KNIME PARA EL CENTRO DE COMANDO Y CONTROL DE UNA EMPRESA DE TRANSPORTE TERRESTRE

KNIME DATA TALKS EN ESPAÑOL

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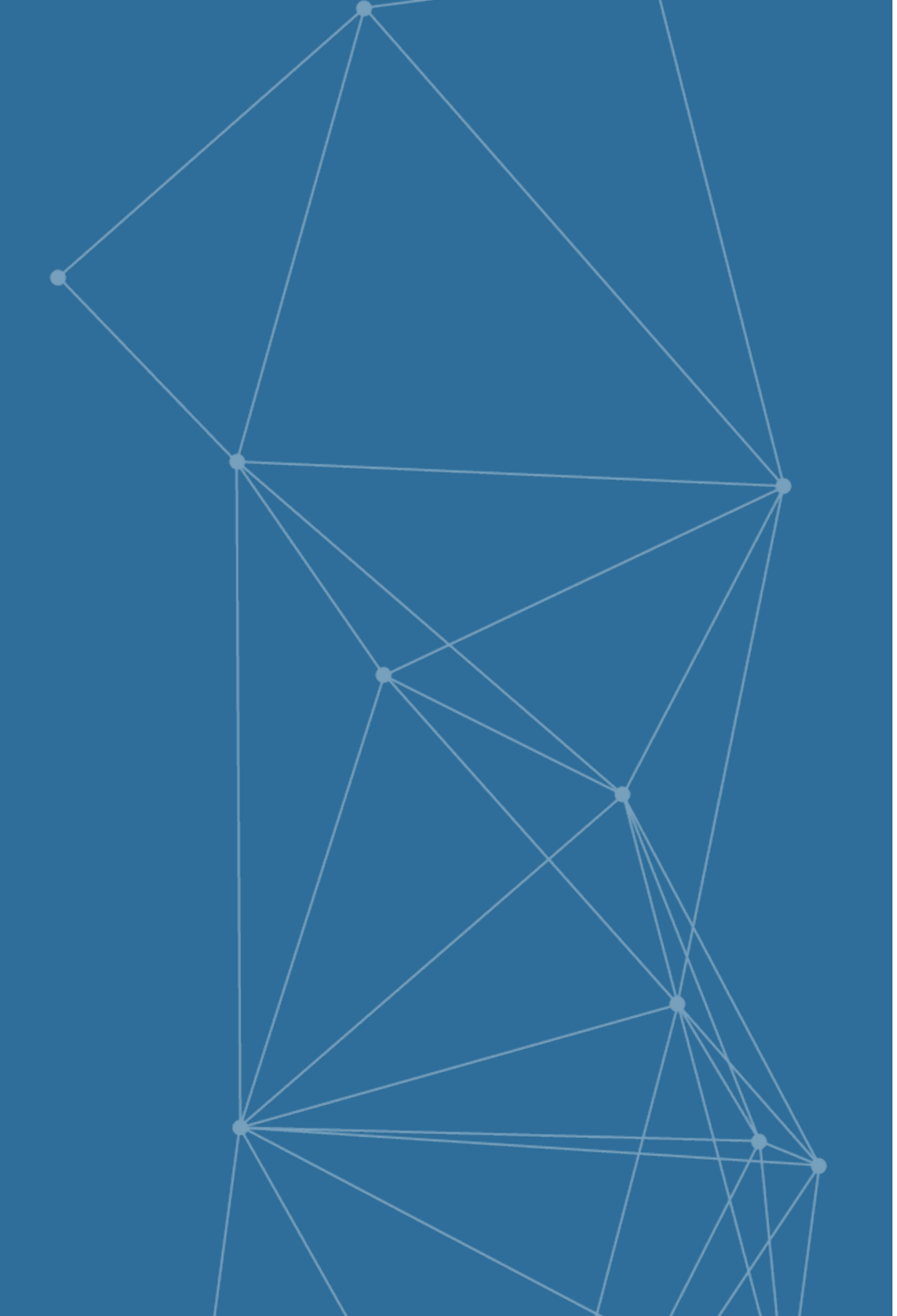
22 JULY 2021

Open for Innovation
KNIME CLEARPEAKS

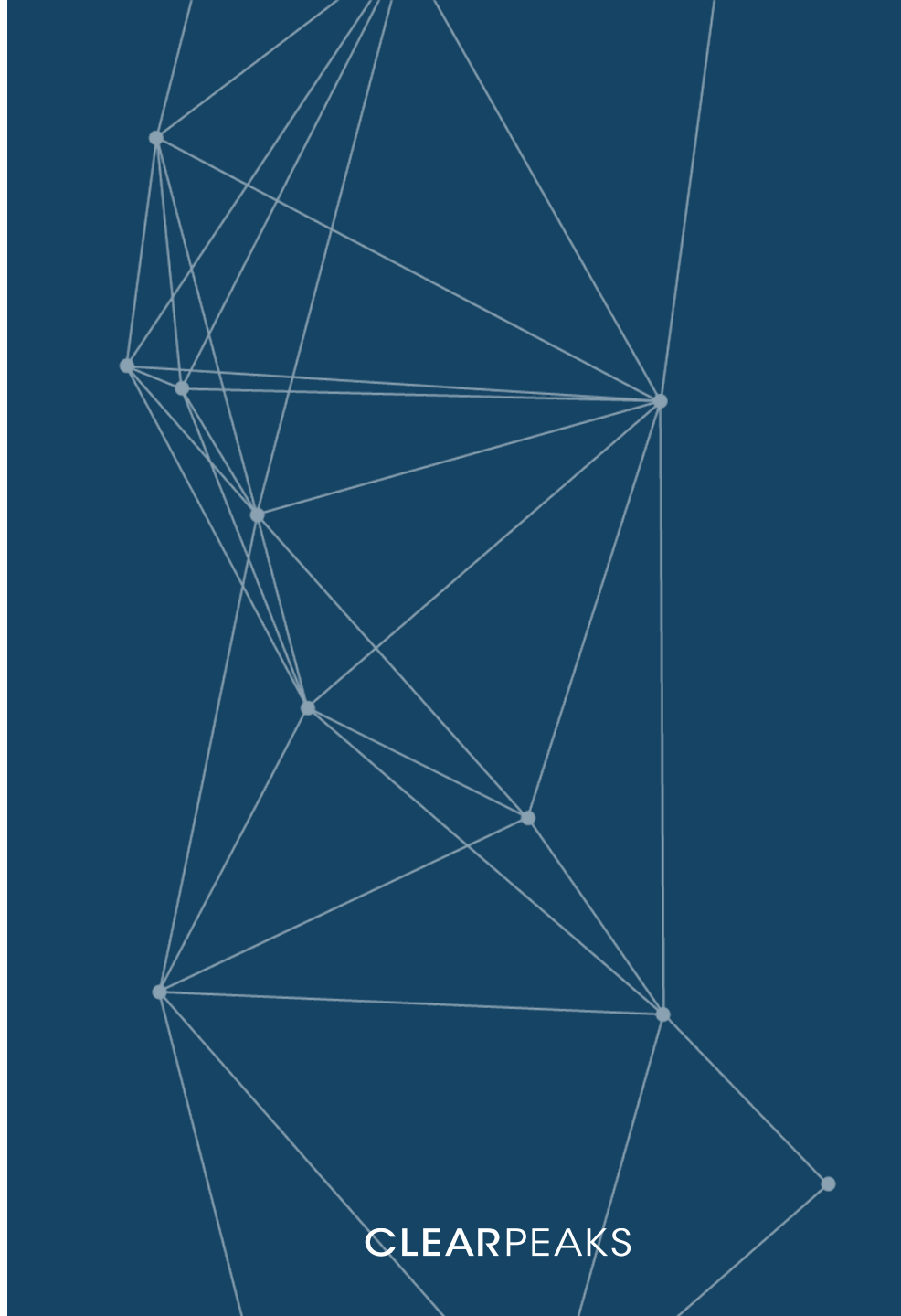


AGENDA

1. About the Customer & Project
2. Technologies, Architecture & Data flow
3. KPIs
4. Challenges & Cool Things
5. Wrap-up & Conclusions
6. Q&A

CLEARPEAKS

ABOUT THE CUSTOMER & PROJECT



About the Customer

- RTA - Roads and Transport Authority Dubai.
- Plans and constructs transportation and road projects in Dubai (or) between neighbouring emirates.
- Strategic planning for road systems, land and marine networks.
- Comprises of Public Transport Agency, Traffic & Roads Agency, Rail Agency, and Licensing Agency.

