

Ticketing Software Development for a Solutions Provider in Public Transportation Sector



edvantis



Intro

Edvantis helped ATRON develop a ticketing system, based on the national standard introduced by the joint venture of the public transport authorities (PTAs) in Sweden.

The Challenge

ATRON Systems Sweden AB is a branch of the ATRON Group headquartered in Germany. The company is a European market leader in software and hardware solutions for the public transport industry.

ATRON Systems Sweden AB previously used the ticketing solution developed by ATRON electronic GmbH. However, in recent years [Samtrafiken](#) – a joint venture of the public transport authorities in Sweden – introduced a new ticketing and payment standard called [BoB \(Biljett- och Betalstandard\)](#).

ATRON Systems Sweden required a new solution to rapidly achieve compliance with the changes. However, they needed a hand on the technical parts to implement the BoB standard. ATRON contacted Edvantis because we had engineers, familiar with the standard, and available to immediately get started on the project.

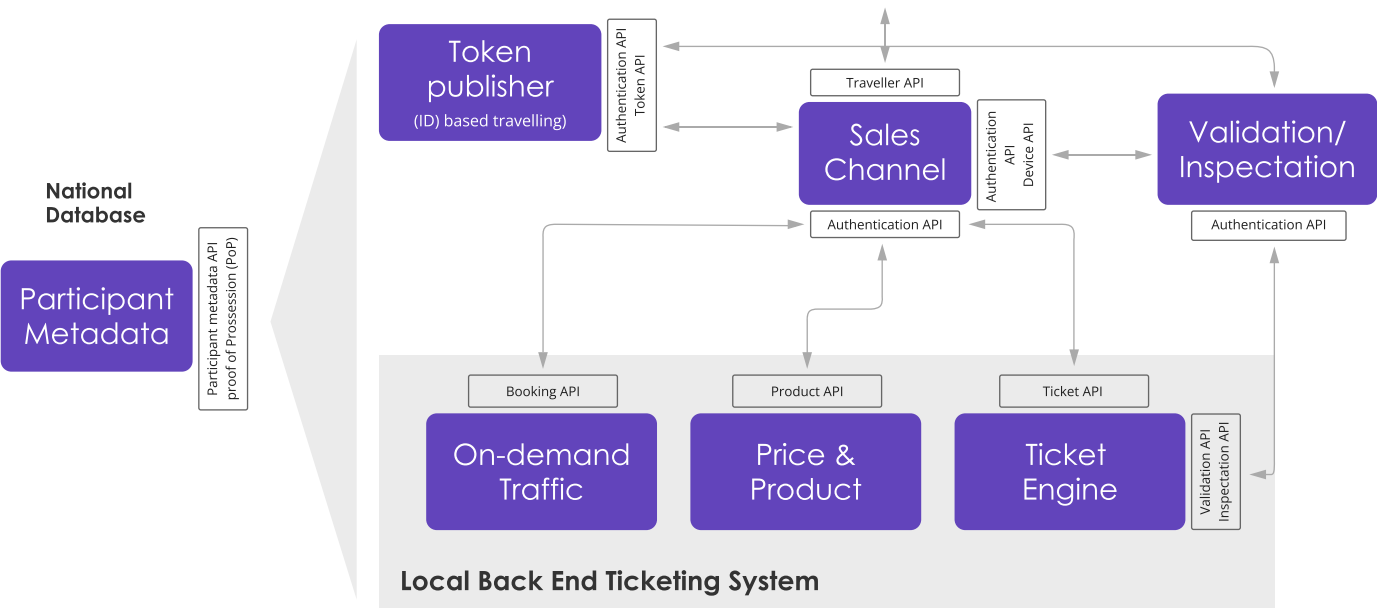


BoB Standard Overview

BoB standard was introduced to create unified ticketing and payment experience for the Swedish public transport market. It's meant to:

- ✓ Improve interoperability between different public transport authorities
- ✓ Achieve unification of machine-readable mobile ticket issuing
- ✓ Enable single ticketing card creation which would aggregate multiple tickets from different transport companies.

The standard uses the modular architecture:



Solutions Delivered by Edvantis

After doing a [project discovery](#) to estimate the scope of the project, Edvantis provided the Client with 4 backend developers and 1 tech lead. The team was assigned to create BoB-compatible backend architecture, using an existing engine.

The project is still in progress. However, Edvantis can already report on some stellar results:

- ✓ Created a backend engine following Mobile Ticket Specifications (MTS) and Schemas introduced by the BoB standard
- ✓ Wrote integration tests to conduct comprehensive quality assurance of all ticketing features



- ✓ Adapted the Client's previous CI/CD pipeline to better support the development of a new backend solution
- ✓ Integrated a number of APIs:
 - **Authentication + Authorization API** enables interoperability between different hardware according to predefined rules
 - **Product API** provides a listing of products and their prices
 - **Ticket API** receives ticket orders and verifies them through electronic signatures
 - **ParticipantMetadata API** manages and updates information in the Participant Meta Database.
 - **Device API** provides keys for copying protection
 - **Validation API** enables the ticket validation device to operate properly
 - **Inspection API** enables the inspection device to submit a completed inspection report
 - **Management API** allows performing the administrative management of the new backend engine

Edvantis is currently supporting ATRON Systems Sweden AB in the area of public transport with the integration of the Swedish ticketing standard BoB. Within the current cooperation, Edvantis has distinguished itself through professionalism, reliability and adherence to schedules.

Juergen Goldmann,

Director Business Operations at ATRON Systems Sweden AB

We Achieved **Great Results Together!**

BoB standard is an innovative concept in the public transport market. The standard continues to evolve in terms of requirements, as we speak.

By rapidly setting up the project, Edvantis enabled ATRON Systems Sweden AB to become the front-runner among other PTAs of Sweden. The Client has the potential to sell the application on the Swedish market. The solution can be re-used by any Swedish PTA with only a few changes to parameters.

The backend engine we developed can also be used for interfaces of any ticketing device in public transport, whether we talk about purchasing tickets through unattended terminals, conductor-attended handheld devices, mobile apps, or websites.

Technologies Used:

