

SATELISE[®]

A stylized, isometric illustration of a winding road in shades of blue and grey. A yellow car is on the upper left, and a yellow motorcycle is on the lower right. There are stylized clouds and a large yellow location pin on the right side of the road.

Mobile App for Satellite – Based Connected Payment
Pilot Project in Portugal

IBTTA GLOBAL TOLLING SUMMIT – LISBON, OCTOBER 2019

cintra

 **Infraestruturas**
de Portugal

SATELISE[®]

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- 3 ADVANTAGES FOR INFRASTRUCTURE AGENCIES
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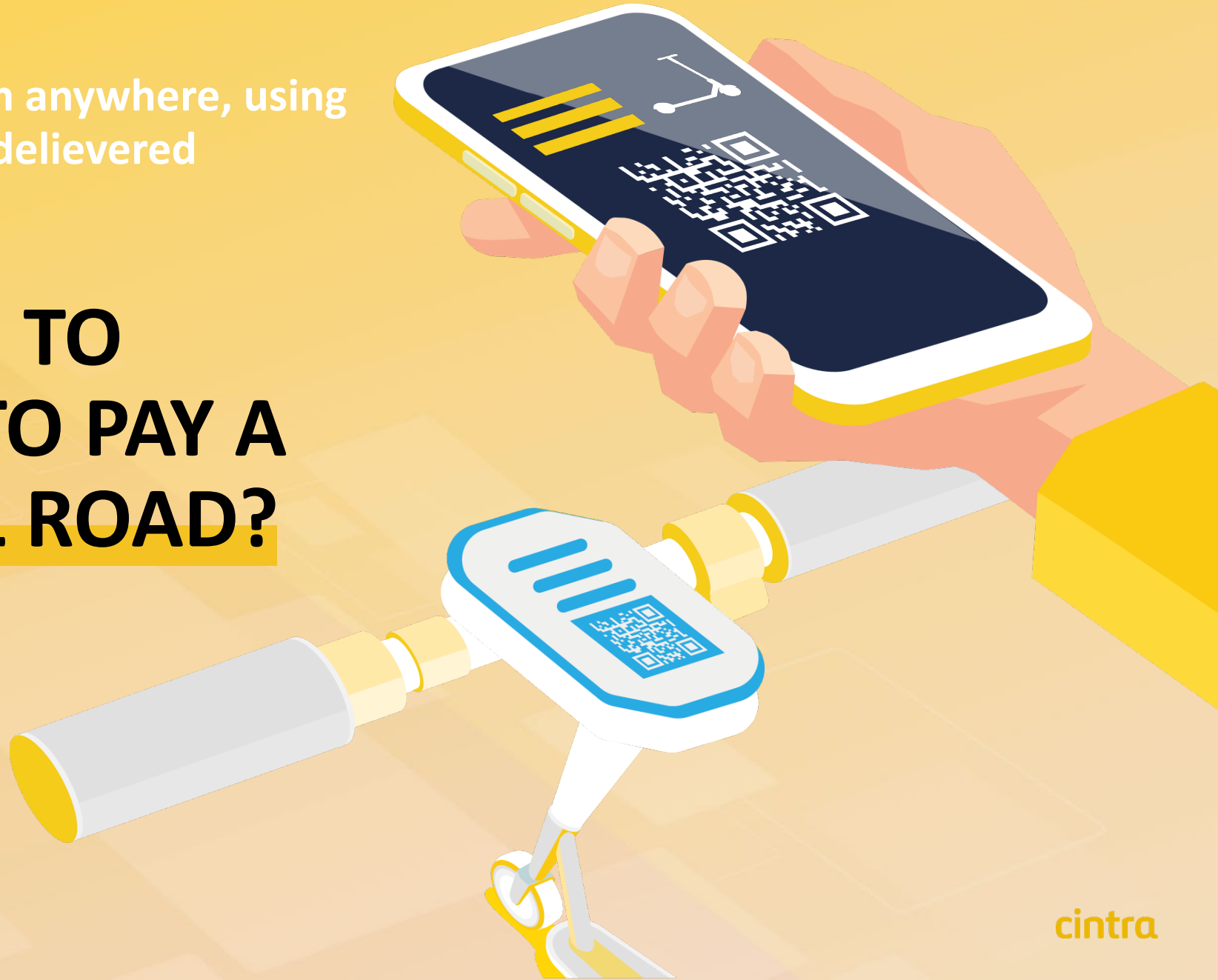
If I use my mobile to pay for a taxi or for a meal in a restaurant...