- EC^3 – Enterprise Command Control Centre.
- Collaboration and coordination between agencies, RTA, and external stakeholders.
- Integrates data from various endpoints and enables decision making.
- 5 modes of operations:
  - Normal, Incident, Emergency, Planned Event, and Crisis.

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About the Customer

هيئة الطرق والمواصلات
ROADS & TRANSPORT AUTHORITY
RTA

مركز التحكم الموحد
في الهيئة
Enterprise
Command & Control
Centre at RTA

Project

EC3 Phase1 Existing Challenges

Maintenance Cost

External Agencies

Scalability

Expo Requirements

CCTV

Ad-hoc Reporting

Project

Project Aim

- In Crisis - One Click to access near by cameras.
- Guided Assistance to handle SOPs.
- Increased CCTV Feed coverage.
- Configurable decision intelligence.
- Ready access to trends for detailed analysis.

*SOP – Standard Operating Procedure

Project

Data Elements

700

BUSES

10K

TAXIS

79

METRO TRAINS

10

TRAMS

204

MAJOR ROADS

65K

PUBLIC TRANSPORT TRIPS

180

PUBLIC TRANSPORT ROUTES

227

DUBAI COMMUNITIES

104

RADAR VEHICLE DETECTORS

2600

STATIONS/STOPS

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Project

Data Speed

20s

BUS

10s

TAXI

10s

METRO

10S

TRAMS

5M

MAJOR ROADS

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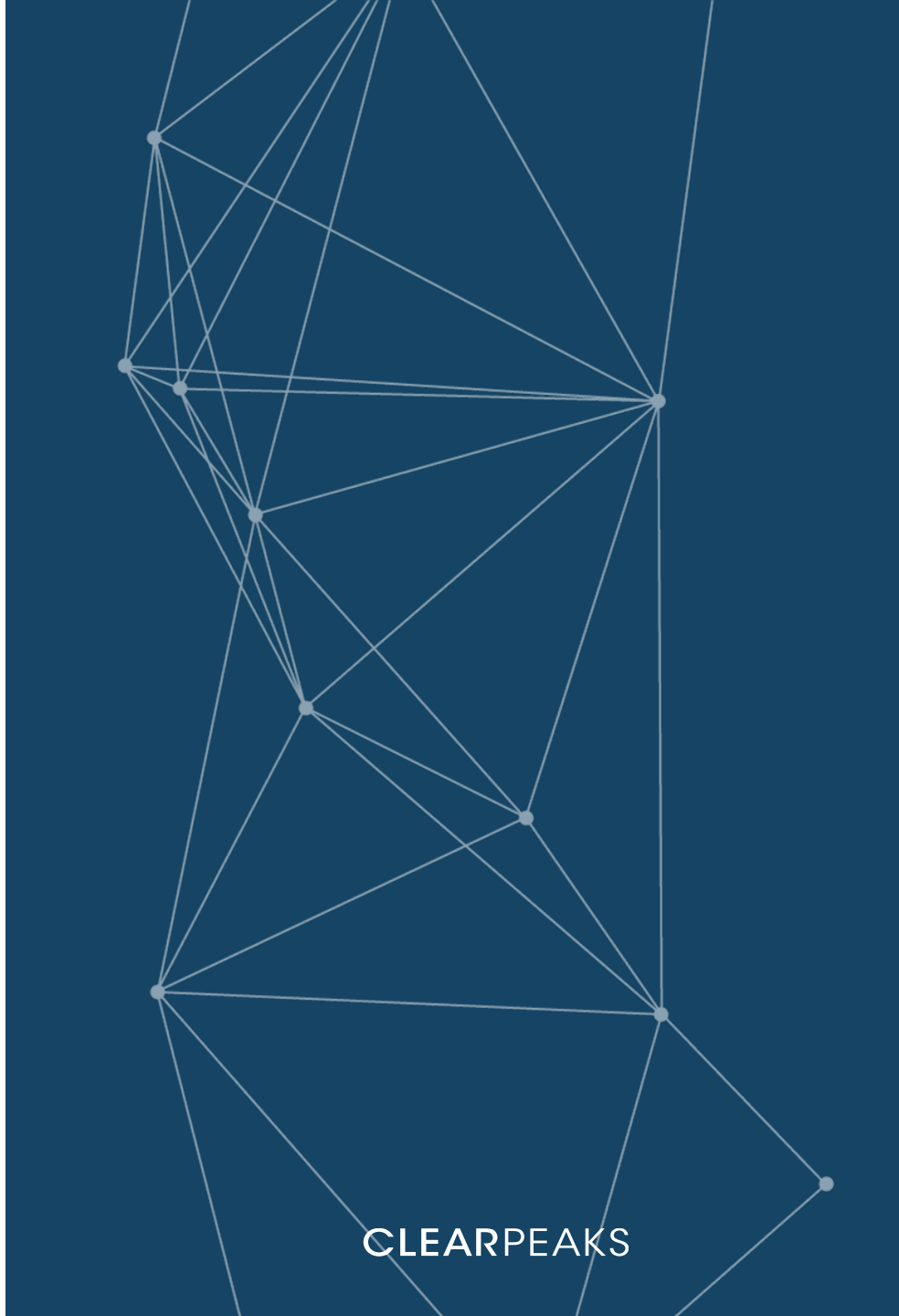
TECHNOLOGIES, ARCHITECTURE & DATA FLOW



