



Smart Mobility solutions

June 2018



Company Profile



Founded in **June 2014**



Current headcount:

130 employees

(**>50% R&D software staff**)



Headquartered in **Toulouse** (France), with offices in **Denver** (USA), **Berlin** (Germany), **Singapore** and **Australia**



Privately funded with **Siemens (Alstom)** and **Continental** as shareholders

SIEMENS
Ingenuity for life

Continental 



EasyMile's Core Business



Providing software systems powering autonomous vehicles



Develop Indoor / Outdoor / Road compatible driverless technologies



Integrate these technologies to different vehicles for different use-cases

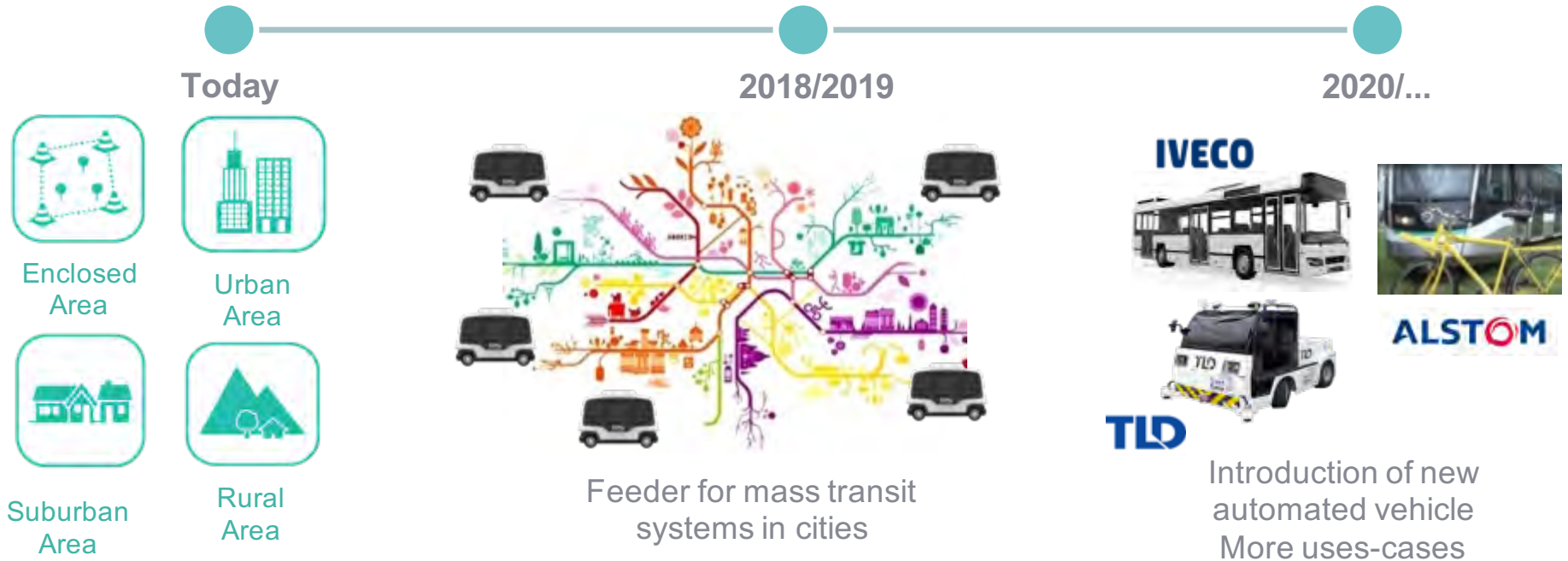


Develop methodologies, processes to deploy safely & efficiently fleets of Automated Vehicles



EasyMile Vision

Mobility challenges resulting from the urbanization of the world



Global Footprint



>160

Deployments
in 21 countries



80 Shuttles
worldwide



Wheelchair
friendly

>250,000

People transported



>160,000

Kilometres travelled



NO ACCIDENT since company inception

The EZ10 : Features

Driverless and electric shuttle

Can carry up to 15 people

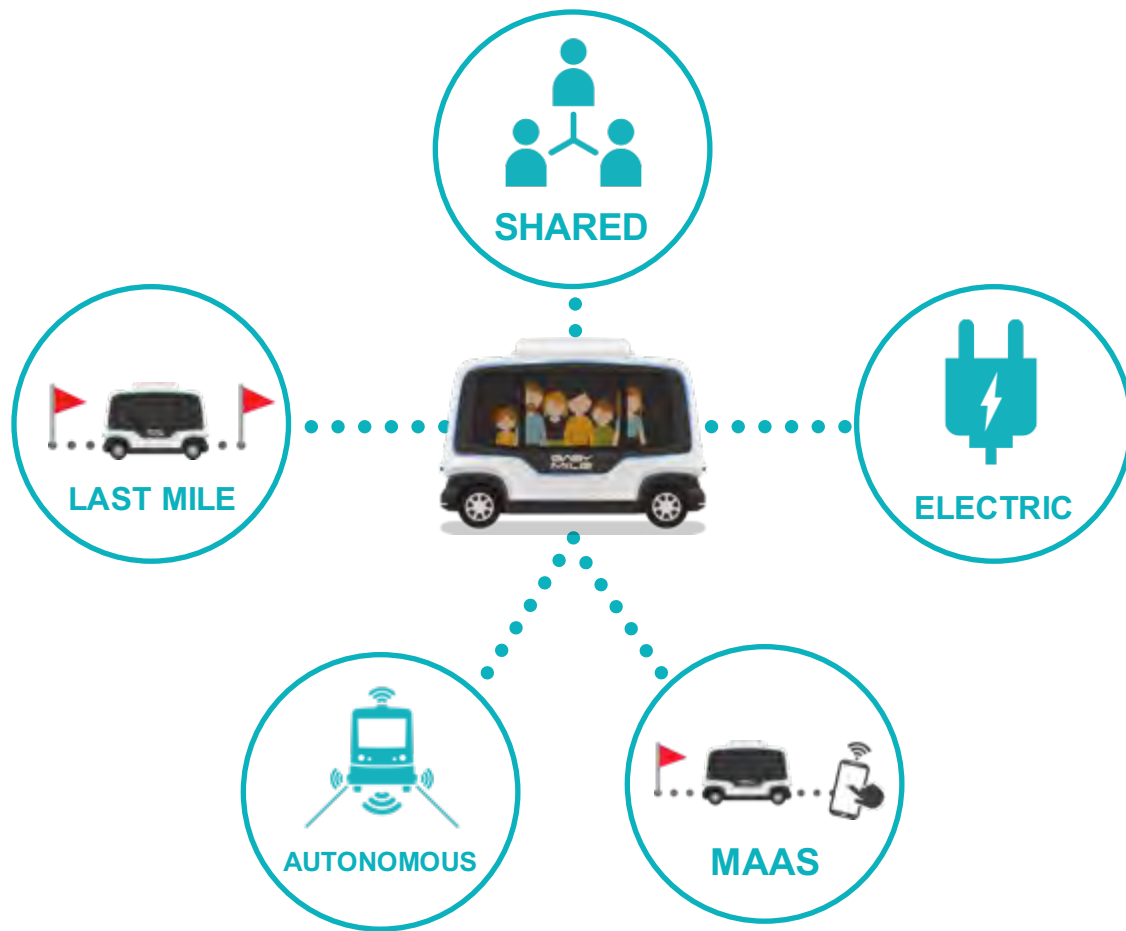
Max speed : 40 km/h

Built-in access ramp for passengers
with reduced mobility

No need for additional infrastructure



What We Do



Driverless Vehicle Ecosystem



Value Proposition



VS



DRIVERLESS

SELF-DRIVING



Reduce Traffic



Reduce Car-related
Infrastructure
in Cities



New Mode of
Consuming
Transportation



Social Inclusion

	Self Driving	Driverless	Comments
Steering wheel	YES	NO	
Driver	YES	NO	
Level of automation	2/5	4/5	Out of 5
Final decision maker	Driver	Operator/control room	
Usage	All roads	Use case based First & last mile	Controlled environments
Approval process	Homologation	Certification	

