

Conduent Seamless[®] Transportation System

A disruptive mobility solution for travelers,
transport operators and city decision makers.



A universal system
for secure, ticketless
public transport payment
by smartphone.

Cities are critically reliant on transportation systems to enable the movement of people, goods and services. Failure of transport systems leads to delays, increased costs, frustration, increased pollution, a poor living environment and reduced health.

Transport is a common challenge area in cities across the world, where increasing populations and growing economic and environmental demands place ever-increasing stress on city infrastructure.

There are new, smart transportation solutions emerging that promise improved balance between supply and demand, increased use of public transport and improved understanding of mobility through smarter back office processing and data analytics.

Transport is also being transformed by younger generations (so called generation Z group) who are already practicing what they preach when it comes to traveling around their city using smartphones and tablets to plan journeys.

As these 'Future Commuters' begin traveling into our cities more frequently, they bring with them high expectations of the transport systems (including cashless transport transactions). Public transport provision and infrastructure must smarten up, incorporating digital services like integrated apps and cashless payment as standard features.





Without having to alter current ticketing systems, public transport operators can now offer their customers the convenience of paying for travel with a smartphone.

Mobility as a Service

Mobility as a Service (MaaS) is a concept that changes the use of different transport modes from separate systems to a service promise. It has the potential to fundamentally change the behavior of travelers in and beyond cities and is hence regarded as the biggest paradigm change in transport since affordable cars came to market.

Integrating services through smart, MaaS solutions puts users at the heart of the transport network, offering tailor-made travel services based on preferences. These services also provide the means to achieve the smarter, simplified transportation landscape envisioned and expected by future users.

MaaS is envisaged to have an account-based payment method, where the customer is regularly (weekly, monthly...) billed by direct debit or credit from a private account, based on their transportation usage, similar to how charges are assessed for mobile phone subscriptions.

The Conduent Seamless® Transportation System

Our system has many characteristics of MaaS as it enables travelers to access city services and various mobility solutions including all forms of public transport.

Seamless® is comprised of a payment service and a back-office processing platform that supports services. Conduent Transportation installs the necessary components. A single app can be used to take the bus or metro, share cars, park and ride, as well as access other services. Conduent Transportation reduces the risk that authorities are exposed to in implementing a mobile payment system, by hosting and managing the digital payment portal and back-office operations.

Without having to alter current ticketing systems, public transport operators can now offer their customers the convenience of paying for travel with a smartphone. Operators simply become a Conduent Transportation affiliate and install dual technology (BLE / NFC) targets on their network. Developed by our computer scientists in Europe, the target come with their own power supply, and are easy to install and operate.

Travelers simply tap their smartphone on any Seamless® target. While in contact with the smartphone, the target creates and stores an encrypted transaction and relays it to the mobile application. Constant network connection is not required – the transaction is transmitted when network connectivity is available. Seamless® provides a fully managed account-based payment system. This system enables users holding an account and an authentication means (e.g.: smartphone with NFC or Bluetooth Low Energy technology) to travel via multiple modes of transport both public and private. The system also allows transportation agencies and operators to deploy validation and authentication means easily and cost effectively, guaranteeing protection against fraud and offering fare management and financial consolidation, customer support, and device and account management capabilities.



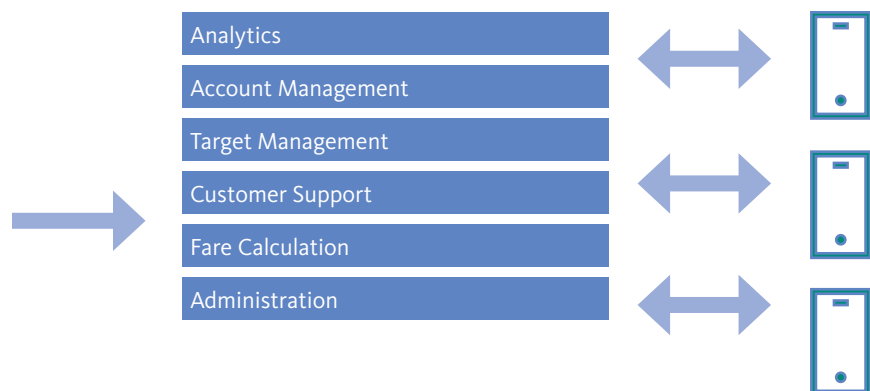
The Seamless[®] concept is illustrated below. The concept itself is a major architectural change compared to current automated fare collection architectures and conventional NFC payment architectures, which struggle to be adopted by the public transportation industry due to the multiplicity of parties and costs of implementation.

The goal is to provide a seamless mobility service to travelers holding a smartphone. The passenger subscribes to Seamless[®] and can then start using the services worldwide by simply presenting the mobile phone to a Seamless[®] target affixed near the entrance of the transportation means (bus entry, access control gate, etc.), or more generally at a place representing the consumption of a service. The transit fare is calculated on the back-end and optimised to the best adapted fare for the user by choosing among various choices, such as a capped, flat fare, and a weekly or monthly pass. Customers will be billed the amount on a regular basis (ex: monthly) by direct debit or credit card payment. Passengers no longer need to buy tickets in advance or wait in line at counters or ticket vending machines.

Even if post-payment is a recent development in transportation, the model is adapted to the usage of all commuters; not only for occasional or regular users, as it employs a smart, best fare calculation and presents real flexibility to regulars.

The advent of dual technology (BLE / NFC) in the smartphone industry is revolutionising the payment of goods and services. Unlike Seamless[®], most NFC solutions are based on integrating a contactless transportation card or bankcard inside a phone, either in a secure element (e.g. a SIM card) or not (Host Card Emulation). These solutions require intensive capex investment for terminals and overcoming interoperability challenges.

Overview of the Seamless[®] Concept





The Seamless target as installed in the the city of Valence, France.

Seamless® Road Map

Conduent Seamless® Transportation System is a turnkey solution based on the Mobility as a Service model. Transport as a Service is a viable answer to global budget pressure experienced by governments and citizens, while ensuring the development of new access to city services.

The expanding mobile payment sector is highly fragmented, with a variety of competing technologies and business models vying to capture consumer attention and early market share. These range from peer-to-peer mobile money transfers to in-store app-based payment and full e-wallet functionality enabled by NFC. (Deloitte)

The main key assets of the solution are:

- Remains simple: mobile ticketing is new and unfamiliar to most users. The aim is to provide a user experience that is intuitive and seamless. The users shall see their needs accomplished quickly, intuitively and with ease, leaving them with a desire to return and re-use the application.
- Provides a stable business model, even for micro-payments.
- Mitigates fraud and security risks while delivering the services. From the service provider's perspective it prevents payment default, and from the traveler's perspective, personal data protection and data privacy are ensured.

The first Seamless® pilot was started on September, 2015, in the city of Valence, France. Its first implementation occurred September, 2017, in this same city, followed by its introduction in two other French cities in 2018. Public transportation is facing a major transformation in the way it is planned, managed and even consumed.

Authorities and suppliers need to seize the opportunity and adopt new methodologies, systems and business models to fulfill increasing commuter expectations, while at the same time deal with budgetary pressures.

The adoption of mobile ticketing technology is one important step, but it needs to be associated with new business models allowing capital investments to be significantly reduced, while providing authorities more ability to impact financial performance.

We propose Conduent Seamless® Transportation System as a universal, low CAPEX mobile ticketing system based on our decades of experience as ticketing technology providers.

Contact Us

www.ConduentTransportation.com
transportation@conduent.com