Capacity Building Conference on 5G Use Case

West Bengal

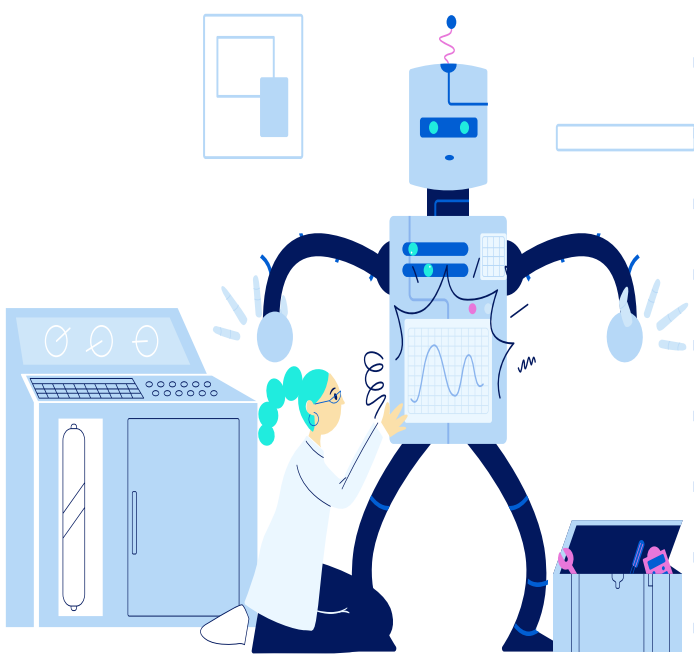
November 14, 2022

5G IN INDIA

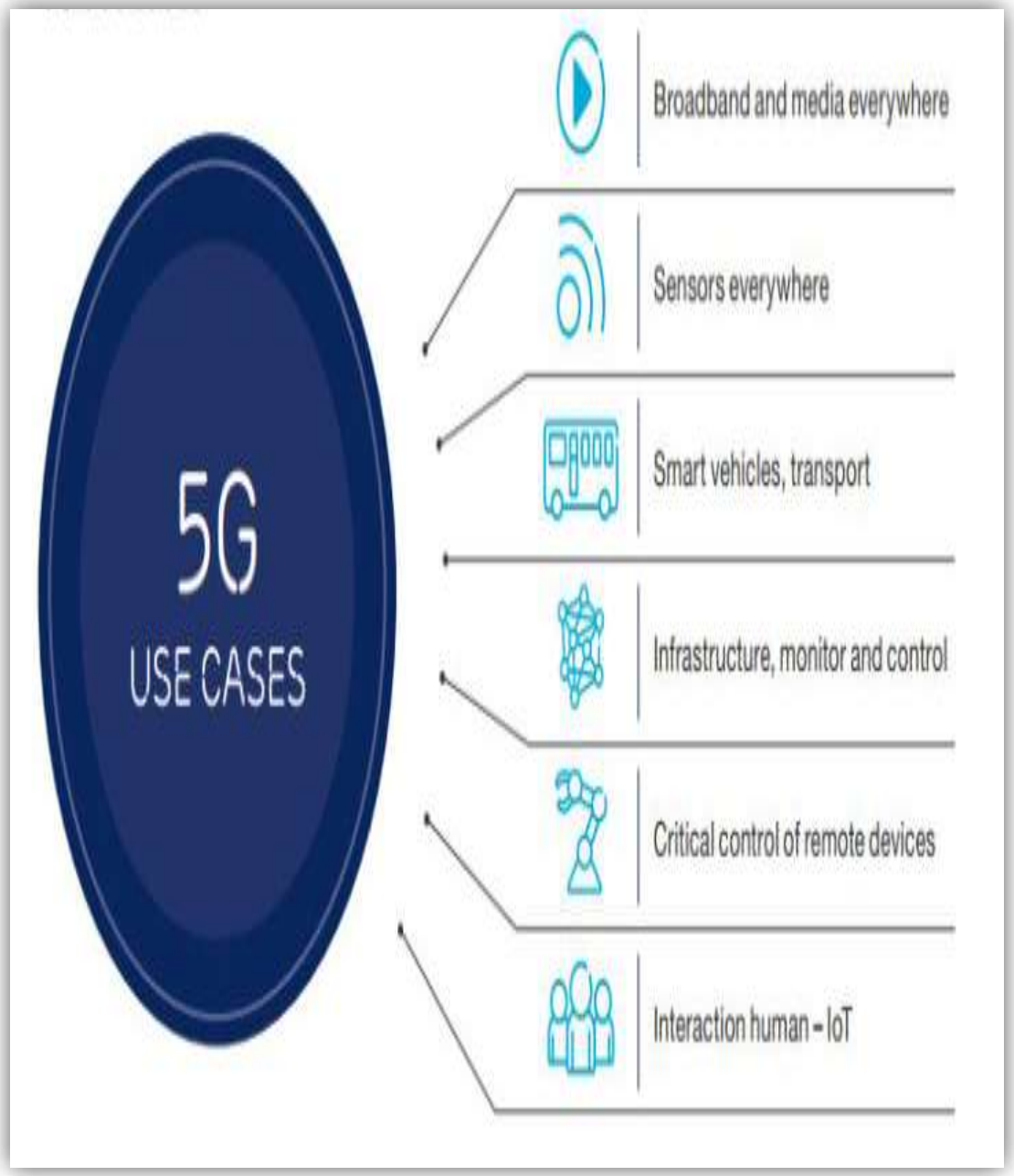
सत्यमेव जयते
Department of Telecommunications
Ministry of Communications
Government of India
Azadi Ka Amrit Mahotsav
Redefining India's Techade
Launch of
5G Services
by
Shri Narendra Modi
Hon'ble Prime Minister
1st October 2022 | 10 AM | Pragati Maidan, New Delhi
5G

5G-NEXT GENRATION WIRELE TECHNOLOGY

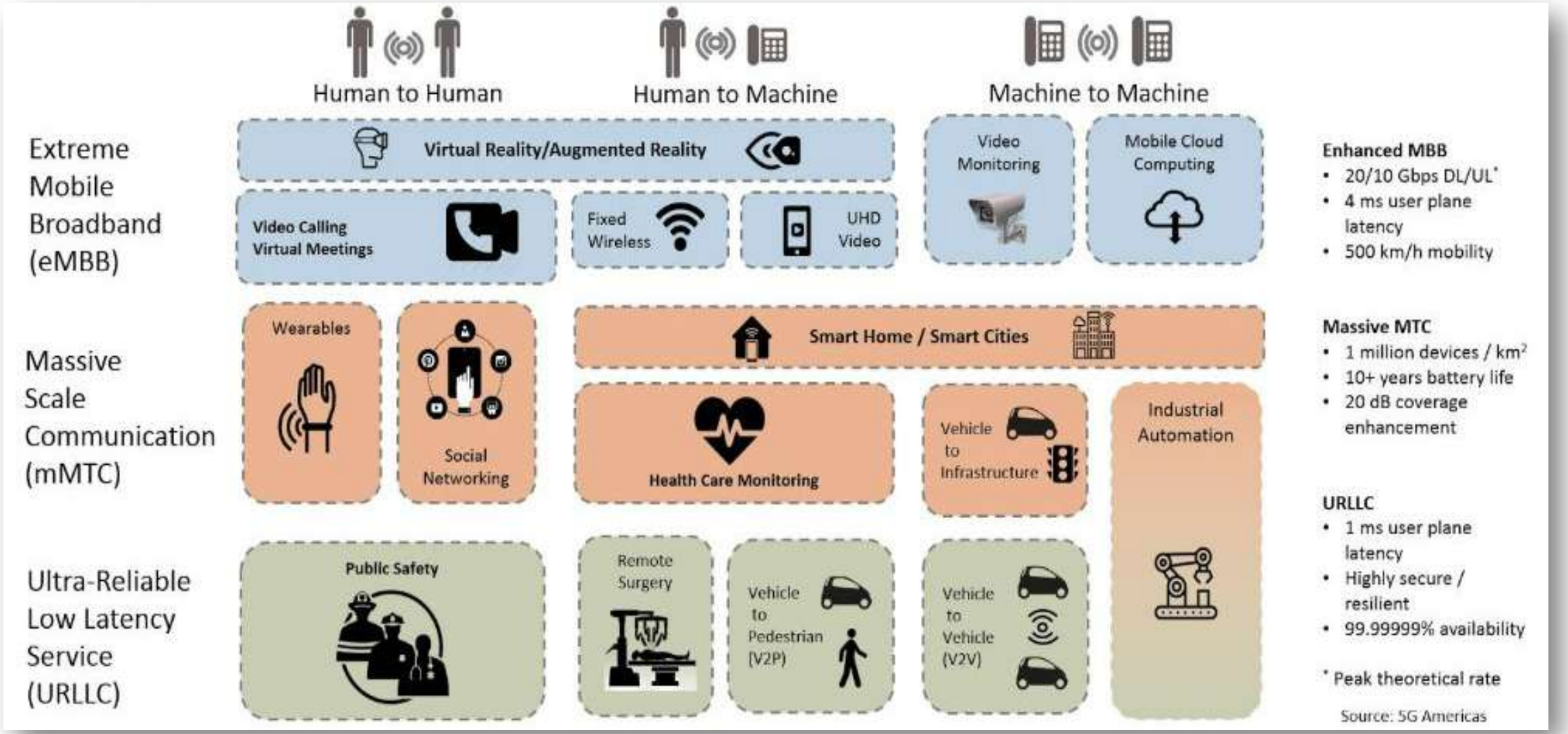
Features



- **ENHANCED MOBILE BROADBAND**
- **ULTRA RELIABLE, LOW LATENCY**
- **HIGH USER DENSITY**
- **MASSIVE MACHINE TYPE COMMUNICATION**
- **Accurate Positioning**



5G USES CASES SUMMARY



TRANSPORT

A

CONNECTED VEHICLES

Intelligent Transportation, Connected & Autonomous Vehicles, Vehicle platooning, Remote Driving, Fleet Management