Certifications and approved operations



Sécurité routière (France)

Astra* (Switzerland)



NHTSA (USA)

Vicroads (Victoria, Australia)



RDW (Netherlands)

Tüv Süd (Germany)



RTA (UAE)

NPRA (Norway)



EasyMile use cases : step by step approach

2014- 2018



Enclosed
Areas



Controlled
Areas

2018 - 2020



City districts
Smart Cities
Green Cities



Suburban
Area



Rural
Areas

2020 - 2022



City Centers

2025 -



Full open road
with mixed
traffic

First & Last Mile Value Proposition

- Complement
- Feed
- Replace



Enclosed
Areas

Theme Parks



Theme Park

Premium and innovative service



Pedestrians, cyclists, EVs
First commercial operation in APAC
Started in June 2016
2 shuttles operating daily
2 km route(s)
From exit of MRT station to main retail area

Last Mile driverless transportation

Short distance from hub to final destination

HUB



1,5 km



Final destination



Car park
Train/ Metro station
Bus stop
Taxi stand

Work
Home
Leisure



Too long distance to walk to
Adverse weather conditions



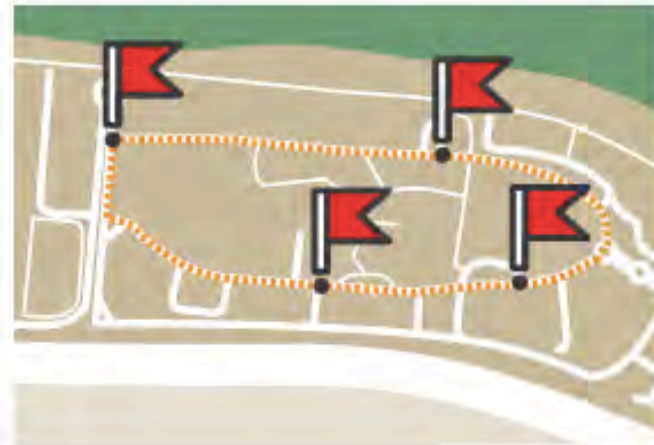
Little/ no parking space
"off limits" to cars



Value Proposition

Service mode

Peak Hours
Calling at all stations



Off Peak Hours
On demand





Controlled Areas

Business Parks

First Transit
transforming travel



Facilities and
traffic
Management
enhancement



transdev
MOBILITY INSPIRED BY YOU



Nobina



Universities

Facilities and
traffic
Management
enhancement



Value Proposition

Last Mile driverless transportation

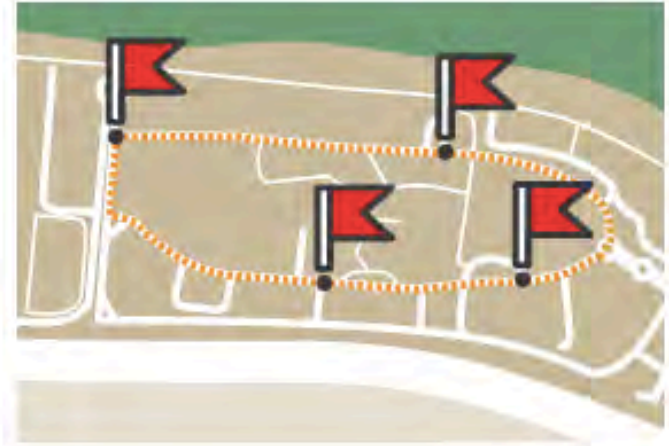
Short distance from hub to final destination



Value Proposition

Service mode

Peak Hours
Calling at all stations



Off Peak Hours
On demand



Airports

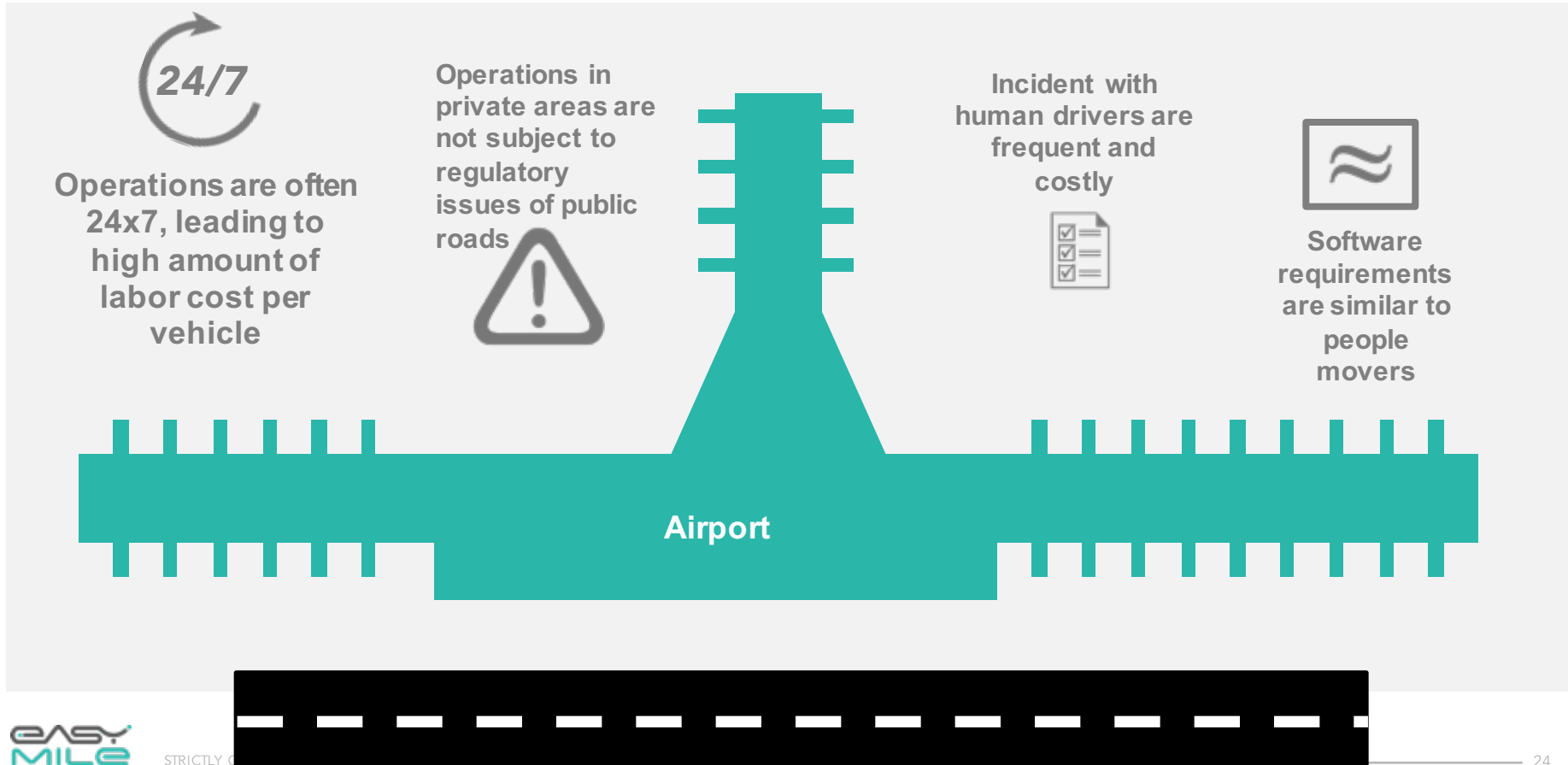
Introducing the first smart mobility solution for people transportation at airports – the **EZ10 driverless shuttle**.

