

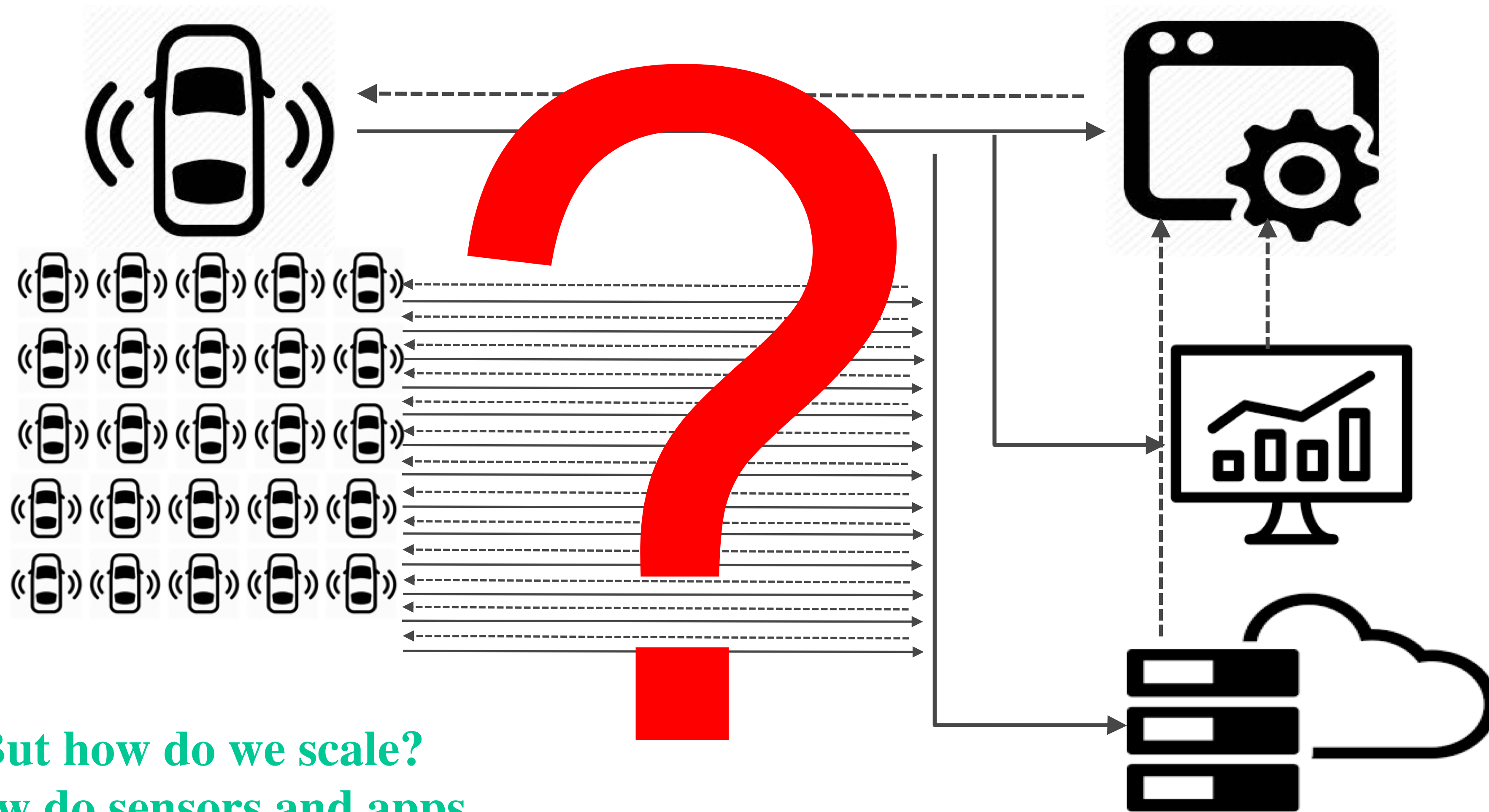
Scaling IOT and Insights with an Event Mesh

Sumeet Puri

Global Head of Systems Engineering
sumeet.puri@solace.com

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Billions? Trillions? IoT Devices are only going to grow