WHY CAN'T I PAY ROAD TOLLS USING MY MOBILE?



If I can shop on Amazon from anywhere, using my mobile, and have goods delivered wherever I want...

**WHY DO I HAVE TO
STOP THE CAR TO PAY A
TOLL ON A TOLL ROAD?**



If I can shop on Amazon from anywhere, using my mobile, and have goods delivered wherever I want...

**WHY DO I HAVE TO
STOP THE CAR TO PAY A
TOLL ON A TOLL ROAD?**



We need to make further progress with means of payment, in this new revolution.

New mobility players UBER, LYFT, ZITY, CAR2GO...





WHAT IT CONSISTS OF

A platform and an app that allows any toll to be paid using a smartphone. It uses **satellite-geopositioning** to locate the user on the infrastructure

We create
SATELLIS



BENEFITS



VERSATILITY

The user does not need a special on-board device and can link their account to one or more license plates; also, a given vehicle can be linked to more than one user (portability)



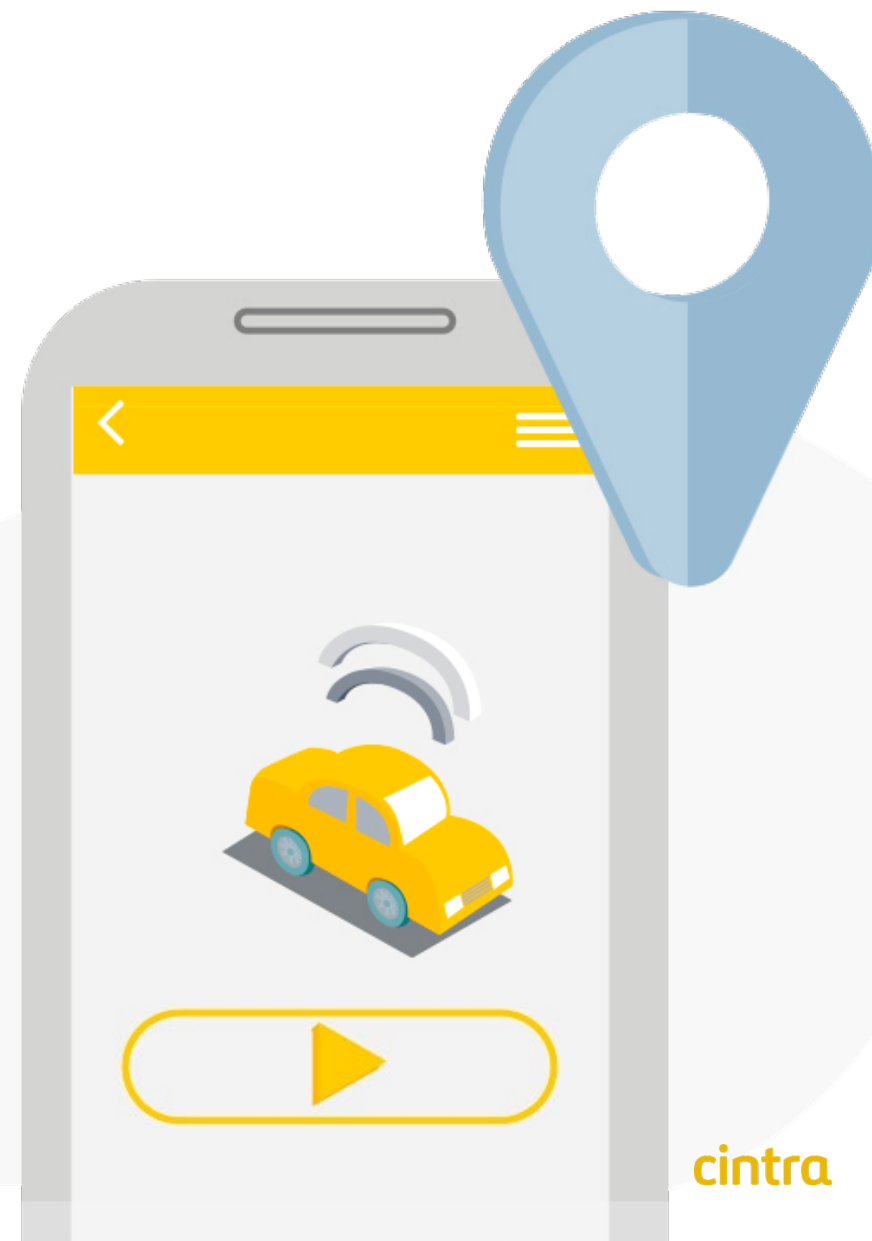
SIMPLICITY

No intrusive transponder installation



COMMUNICATION

