

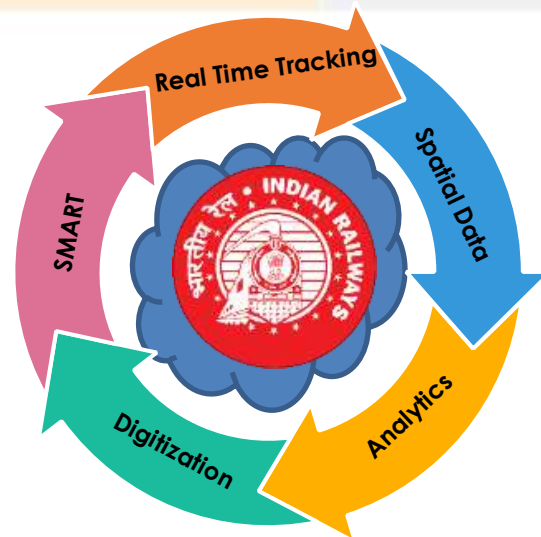
Railways Getting SMARTER

Ankur Mittal
Manager (Technical)

AGENDA

- **Real Time** Train Information
- Satellite based 2-way Com for Indian Railways (IR)
- Railway Display Network (**RDN**)
- **Monitoring** IR Infrastructure

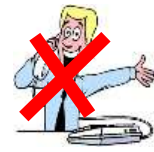
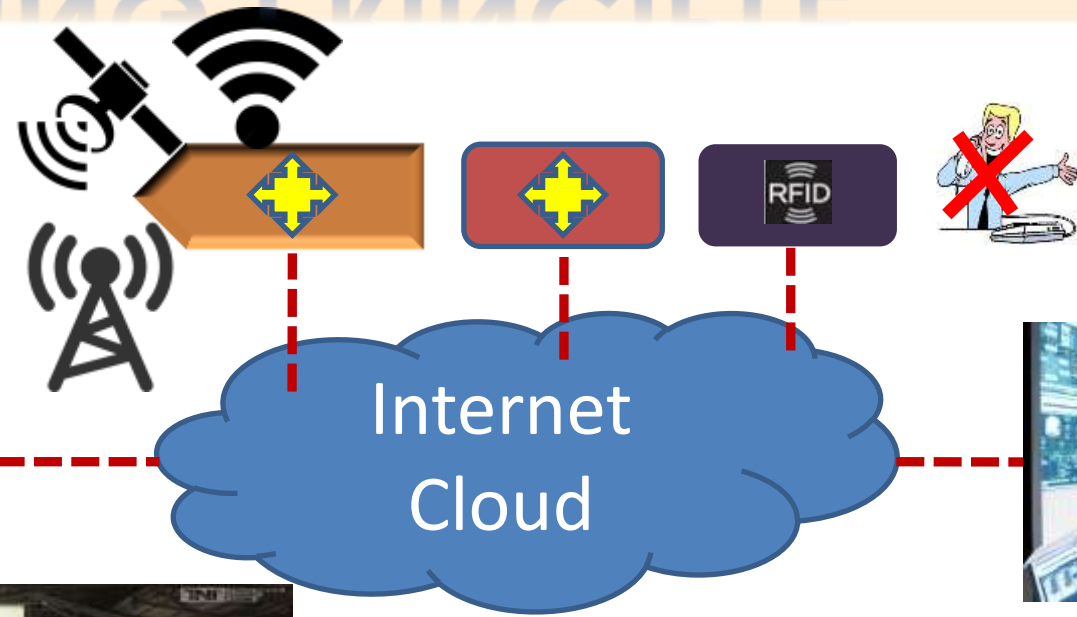
Improving the **Operational Excellence** of the behemoth
INDIAN RAILWAYS