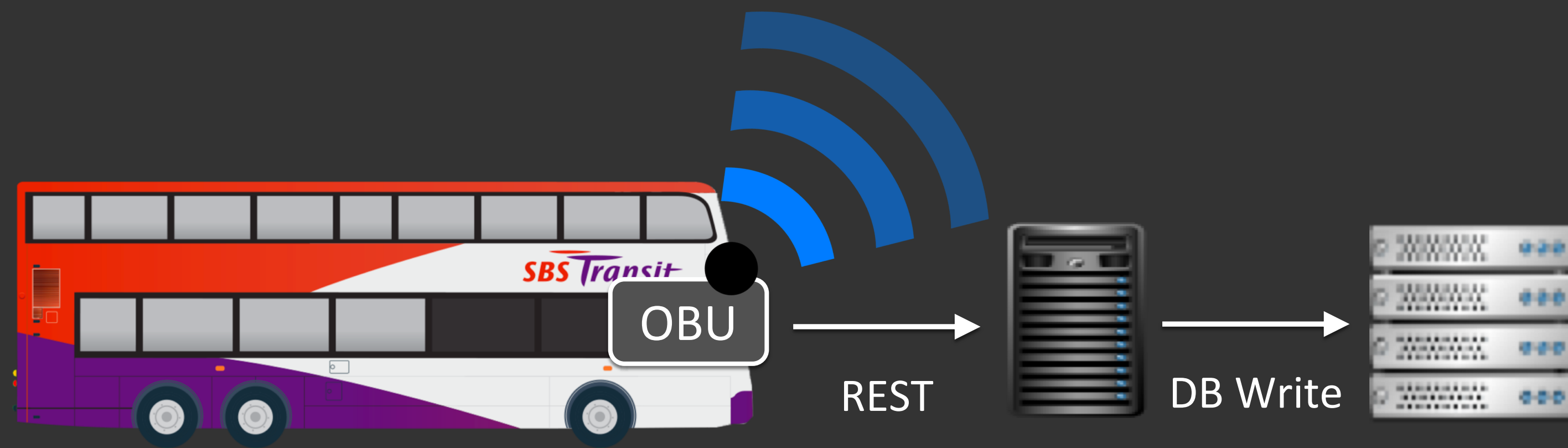


But how do we scale?
How do sensors and apps
interoperate with simplicity?

Lets examine a specific problem –

Connected Buses

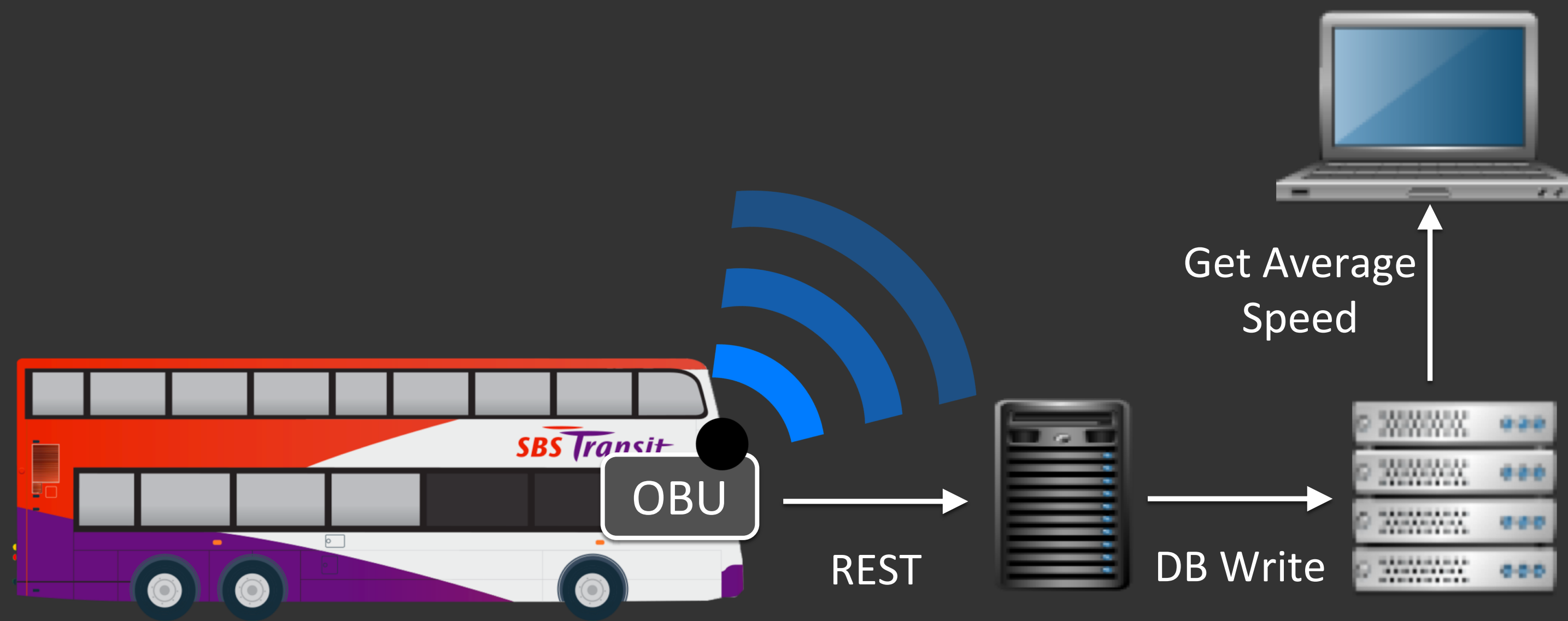
Bringing buses online



- Lets connect the buses
- 30 sensors per bus
- Bus connected over 4G with OBU
- HTTP integration, writing to database

And a silo got created....

