

DESIGN FROM SCRATCH

Honeywell Aerospace Ground Asset Tracking System

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HUX.

Hashedin

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ABOUT THE PROJECT

EXECUTIVE SUMMARY

HashedIn User Experience (**HUX**) crafted the product experience for Honeywell Aerospace (**'client'**) Ground Asset Tracking. The client wanted to automate and assist the airport's ground staff to locate ground vehicles via GPS. Since the volume of cargo shipped and the passenger traffic are increasing exponentially, we designed a robust monitoring system to get insights about vehicles at any point of time.

PROBLEM STATEMENT

For one of the world's largest and busiest airport, which manages about **0.9M tonnes** of cargo and about **65M** passengers every year, it is a mammoth task to manage all this in the traditional "take-my-order" style. The need to automate is the key to get this solved. The ground staff need a robust, zero-error, one-stop solution to take stock of the vehicles and better manage their routes so as to provide a better passenger's flying experience.

PROBLEM AREAS



65 MILLION PASSENGERS



0.9 MILLION TONNE AIR CARGO



UNNECESSARY DELAYS



HAPHAZARD ROUTES



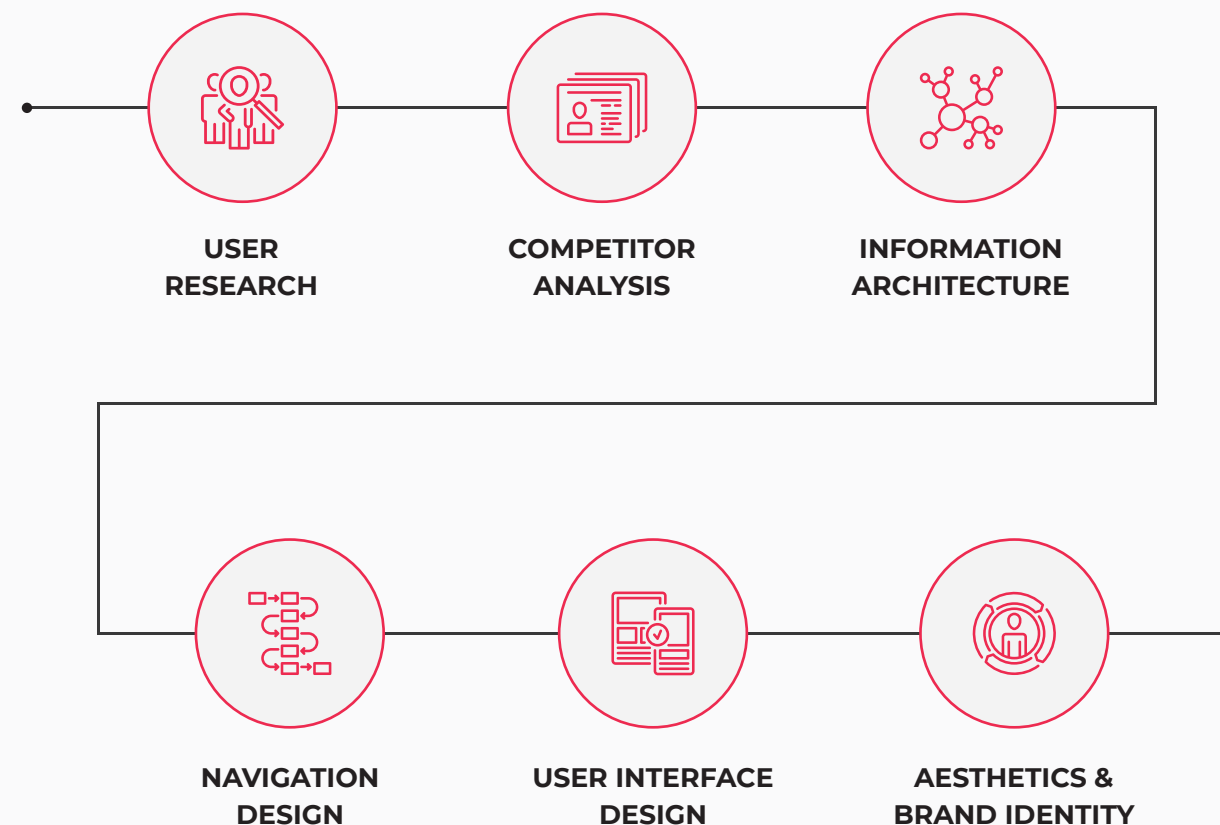
UNKNOWN LOCATIONS

DESIGN THINKING

We approached this problem using “**Lean & Agile User Experience Design Principles**”. This technique comes in handy when time & budget plays a critical part in the design delivery process.