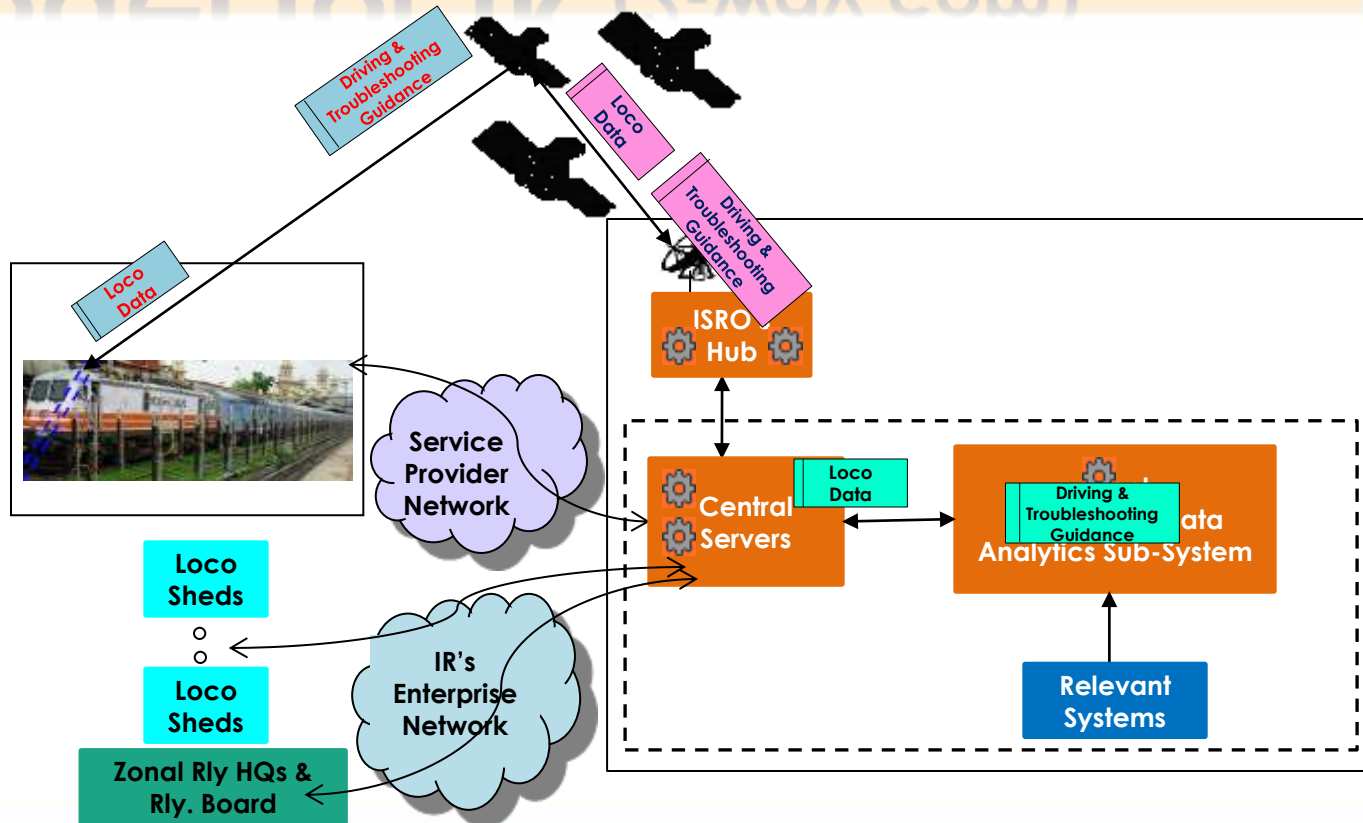
Real Time Train Tracking

- Get real time train **location** and **speed** with **time stamp**
- Tracking of train in between two stations
- No manual intervention required
- **GPS+GSM+Wi-Fi** based equipment for locos & coaches
- **RFID** Tags for Wagons
- Get location from GPS satellite and upload data to cloud through GSM/Wi-Fi/RFID Receivers

WORKING PRINCIPLE



Model for IR (2-way com)