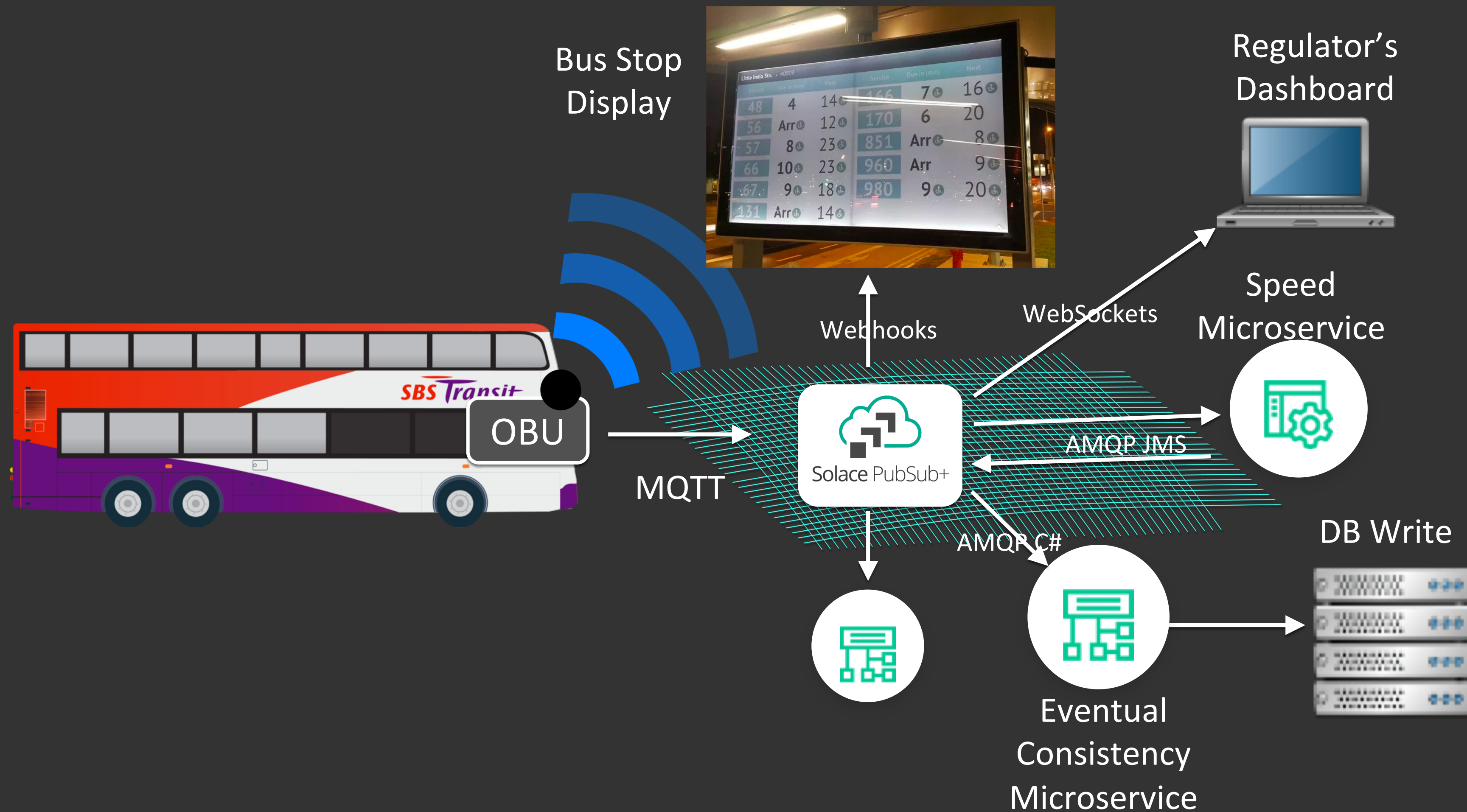
Bringing buses online - Challenges



We need event streaming!

- So now that we are online...
- Lets get the average speed of a route or a road
- Too difficult, too expensive!
- Everything is siloed, tightly coupled
- Database in the way!

Bringing buses online – Event Driven IOT!