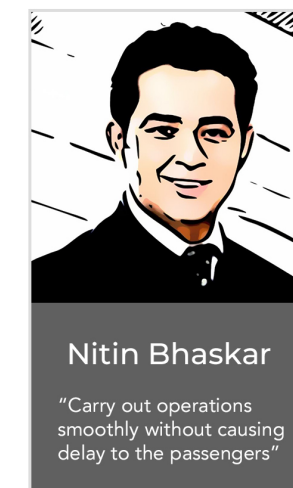
At HUX, we follow a methodological Design Thinking process for any problem; big to small, critical to trivial. Our designers empathize with the pain points of the existing system/UI, define user experience issues and ideate on possible solutions. While designing, we make hypotheses, take “word-of-mouth” suggestions from stakeholders and move on. We later validate all our assumptions by Usability Testing, Stakeholder Feedback and ROI Analysis.

OUR DESIGN JOURNEY



USER RESEARCH

Based on the stakeholder interviews, we created the "user persona".



#focused #attentiontodetail #reliable_nature

Bio

Nitin is the Ground Operations Head at Delhi Airport. He manages transport of passengers & cargo from airport to plane & vice-versa. He is a very meticulous person and does not want his work to be affected by careless/silly mistakes.

Goals

Complete ground tasks as efficiently as possible without any hiccups.

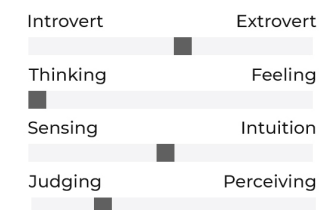
- To know the live location of the airport bus
- Communication with ground staff at the plane
- Communication with bus drivers

Frustrations

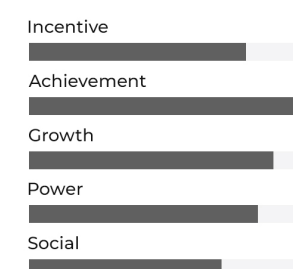
Nitin loses a lot of time over radio communication to know about bus location and it's status. Also he doesn't know when to let the second batch of passengers leave the gate to board the plane.

- Lack of communication between ground teams leading to delay in operations
- No view of live ongoing operations

Personality



Motivation



Competitors



EMPATHY MAPPING

An empathy map is a collaborative tool, designers use to gain a deeper insight into their customers. The map plots all the emotions a user has upon using a product/service.

01 THINKING & FEELING

What is important to customers?
What are his hopes, dreams, fears?

02 SEEING

What does the customer's environment look like?

