

5G private networks real life use cases

Sreenivas Midatala
Megron Tech Ltd UK (RantCell)



5G private networks users verticals

- Oil and Gas
- Green energy (offshore wind turbines farms)
- Logistics Ports and railway yards
- Manufacturing (Chemicals, automotive, food etc)
- Mining
- Passenger experience
- 5G as backhaul
- MC networks (Public safety or critical comms)
- Large ships
- RoVs,AGVs,Trials
- Inbuilding coverage large warehouses

5G tech offers for PN users

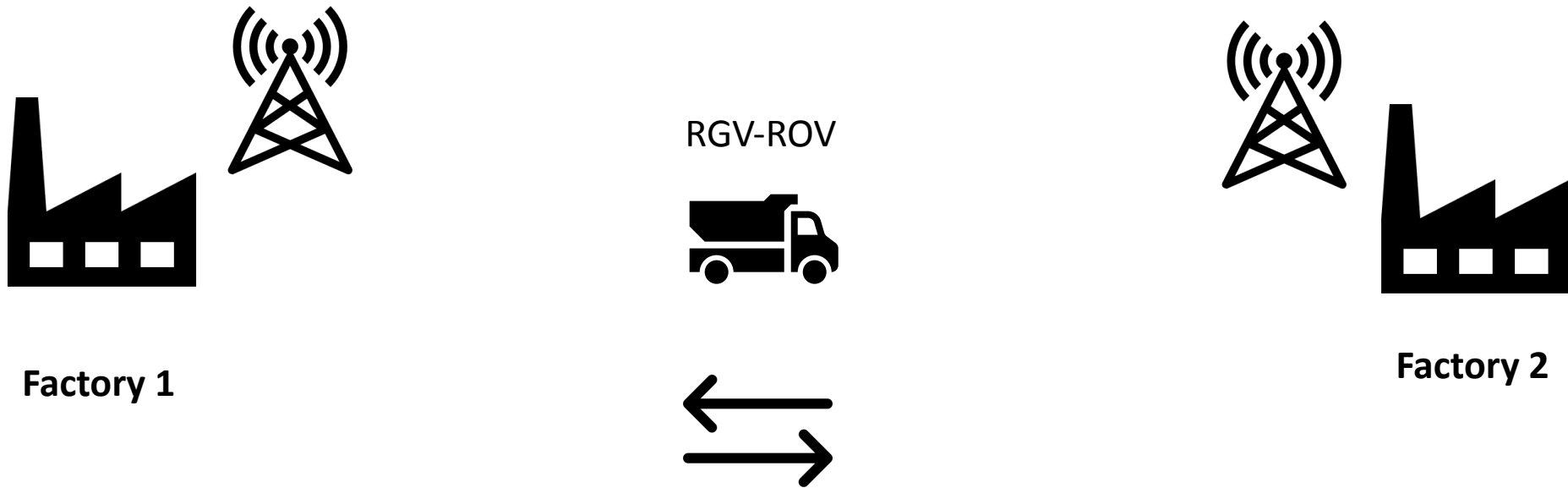
- Ultra low Latency 5ms or less
- Data throughputs up to up to 1~2Gbps (5G SA or 5G NSA)
- ~20Gbps 5G mw
- Public or private cloud Architecture
- Network slicing
- Low-cost spectrum licensing (ex CBRS band in USA)
- High density IoT devices per cell
- Exclusive wireless coverage withing PN users' premises .
- High reliability
- Guaranteed user QoE



Why do large enterprise invest in PNs ?