- Topic based events emit from the bus
- Multi Protocol, Open Standards
- Event Broker Route them
- Streaming analytics are now possible

Event Brokers – One to Many Pub Sub, Guaranteed Delivery, Standards

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HOME / WHAT IS SMART NATION / INITIATIVES / TRANSPORT

Open Data & Analytics for Urban Transportation



How can public data help transport planning?

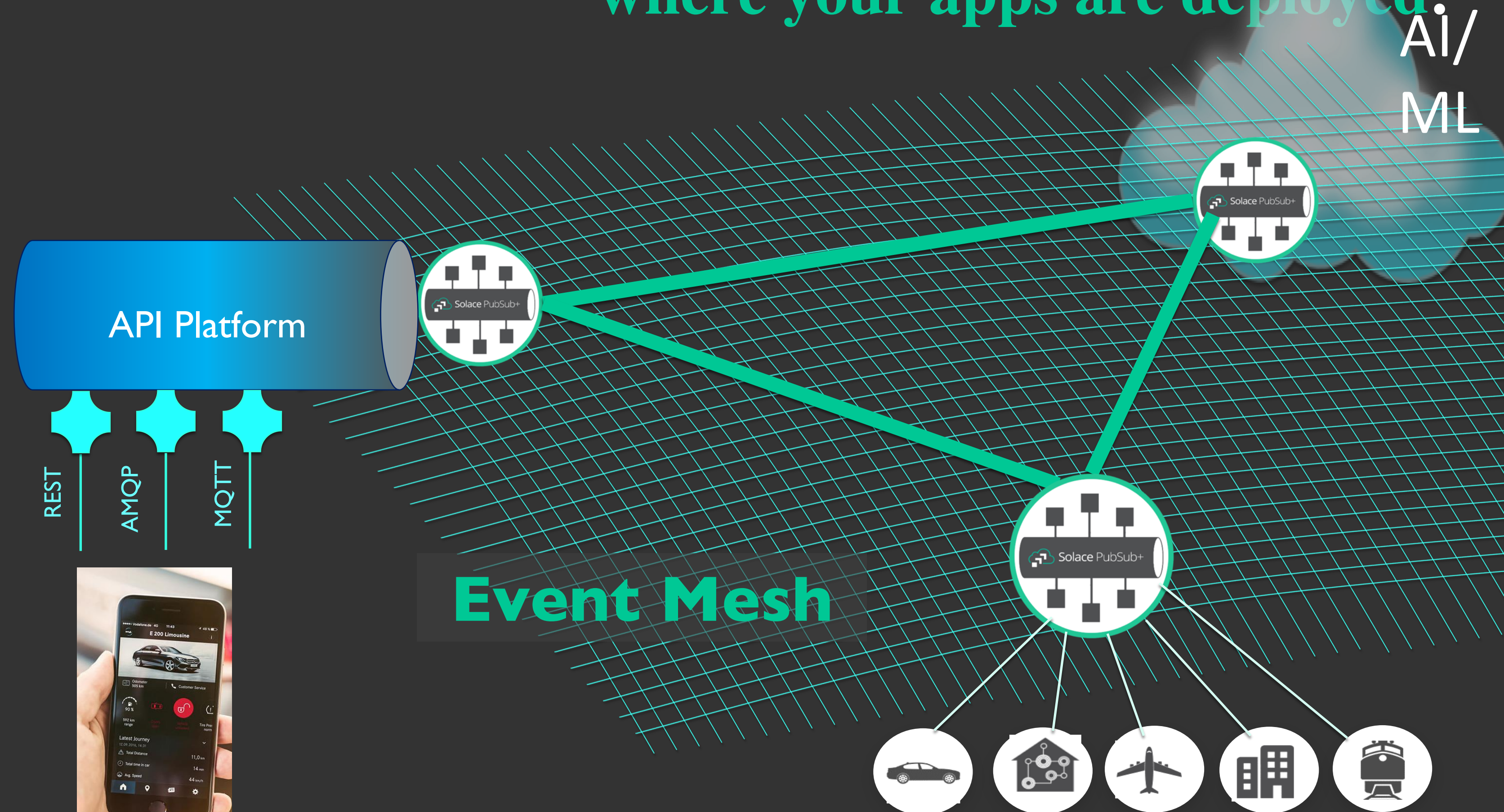
- By analysing anonymised data obtained from commuters' fare cards and identifying commuter hotspots to manage bus fleets, the Land Transport Authority (LTA) can help improve commuting experience.
- Arrival times of buses are tracked using sensors installed in over 5,000 vehicles, and the real-time location data of buses helps facilitate transport planning to better meet commuters' demands.
- Insights gained from data can help LTA better anticipate and address the needs of different types of commuters through improved policy planning.

