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***Introducing Digital Safety systems for IR Personnel/passengers and properties (web and mobile) using MMIS Tech. & Concepts.***

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**Background:** MIS communicates routine operations of IR teams, on ground happenings of (IR-TMS) in non-geographic mode, thereby visualizations and analytics of TMS data is complex and remain critical **for monitoring the health of remote Linear Assets that impact safety.**

Thus, *converting* TMS/BMS and PSM data to map format would enhance digital safety systems @ Indian Railways significantly, when integrated to IR zones specific systems maps (currently analog format) when made digital, using Map Management Information Systems (MMIS) Tech. & concepts.

Given below are the features of IR-Digital Safety Systems (IR DSS) to support the claimed views:

1. Android based mobile application with Zone/Division/SSEs jurisdictions digital tracks with all Linear Assets as per TMS records.
2. Integration of BMS/PSM with RYG intelligence to monitor Bridge maintenance and Projects sanctioned and monitoring of Linear Assets.
3. GMT consumption and balance left of each rail segments on IR Digital System maps.
4. Mobile features for enhancing Digital safety.
  - a. Digitized lines as Google background/OSM overlays on 1:500 scale to develop SCR Digital Base System Map of Running tracks including, S&T assets, Railway yard plans and other entities where trains of all forms commute.
  - b. Feature to set buffer zones by user himself from 100 mts to 20 KMs range both linear/circular chainage as base for linear lengths.
    - i. Alerts user when train hits buffer zone periphery (Both up/down directions)
    - ii. Single, Double, and triple lines are assigned Unique IDs and colors feature to distinguish train movements on different lines.
    - iii. Buzzers and alarms at LCs, sounds volume can vary (near to far) as defined to caution public gatherings in around rail tracks buffers.
5. Linear Assets of all classes' maintenance and management alerts
  - a. Observations of rail fracture and communication among six IR personnel for alerts and managing emergencies.
  - b. Alerting by train loco pilots on mid track disturbances on digital tracks to other incoming trains of buffer set for all type of trains (when IR DST app installed).
  - c. Controllers shall be able to view all trains' movements and precise locations to address likely congestions of trains ahead at stations.
6. Rolling stocks/locos health status and its movements monitoring at any point of time.
  - a. *Each rolling stock shall be given a unique map ID* to trace and track its location along with the GMT carried and consignee and consigner details with origin stations of traverse to its destinations.
  - b. Executive summaries to the concerned officers on LAs status and maintenance requirements with RYG intelligence.
  - c. Maps and MIS integrated reporting systems on various dates can be viewed as well.

7. Aversion of train collisions and derailments possibilities are high, with following prime modules development:
- a. On collisions aspect**
    - i. Assuming all trains shall have IR DSS application on rail engine on tabs.
    - ii. Only train origin and destination track visibility and streams progressively.
    - iii. Six stakeholders shall be able to view dynamically.
      - 1. Loco pilots of trains on same track (Two pilot members)
      - 2. Guards
      - 3. Cabin crew inner and outer cabins.
      - 4. Station master at stations
      - 5. Controllers
      - 6. S & T teams.
    - iv. All team members on board shall receive heavy alarms cautioning about the likely occurrence of the mishap incident.
  - b. On derailments of trains aspect and associated factors**
    - i. Status of health of LAs with RYG intelligence on tasks of maintenance for LCs, P&C, SEJs, Long weld rail segments, **bridges etc.**
    - ii. Photos/videos uploading for quick and faster actions.
    - iii. Alarms and buzzers uber like navigation systems to reach location of incidence. Can evolve sabotage related aspects quickly to communicate almost on real time basis.

In view of the above findings of our research and observations made by our MMIS Tech. Team, we request you to kindly consider IR DSS as an “ATMA Nirbhar” solution of MMIS Technologies and support our company M/s Suswa Infoway (P) Ltd. By recommending appropriate authorities at SCR for award of contract.

IR DSS application developed shall be hosted at Rail servers and a mirror copy shall be had on our MMIS server till IR DSS systems get stabilized or as deemed fit by the authorities. Cost of application development cost could be Rs. 2,500/- including 15 user licenses, over and above user licenses cost could be extra along with MMIS server space cost on AWS server.

Request to consider a recommendation letter to appropriate authorities for award of contract to our company.