B

E-TOLLING

Automated payments through high-speed moving vehicles

C

NAVIGATION SERVICES

Precise ground-based navigation services for unmanned vehicle/drones

HEALTH

REAL TIME MONITORING

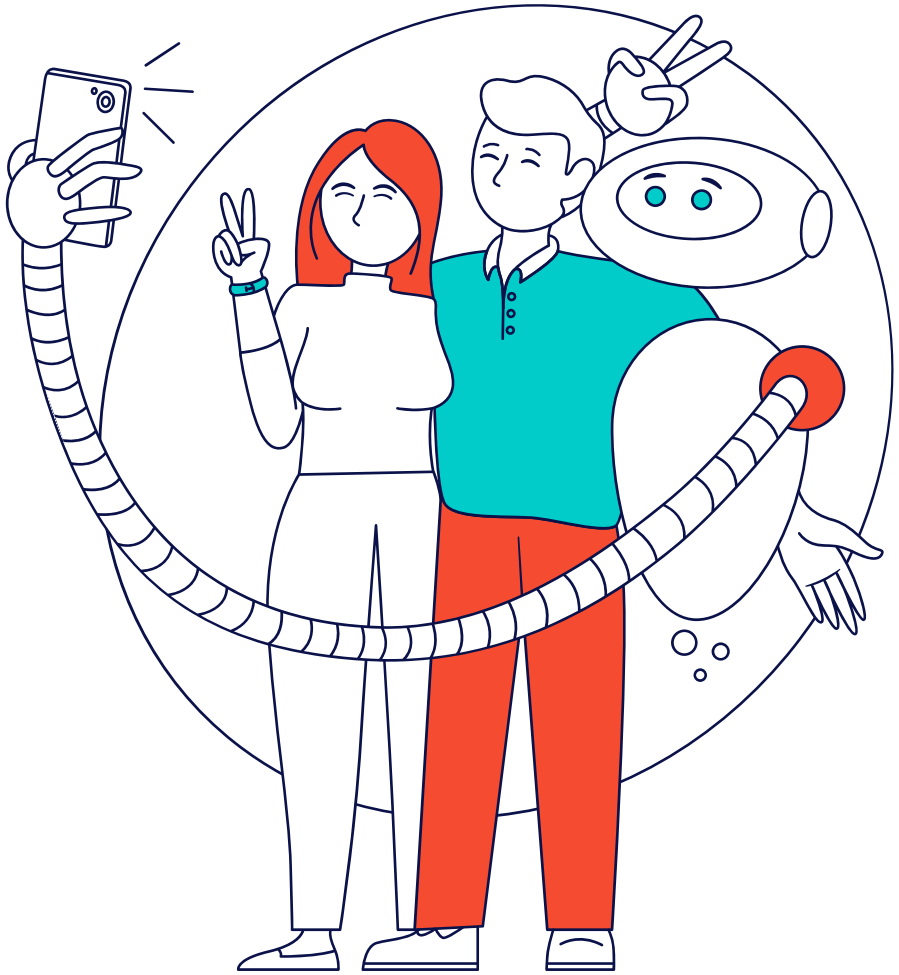
Transmission of real time vital parameters of patients & HD multimedia content to enable early preparation in hospital for critical cases and remote interventional support