Ask Jamie

The result?

- A 92% reduction in the number of bus services with crowding issues despite year-on-year increase in average daily bus ridership
- Average waiting time on popular services shortened by about 3 to 7 minutes!

IOT at Scale via an Event Mesh - An event mesh is an architectural layer that routes events from producers to consumers in a flexible, reliable and governed manner, no matter where your apps are deployed.

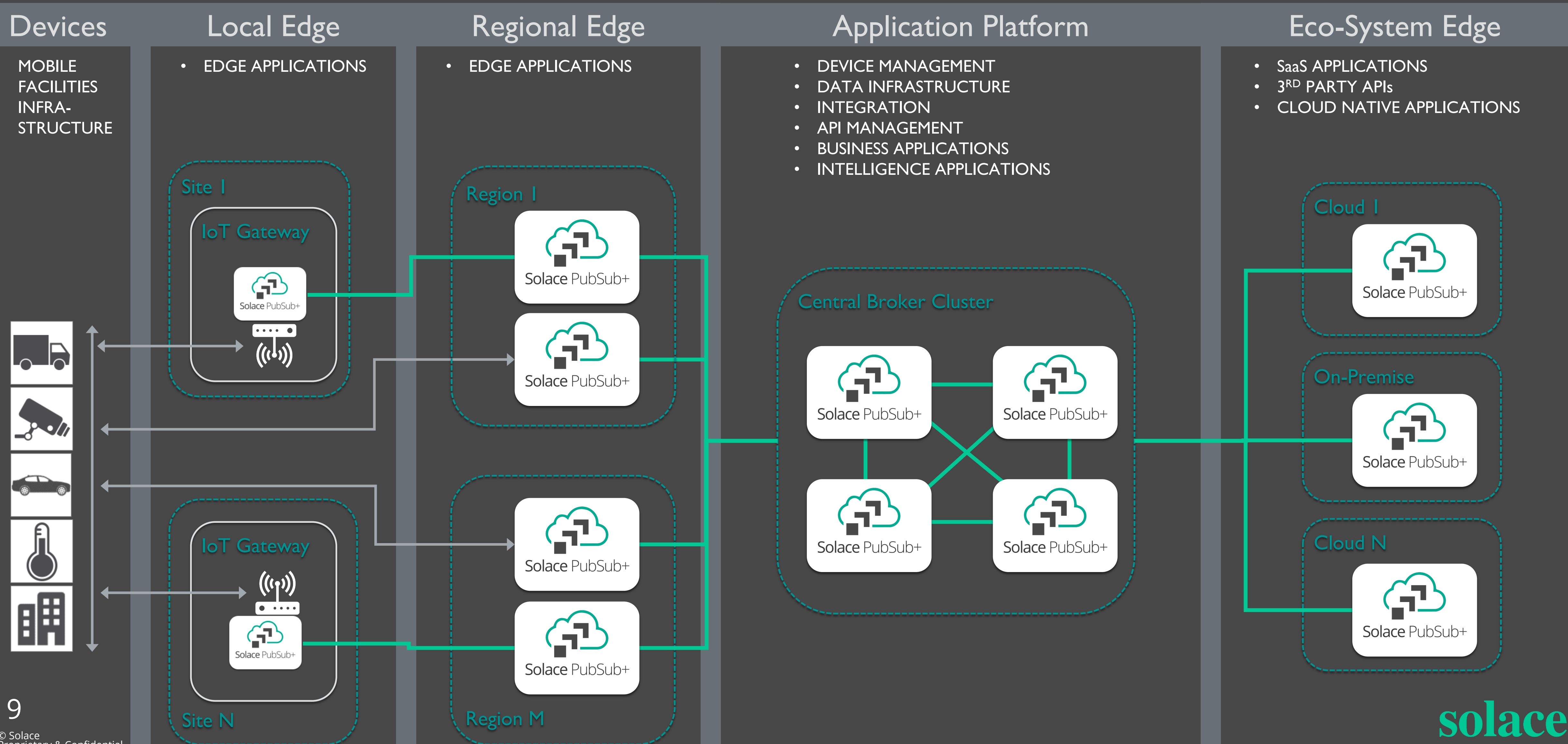


- Millions of Connections
- Scale - Each Connection doing 100s of messages per minute
- Routing - End to End Address, Command and Control
- OT/IT Integration – Insights and Analysis

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Scaling IoT - IoT event mesh – Millions of Devices