Users can receive useful messages about using and paying for the infrastructure (potentially including public service messages)





TRANSFORMATION

Turn any road into a Smart Road. 21st-century technology for a 20th-century infrastructure



MINIMAL INFRASTRUCTURE

Minimal infrastructure required to collect for road usage at any point



EFFICIENCY

More **efficient** than any other means of payment. Maintenance costs only for the technology platform, not for physical infrastructure (or, at least, minimal).



REDUCED DEPLOYMENT TIME

Allows for fast, efficient deployment of the system without having to distribute transponders/OBUs (although GPS-OBUs are applicable for users who do not have/want the mobile app)



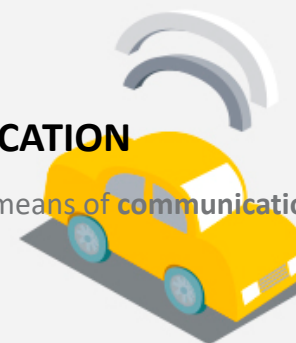
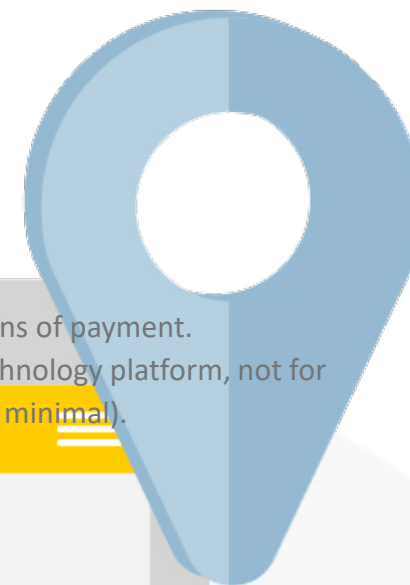
FLEXIBILITY/SCALABILITY

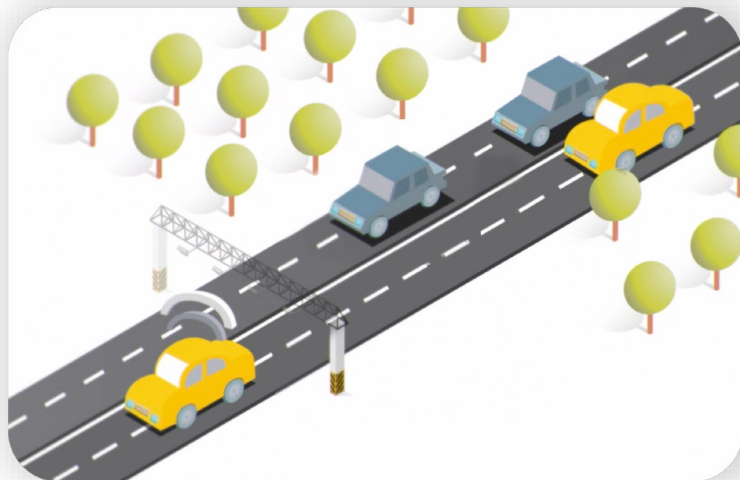
It can cover all or only part of a road network, allowing fast, simple extension of the network and the application of different toll policies in real time (per km., per access, variables, etc.). Enables traffic to be managed intelligently, passing user externalities on to them