03 HEARING

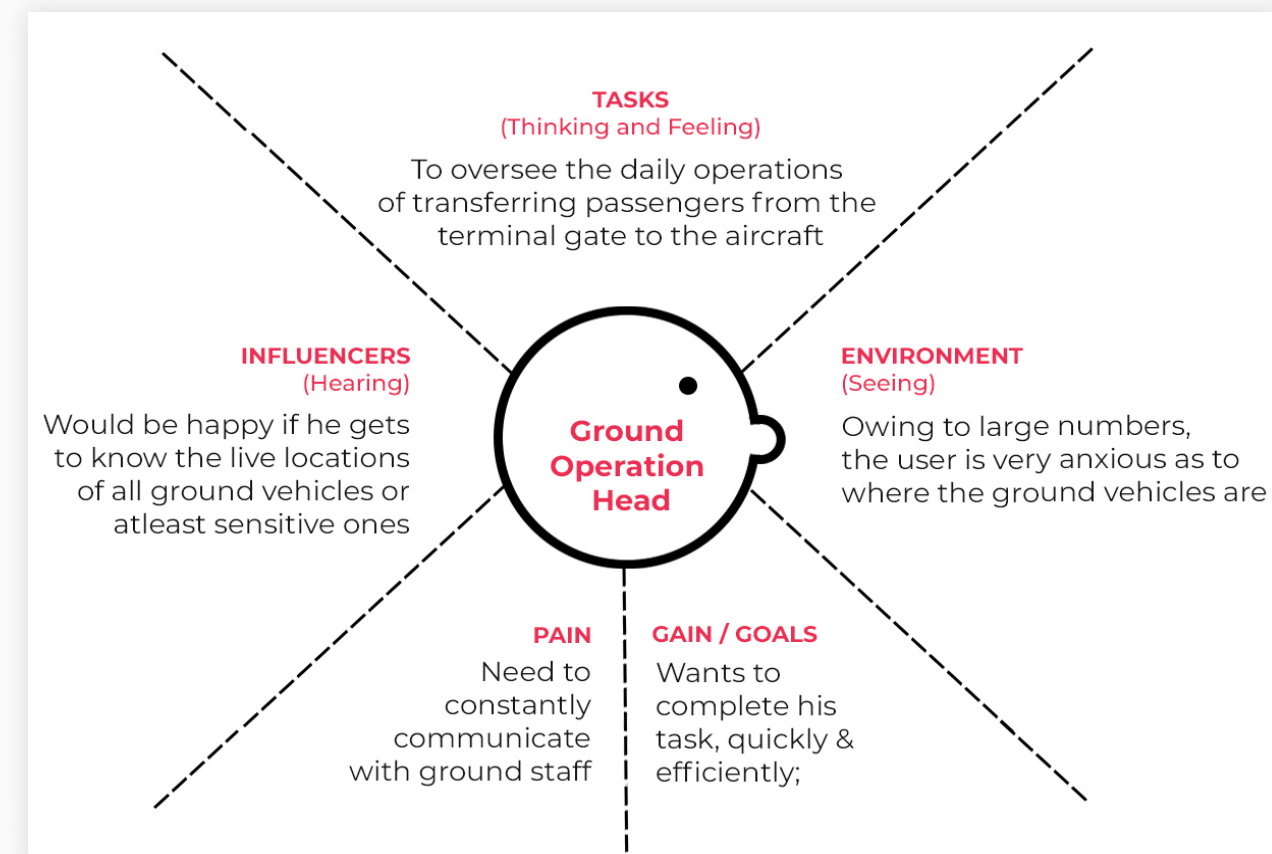
What influence the customers?

04 PAIN

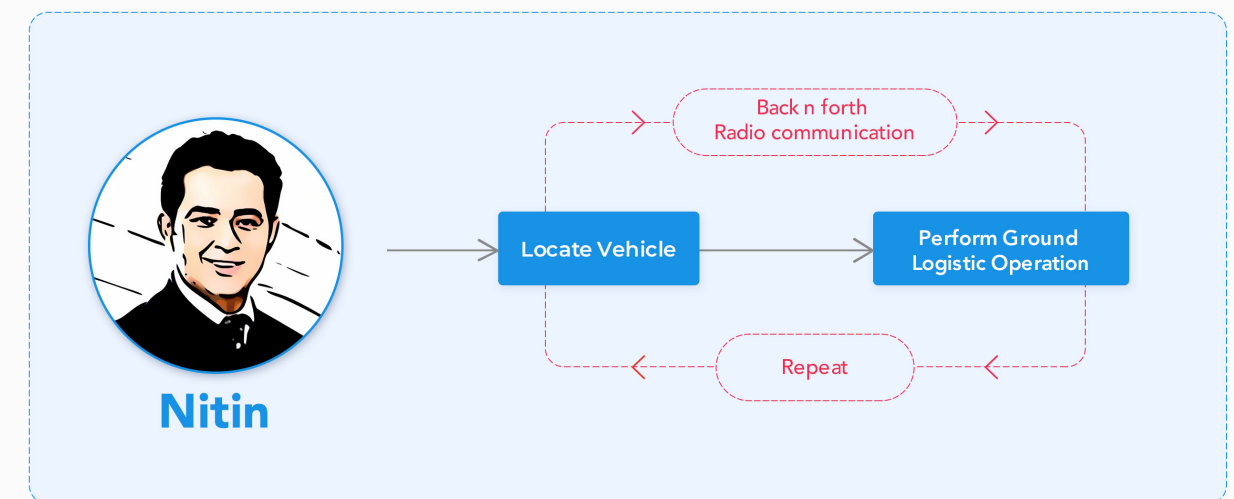
What obstacles or challenges does the customer have?

05 GAIN

What does he hope to achieve?
How can he measure success?



USER JOURNEY



ABOUT THE GROUND OPERATIONS HEAD (NITIN)

The Ground Operations Head has to transfer 250 passengers from a specific gate to the airplane via airport busses on a daily basis. As of now the whole operation is carried out just with the help of radio communication.

USER TASKS

- To know the live location of the airport busses
- To communicate with crew members inside the aircraft and airport bus

PAIN POINTS

- Loses a lot of time over radio communication to know about bus location status
- Doesn't know when to let the next batch of passengers leave the terminal gate to board the aircraft

CURRENT ISSUES

From our Lean User Research, we concluded that Nitin qualify as “power-user” with the following characteristics

- Would want easy & quick navigation
- Instant views / results within a single click
- Live, accurate & pin-point view of each vehicle on the grid
- Automated routes created by system's artificial intelligence (AI) to increase efficiency



Against the user emotions & expectations, the following issues need to be addressed from an experience standpoint



UNNECESSARY DELAYS



COLLIDING ROUTES



INCORRECT LOCATION

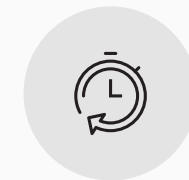


USER DOESN'T KNOW THE LIVE LOCATION OF AIRPORT VEHICLES



USER HAS TO WAIT FOR GROUND SIGNAL VIA RADIO TO PROCEED FURTHER

DESIGN PHILOSOPHY



UNNECESSARY DELAYS



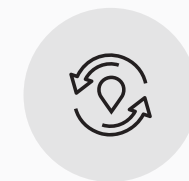
ON-TIME OPERATION



OVERLAPPING ROUTES



EFFICIENT AND FASTER ROUTES



UNKNOWN LOCATIONS



ACCURATE & PINPOINT LOCATIONS VIA GPS

DESIGN GOALS



User centric & not business
Usability vs time is the key



Progressive disclosure
Funnel view towards the data makes easy to find



Show relevance
A modern approach for getting vehicle tracks from the User Interface



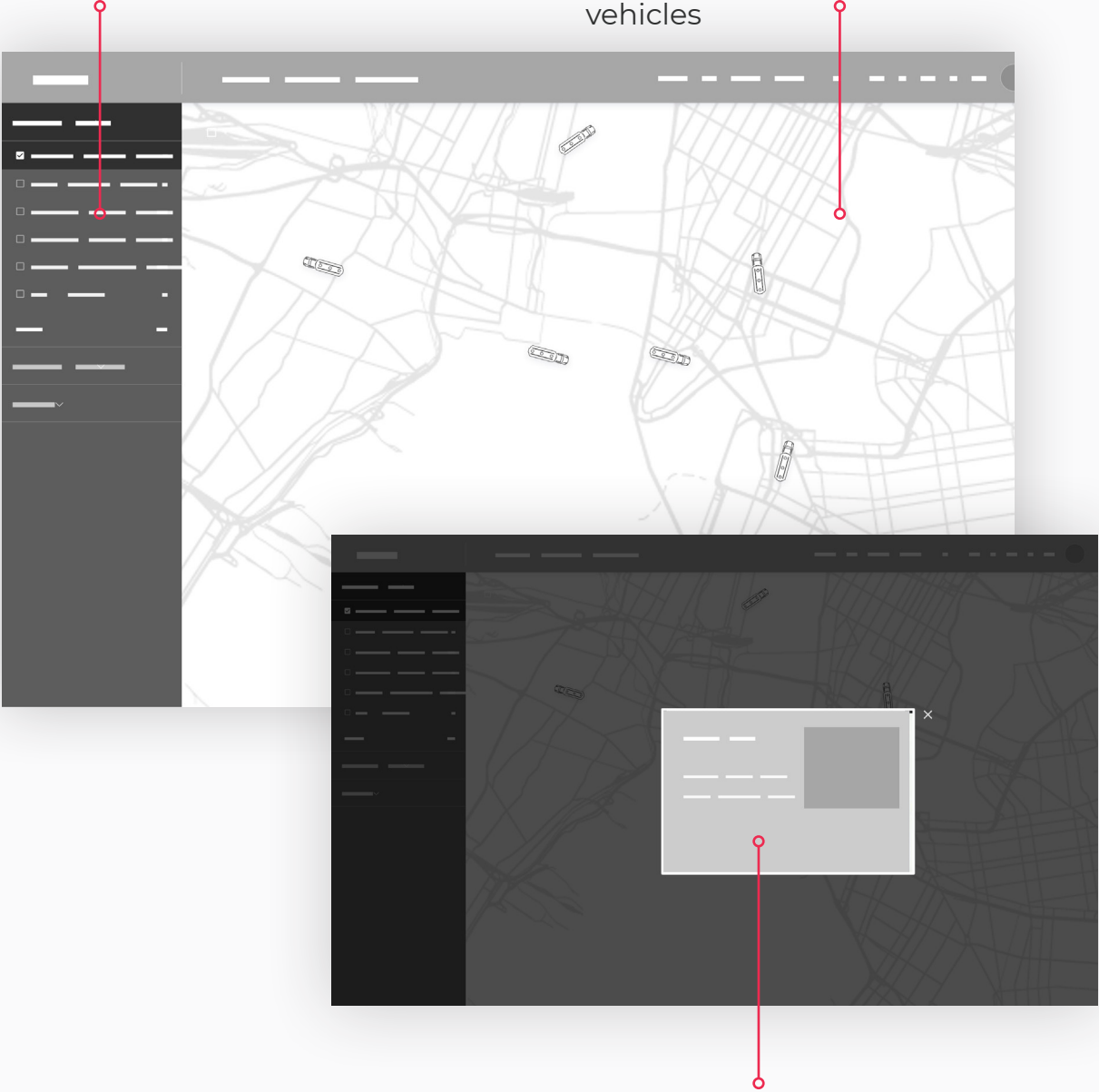
Keep in the same page
Keeping the user in the same page and managing load by interactions

WIREFRAMES

LANDING PAGE

Left column for navigation
& extra information

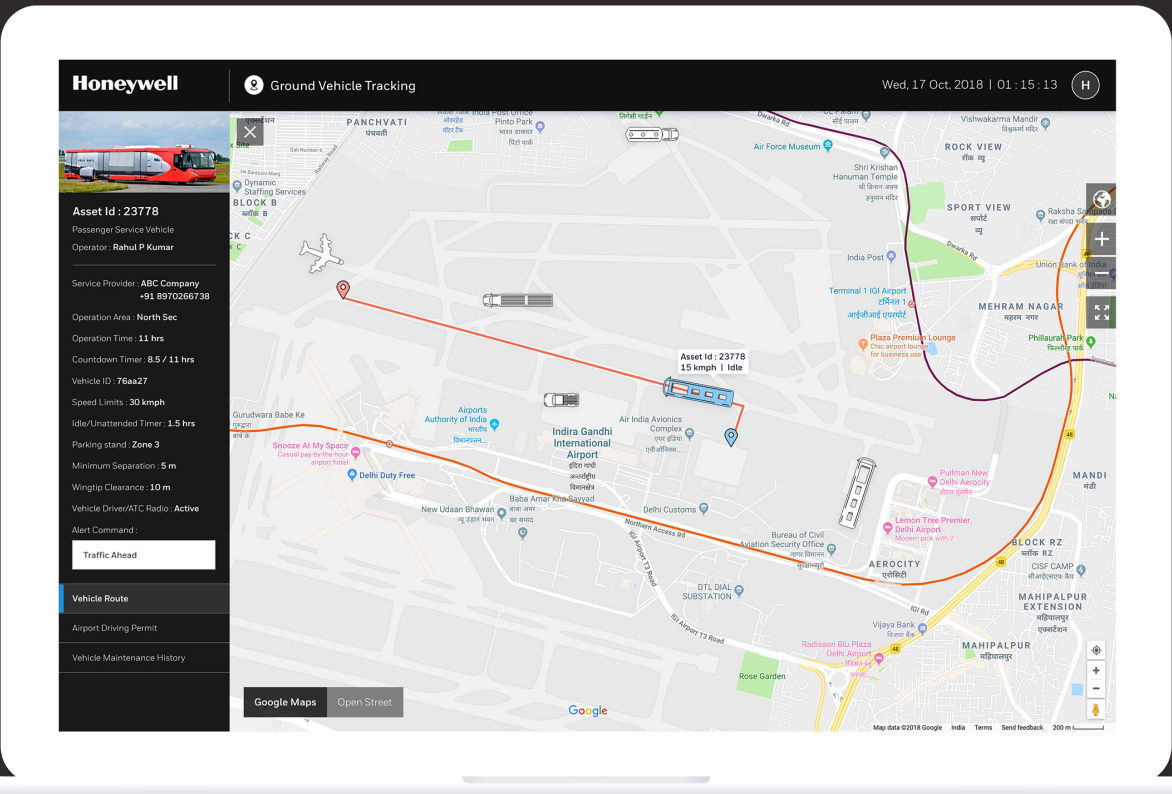
Maximum area for the map
for better visualization of
vehicles



Overlays for information
as dialog box

A NEW EXPERIENCE

EASY-ON-THE-EYE, YET POWERFUL & ROBUST MONITORING EXPERIENCE



Pinpoint Accuracy

Created a system which provides the location of vehicles on the airfield at all times and in all conditions. This is a critical part of managing a safe and efficient operation.

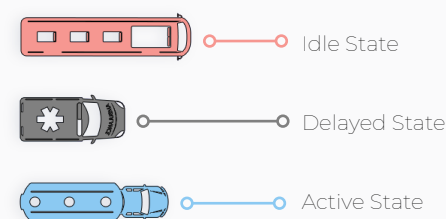
01 Side Bar

- Provides user with multiple filter options for different types of ground vehicles
- Calculates the total tally of vehicles on ground at given point of time via gps

Vehicle Types ^	
<input checked="" type="checkbox"/> Aircraft Services Vehicle	6
<input type="checkbox"/> Cargo Services Vehicle	1
<input type="checkbox"/> Passenger Service Vehicle	11
<input type="checkbox"/> Emergency Service Vehicle	2
<input type="checkbox"/> Airport maintenance Vehicle	11
<input type="checkbox"/> Tug Vehicle	8
Total	32
Vehicle History v	

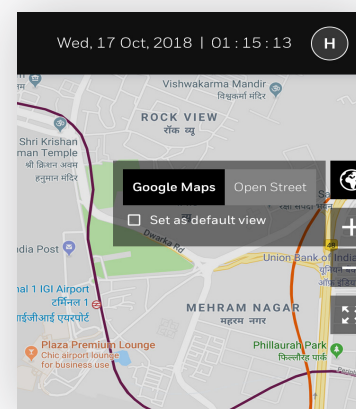
02 Distinct Icons

- Created icons for different types of ground vehicles
- Also set vehicles states via colors for easy identification on airport map



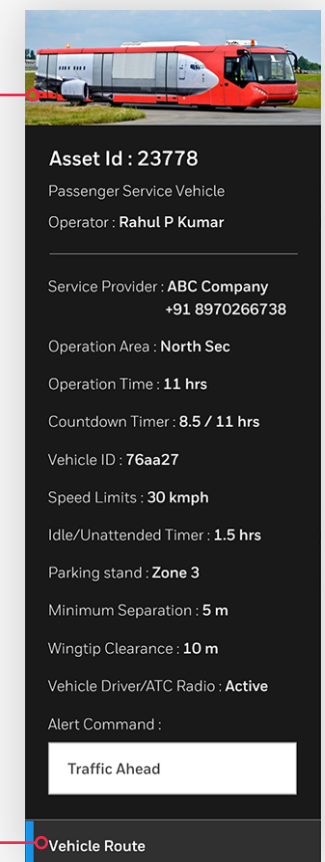
03 Map Tools

- Handy map tools are placed on the right of the system
- It consists of a toggle between google maps & open street, zoom in & out and a fullscreen option for maps