REMOTE CONNECTIVITY

Mobile rural clinic will connect with Specialists in city Hospitals

CONNECTED IOT

Connected wearables for remote diagnosis & patient monitoring



INDUSTRY 4.0

M2M COMMUNICATION

Machine to Machine (M2M) communication to enable automated cart movement and automated loading in warehouses

A

COMMUNICATION

Robot to Robot, Worker to Robot communication

B

GUIDED VEHICLES

Automated guided Vehicle

C

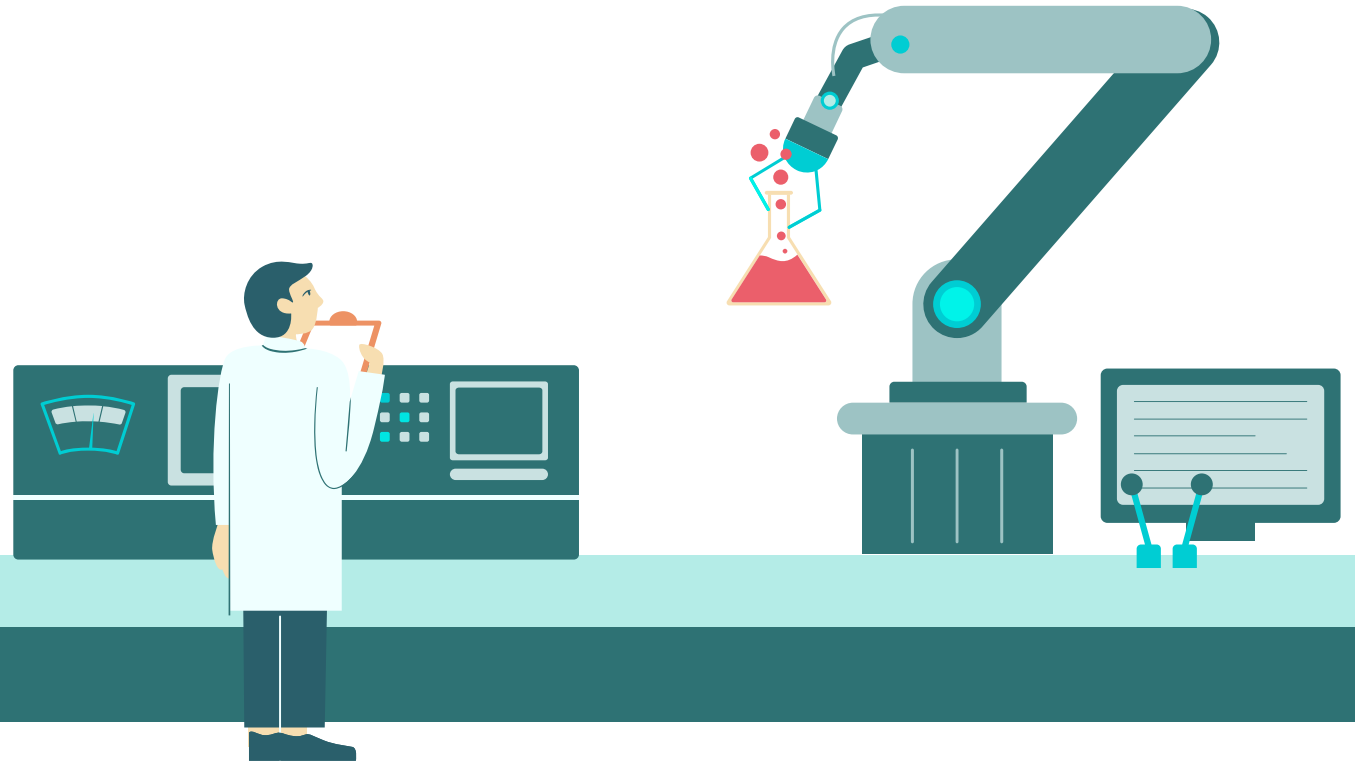
TRAINING

Industrial Training

D

IOT

IOT connected things like sensors, actuators, cameras, vehicles resources, containers for transport and logistics