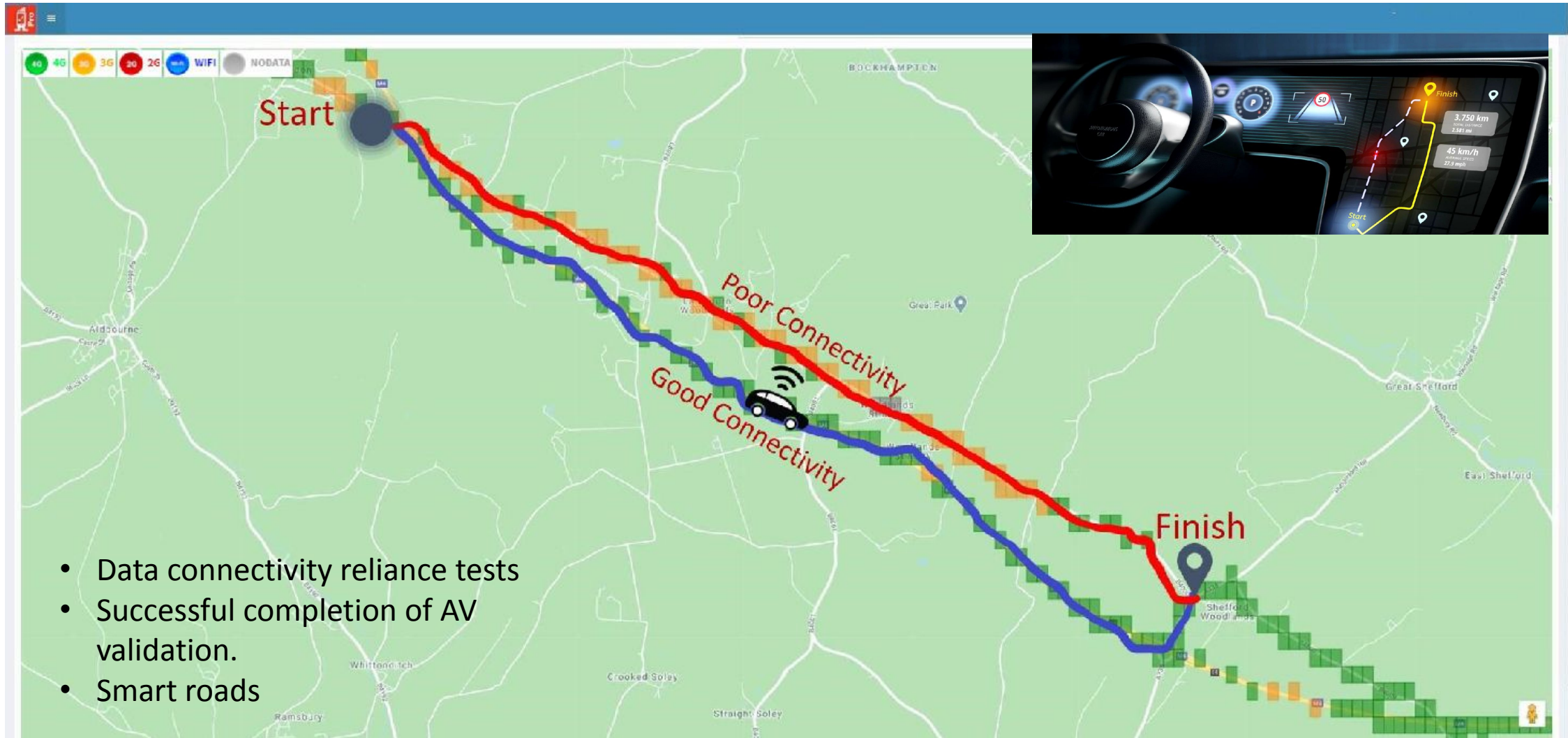
- Increased productivity (M2M, IoT , data and AI)
- Enables time sensitive operations.
- Ability to deploy network for multiple locations (in country or multi country)
- Higher network capacity there fore more workers could carry smart devices such as tabs , PTT and data enabled
- Increased use of Robotics (Manufacture , healthcare , Mining)
- AGVs and ROVs usage which is now possible (Manufacturing, Mining)
- Long term cost savings.

Shifting materials or partially finished products 24/7



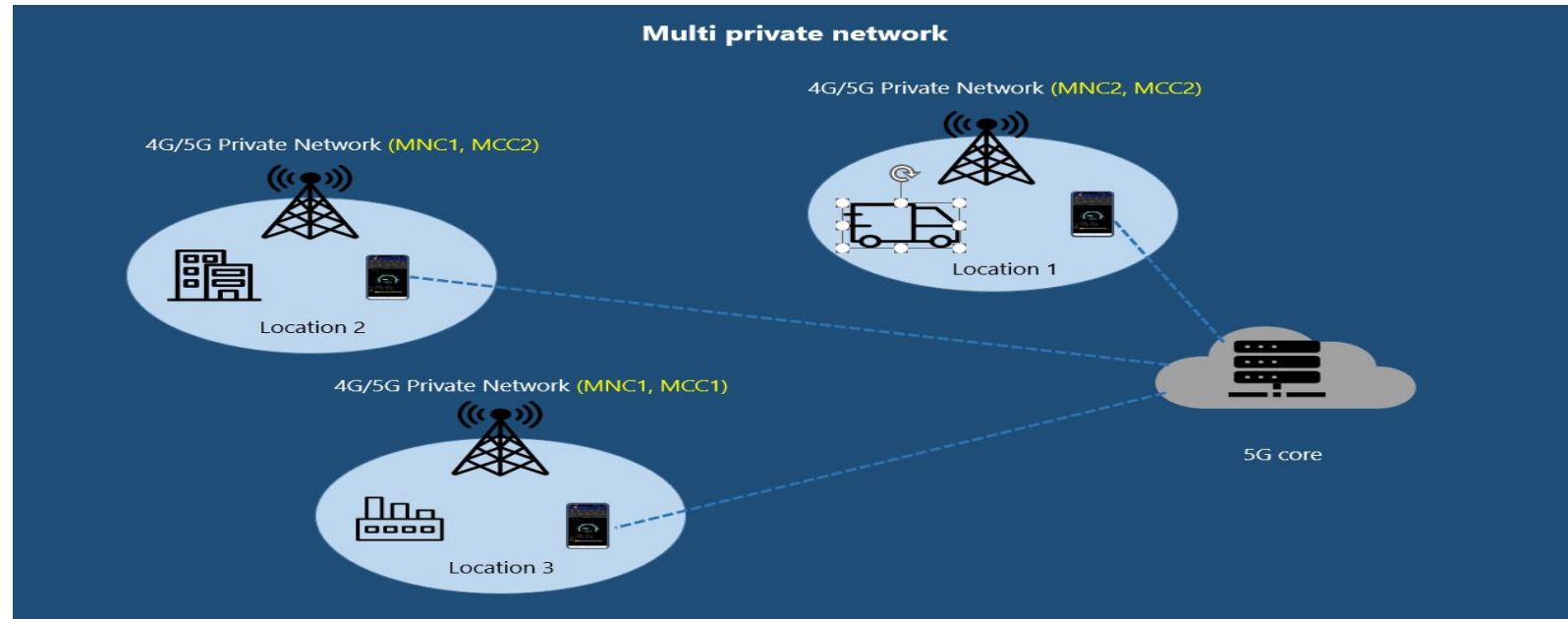
- Guaranteed Data throughput (24/7)
- Streaming (UL throughput)
- Latency
- Coverage