Solace Event Mesh Connections
Device Connections

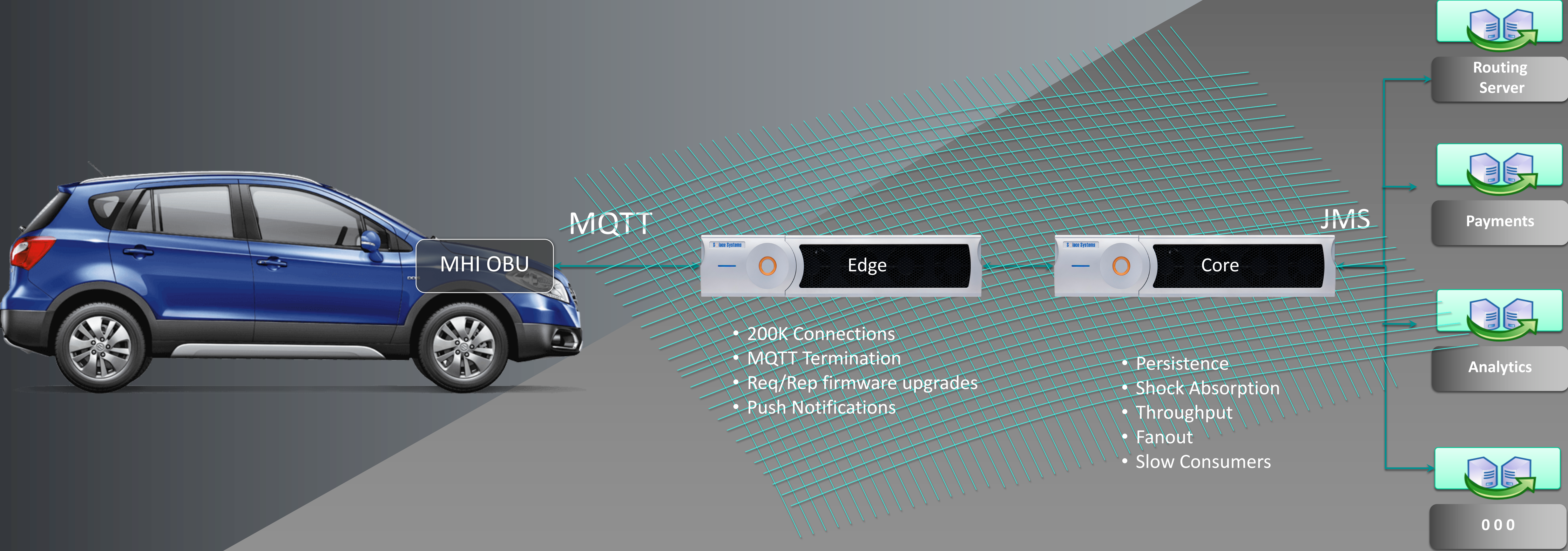


Impact of IOT Event Mesh

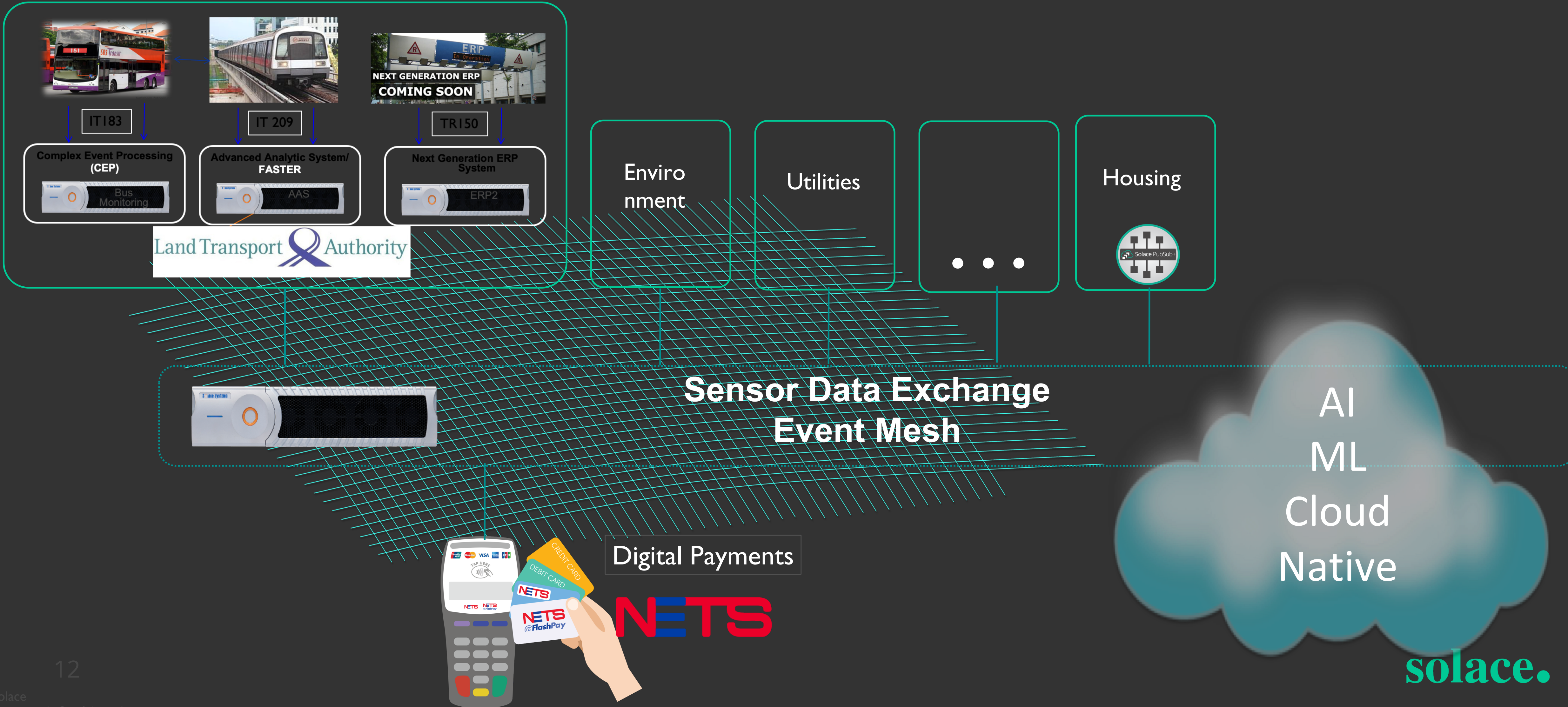
↑	Agility and Innovation	Add/remove applications without re-coding of routing logic
↑	Robustness and Scale	No manually maintained routing logic, 10s of millions of connected devices supported