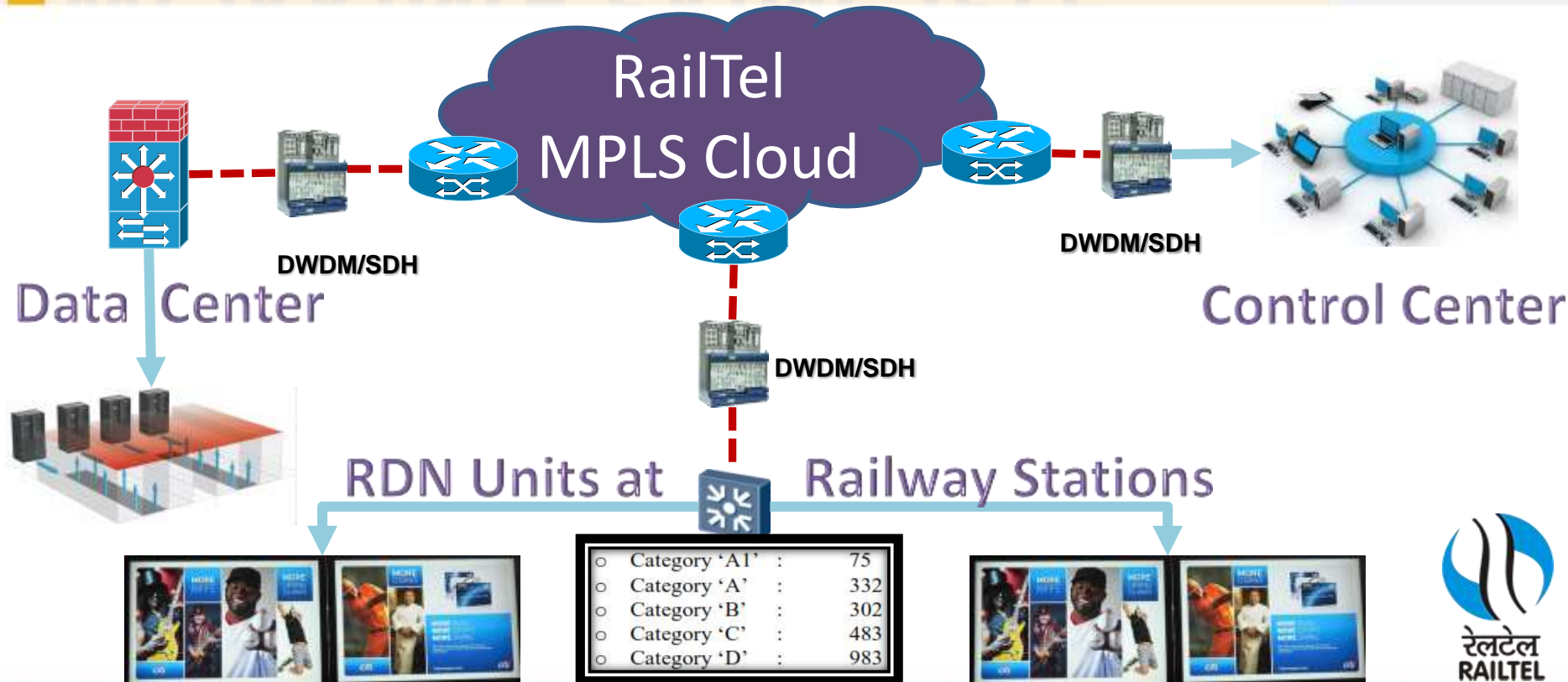
APPLICATIONS & BENEFITS

- **Assisted Loco Troubleshooting**
 - Fuel consumption data analytics: section/train wise
 - Emergency messaging, incident operations
- Real time health monitoring for **Predictive Maintenance**
- **Inventory Control** for better asset utilization
- Policy Initiatives & Process Optimisation
- Informed **Decision Making**
- Increased performance, efficiency and quality

RAILWAY DISPLAY NETWORK

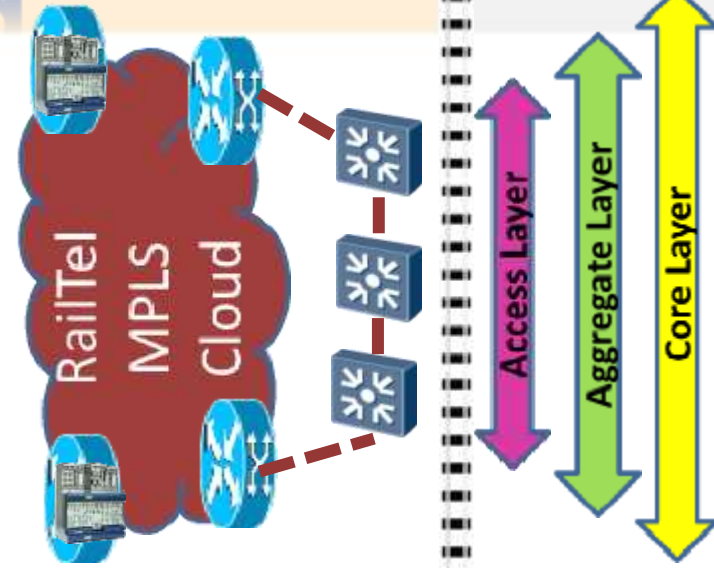
- **RDN** at 2175 railway stations across 5 categories by 2019
- Display **railway information**, **revenue generation content** and **non-revenue information**
- **Self-sustainable** model through contextual advertisements
- Capability to integrate with relevant **social media**
- Integration with **National Train Enquiry System**
- **Centralized & Customized Railway Information System**

WORKING PRINCIPLE



Monitoring IR Infra

- **Core Layer:** Long Haul
 - **Aggregate Layer:** Short Haul
 - **Access Layer:** Very Short Haul, ME switch at every controlled post for integration
 - **NMS: Private IP & Application-wise VPNs**
-
- Railway Infrastructure can be inventoried using GPS and integrated to **OFC backbone network** to upload data to Central Server
 - Relevant **Insights** from Raw Data to meet objectives like information to gang man, LC gate



Thank You!

Batasia Loop of Darjeeling Himalayan Railways

References & Courtesy:

