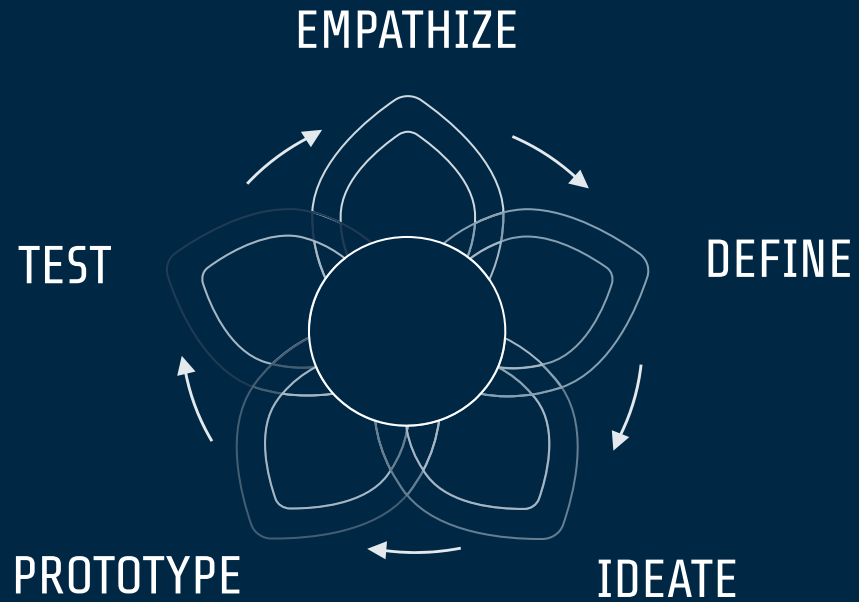




KIANA CONSULTING PHASE-I REPORT

3 x Zones

CONTENT



EMPATHIZE

DEFINE

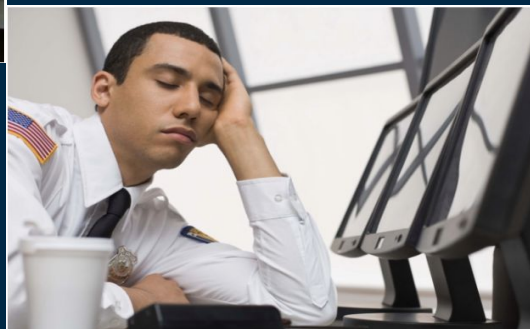
IDEATE

PROTOTYPE

TEST



CURRENT SITUATION





EMPATHIZE

DEFINE

IDEATE

PROTOTYPE

TEST



CURRENT SITUATION

Problem 2: Elevator

Power Outage at Murtala Mohammed Airport, Lagos Traps People Inside Elevator for 45 Minutes![1]

Problem 3: Restricted Area

On May 7, 2020, Southwest Airlines Flight 1392 struck and killed a pedestrian while landing on runway 17R at Austin-Bergstrom International Airport. The victim, who was not a badged airport employee, was subsequently confirmed to have breached airport security in reaching the runway.

Problem 4: Devices stolen from airport

According to police, unknown suspects(s) entered the 40 acre Mauka Extension Project construction site in Daniel K. Inouye Airport and proceeded to steal approximately \$100K in hand tools and construction equipment on December 20th at 11 p.m.



EMPATHIZE

DEFINE

IDEATE

PROTOTYPE

TEST




CURRENT SITUATION

citation

1.<https://www.bellanaija.com/2012/05/power-outage-at-muritala-mohammed-airport-lagos-t-raps-people-inside-elevator-for-45-minutes/>

2.https://www.wikiwand.com/en/Airport_security#/Notable_incidents

3.<https://www.khon2.com/local-news/over-100k-worth-of-equipment-stolen-from-airport-construction-site/>