Technologies

ClearPeaks Involvement

Other Vendors

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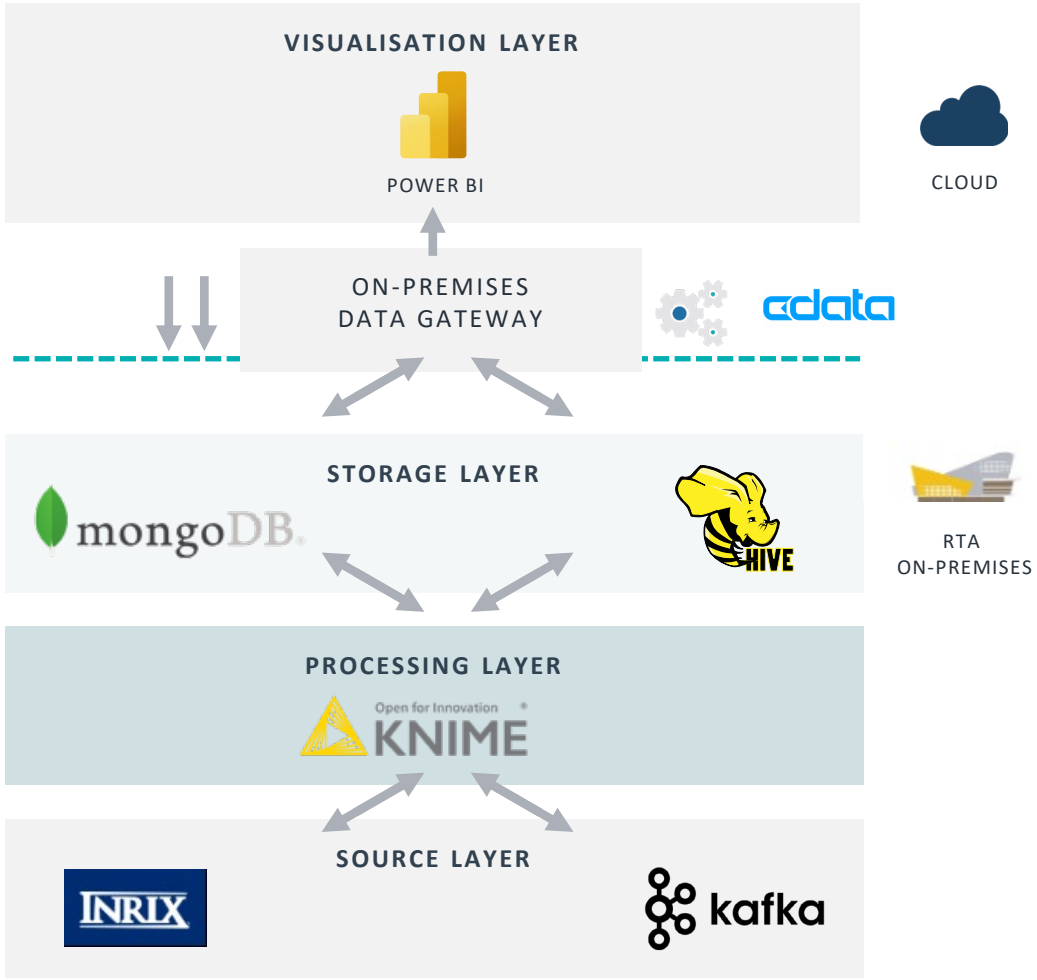
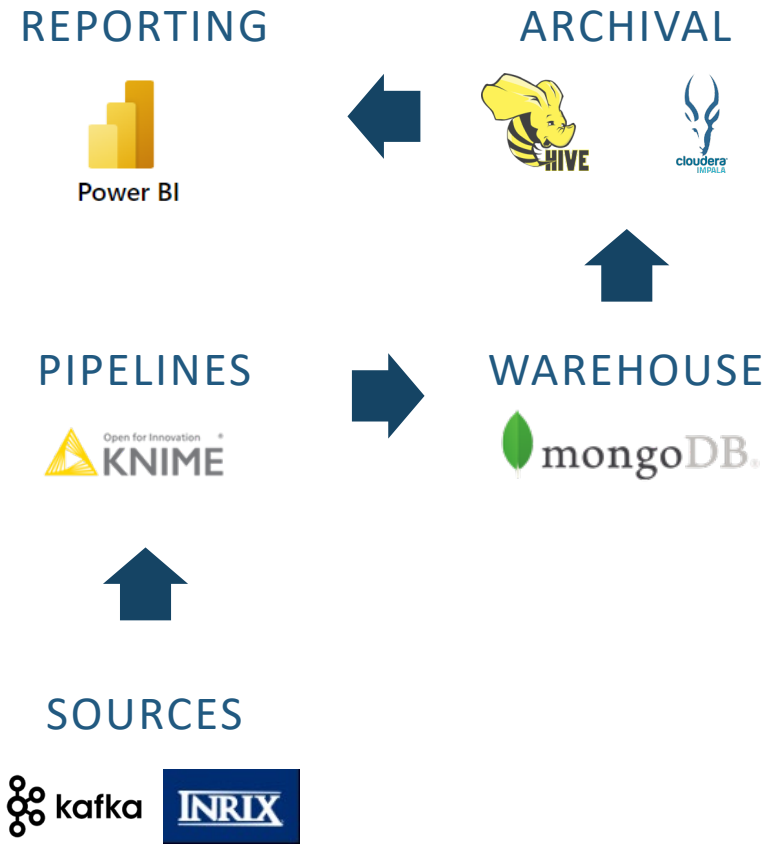
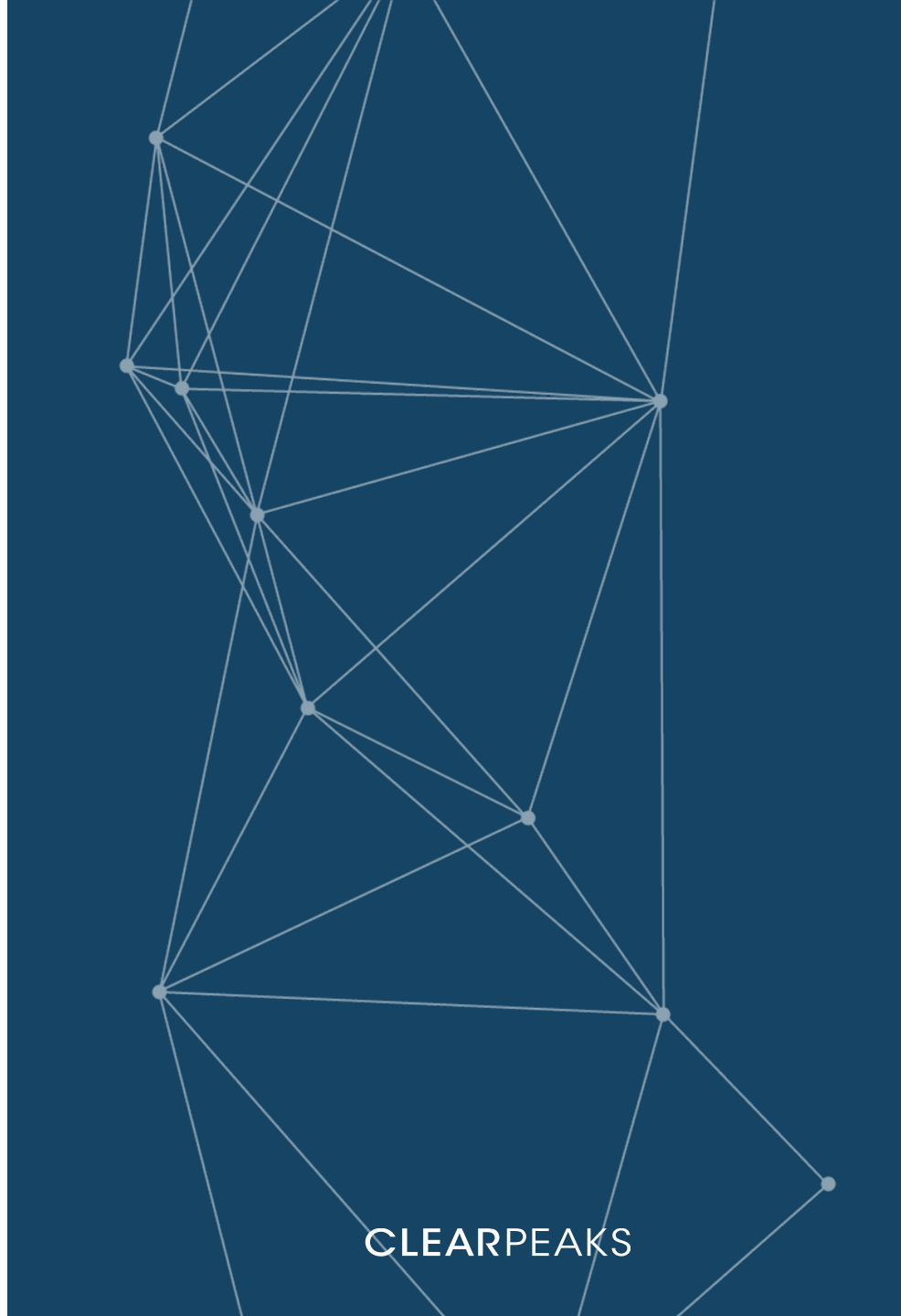
Architecture & Data Flow





