5G MALAYSIA DEMONSTRATION PROJECTS

FREQUENTLY ASKED QUESTIONS

TM's Position on 5G

TM has been at the frontier of each telecommunication technology evolution of the nation. It is the communications backbone of Malaysia with the widest connectivity and convergence network and continues to expand its digital infrastructure to serve a more digital society and lifestyle, digital businesses and digital Government.

TM, as an integrated telco and the enabler of Malaysia's digital economy aspiration is certainly well-positioned to be in the lead towards the road to 5G, as it has charted a long and proven track record in nation-building with significant historic milestones as well as having the right expertise and experience needed to transform Malaysia into a digital nation.

TM believes that 5G is an evolutionary technology, that will open up and enable new use cases that no one has ever thought was possible. Through its enterprise and public sector arm, TM ONE, tested and proven 5G-enabled smart solutions will be deployed to help businesses serve their customers better. While through its Research and Development (R&D) arm, award winning solutions will be put in place that can help improve quality of life.

Why smart city vertical for 5GDP?

A sustainable smart city caters to the need of its citizen. A smart city operates via people, embedded electronics, software, sensors, and network connectivity that enables the data to be collected, exchanged and analysed into valuable and timely information at the IOC. The IOC in turn, provides 24/7 support throughout the year via Artificial Intelligence (AI) based proactive monitoring with services such as situational awareness, smart services analytics, emergency response as well as alarm management. As we expand into IoT and embark into Internet of People, digital footprint, data and insights can be garnered to introduce more innovation that can improve lives.

This means optimising a city's operations to make it a better place to live, work and play for its community as outlined in our promise of 'Life Made Easier.

Why smart tourism vertical for 5GDP?

Smart tourism is an important component of smart city. Smart tourism includes experiences that enable tourists to communicate and interact more during their trip. Tourists can enrich their experiences using technology which can enable immersive experience.

Tourism is one of the major components of economic growth for communities worldwide. A key requirement of tourism has been to attract more and more tourists from different parts of the world. This means more job opportunities and guaranteed economic growth which can improve quality of living for the rakyat.

Where will the use cases be deployed?

TM via its enterprise and public sector arm, TM ONE and R&D, has collaborated with Majlis Perbandaran Subang Jaya (MPSJ) to deploy seven (7) use cases in the SS15, Subang Jaya area. They are:
- Smart Traffic Lights Solutions
- Smart Parking Solutions
- Smart Safety & Security Solutions
- Open Innovation Platform (OIP)
- Retail Footfall Analytics (ACE)
- Smart Water Meter System (RITA)
- Fleet Management System (CONVES)

We will also be collaborating with Lembaga Pembangunan Langkawi (LADA) to deploy fourteen (14) use cases in Cenang and Kuah, Langkawi. They are:
- Smart Traffic Lights Solutions
- Smart Parking Solutions
- Smart Safety & Security Solutions
- Virtual Reality and Augmented Reality (vGames)
- Virtual Reality and Augmented Reality (vConcert)
- Smart Tourism App
- Digital Signage
- Smart Agriculture Solutions
- Open Innovation Platform (OIP)
- Retail Footfall Analytics (ACE)
- Smart Water Meter System (RITA)
- Fleet Management System (CONVES)
- Smart Safety and Incident Management – Smart Helmet
- Geo Location and Services – Pesafe

Smart Traffic Lights Solutions

1. **What is Smart Traffic Lights Solutions?**
   It's a data driven solution that provides a single dashboard for monitoring and helps to improve traffic flow and better traffic management. It can help benefit municipalities and the community at large by reducing waiting time at traffic lights, improve traffic congestions and management of traffic.

2. **How can it impact the way we travel in the era of 5G?**
   When commuting needs to be made easier, safer and effortless, 5G-enabled smart traffic can make it happen. With real-time traffic analytics and various smart features, allowing for a safer drive, resulting in improved safety, increased efficiency and enhanced experience. TM ONE Smart Traffic Lights Solutions help address traffic congestions for faster travel time while accommodating to the ever evolving daily traffic demands. Additionally, the solution helps to reduce fuel consumption, air pollution, and carbon emissions from vehicles.

Smart Parking Solutions

1. **What is Smart Parking Solutions?**
   It's a real-time parking bay monitoring system using camera and AI. Rakyat will be able to search for vacant parking bays using the mobile app, navigate via path finder and also be able to make payment seamlessly without having to key in any details. Enforcers on the other hand are able to monitor payment and parking meter expiration real-time.

2. **How can it impact the way we commute in the era of 5G?**
   When parking needs to be made effortless, real-time status check can enable it. A single integrated mobile apps for rakyat to check live update and for enforcers to automatically receive parking alert via real-time video streaming capability. Single monitoring platform by providing real-time status and data displayed via TM IOT Dashboard, accessible through any IP connected devices.

Smart Safety & Security Solutions

1. **What is Smart Safety & Security Solutions?**
   It's a real-time monitoring system using AI capabilities. Integrated to TM's emergency response team and MSPJ's Integrated Operations Centre (IOC), help can be deployed immediately to assist in unwanted incidents. Insights garnered will enable predictive analysis on actual incident situation for proactive response.