COMMUNICATION

In itself, it is a means of **communication with the user**





A technological solution based on georeferenced virtual elements (polygons) instead of the physical gantries used in conventional toll systems.



The smartphone's GPS trace is monitored and transactions are triggered when the user enters or leaves a virtual toll polygon.



Virtual gantries are defined (marking where users enter and exit a zone), generating a transit for each toll zone.

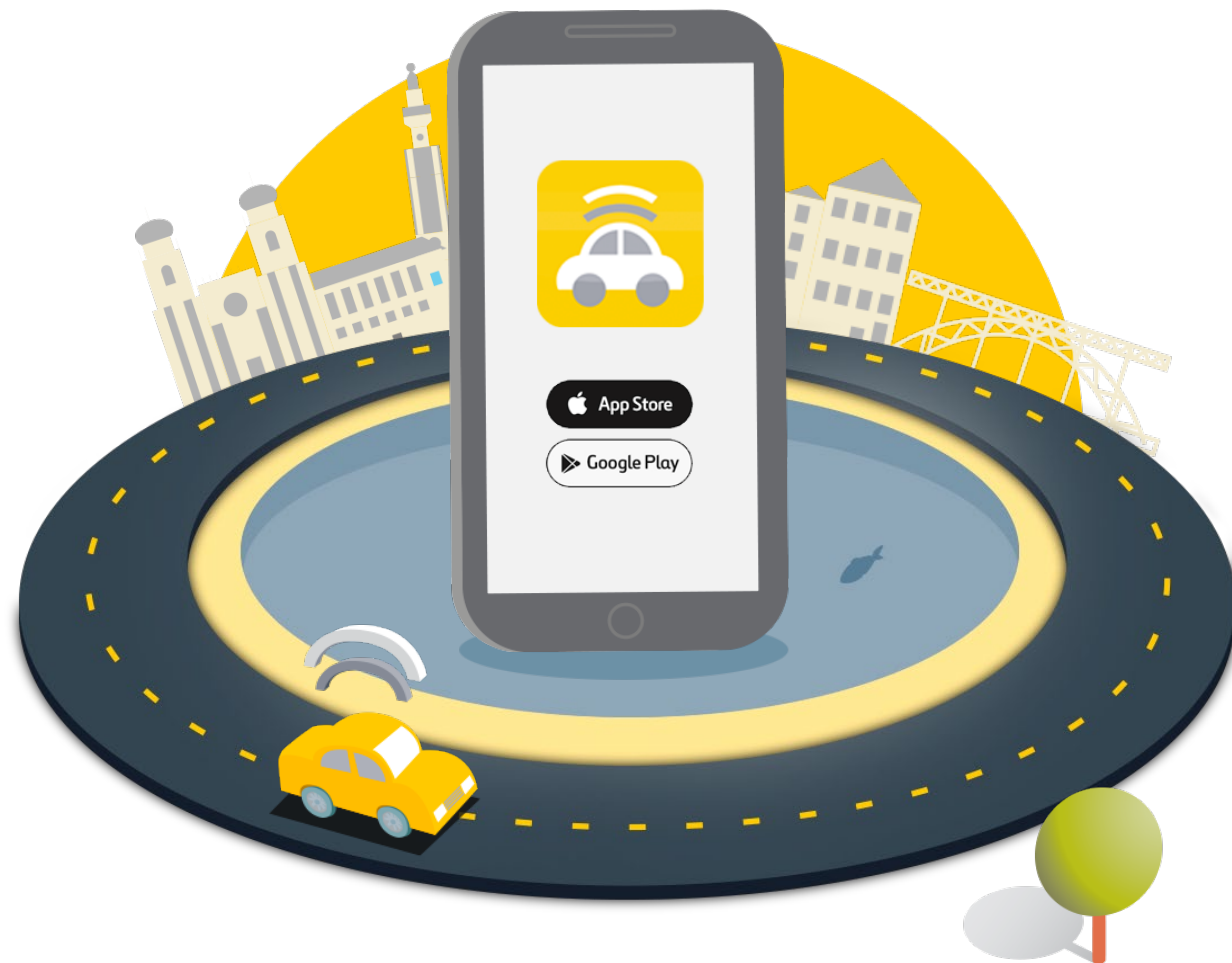
Virtual gantries make the system scalable at minimum marginal cost.