The EZ10 is a driverless and electric shuttle that can transport up to 12 people (6 seating and 6 standing) and can also cater to passengers with reduced mobility.



EZ10 Driverless Shuttle

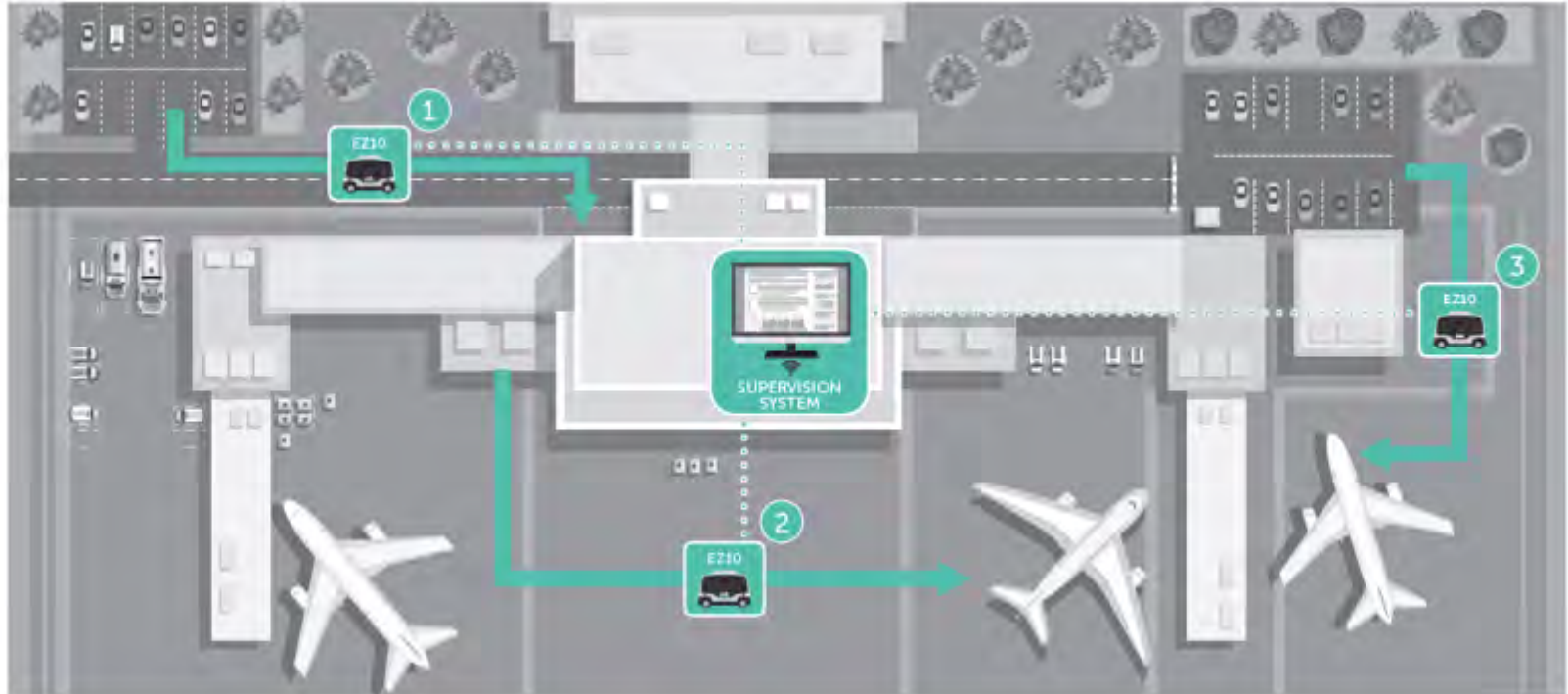
Airport opportunities for Autonomous vehicles



EZ10 airport use cases (feeder service)

- 1 (long term) car park to terminals
- 2 Staff / Crew transportation on airside

- 3 VIP transportation
- 4 Transportation in resident Airline facilities

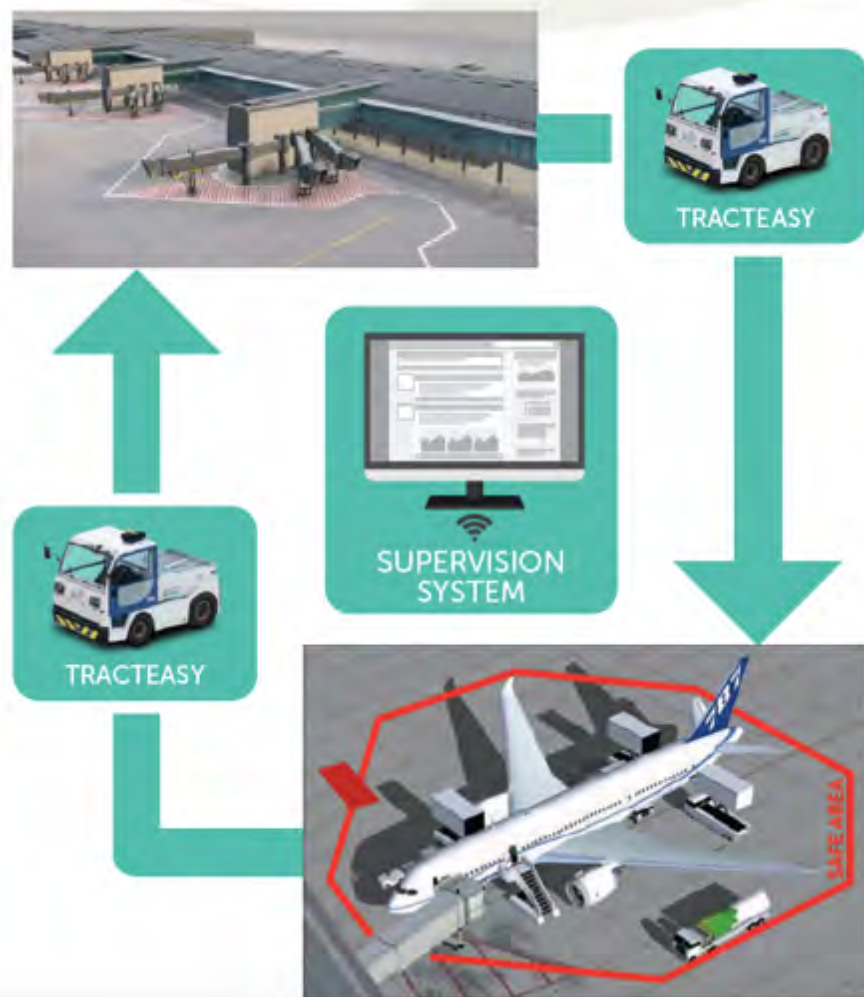


Introducing
TractEasy,
the first autonomous
Electric Baggage Tractor
jointly developed by
EasyMile and TLD.

Ground Support Equipment, as with many other heavy machinery, is experiencing a technological revolution with the development of Assistance or Automation Systems.



*Image shown is for illustration purpose.



