installing own network guarantees coverage all around the facility - Outdoors and Indoors, where public networks may not exist or are not robust. e.g., factories, warehouses, power plants, mines or agricultural lands.



Capacity: Owning the mobile network gives the enterprises the ability to utilise full and exclusive use of available network capacity. They can configure uplink & downlink, set usage policies and upgrade RAN as per the specific needs.



Private Mobile Broadband Network Model on VSAT



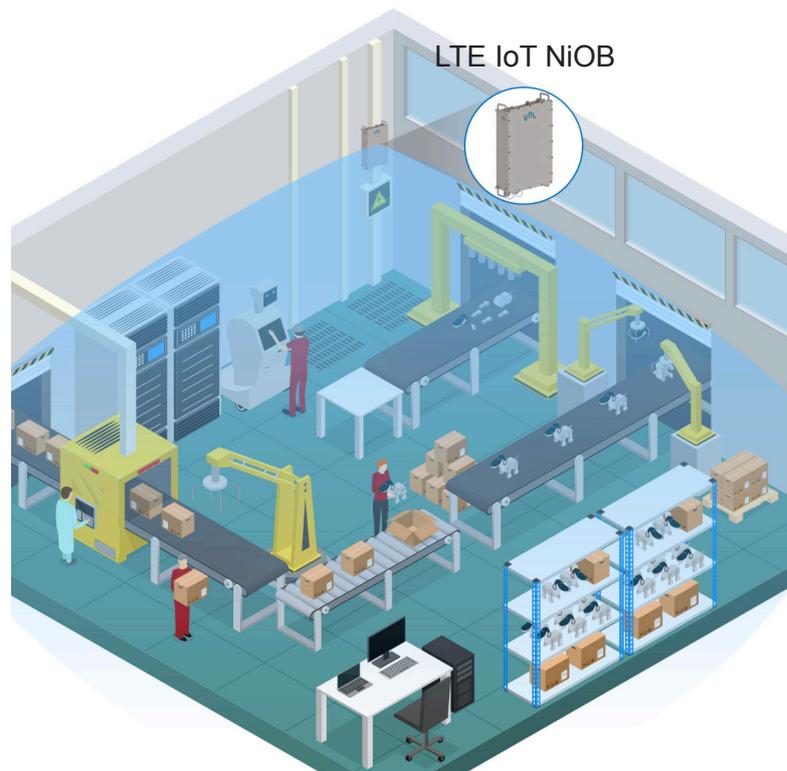
Control: Owning the network enables enterprises to determine the security of the sensitive data, which users connect, how resources are utilised and how the traffic is prioritised. Private Mobile Broadband Networks also let you optimise reliability and latency.

A strict synchronisation and a high degree of network reliability are required for industrial automation to be widely deployed in a manufacturing environment. VNL's 4G/LTE NiOB based Mobile Broadband Networks will enable enterprises into new levels of efficiency by automation, greater control and high levels of security of critical data.