EMPATHIZE

DEFINE

IDEATE

PROTOTYPE

TEST



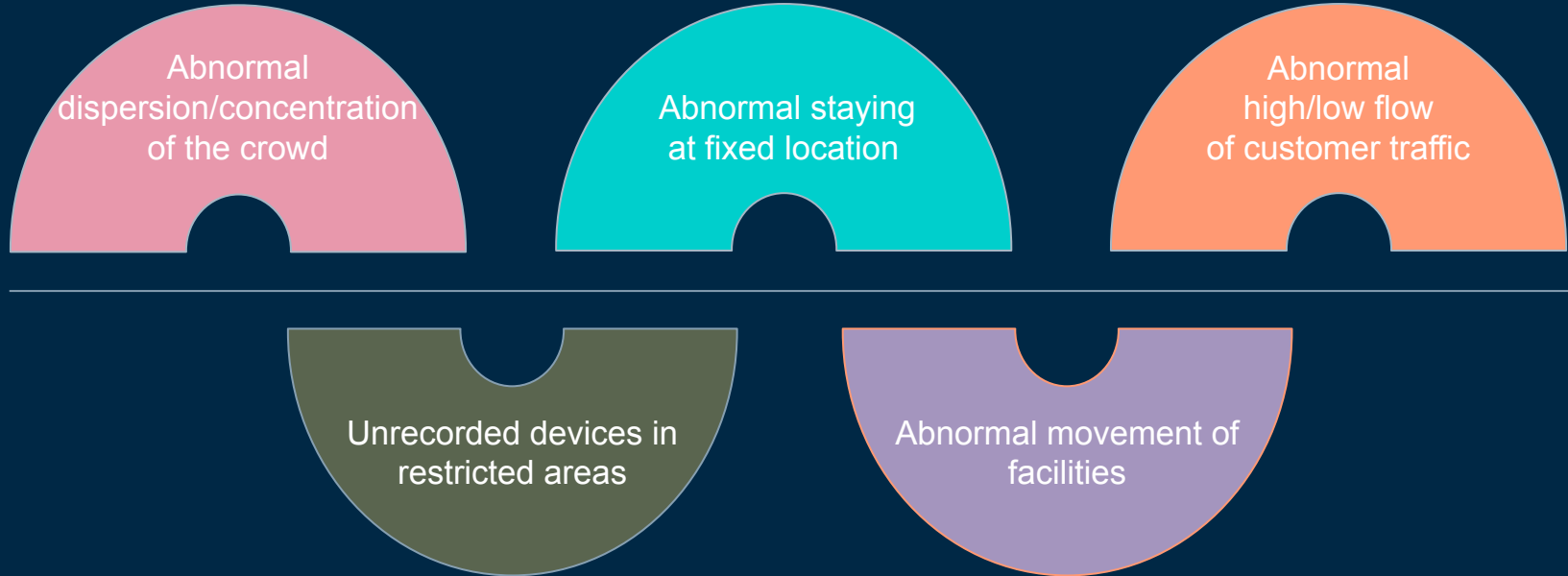
890,758

Number of devices
appear in TPS1 Level 2





DETECT ABNORMAL MOVEMENT & DENSITY





GOAL : Enhance the efficiency of detection and response time



01

MAINTENANCE NEEDS



02

EMERGENCY SITUATION



SPECIFIC APPLICATION



"When there's a fire incident or bomb threat, people will be running away from the site."



"When a person is stuck in an elevator, the device remains at the same location for a long period of time."



"When there's medical related emergency, the crowd will be gathering at one location."



"When the restroom or other facilities needs maintenance, the passenger flow will drop significantly."



"If a non-airport device appears in a place that is not open to the public, that might be guests entering restricted areas, either by mistake or on purpose."



"An airport device moves out of its normal range may be associated with equipment stealing."