There is flexibility to design virtual gantries to allow for discount policies; Satelise® can also be applied in other situations such as car parks and massive events.

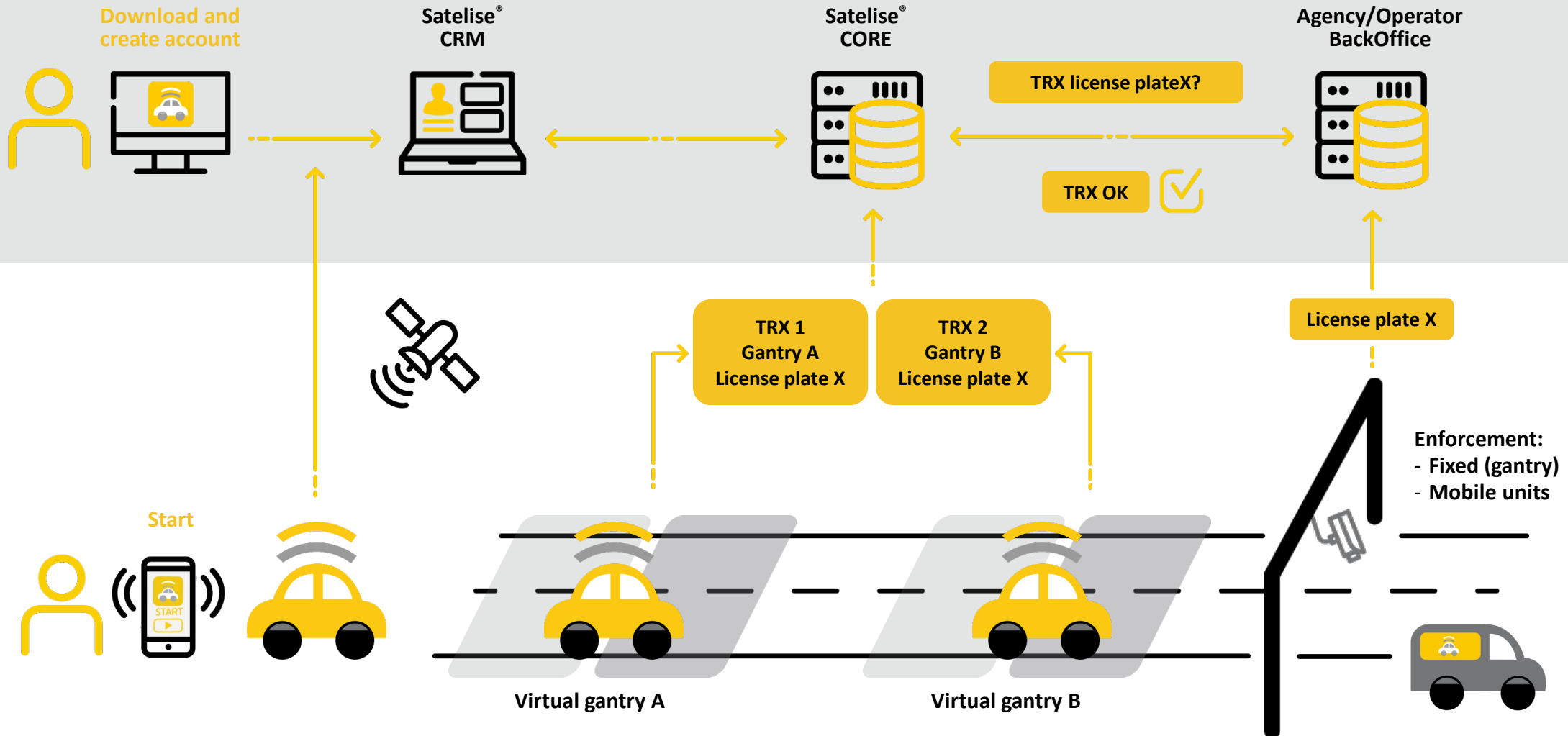
SATELISE[®] MOBILE APP

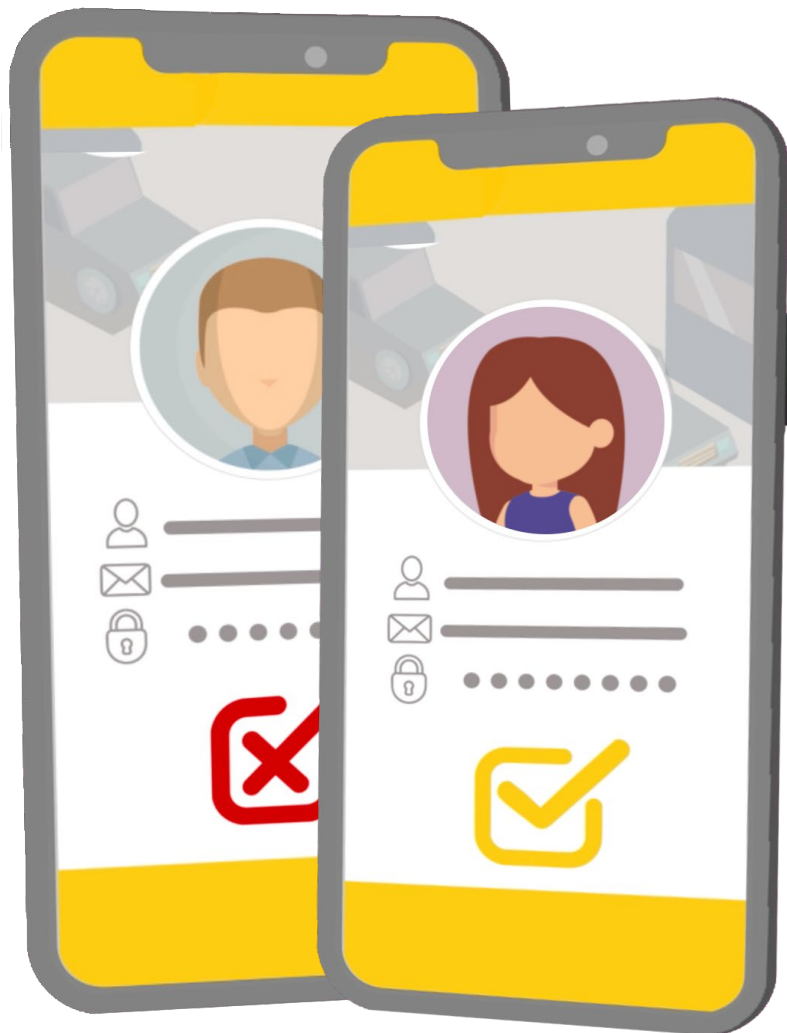
A smartphone app that can be downloaded easily (Apple App Store/Google Play). A single **Satelise**[®] user can be linked to several license plates, and a given vehicle can be linked to several user accounts. Each account has an associated credit card.