6

AGRICULTURE & LIVESTOCK

REAL TIME DATA

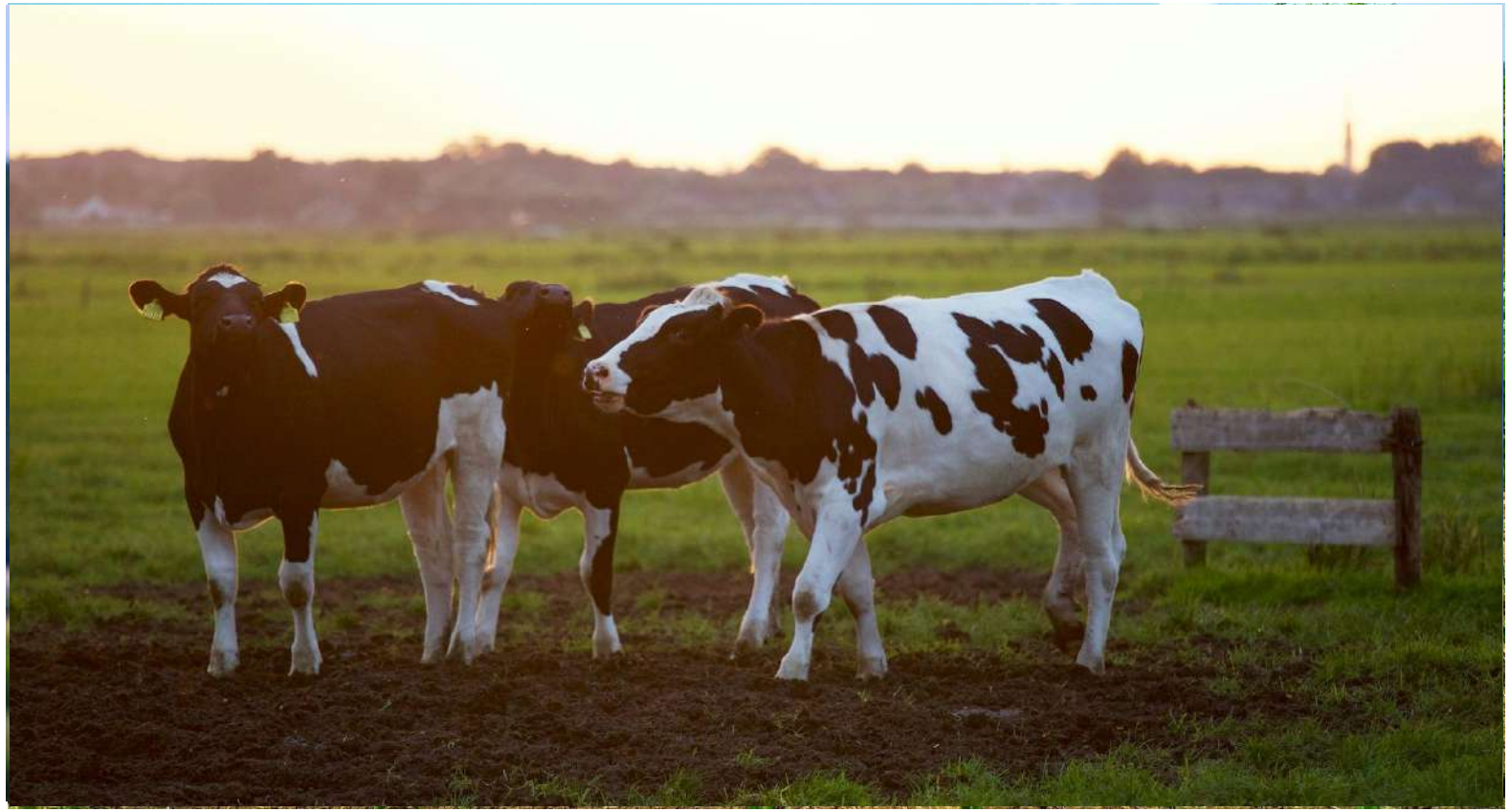
With Real time transmission of data using IoT/sensors/video, controlled delivery of water, nutrients and pesticides to increase yield