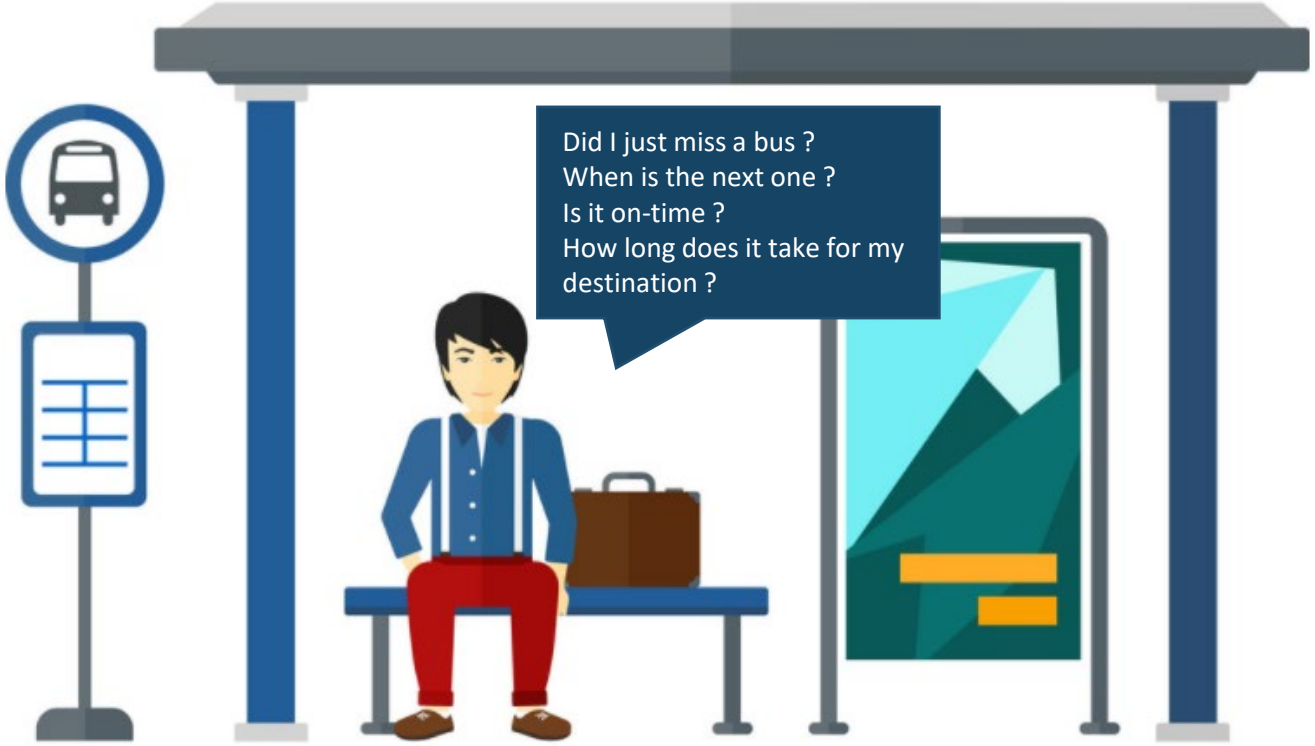
KPIs



KPIs

Public Transport

- Delays
- Travel Time
- Headway
- Forecast



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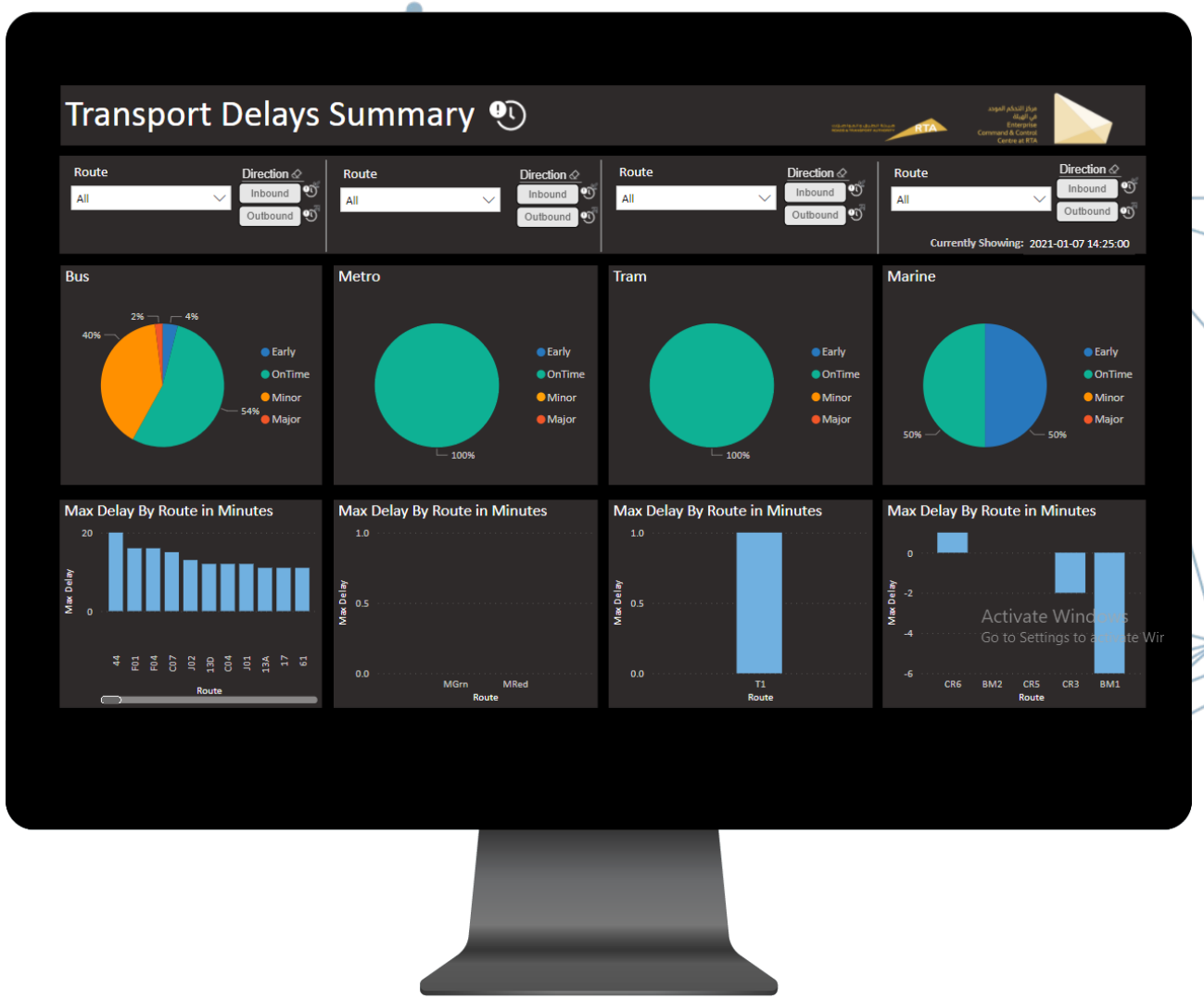
KPIs

Public Transport



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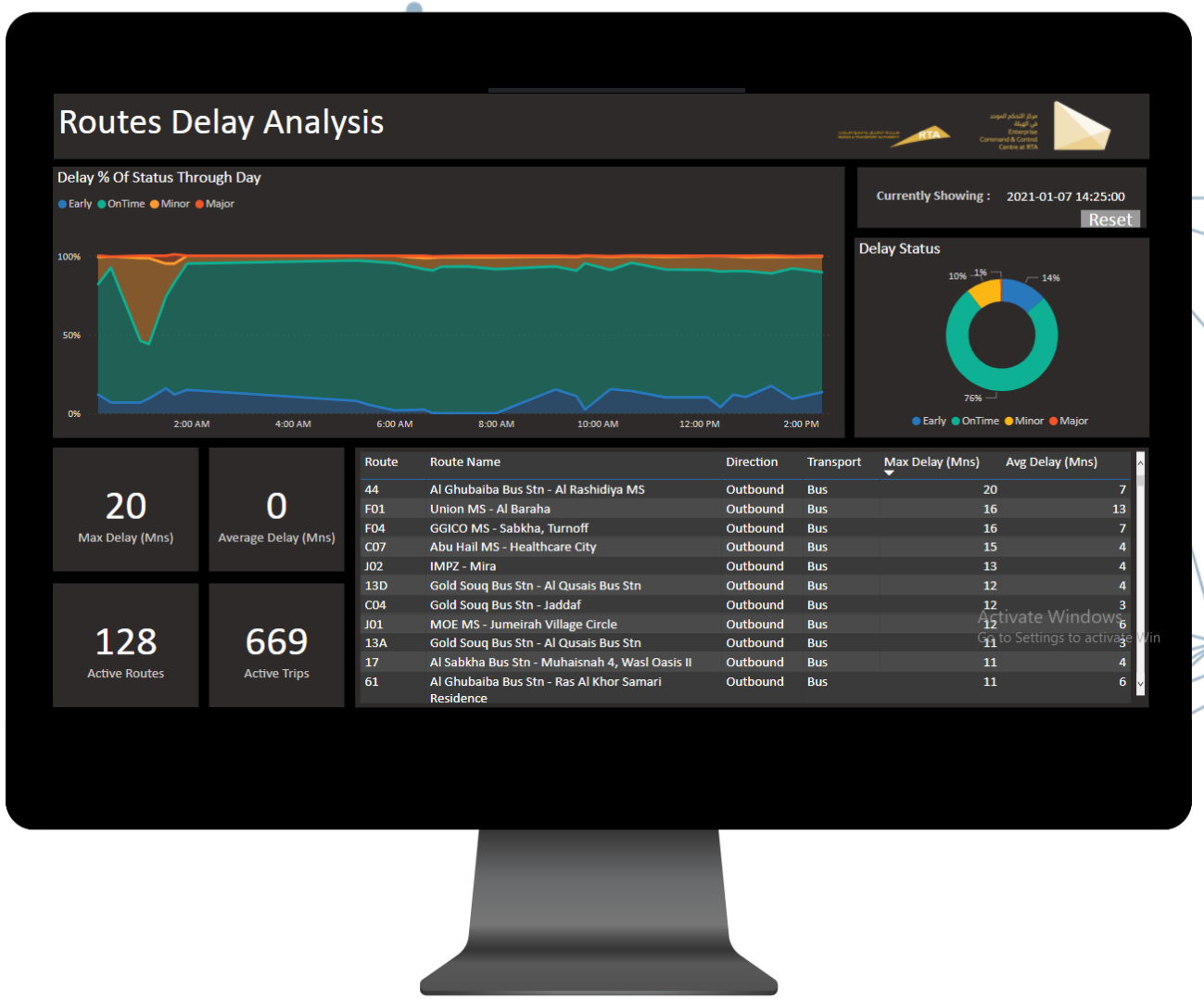
KPIs

Public Transport

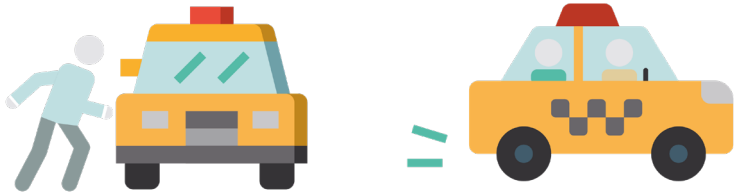


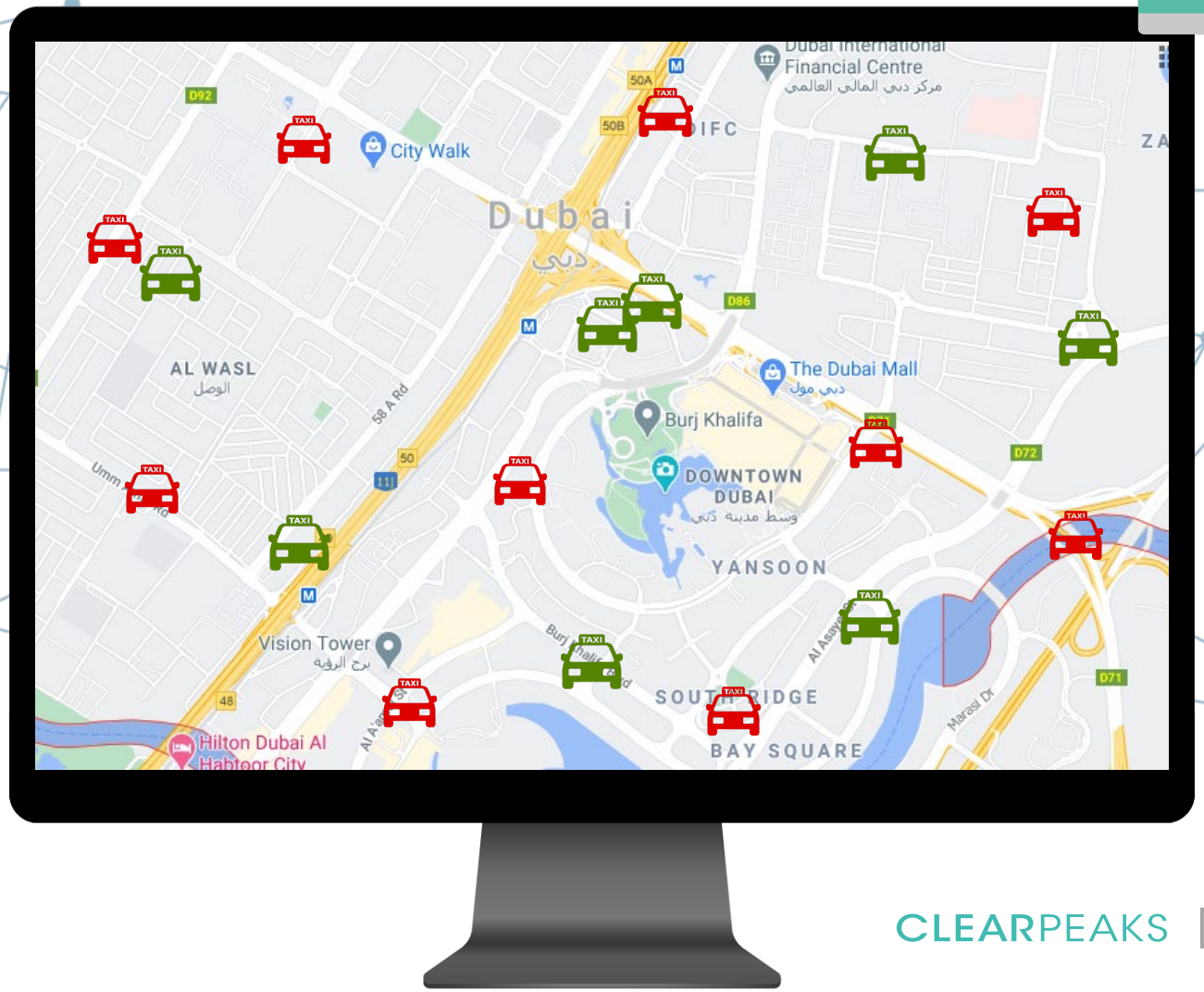
Activate Windows
Go to Settings to activate Win

KPIs

Taxis

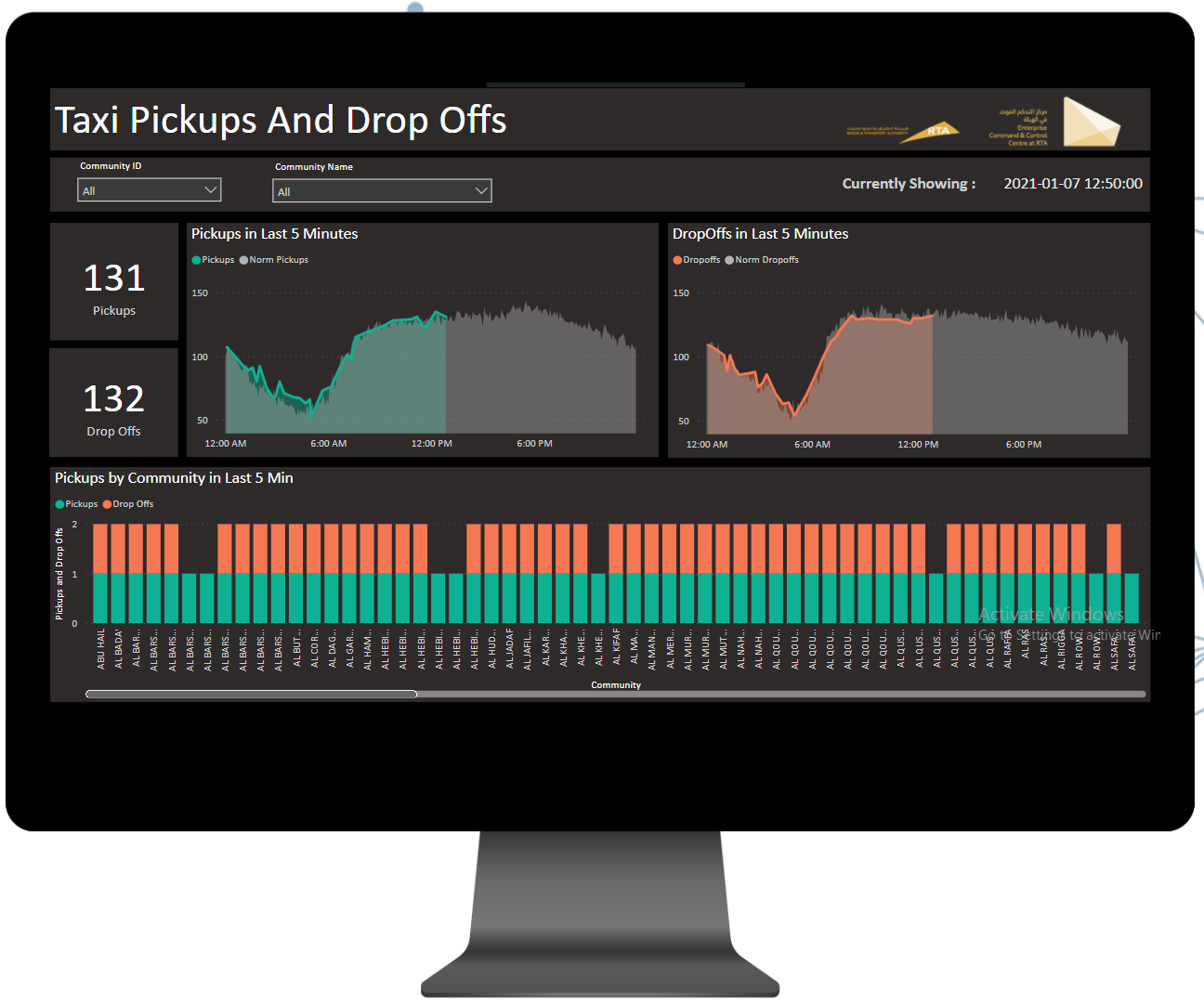
- Hired vs Available
- Pickups and Drop-offs
- Served and Unserved Bookings