MAIN CHARACTERISTICS

- Fully Driverless vehicle compatible with indoor/ outdoor/ road conditions
- Speed: Up to 25 km/h
- Traction Capacity : Up to 25000 kg
- Ground Clearance : 150mm
- Remote Situation Assessments by Cameras
- Autonomous Navigation and Obstacle Detection
- Communication to Infrastructure/ Traffic lights
- Link with standard FIS (Flight Information System)

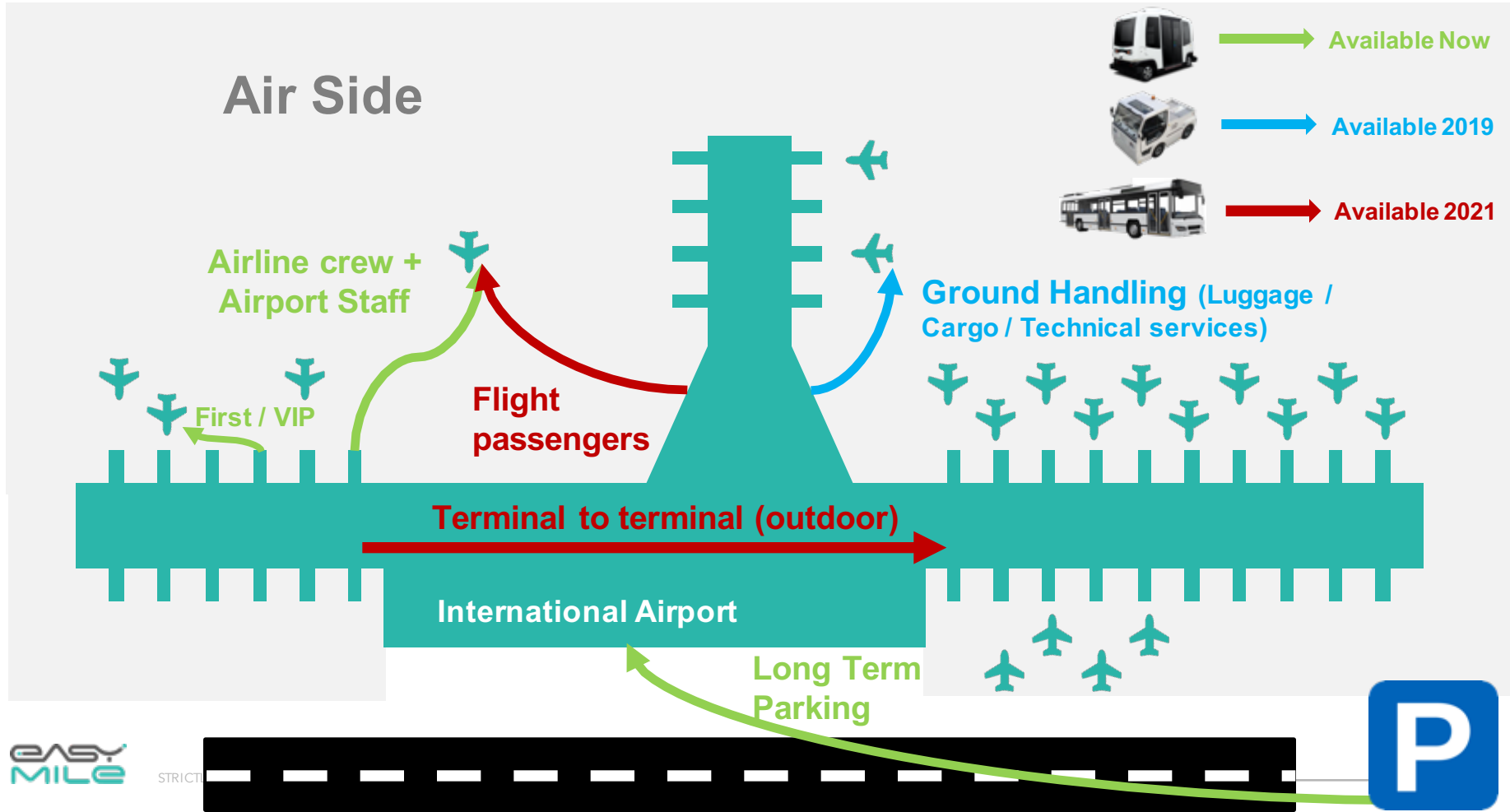
LOCALISATION USING DATA FUSION

- Lasers
- Odometry
- GPS
- Cameras
- IMU

DECISION-MAKING SAFETY CHAIN

- Industrial grade safety control units
- Obstacle detection lasers
- Braking systems & failsafe parking brake