Currently, the user must launch the app before each road trip, and they can check their travel history.



FLOWCHART





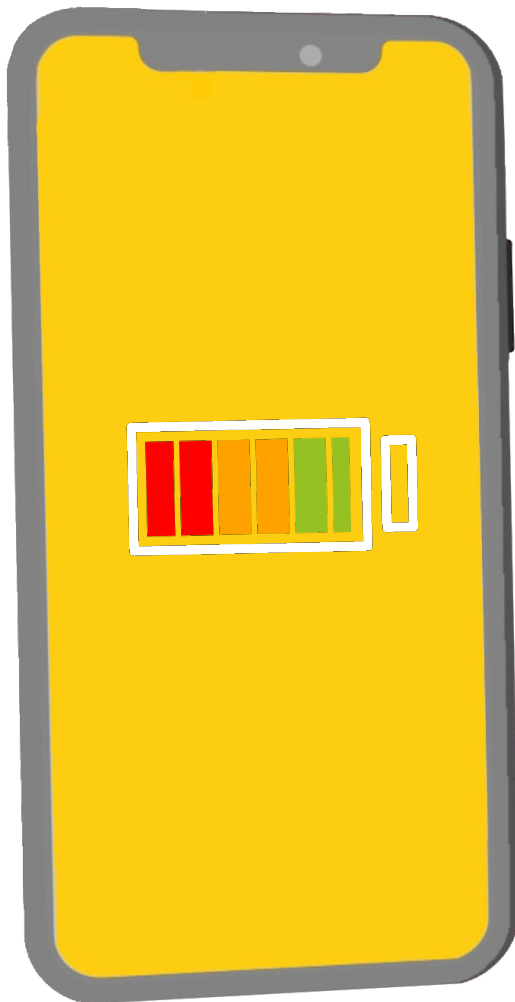
WHAT IF THERE ARE SEVERAL USERS IN A GIVEN VEHICLE?

The app can detect whether there are several registered users in the same vehicle. It displays a message asking the users to identify which of them should be charged; if no response is received, business rules apply.



ROAD SAFETY WITH SATELISE[®] PILOT

Equipped with voice alerts for beginning and ending the journey. It has recently incorporated voice synthesis to read out messages and alerts of interest to the users. It also has functions to restrict the use of the app when the vehicle is in motion.



WHAT IF THE MOBILE RUNS OUT OF BATTERY?

If the user has an account, they are charged for the trip based on identification at control points (enforcement) or the trip is rebuilt from the data available up to the point the app shut down. Any abuse of this feature will be managed using business rules.



DATA PROTECTION

The app only registers the user's location for the duration of a transaction.

Satelise® does not record any other data, not even location information, when a trip is not being taken.

The APP does not profit from any of the users' data; it retains only the necessary data for the purposes of the system.

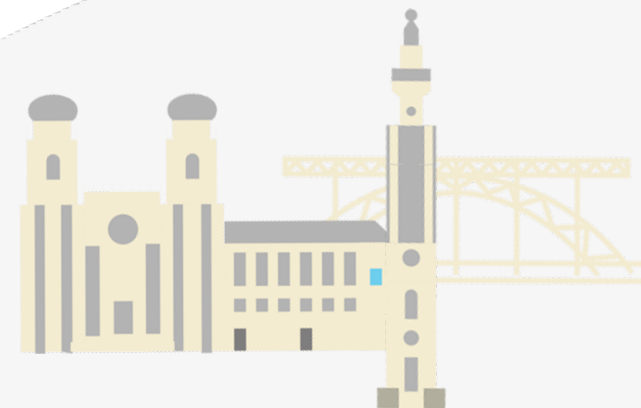


The Satelise® pilot in Portugal and its objectives

Pilot project in collaboration with **Infraestruturas de Portugal (IP)** with the previous authorization from **Instituto da Mobilidade e dos Transportes (IMT)**, as Regulator.