KPIs

Taxis

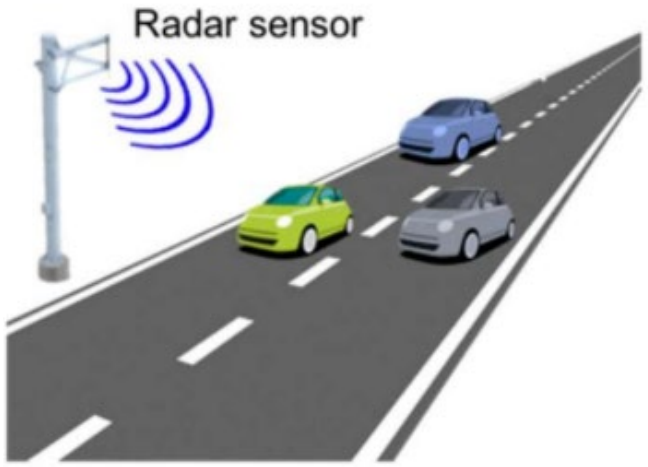

Taxi Pickups And Drop Offs
Community ID
All
Community Name
All
Currently Showing :
2021-01-07 12:50:00
131
Pickups
132
Drop Offs
Pickups in Last 5 Minutes
Pickups
Norm Pickups
150
100
50
12:00 AM
6:00 AM
12:00 PM
6:00 PM
DropOffs in Last 5 Minutes
Dropoffs
Norm Dropoffs
150
100
50
12:00 AM
6:00 AM
12:00 PM
6:00 PM
Pickups by Community in Last 5 Min
Pickups
Drop Offs
Pickups and Drop Offs
2
1
0
Community

KPIs

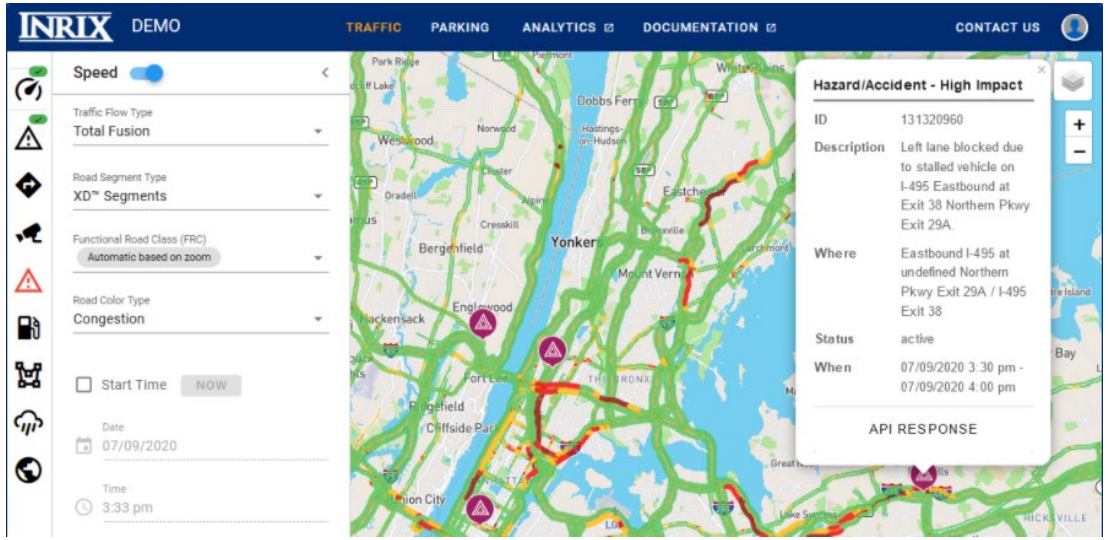
Others

- Pre-Defined Path Average Speed and Travel Time

  Eg: Dubai Airport - Sharjah Road

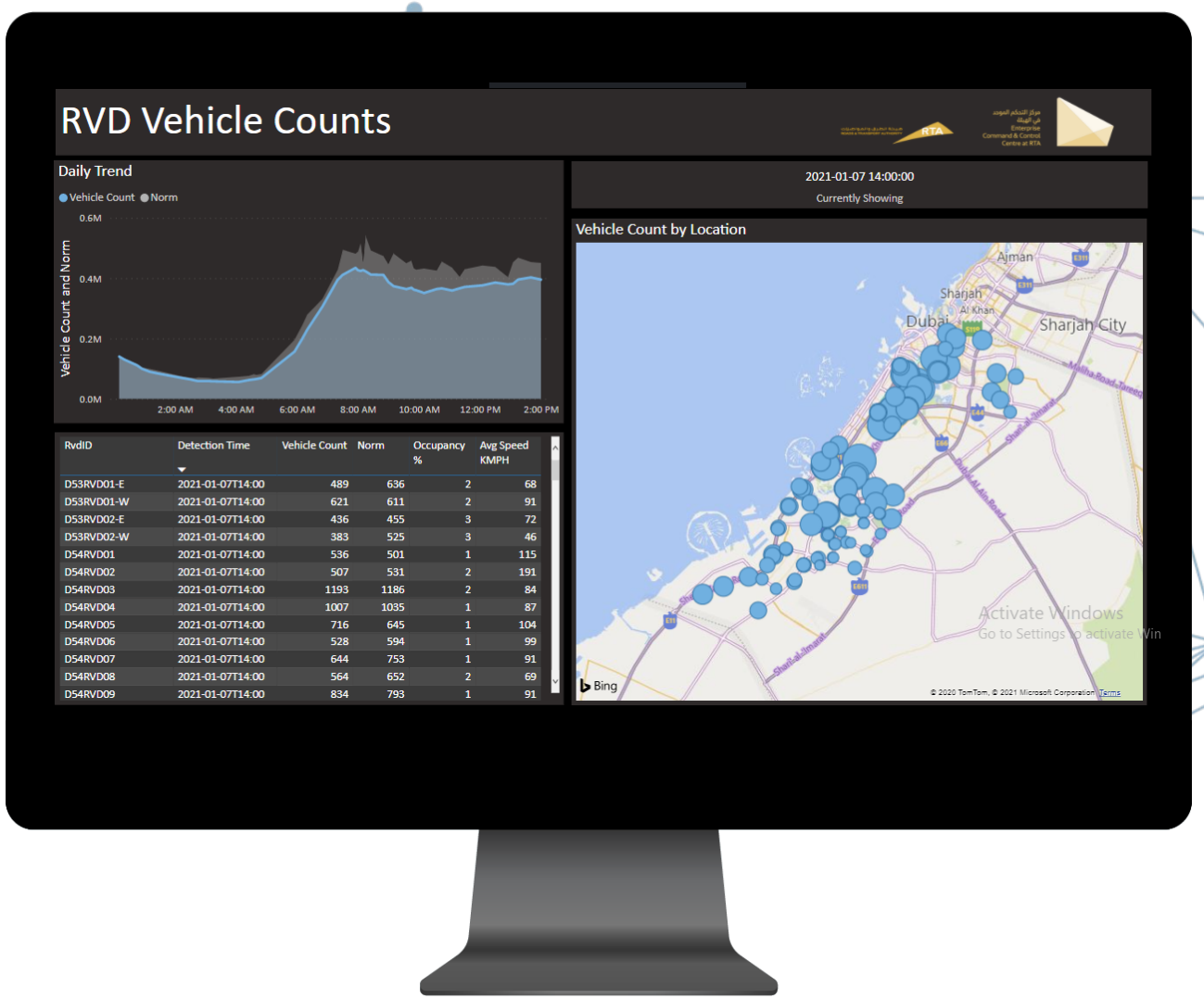


- Vehicles flow per RVD (Radar Vehicle Detector)