PRECISE

Precision agriculture, Pest control, Aquaculture & Livestock monitoring

MONITORING

Aquaculture & Livestock monitoring



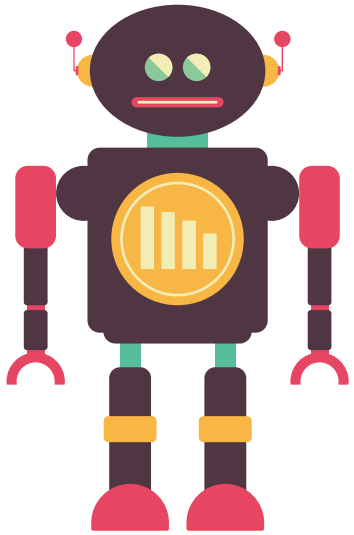
DISASTER MANAGEMENT & SAFETY

Save Precious Lives

A

Rescue Services

Improved emergency rescue services



B

Remote Monitoring

Remote operations & monitoring for safety of construction workers, mining workers etc

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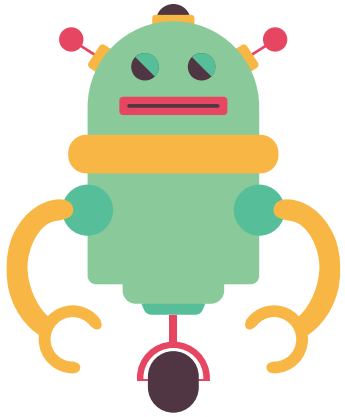
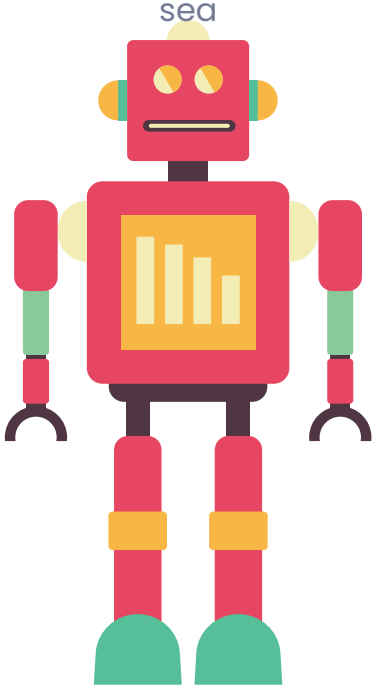


C

Mission Critical

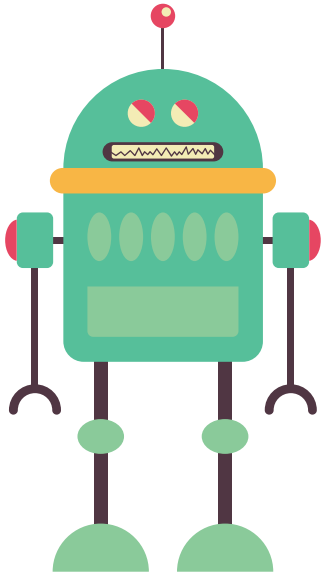
Public safety network and mission critical services for fisherman at sea



D

Remote Monitoring

Remote management of Mines . Highway safety



SMART APPLICATION FOR SMART CITY

Make Big Impact in Life of Citizens

PUBLIC SAFETY

Better Public safety through real time video surveillance

surveillance

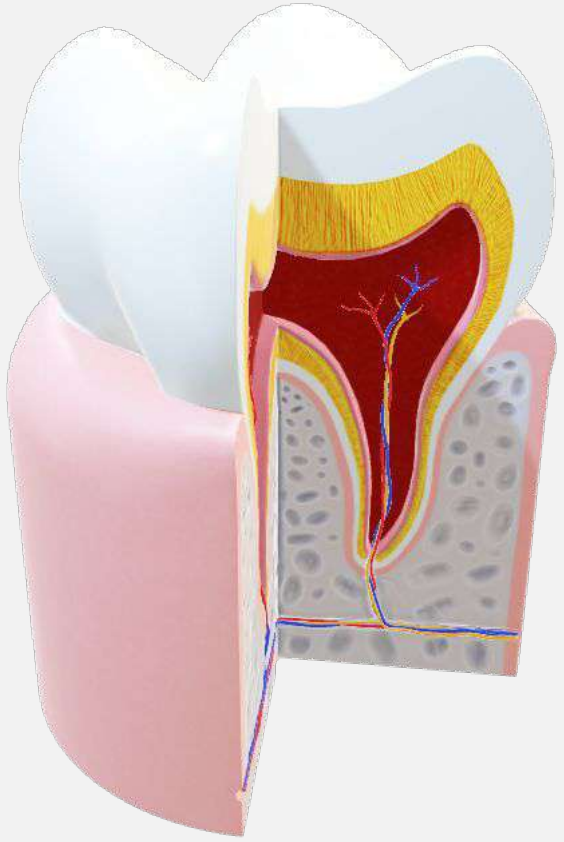
Audio-visual surveillance in presence of large number of connected users at shopping mall, stadium, open air festival & public events etc