GEOGRAPHIC SCOPE

Norte Litoral concession (with the possibility of extending to Lisbon during the Demo/Friends & Family phases). Number of virtual gantries: 8, coinciding with the toll plazas on the A28.



5 The Satelise® pilot in Portugal and its objectives



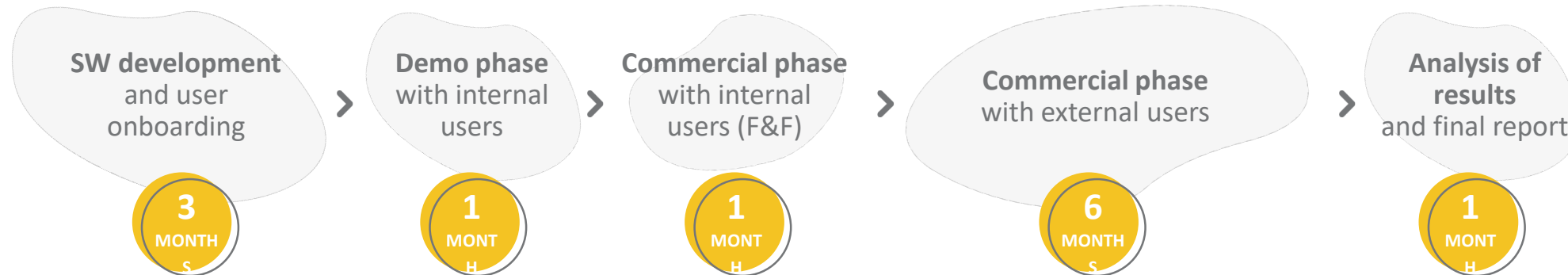
NO. OF USERS (commercial phase)

500

approximately (not counting internal users during the Demo/Friends&Family phases).



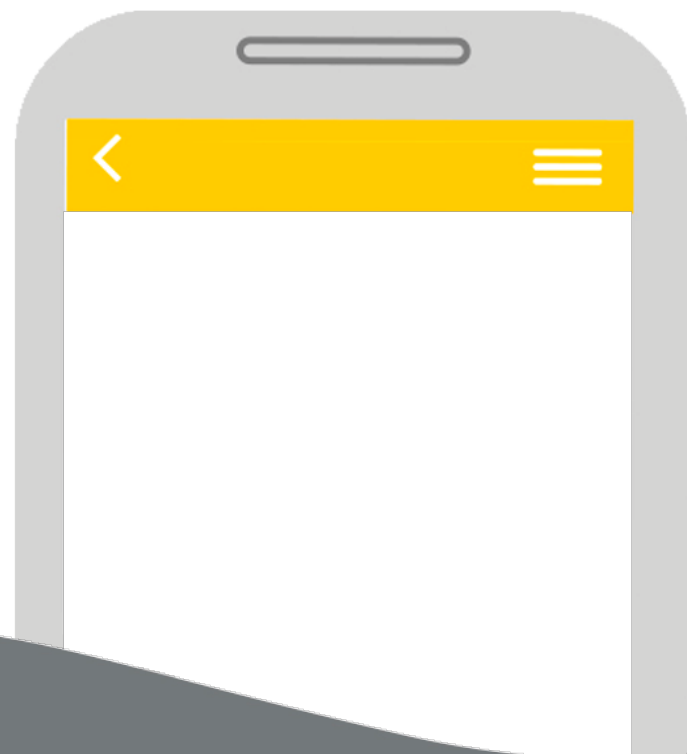
DURATION 12 MONTHS





GOALS

1. Demonstrate the technical viability of **Satelise®** as a **satellite-based means of toll payment** in the near future, according to the new **European Interoperability Directive 2019/520**.
2. Use Vialivre to showcase the **simplicity** of the adjustments required in the back office systems of existing concessionaires/operators in order to accept **Satelise®** as a **means of payment** within the current tolling model in place in Portugal.



THANK YOU