↓	Development & Maintenance Costs	No coding of routing logic
↓	Operating Costs	Optimized network bandwidth Less compute (no duplicated routing logic)

***And this needs to be done dynamically at scale –
otherwise we are back to coding / configuring routing logic...***

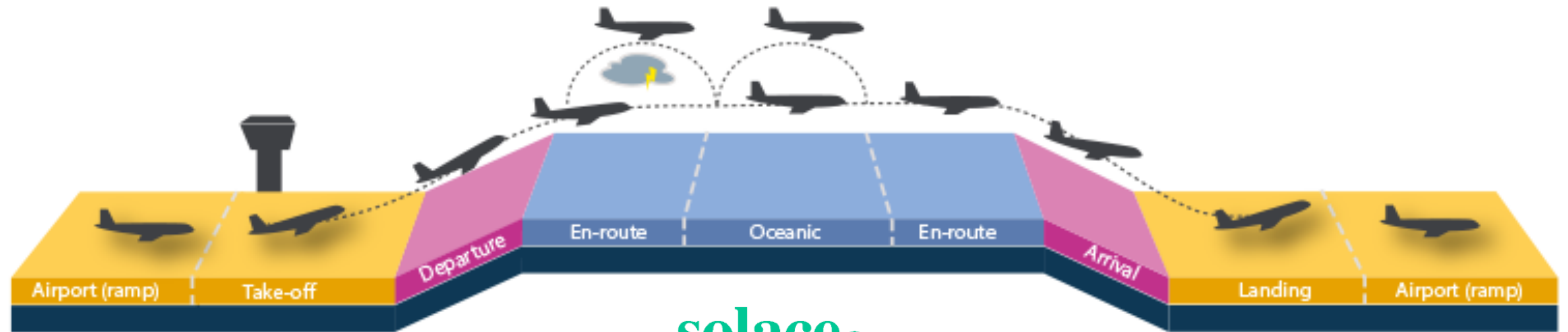
Singapore Next Gen ERP 2 – Connect all vehicles in Singapore