Reports

Radar Vehicle Detector Counts



RvdID	Detection Time	Vehicle Count	Norm	Occupancy %	Avg Speed KMPH
D53RVD01-E	2021-01-07T14:00	489	636	2	68
D53RVD01-W	2021-01-07T14:00	621	611	2	91
D53RVD02-E	2021-01-07T14:00	436	455	3	72
D53RVD02-W	2021-01-07T14:00	383	525	3	46
D54RVD01	2021-01-07T14:00	536	501	1	115
D54RVD02	2021-01-07T14:00	507	531	2	191
D54RVD03	2021-01-07T14:00	1193	1186	2	84
D54RVD04	2021-01-07T14:00	1007	1035	1	87
D54RVD05	2021-01-07T14:00	716	645	1	104
D54RVD06	2021-01-07T14:00	528	594	1	99
D54RVD07	2021-01-07T14:00	644	753	1	91
D54RVD08	2021-01-07T14:00	564	652	2	69
D54RVD09	2021-01-07T14:00	834	793	1	91

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KPIs

Expo Zone Analysis

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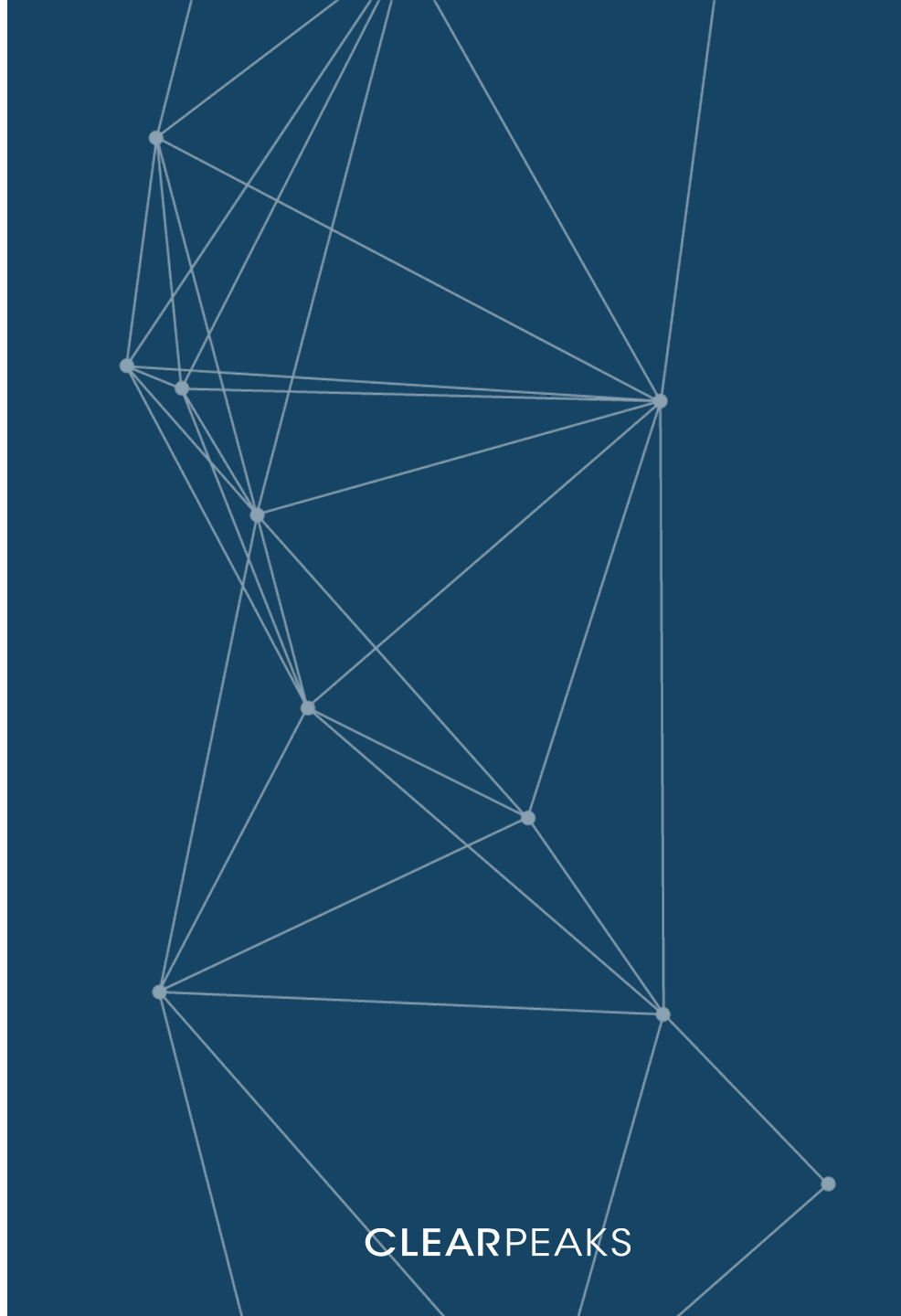
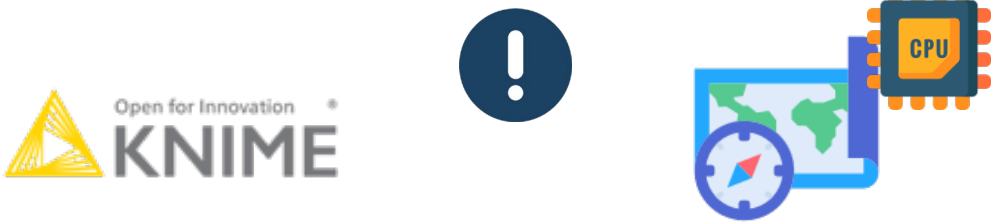
CHALLENGES & COOL THINGS



Challenges & Cool Things

INTEGRATION

DIRECT QUERY SUPPORT



EXPENSIVE GEO-SPATIAL OPERATIONS

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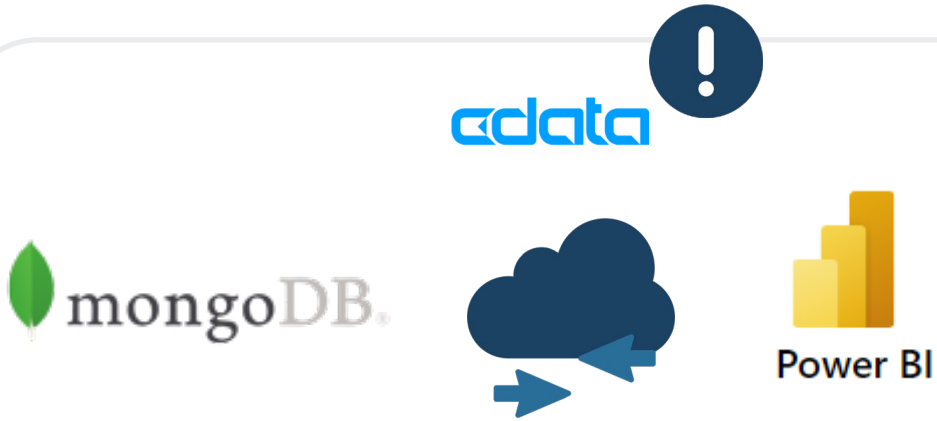
Challenges & Cool Things

INTEGRATION



DIRECT QUERY SUPPORT

EXPENSIVE GEO-SPATIAL OPERATIONS

Blog posts on clearpeaks.com

- *Extreme Performance Boost for KNIME Spatial Processing*
- *High Performance Data Processing with KNIME & MongoDB*