Integrated Autonomous fleet strategy

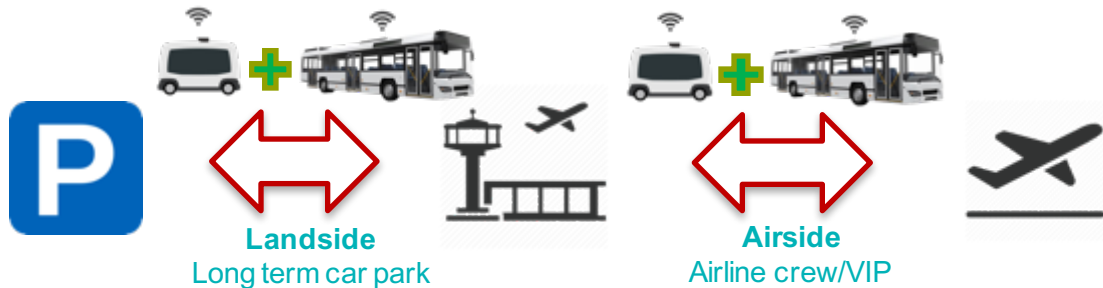


easy
MILE



Bus
Manufacturer

Passenger transportation



TLD



easy
MILE

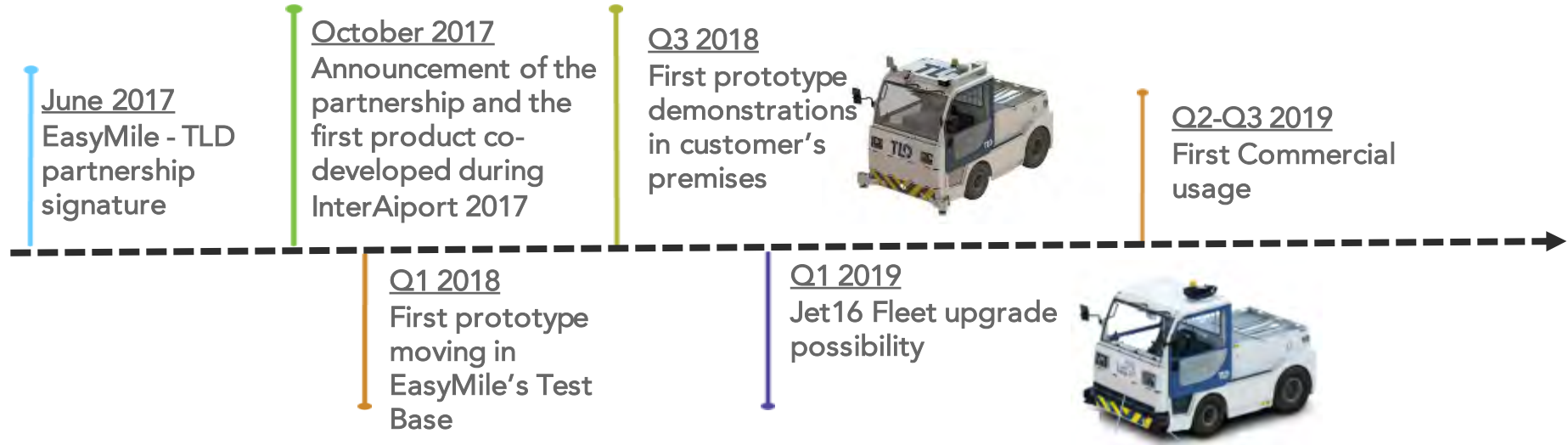
transportation of Luggage/cargo



Supervision System

easy
MILE

TractEasy time to market





City districts
Smart Cities
Green Cities

Segregated Lane



HUB to HUB Connectivity

Bus Lane in Taipei City center – from midnight to 5 AM

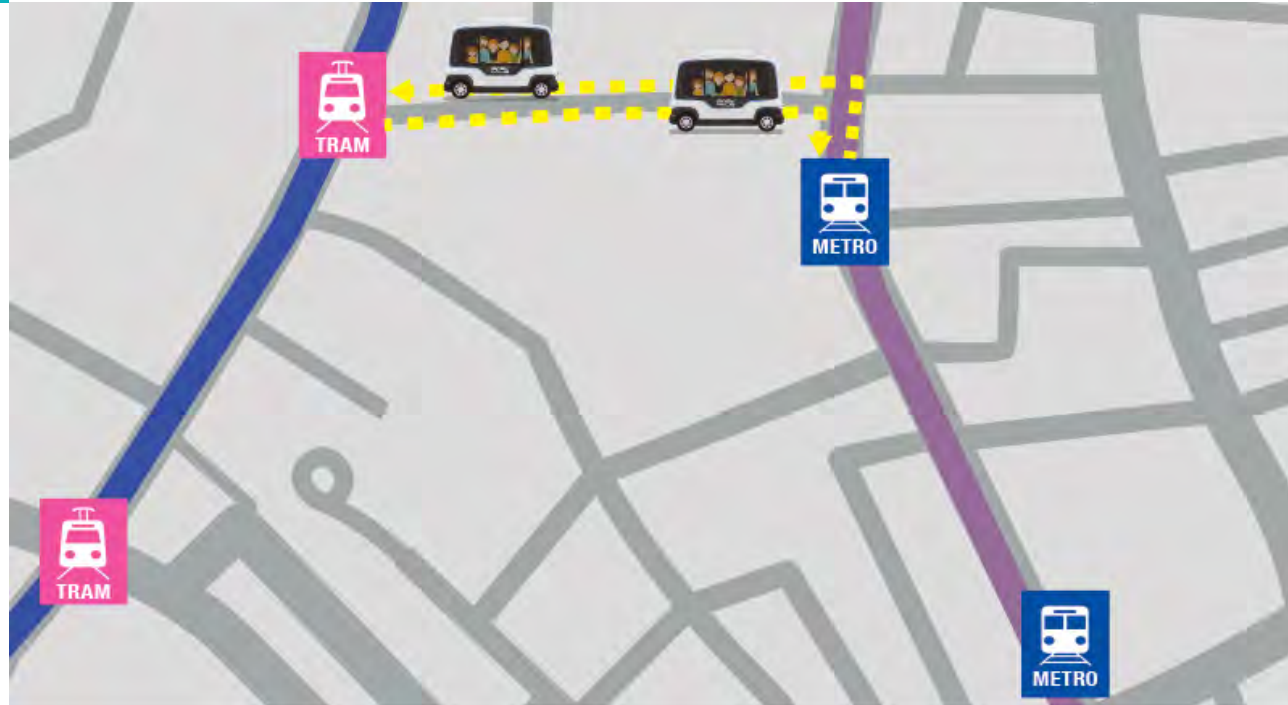
- Phase 1 : POC
- Phase 2 : V2I test
- Phase 3 : full service



Value Proposition

HUB-TO-HUB

TO CONNECT AND FEED



PEÑA STATION, DENVER, COLORADO PANASONIC SMART CITY



BABCOCK RANCH, FLORIDA FIRST 100% SOLAR PANEL POWERED CITY IN THE USA



FPL Babcock Ranch Solar Energy Center

- » Located on a 440-acre site donated by Babcock Ranch developer, Syd Kitson.
- » 74.5 megawatts of quiet, zero-emissions energy, enough to power about 15,000 homes
- » Emissions prevention equivalent to removing 12,000 cars from the road every year
- » Built cost-effectively; savings from fuel and other expenses means no net cost to customers
- » Generating clean, solar power since 2016





Suburban Areas

Suburban Areas

Feeder service to mass transportation

Benefits:

- Door to door challenge
- * Efficiency and cost saving for areas of dispersed demand
- On demand during Off peak hours