Opportunity - Mobile Broadband Network for Industrial IoT

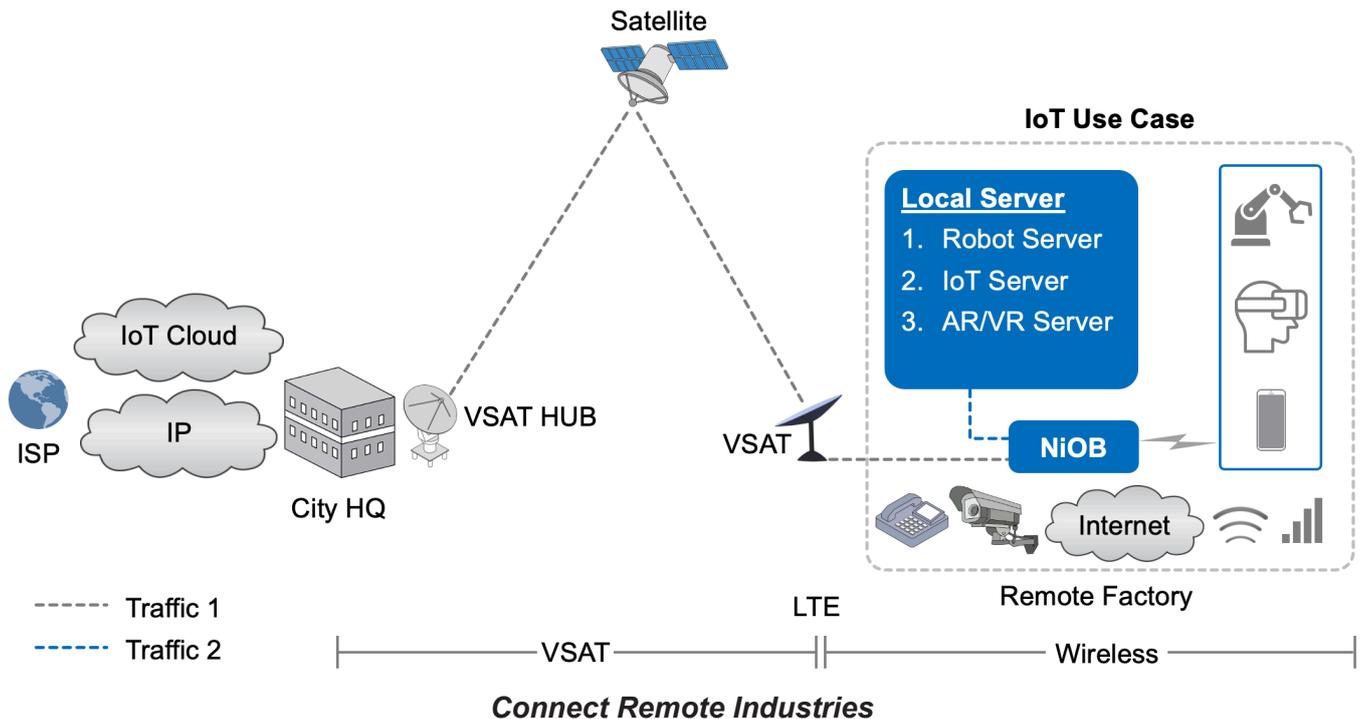
With VNL's NiOB based Mobile Broadband Networks, a new generation of wireless technology is unleashing an age of reliable, pervasive connectivity and awareness that fosters entirely new and more efficient modes of automated manufacturing, customer interaction and service delivery.

Several enterprises that have tried wireless technologies for critical connectivity, such as Wi-Fi, Wi-Fi MESH or Bluetooth (for shorter distances), have realised their limitations. At the same time, they are very well suited for business communications, but, are not designed and optimised for the reliable required for mission-critical communications. Security is also a concern with these easy to hack wireless technologies.



A futuristic manufacturing facility powered by VNL's Mobile Broadband Network.

IoT use case with Local break-out for Remote industries with VNL's Mobile Broadband Network



Industrial Automation Use Cases

- 1. Factory-floor robotics** - Wireless robots introduce greater flexibility and accuracy to reconfigure production lines.
- 2. Logistics and warehousing** - Pick-and-pack machines and automated shipping are some of the most sought-after solutions for Industry 4.0 application.
- 3. Monitor and control mission-critical infrastructure** - e.g. trains, electricity distribution grids and power plants.
- 4. Setup closed user group ad hoc networks** for situational awareness by public safety agencies during emergencies.
- 5. Automated machinery** for oil rigs, mining and agriculture
- 6. Port and airport automation**

Conclusion

VNL's carrier-grade, flexible and cost-optimised solutions and integrated Network in One Box (NiOB) are a new efficiency and productivity enabler for industries and disrupt the value chain.

NiOB based LTE based mobile broadband networks for Industry 4.0 is available now. They provide the coverage, capacity, control, security and agility that industries need to transform. They can handle the most demanding use cases as they develop.

VNL's LTE mobile broadband networks are the perfect solution for industries and WISPs to provide cost-effective remote access and enable new market verticals.

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