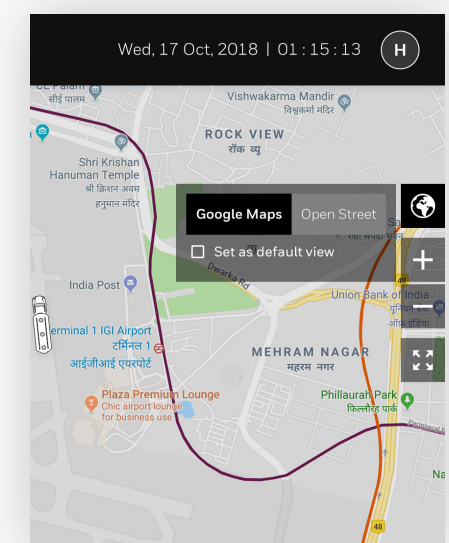
04 Vehicle Info / Routes

- Increased the prominence & visual cue for frequent actions like "Saved Searches" with the help of floating panel
- Ability to save search criteria is designed within close proximity to its related action
- Clicking on the route tab on the left shows it's specific routes
- It has an indicator of vehicle Id, status & speed



05 Search Function

- Clicking on the route tab on the left shows it's specific routes
- It has an indicator of vehicle Id, status & speed



RETURN ON INVESTMENT



Finally good to see actual live locations of the whole fleet in real time!!

- THE CLIENT



TASK COMPLETION RATE

Transparency of airport's ground vehicle movements has increased leading to less time in boarding passengers.

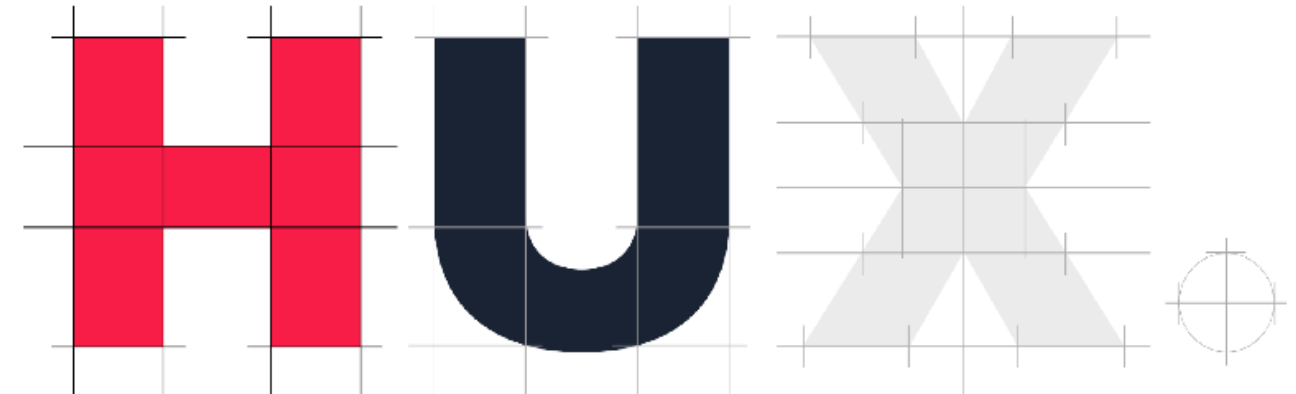
With the ability to track the vehicles, there are comparatively less delays in luggage & cargo offloading.



BUILDING INTELLIGENT SYSTEMS

Our new system has given scope for more efficient route mapping and navigation via AI for all the ground vehicles.

This will reduce accidents, traffic & delays. Also it will pave the road for an automated travel experience.



We define the user experience strategy for enterprises to build their products. We create experience design and also develop the same for our clients. Our agile design thinking approach has delivered delight to many of the Fortune 100 companies. We empathise with our client's end-users, conduct lean user research, conceptualise ideas, design experiences, deliver and engage through its end-2-end product development.

We are an Intelligent SaaS solutions development company. We use our advanced developmental capabilities to deliver a range of specialized IT services including Product Innovation, Modernization, Cloud Migration, Integration, Data Analytics, Machine Learning, API Management and more. Our strategic partners include AWS, Salesforce, and Redis.



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