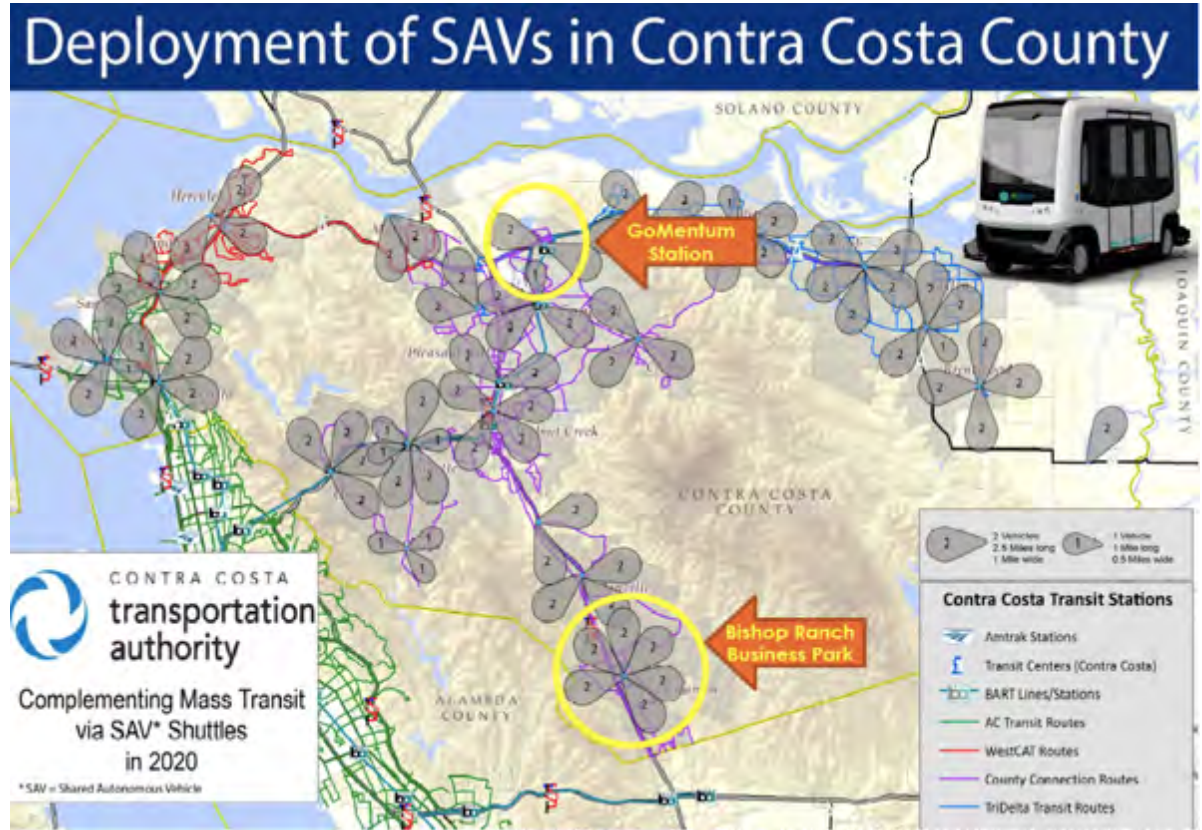


CONTRA COSTA
transportation
authority



Complementing Mass Transit
via SAV* Shuttles
in 2020

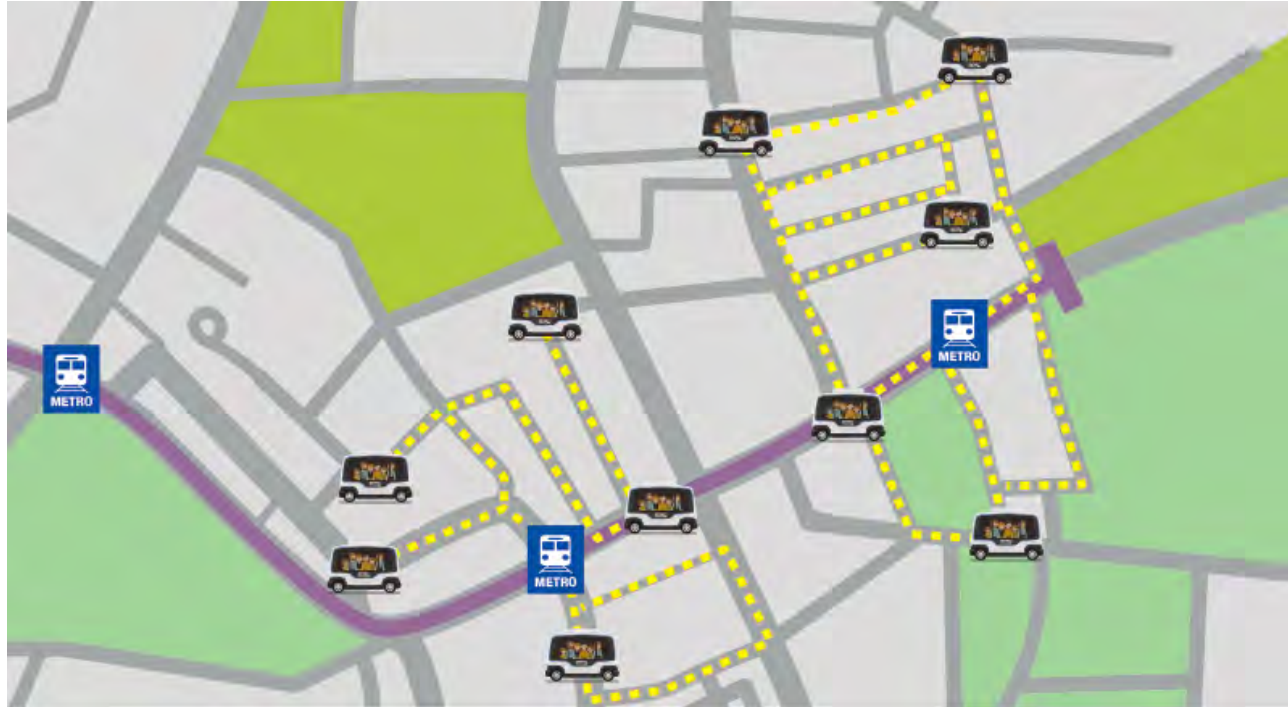
* SAV = Shared Autonomous Vehicle



Value Proposition

SUBURBAN

TO ADD AND TO FEED





Rural Areas

Rural Areas



Social Inclusion

Benefits:

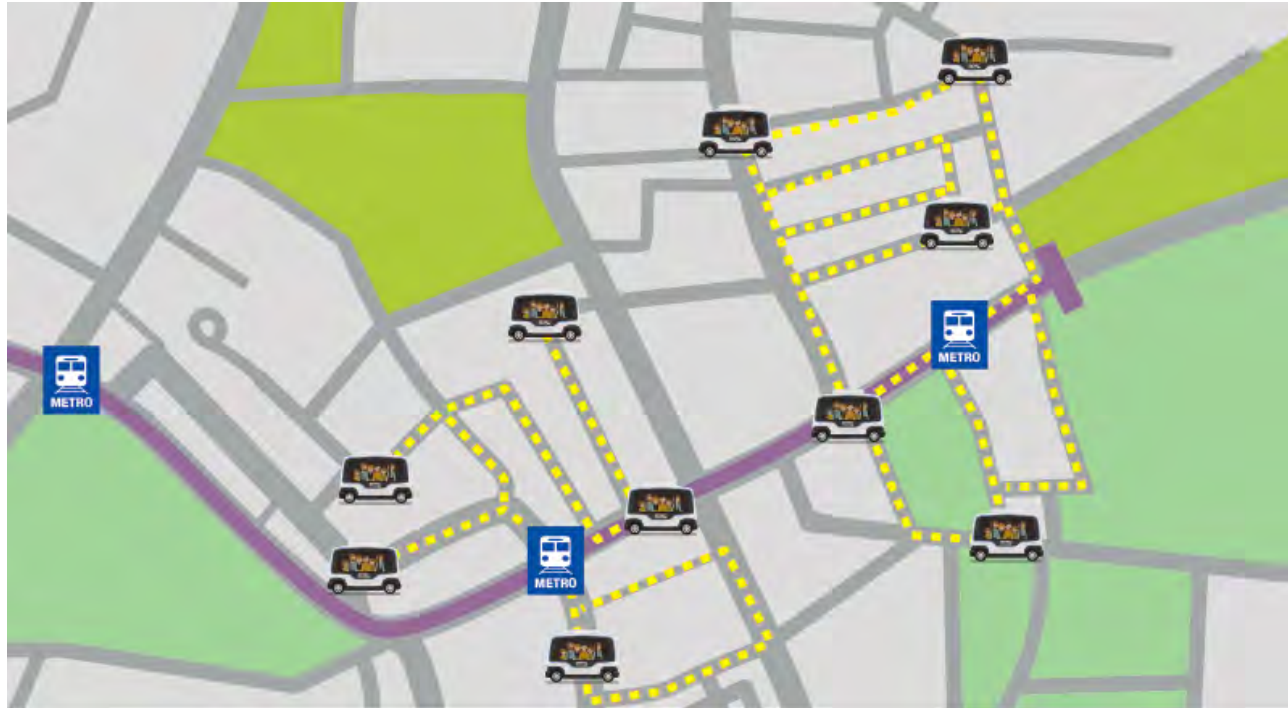
- Efficiency and cost Saving for areas of dispersed demand
- *Feeder to mass transportation
- On demand / Off peak hours



Value Proposition

Rural

TO ADD AND TO FEED





City Centers

City Centers Smart Districts

SINGAPORE MaaS

3 Districts - Level 4/5 in mix traffic by 2022, Public Transport

Fixed & Scheduled Services:

- ~70 large buses
- 80-120 pax

Mobility-on-Demand:

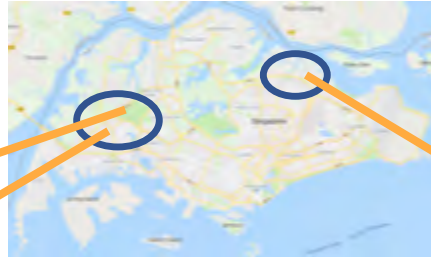
- ~30 shuttles
- 4-5 to 7-8 seaters

Jurong

100k population
Students & offices

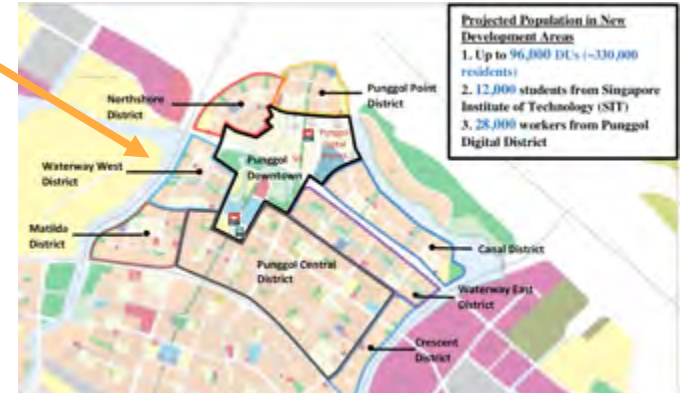
Tengah

42k units
residents & offices



Punggol

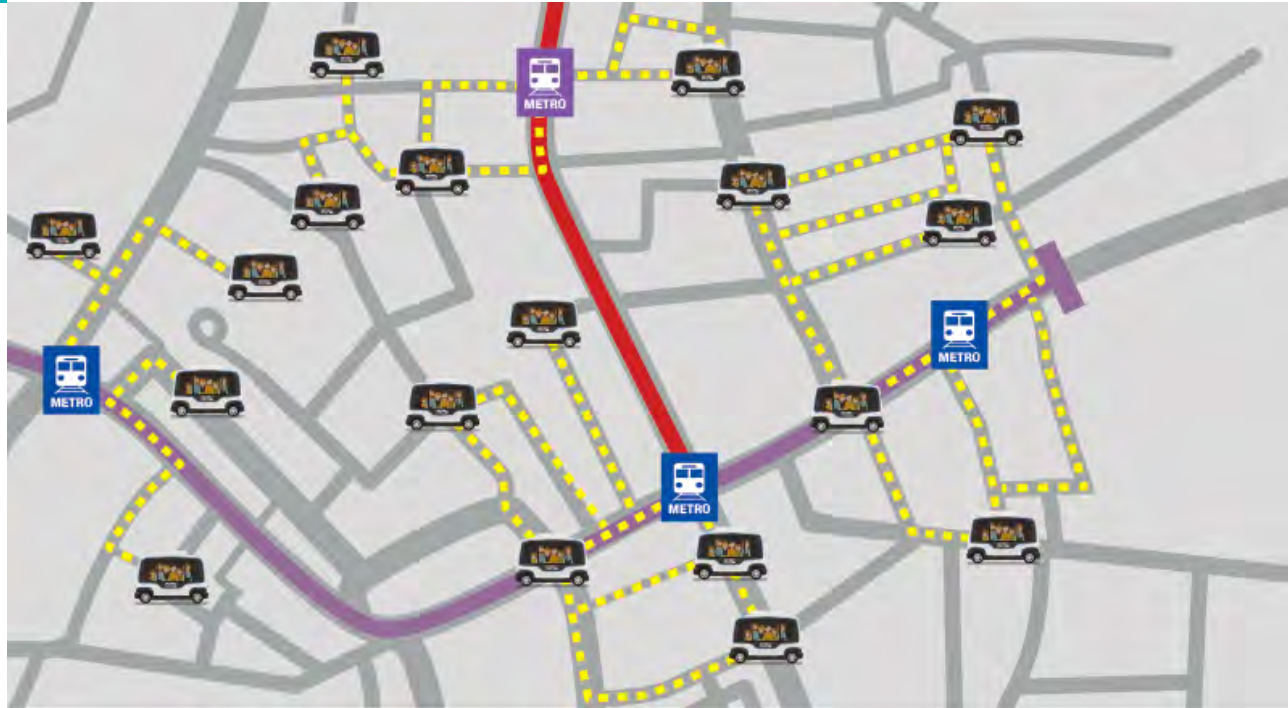
96k units
residents & offices



Value Proposition

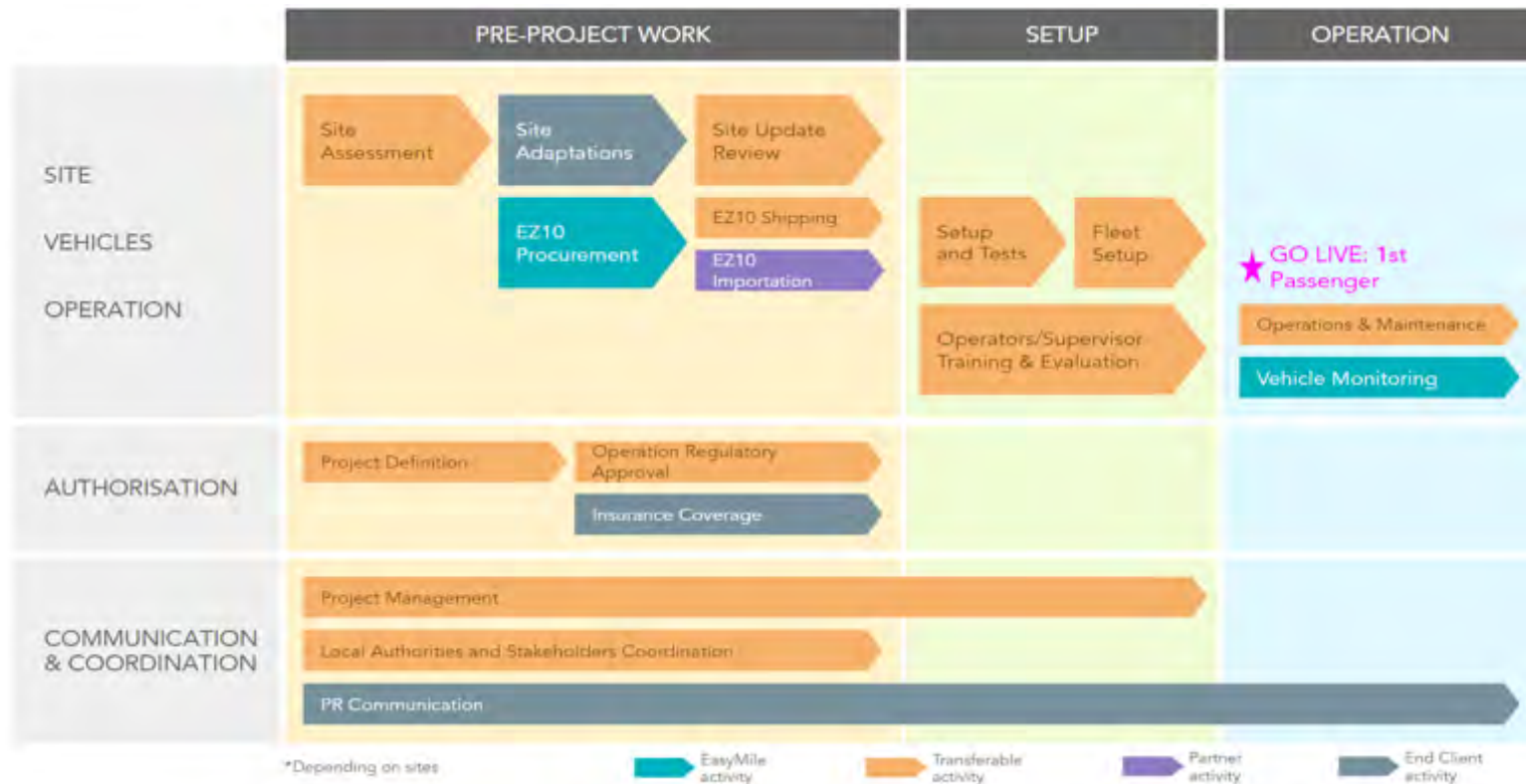
URBAN

TO REPLACE AND COMPLEMENT



EasyMile Shuttle deployment Project stages

EZ10 Deployment project stages



Turnkey Deployment Solution



Maintenance Operations

During its life cycle, several preventive maintenance interventions are scheduled on the vehicle. These tasks fall into 3 main categories, according to the skill level needed to achieve the tasks:

L0 - Tasks performed by Clients/ Operators :

Functional tests of the vehicle subsystems : infotainment, air conditioning, lights, Windshield wiper replacement, etc

L1 - Tasks performed by a technician trained and certified by EasyMile

Replacement of wearing parts : tyres, brake discs, brake pads, etc. (according to manufacturer's specifications and wear and tear)

Draining of fluids (according to manufacturer's specifications)

L2 - Tasks performed by EasyMile staff only

Localisation and safety pieces of equipment calibration (yearly)

Software update (twice a year), complex hardware item intervention

Turkey solution



Daily operation



Fleet
Monitoring &
Supervision



Fleet
Maintenance

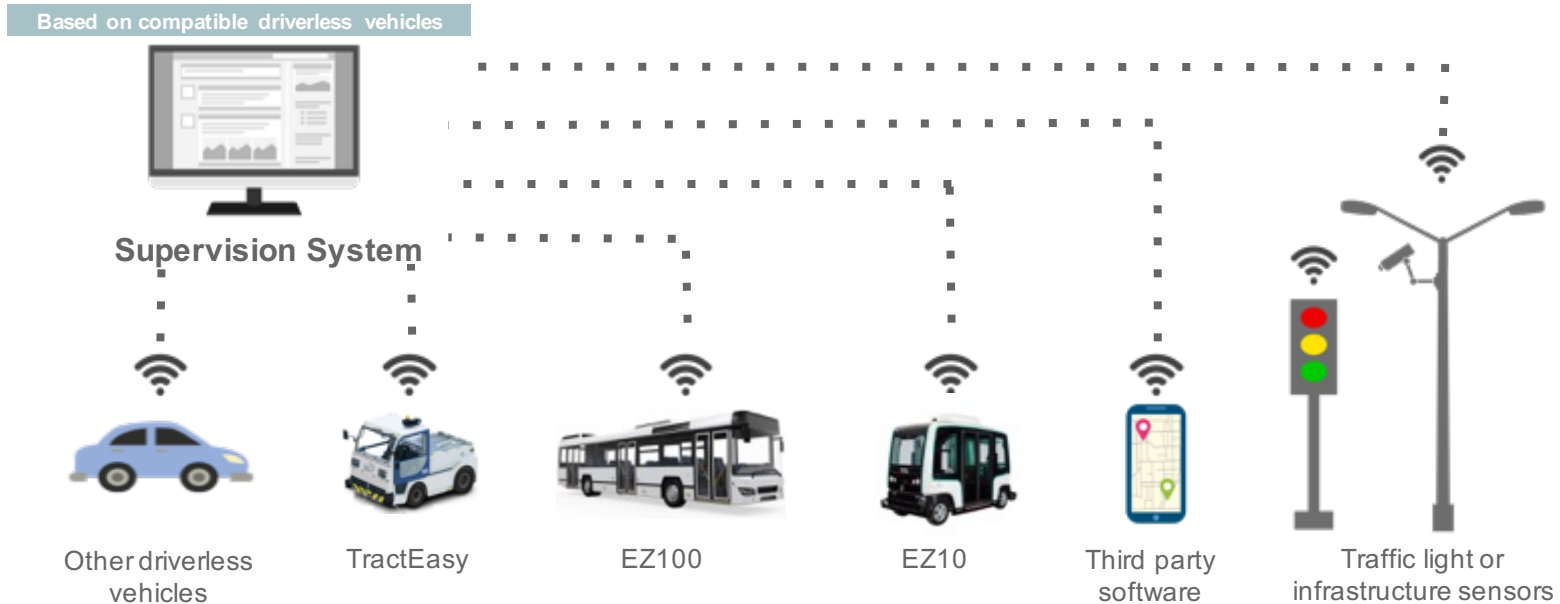


Additional
Transport Services

Fleet Management Software

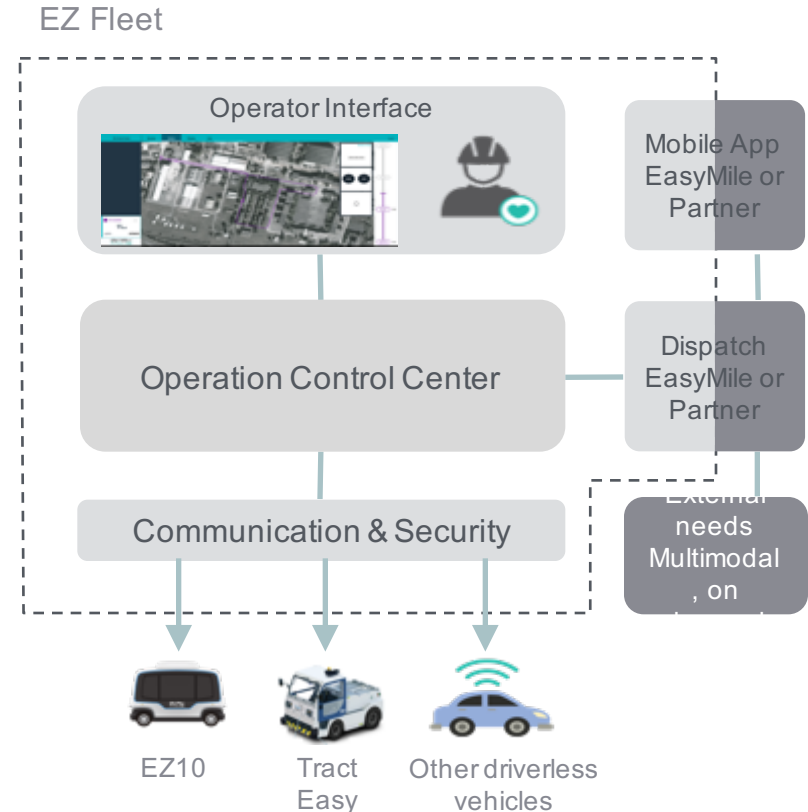
An Autonomous Road Transport Solution

Solution Overview



Fleet Management - 4 Main Functions

- **Control Center**
 - Vehicle performance
 - Vehicle safety
- **Mission Manager**
 - Organise and optimise driverless vehicle missions
- **Data, Reports & Statistics**
 - Gather vehicle information on usage patterns
 - Enable preventive maintenance
- **Communication**
 - With passenger via User interface
 - Communicate with third parties software



Fleet Management - Benefits



Safe and efficient operations of driverless vehicles



Vehicle agnostic, a system for managing fleets made of different autonomous vehicles



Designed for high availability, scalability, and future evolutions



Operator friendly : ergonomic, quick setup...



Partnering with transport operators

- Control Center (OCC)
- Multimodal Transport management System
- Dynamic routing & Data analysis :
- Real-Time Monitoring for Maintenance & Safety



Some key EasyMile Transport Operators Partners



Production facilities @ LIGIER

The EZ10 : Manufacturer



Incorporated : 1971



Current Headcount : 225



- €141 M Revenues
- 2 Factories in France
- 15000 vehicles produced per year









EasyMile Test bed in France



Gen2 vehicle





Thank you!



Connect with us to find more about our recent developments!
#EasyMile