ADVANTAGES

Prevent maintenance issue to ensure airport's operational continuity

OPERATION

Efficiency
Reduce response time for emergency



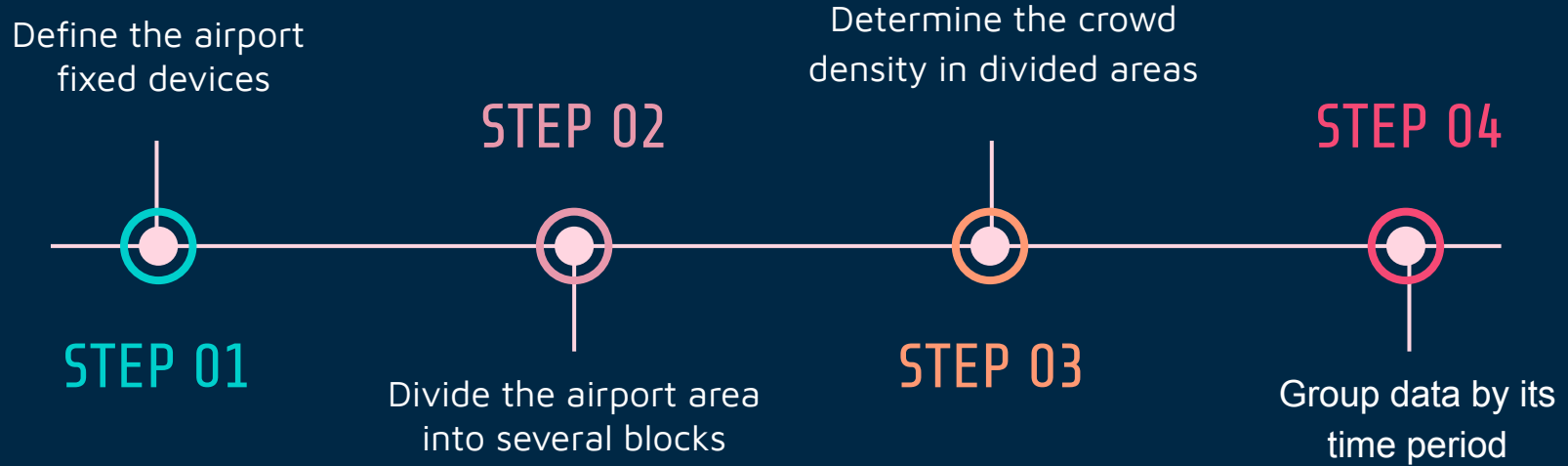
Ensure airport's and passengers' safety

SAFETY

COST
Reduce manual labor cost & security cost.



TECH APPROACH





TECH APPROACH

Determine the normal movement speed of the crowd



STEP 05

STEP 06

Use models to distinguish the normal and abnormal



Confirm the reliability of our model by determining whether any previous events were detected by our test dataset.

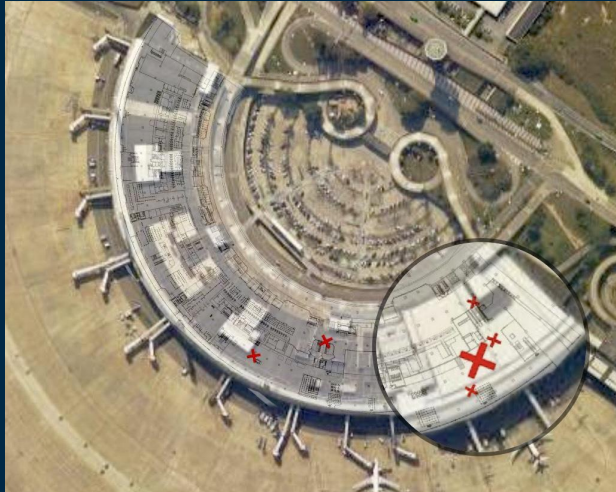


STEP 07





Fixed Devices

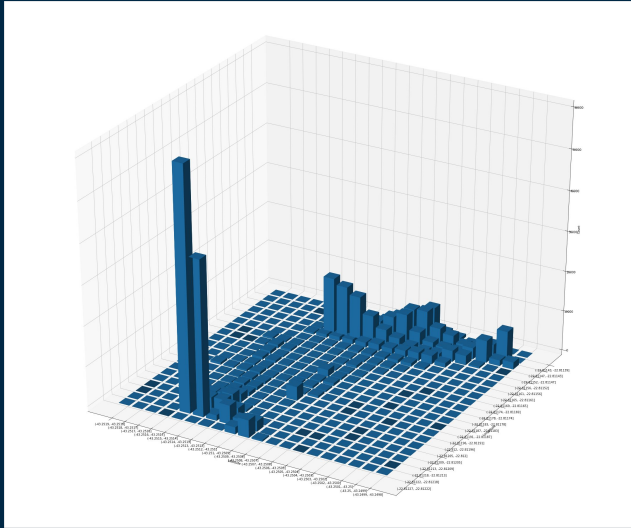


MAC Address (e.g.):