And going beyond transport... to smart city

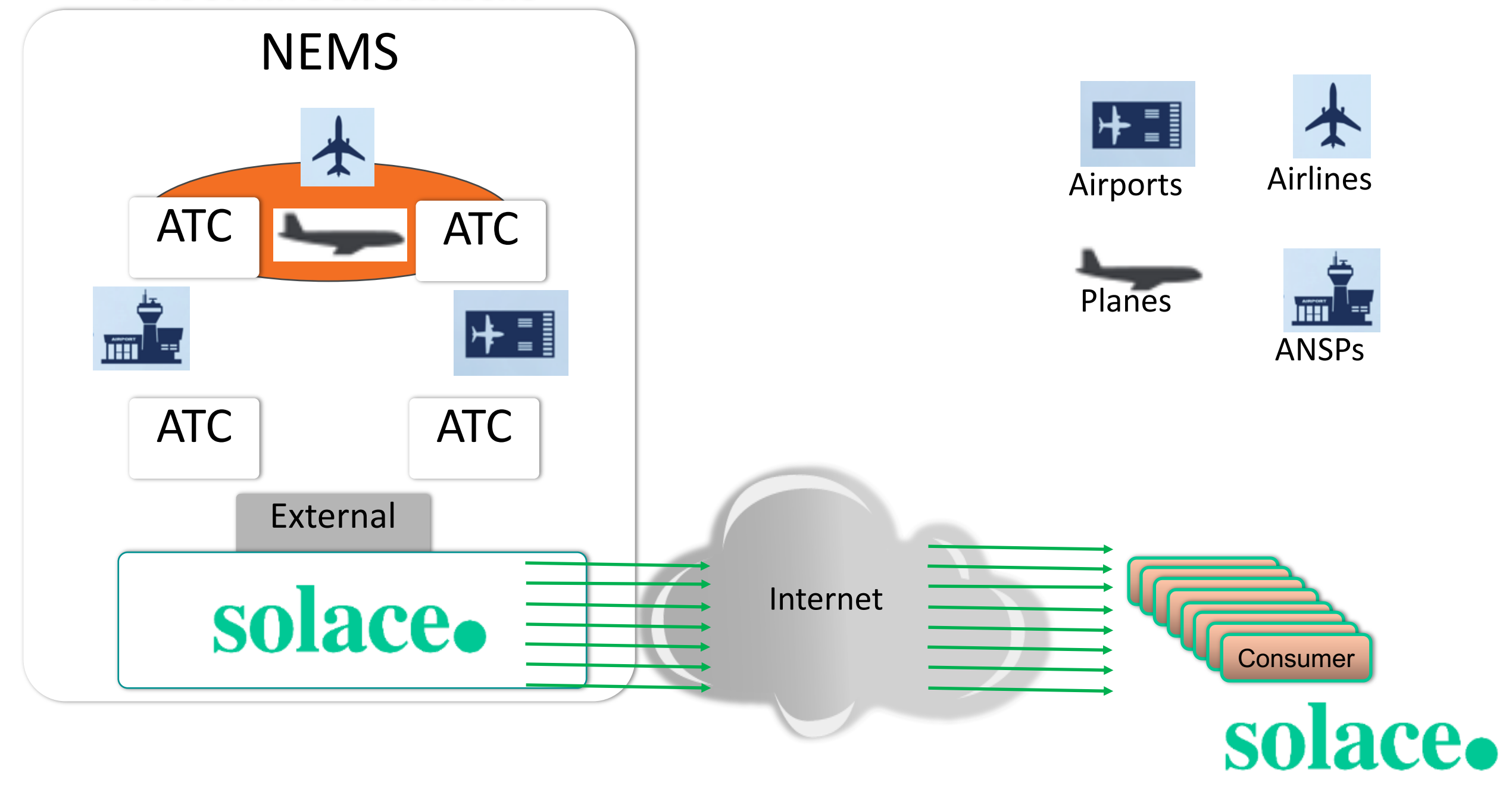


Solace connects Airspace, Airlines, Airports



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Core SWIM Data backbone



NAV
CANADA



Solace is the
SWIM
backbone for
US, Canada
and
Eurocontrol

Solace connects Mercedes

Event Driven backbone for
Daimler and Mercedes Me app

10M vehicles, always on
connected via MQTT

Pub Sub, Command and
Control, Insights



Who is Solace?

World's foremost experts
on event distribution and
messaging middleware

- 250+ employees
- 100+ in R&D
- 100% focused
- 21 patents



HQ and Manufacturing
in Ottawa, Canada
15 Global Offices

Award-
winning
business





Solace PubSub+

Welcome to the Solace PubSub+ hub for developers.
Here you'll find all the resources you need to get started.



Our Technology

Learn about Solace PubSub+, APIs and more.



Labs

Repurposable projects that make it easy to get going.



Community

Connect with others using Solace PubSub+.



Docs

Read product documentation and other useful material.

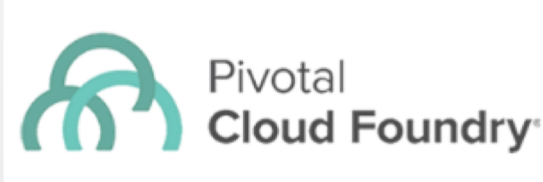


Downloads

Get Solace PubSub+ and other software

Start Up Solace PubSub+

These tutorials will help you get Solace PubSub+ message brokers running in your environment.



Google Cloud Platform



VirtualBox

vmware®



Appliance



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