



# SMART MANUFACTURING

Tata Communications MOVE™ - Private Network

## Industry Overview

The manufacturing sector is undergoing significant change. Increasing global competition is putting pressure on prices and consumer demand is becoming increasingly dynamic. Companies are adopting Industry 4.0 ideas and concepts to improve efficiency, enhance productivity, streamline operations and enable new business models. To achieve these goals, you need a robust communication infrastructure to ensure that the benefits promised by the new technology can be realised.

5G delivers unique capabilities, allowing it to play a significant role in providing a platform to enable a multitude of use-cases. Tata Communications Smart Manufacturing solution uses private 5G network to develop the innovative business solutions required to support your digital transformation journey.

## Manufacturing Sector - Challenges

- **Inefficient production** - To remain competitive, you must produce relevant and better products at an increasingly fast pace. Given the operational complexity associated with this, it can be a struggle to balance these requirements
- **Cost** - You want to reduce the cost of production by digitising your sites, but it can be difficult for you and for your suppliers to define and implement a clear execution strategy
- **Increased supply chain complexity** - Due to the fragmentation of production globally, strong demand fluctuation and increasingly scarce resources, you can find it difficult to be as agile as you would like, while remaining integrated with your supply chain partners
- **Labour shortages** – You might well be struggling to find the right mix of skilled and unskilled labour to keep your operations running
- **Competitive pressures** - The rise of smart digital technologies has empowered established players as well as new entrants by lowering costs & barriers to entry which has led to increased competition

## Tata Communications MOVE™ - Private Network

An easy-to-manage, enterprise wireless connectivity solution. It delivers a robust and reliable private wireless network, with an associated digital ecosystem enablement platform to help you to achieve your digital transformation vision.

## Value Proposition

- **Automation and orchestration platform** to enable industrial applications
- **Unified view of operations** across global locations
- **Industry vertical knowledge** in solving sector specific challenges and needs
- **Collaboration centre** with 5G testbed for use case testing and evaluation
- **Multi-layer security** to protect device, network, and applications
- **Comprehensive service suite** comprising network planning, deployment & management services

## Smart Manufacturing Use Cases

USE CASE	DESCRIPTION	BENEFITS
Advanced predictive and preventive maintenance	Providing an accurate, real-time wear and tear status of a machine to perform predictive and preventative maintenance	<ul style="list-style-type: none"> <li>• Reduce downtime</li> <li>• Reduce spend on maintenance</li> <li>• Reduce machine replacement rate</li> </ul>
Precision monitoring & control	Real-time monitoring and control of robots / machines (e.g. change speed of process based on vibrations)	<ul style="list-style-type: none"> <li>• Reduce defects</li> <li>• Increase throughput and yield</li> </ul>
Augmented reality & remote expert	Using augmented reality headsets to guide workers and/or remote experts, via augmented display when carrying out maintenance	<ul style="list-style-type: none"> <li>• Reduce spend (and time) on maintenance and repair</li> <li>• Reduce spend on training</li> </ul>
Remote robot control	Controlling robotic machinery remotely for tasks in which human involvement may be hazardous	<ul style="list-style-type: none"> <li>• Health and safety</li> <li>• Increase throughput</li> </ul>
Automated Guided Vehicle	Co-ordinating vehicle control of AGVs (e.g. forklifts, pallet movers or tractors) in a more flexible way	<ul style="list-style-type: none"> <li>• Increase efficiency</li> <li>• Increase productivity</li> </ul>
Drone inspections	Using drones to perform tasks that may be difficult, dangerous or tedious for humans (e.g. inspecting hard-to-reach equipments, checking inventory)	<ul style="list-style-type: none"> <li>• Health and safety</li> <li>• Reducing spend (and time) on inspections</li> </ul>
Asset tracking	Connected equipments (e.g., tugboats) using private 5G network to track locations of assets and enable machine-to-machine communication	<ul style="list-style-type: none"> <li>• Real time location tracking</li> <li>• 24*7 visibility of assets</li> <li>• Optimal utilisation of resources</li> </ul>

### Way forward

With rapidly changing patterns of consumption, you need to expedite your journey towards digital transformation. Advanced digital capability is not only a competitive advantage, but a necessity. **Tata Communications Smart Manufacturing solution** delivers an cutting-edge digital transformation platform, specifically tailored to the operational requirements of your business.

Tata Communications leverages its vast experience as a global network provider to deliver a unified view of operations, covering all network visibility, connectivity and management requirements.

To collaborate with us or to learn about our smart manufacturing solutions and POCs, please email us at: [5Gnetwork@tatacommunications.com](mailto:5Gnetwork@tatacommunications.com)