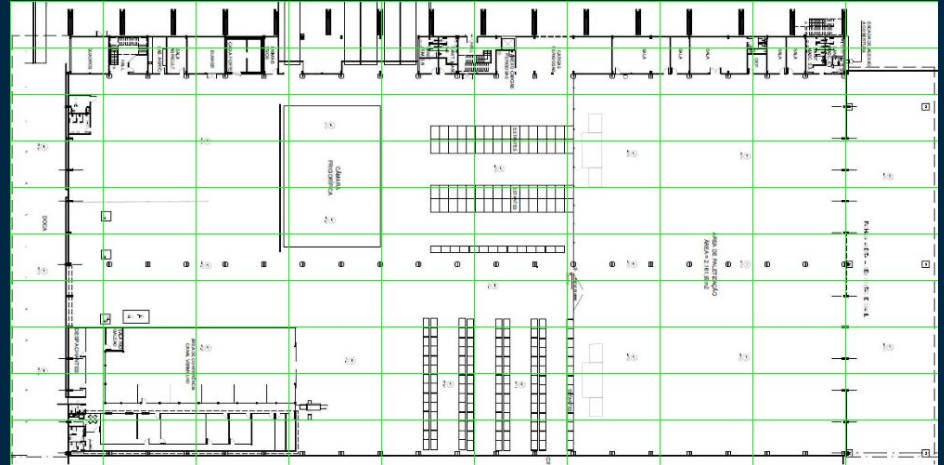
00:05:9e:97:19:b0
28:80:23:32:16:10
28:80:23:32:16:11
28:80:23:32:16:12
28:80:23:32:16:16
30:b5:c2:d4:c1:40
c0:25:e9:7e:d8:5c
c0:25:e9:7e:d8:5d
c0:25:e9:7e:d8:5e
d0:04:01:48:f9:66
fc:64:3a:24:ab:dc