2. **How can it impact security in the era of 5G?**
   What's most important when it comes to safety and security is for help to arrive fast. Via real-time data, video streaming, sensor, camera and AI capabilities, advance surveillance and monitoring can be deployed. Integrated and connected to TM emergency response command centre, extension of real-time video streaming (of emergency situation) to respective public safety agencies can reduce waiting time and help can be dispatched even before a call is made to the emergency services.

Virtual Reality and Augmented Reality

1. **How will AR and VR be deployed that makes it different with 5G?**

   (vGames)
   AR games are usually played indoors. With 5G, the game can be played real-time with multiplayers in outdoor and indoor environment. During the competition, gamers will battle each other and the avatar can be viewed publicly via TM digital board. Bringing eSports out from a confined space and area.

   (vConcert)
   A performance in which the virtual avatars of performers are projected onto a stage in the form of three-dimensional images. Performers from anywhere in the world can be brought "LIVE" to Langkawi. Real-time data interaction and huge data streaming capability is enabled by 5G ultra low latency. Higher quality content and more real-time updates is also possible and streaming from cloud hosted content via 5G connectivity.

Smart Tourism App

1. **What is different about the app from other app?**
   Single integrated mobile apps to automatically alert tourist on tourist attractions and "Discover Langkawi" VR content. Gamification platform that can provide real-time notification for tourist to book, visit, order, explore, use voice-translation, panic button activation, and participate in Discover Langkawi challenge.

2. **How is it different with 5G?**
   Real-time data can provide live update for consumption of the tourist making using functionality of the app seamless and almost faultless. Voice translation or panic button can be real-time due to ultra low-latency connectivity. Similar to vGames that will run on 5G wifi, tourist can experience an immersive holiday by participating in Discover Langkawi challenge that is VR enabled.

Smart Agriculture Solutions

1. **What is Smart Agriculture Solutions?**
   Provides real-time data to monitor temperature, pH, and fertilizer concentration. Enables automation and alert as an alarm would be triggered should the parameter reaches a certain limit. AI driven automation platform that allows predictive growth modelling. Remote global monitoring and control. Making farming possible anywhere.

2. **How can it impact farming in the era of 5G?**
   Within each Machine Farm, we utilise a multitude of sensors to monitor power consumption, decipher plant parameters, measure atmospheric elements such as CO_2, temperature and humidity and monitor water level and usage patterns. These data points are fed into the IOT platform and deciphered using our data analytics capability which are critical for decision making, live monitoring and dashboarding. This enables the Machine Farms to improve the quality of the data modelling parameters, which enable more efficient usage of key resources (i.e. power, water, temperature, humidity, CO_2, nutrient solution etc.) across each cultivation cycle for more efficient and effective yield management. Real-time data collected can make monitoring of plant health easier.

Digital Signage

1. **How can the digital signage function differently in the era of 5G?**
   Greater speed reduces the need to compress video, which will allow signage to pull and display higher quality content without having to host it locally. The higher speed will also enable greater opportunities for augmented and virtual realities. This will allow digital signage to allow for a more immersive, interactive content experience.

Open Innovation Platform (OIP)

1. **What is OIP?**
   A cloud based rapid development platform that enables digital innovation with services that include data hub, smart service hub, IoT management, service marketplace, analytics and many more.

2. **How the use case benefits the society?**
   The platform realise the potentials of Internet-of-Things (IoT) in the digital era. By realising IOT, more efficient and sustainable features can be used to manage resources and data therefore quality of life can be improved.

RITA Water Smart System

1. **How the system works?**
   The system will collect and analyse data from water meters via 5G networks. Water Companies can then view the meter reading, and water quality index as well as managing sensors.

2. **How the use case benefits the society?**
   This system can minimise water leakage/wastage, reduces water shortage, save our environment, improves productivity and eventually save cost.

Retail Footfall Analytics (ACE)

1. **How the system works?**
   It is an analytics and visualisation engine that correlates data from various sources in order to understand customer better. Better visibility about the customer allows the service owners to serve them better.

Smart Helmet

1. **What is the main use case of the smart helmet?**
   The main use case is to provide quick and prompt alert or notification of any incident like falling or knocking on a construction site or workplace. Therefore safety and health procedures can be escalated efficiently.

2. **How 5G can support the smart helmet?**
   5G shall provide faster connectivity hence sensors, streaming data and real-time personal tracking from the helmet will be more efficient and accurate.

Conves Fleet Management System

1. **What is the main use case of the system?**
   Providing vehicle telematics information, utilising the power of big data analytics to provide advisory information to the vehicle owner including the driver's behavior.

2. **How the use case benefits the society?**
   The information from the system can advise the driver on how to become a better driver. In addition it provides vehicle condition, fuel consumption and maintenance requirement via mobile application.

PeSafe

1. **What is the necessity of this app to people nowadays?**
   Personal safety refers to not only physical safety (freedom from physical harm) but also psychological safety which involves freedom from worry about physical safety as well as being victimised by hostility, aggression, and harassment.

2. **How the use case benefits the society?**
   Utilising 5G network, the real-time tracking and historical data of PeSafe can be pushed/retrieved to/from cloud instantaneously either in the form of video or other data rich when emergency occurs. Hence, we can locate loved ones faster with improved accessibility.