AV trials (using network slice or PNs)



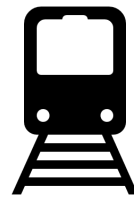
Oil and Gas/Logistics

- Production
- Monitoring
- M2M routers
- Hand held devices
- PTT apps ,user groups
- Smart watches for health
- Android , iOS ,Tabs
business apps
- Geo tracking , tracking
apps etc.



Passenger travel experience enhancement 5G mmWave PN

- A 5G mmWave mast can provide up to 20Gbps
- Average train can carry 800+ passengers
- Data services on train cars gets worse when more numbers of users are higher.
- 5G mmWave masts along the train tracks can provide high bandwidth data rates which in turn can be used to provide Wi-Fi services using 5G CPEs.



5G mmWave



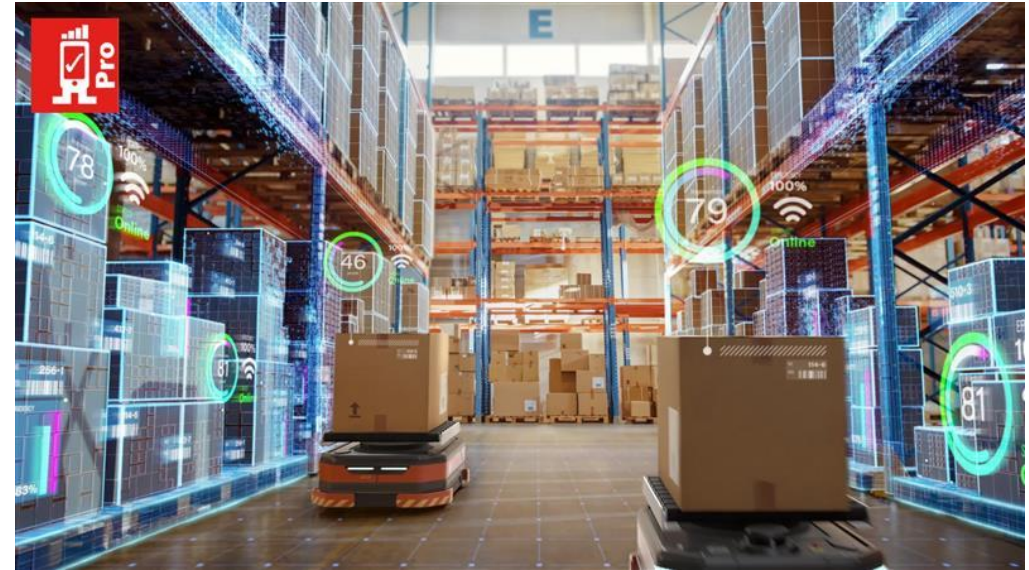
Emergency services (Public safety)

- Police , Ambulance and Fire will need high priority and robust network services
- Video streaming for live streaming to control room helps first responders to make a better decisions in emergency situations.
- Data traffic should be carried at high priority on network and should be reliable.



Inbuilding 5G PN

- 5G PN in Warehouse enables large order processing capabilities with guided robots
- 5G PN deployed in tunnels with leaky feeder enhances production in mining and safety.



Some of the pain points to enterprises on fully operational Private networks

- Large enterprises such as logistics, Oil and gas ,manufacturing will have 4G/5G private networks deployed multiple locations and sometimes world wide. They receive constant complaint from their business and field users
- OSS level KPIs might not reflect actual user experience on private networks as location information is also key to fix the problem.
- Vendor agnostic OSS performance files processing from eNB or gNB tools are expensive to be deployed and needs RF skills. Hence some of the PNs user might not purchase expensive monitoring tools.This might lead to further complaints from network users.
- Constantly changing environment , example higher number of containers on shipping yard might create new coverage holes.
- Maintaining PNs in same approach as MNOs might not work and expensive (example traditional drive test tools , skills ,large data to handle). There has to be user centric test and measurement approaches which are not currently much used.

Thank You
For sales and other information please contact
support@rantcell.com

www.megrontech.co.uk