Crowd density by coordinates



Grids



EMPATHIZE

DEFINE

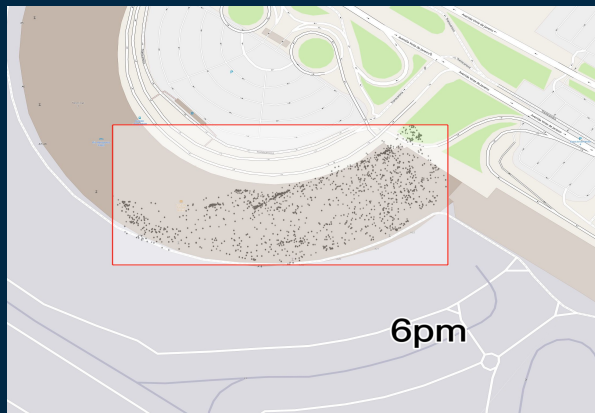
IDEATE

PROTOTYPE

TEST

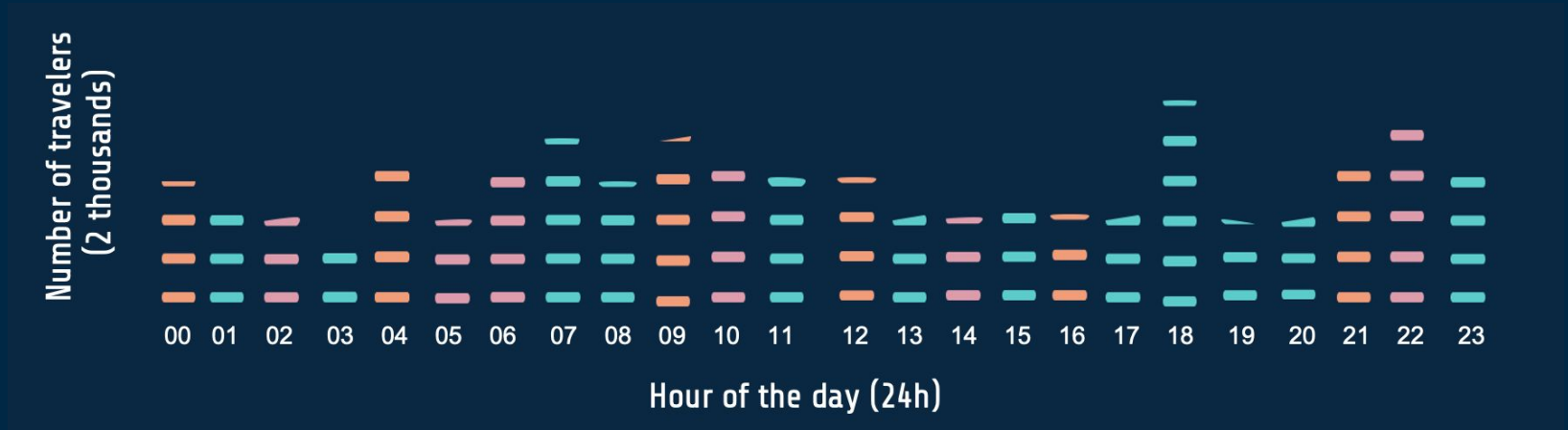


One day's Crowd
Density
at 4am, 8am,
6pm, and 11pm



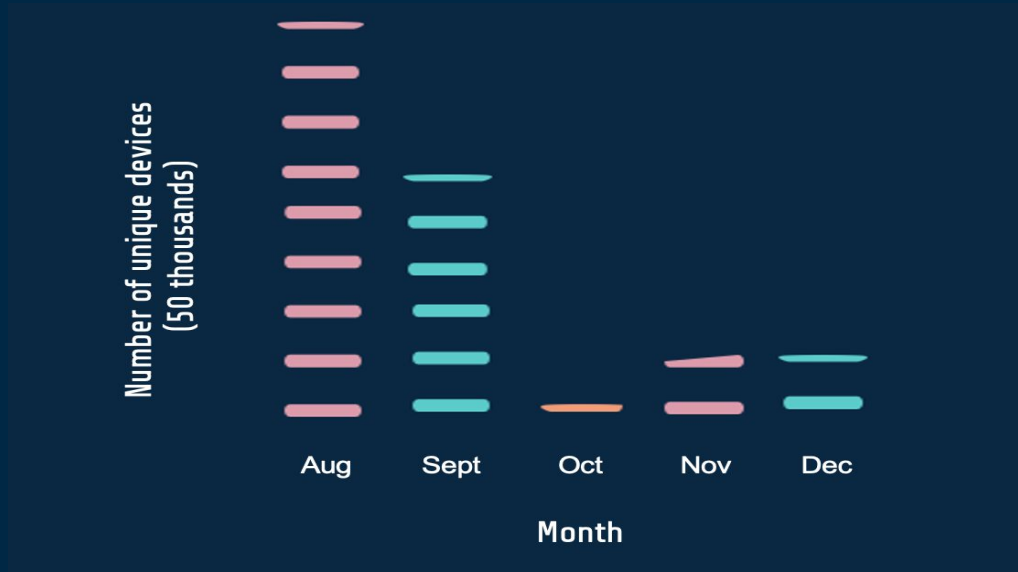


Average Traveler Amount by Hours





Amount of Unique Devices by Months



The background is a dark blue gradient. It is decorated with various geometric elements: thin white vertical lines of varying lengths, small squares in teal, orange, and pink, and larger squares in teal and orange. Some squares are solid, while others are outlined in white. The text is centered in the upper half of the image.

Any Questions?

THANKS