MANAGEMENT

AI could correlate traffic light data automatically and implement new patterns in traffic management

EDUCATION

Make Big Impact for Students



A

AR/VR

Augmented Reality (AR), Virtual reality (VR) & Mixed Reality (MR) display and interface,

B

3D

Mobile 3D projection for remote classroom & learning

C

TRAINING

Skill development training through AR/ VR

POTENTIAL USE CASES AND APPLICATION VERTICAL WISE

Sl. No.	Sector	Use cases	Ministry[16]
1	Smart Cities, Communities, Homes	Intelligent Transport, Infrastructure Mgmt, Lighting, Logistics, Precision Navigation, Resource Management, MRO[17]	Ministry of Housing & Urban Affairs
2	Smart Homes and Campuses	Immersive Gaming, Connected Appliances& Modern Home & Integration, Intrusion Detection, Smart - Energy, Water, Fire Alarms), Micro & Indoor Navigation; Service Bots	Ministry of Housing & Urban Affairs
3	Connected Healthcare	Smart Ambulance, Emergency Service Bio-Connectivity, Real-Time Bio-Connectivity through Wearables, Robotics, Wearable Telemetry, Transmission of HD Images, New Edge -Tele-Consultation, Block chain Use Cases In Healthcare, Volumetric Analysis of Scans And Reports; Smart Rehabilitation, Assisted Living, Geo-fencing	Ministry of Health & Family Welfare
4	Education and Skill Development	AR, VR, MR based Learning and Training, Smart Classroom, Enhanced Viewing Experience In Broadcast & Immersive Learning	Ministry of Education; Ministry of Skill Development & Entrepreneurship
5	Power	Smart Grids, Resource Management, Remote Diagnostics, MRO, Smart Energy (Generation, Trading, Distribution, Metering, Services), Advanced Metering Infrastructure (AMI), SCADA / EMS, Substation Automation, Micro-Grids	Ministry of Power
6	Agriculture	Precision Farming; On-Ground Insurance Models; Remote Diagnostics Of Soil, Yield, Pests, Quality; Health Monitoring For Livestock (Connected Cows And Calving); Indoor Farm Monitoring,	Ministry of Agriculture and Farmers' Welfare
7	Fintech	Near Real-Time Financial Markets, Fraud Detection, Enhanced Customer Experience,	Ministry of Finance
8	Automobile	Connected Cars, Enhanced Safety, Remote Diagnostics, Assisted / Autonomous Driving,	Ministry of Road Transport &
		Fleet Monitoring and Precision Navigation, V2X (Vehicle To Everything), Immersive Infotainment,	Highways ; Ministry of Railways
9	Industry 4.0	Industrial IoT, Robotics And Increased Automation; Smart Factories, Smart Construction, Quality Control, Digital Twins	Ministry of Heavy Industry & Public Enterprises
10	Retail, Food Quality, Food supply-chain integrity	Haptic Experience of Online Shopping, Inventory Management And Control,	Ministry of Consumer Affairs Food & Public Distribution
11	Sports And Events	On-Line Sports Training With Millisecond Analytics; Enhanced Viewing Experience In Broadcast & Immersive Entertainment; Crowd Management, Holographic Collaboration	Ministry of Youth Affairs & Sport
12	Logistic Hubs Such As Sea- Ports, Airports, Warehouses, Resource Management	Resource Tracking, Automated Inventories and Control, Diagnostics, Fleet Movement, Safety, Remote Management of Mines	Ministry of Mines; Ministry of Jal Shakti, Ministry of Commerce; Public & Private Ports, Airports
13	Railways	Rail-Track Safety, Trackside Systems For Video Analytics, Intelligent Transport, Resource Management	Ministry of Railways
14	Tourism	AR, VR, Immersive Experience	Ministry of Tourism
15	Smart water and sewage/ Sanitation	Water management, Water Quality, Safety	Ministry of Jal Shakti
16	Telecom	FWAs- Rural, Urban broadband connectivity; Underserved areas Broadband PCO	Department of Telecom

राष्ट्रीय ब्रॉडबैंड अभियान
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Thank You

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