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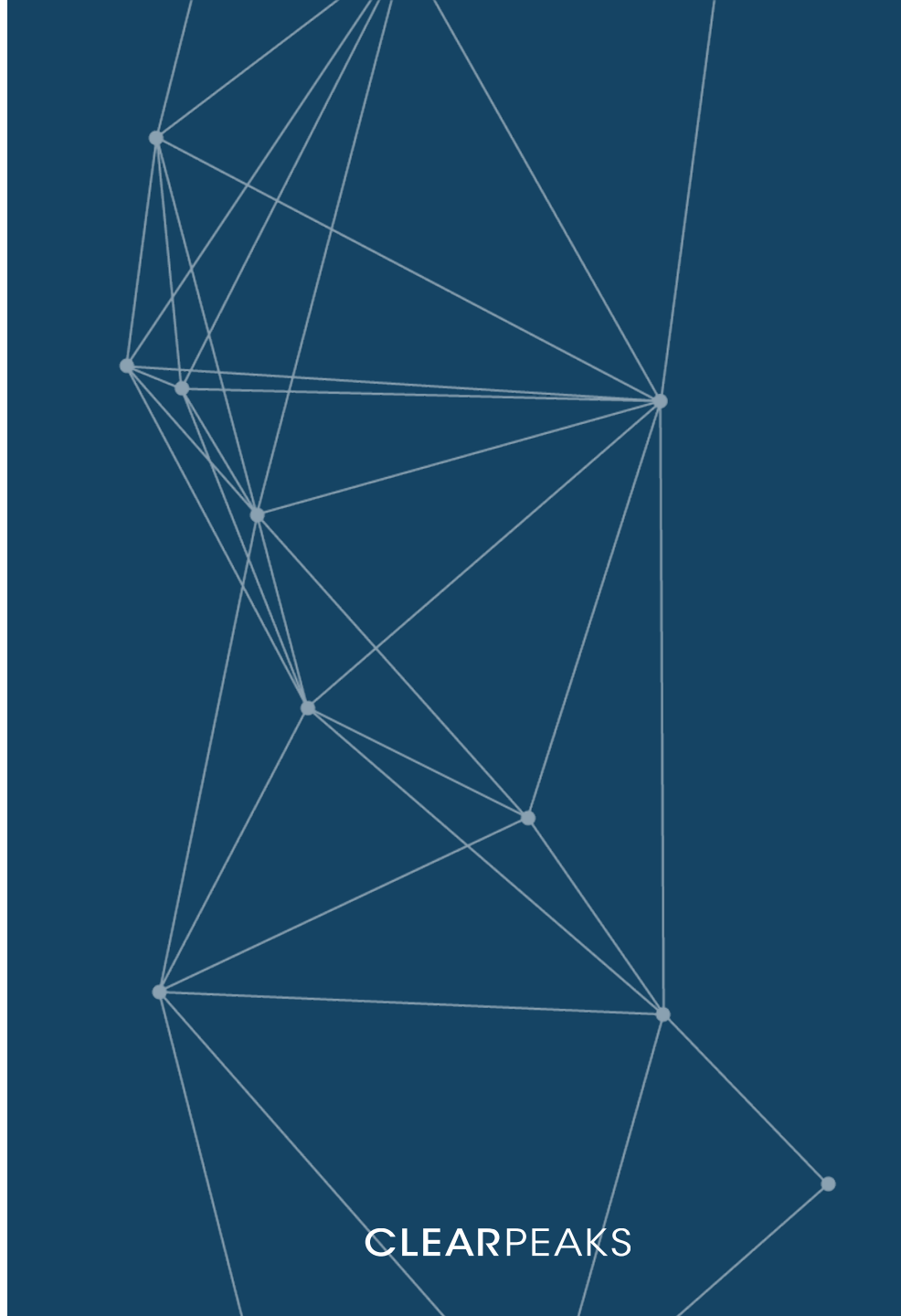
WRAP-UP & CONCLUSIONS



Wrap-up & Conclusions

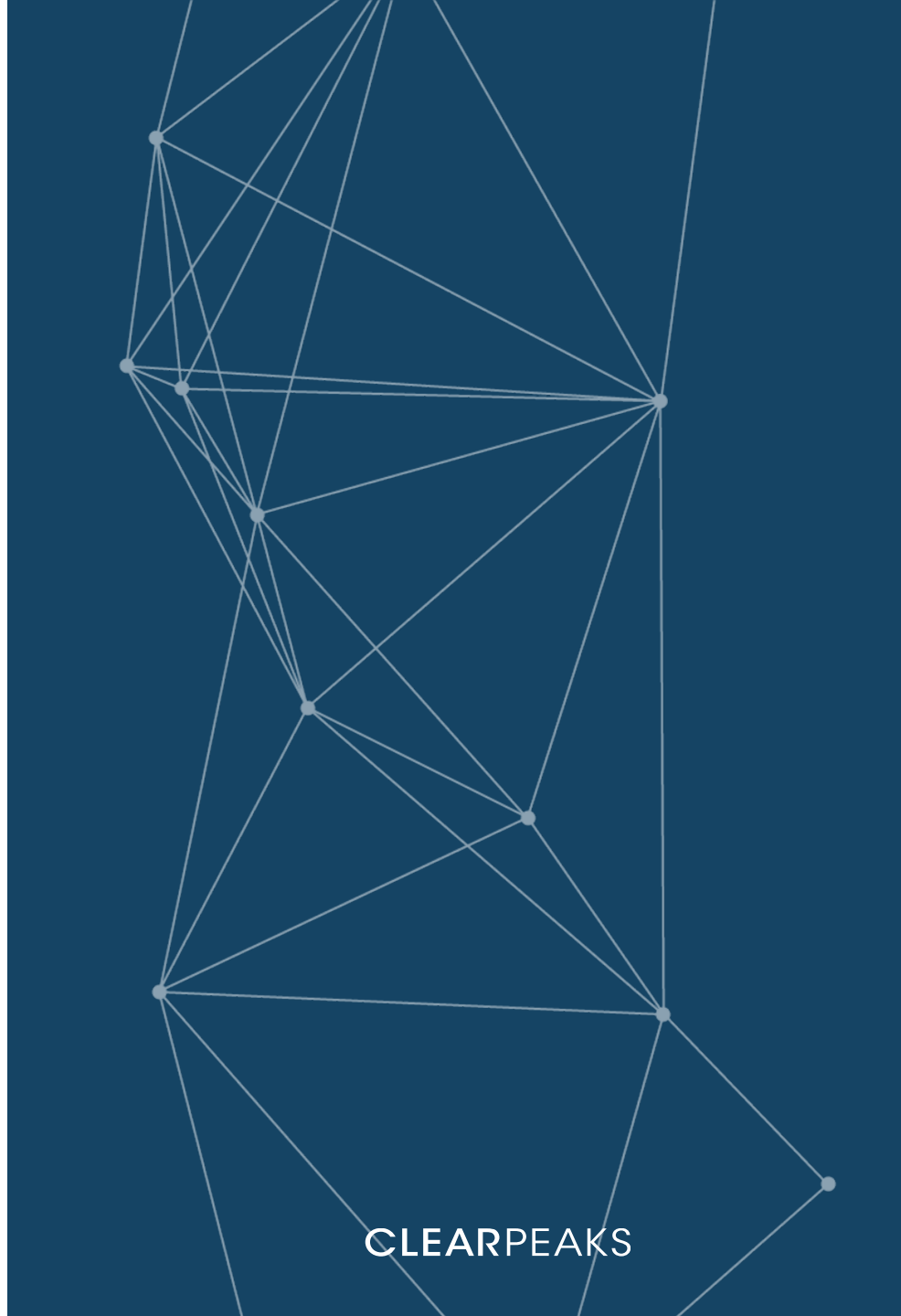
- **KNIME for ETL:**
  Knime can help as an ETL tool to prepare the datasets when they aren't yet there.

- **KNIME Flexibility:**

Knime's flexibility allows the integration of other tools in order to tackle weak points or complement the workflows.

- **Next Steps:**
  - Customer is highly satisfied.
  - Now tackling ML and advanced visualisations!

Q&A



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