TOUCH IOT WITH SAP LEONARDO PROTOTYPE CHALLENGE

Application Description
An application to track and control the entry, movement, loading or unloading of vehicles inside the plant.
Story

Many Indian conglomerates have plants and warehouses spread across kilometers, with materials like COKE and Sulphur lying at open storage spaces exposed to theft, and movement of trucks and tankers being manually monitored, loaded or unloaded and expected to be on their ways to next gate or outside the plant without any deviation.

All this data is manually fed into SAP and documents like shipment and delivery are created and linked to the various trucks moving inside the plant using custom or standard SAP transactions.

In-plant vehicle tracking system will automate the entire process using GPS sensor tags, or even by using the GPS in the smartphones of the vehicle driver, all the SAP transactions can be carried out, if the vehicle enters a predefined co-ordinate inside the plant and shipments & deliveries can be linked to the vehicle by triggering background jobs.
Persona

Jay
Security Admin

“I need to keep up with every vehicle entering the plant, and know its whereabouts, till it gets loaded and leaves on its way to the customer.”

About

- 27, unmarried, 6 years of security experience.
- A lead to 100 security guards and being the person who makes sure authentic vehicles enter the plant and are updated with licenses, also that they follow the given route.
- The plant is spread across kilometers having multiple gates 5-6 kilometers apart, I need to stay mobile and keep a track of what’s going on at each gate, and if trucks are moving as required.
- I work with the Chief Security Admin and 20 others like me, taking care of different routes in the same plant.

Responsibilities

- I am responsible for one route and its regulations. i.e. one transportation planning point (TPP)
- I need to know how many trucks entered and how much time it takes to cross each gate, and even how many are in queue, currently I count and take notes.
- I keep moving across the gates to track any misconduct.

Needs

- I need to know if a vehicle is moving constantly.
- Pending Vehicles at various points lead to queues, a summary of the pending inline vehicles.
- Punching transaction manually takes more time, what if it could be automated somehow?

Main Goals

- Being the person who take care of security and legitimacy, I need to stay aware and updated.
- Keeping the statistics and watch over the faulty vehicles helps follow the norms
- Better insight of movement inside the plant, and in-time dispatch or receipt per trip.

Pain Points

- Can’t know the exact position of a vehicle on the go.
- A broken down vehicle weights and increases cycle time, till help arrives.
- Need to see how many vehicles are waiting at various gates across the plant.
Point of View

As a Security Administrator

I need a way to track the vehicles entering the plant, and their real time movement across the routes.

I also need a total count of the vehicles waiting at each gate along with an information sheet of atmospheric conditions for quality (Vis temperature, humidity etc.).

So that loading and dispatch could be regularized, no vehicle has to weight in the queue, also if a vehicle deviates from the path, it could be tracked. Monitoring real time atmospheric changes for certain materials.
User Experience Journey: Taking Care of the vehicles at the plant on a normal day.

**ACTIONS**
- Go for a stroll to keep a track of the vehicles pending for load & dispatch.
- Check for slow moving traffic at the gates, if any.

**MINDSET**
- "Checking the line again, and counting trucks", gosh!
- "How do I know, how many are coming every hour"
- "These truck drivers & the honking, are frying my brains out"

**FEELING**

**TOUCH POINTS**
- Vehicles
- Truck Drivers
- Main Gate

**VISIT**
- Visit all the gates and the route & keep notes.
  1. Main Gate Entry
  2. Vehicle Parking (3 km from main gate)
  3. Vehicle Order Linking (5 km)
  4. Weigh bridge & loading (7 Km)
  5. Exit Gate (10 km)

**MINDSET**
- Keep a note of vehicles weighting in a queue at gates. Analyze the numbers and speed up the process if required.
- Check the licenses of truck at Truck parking
  - Make sure, tankers with sensitive chemicals should have good temperature and moisture control with respect to the nature of the chemical.
  (Manual check of the vehicle)
- "Five gates to visit, around 25 kilometer on a bicycle, just to check trucks & tankers, wish I could have a bike!"

**FEELING**

**TOUCH POINTS**
- Plant
- Routes
- Other gates

**MINDSET**
- All seems good, just these tankers, are they good to go??
- It feels humid, all the petroleum COKE is dumped in open, and shall I go and check the site before informing the concerned team??
Prototype
Prototype screens for an IOT application to solve your POV

IN- Plant Vehicle Tracking System

Pending Vehicles

- MGN (Main Gate Entry)
- VP (Vehicle Parking)
- VOL (Vehicle Order Linking)
- WB&L (Weigh Bridge & Loading)
- EG (Exit Gate)

*Real time Vehicle data will be available only ones the vehicle is sensor tagged at MGN.
### Vehicle Parking

#### Pending Vehicles for TPN: 13

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<th>Vehicle Number</th>
<th>Reporting Number</th>
<th>Reporting Date Reporting Time</th>
<th>Current Status - Next Status</th>
<th>Transporter</th>
<th>Loading Point</th>
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#### Vehicle Traffic across (Previous, Current & Next gates)

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<tr>
<th>VOL</th>
<th>VP</th>
<th>MGN</th>
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#### Time Periods
- 2 pm
- 3 pm
- 4 pm
- 5 pm
- 6 pm
- 7 pm
- 8 pm
Vehicle Details (GJ10001SUL)

- **Vehicle Number:** GJ10001SUL
- **Reporting Number:** 112006401
- **Transporter:**
- **Loading Point:**
- **Container Number:**
  - **Movement:** Despatch/Loading
  - **Gross Weight:** 0.000 (KG)
  - **Net Weight:** 0.000 (KG)

*Real time Vehicle data will be available only once the vehicle is sensor tagged at MGN.

**Live Container Temperature**

3.7 °C

2 min ago

**Absolute atmospheric humidity in grams per cubic meter (At sulphur loading point)**

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<th>Humidity</th>
<th>Time</th>
<th>Humidity</th>
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