European Travellers Club (ETC)

Horizon 2020 ETC 636126

D 12.4 Equipment

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Contents

1. Introduction

This document is deliverable 12.4 Equipment and is part of work package 12 *'German Pilot'*.

The aim of deliverable 12.4 is to adapt the required equipment in buses in order to enable and prove the readability of token cards in the German pilot.

2. Executive Summary

The specific objective of Deliverable 12.4 is to adapt the installed equipment in vehicles in order to recognize and read the generic secure token (GST) from the chip card and hereby enable Dutch passengers to use public transport services on the German side. The development of different e-ticket-standards in different nations within the European Union was accompanied by the implementation of hardware infrastructure in order to recognize and read the chip cards. This hardware was developed according to each standard, hence it cannot read foreign e-tickets. In order to overcome this obstacle for cross-border travels, a solution apart from multi-scheme terminals is strongly required. Multi-scheme terminals are very expensive, since they need to stick to different standards, cover all their requirements and all their functionalities. The chosen development in order to read the GST generates added value, as it is a rather inexpensive solution that serves the need of recognizing GSTs coming from various nations at the same time.

The Deliverable has been implemented according to the work plan, without any deviations.

In order to read both, the VDV-KA standard and the GST, the partners developed specifications in order to adapt the existing reader infrastructure. Subsequent to that these specifications have been implemented by the supplier of the required terminals, namely IVU Traffic Technologies. After the software upgrade has been implemented, the equipment has been tested in order to ensure that both applications stored on the chip cards can be recognized and processed by the terminals. Furthermore integration test have taken place, which focused on the interaction of different system components. In this case a successful interaction between the chip card, terminal, the German hub and the back office being the Service Platform. After successfully finalising these integration tests the adaption were rolled out to the terminals installed in all pilot busses.

Providing terminals that are able to recognize and process the GST next to existing national e-ticket-standard applications contribute to the objective of accepting Dutch passengers in German public transport. The terminals on the Dutch side are adapted analogously in order to accept German passengers in the Dutch public transport system. Hence, an interoperable solution is reached that allows passengers – regardless whether they are registered in Germany or the Netherlands – to use public transport services in the border region in an easy and seamless way.

3. Equipment

As stated in chapter 1 of this document, the aim of deliverable 12.4 is to adapt the terminals in German buses to ensure that token chip cards are recognized when presented by pilot participants at these terminals.

The terminals are able to recognize and proceed chip cards that contain both, the VDV core application (VDV-KA) as well as the generic secure token (GST) that is used for ID-based ticketing in the ETC pilot. This ensures that only one user medium is required to use public transport services in the home country and in the foreign public transport system. This means that German passengers can check-in in German buses with their conventional VDV core application (VDV-KA) e-ticket, but Dutch passengers can also be recognized and accepted using the generic secure token (GST) saved on the chip card.

The software adaption for the terminals was delivered by the supplier IVU Traffic Technologies AG, which has won the tendering competition for delivering the conventional VDV core application terminals. The software adaption for the handheld inspection devices was delivered by Systemtechnik GmbH, which has won the tendering competition for delivering the conventional VDV core application inspection devices.

To communicate with the GST on the chip card the software specifications as provided by Accept, the Secure Token Acceptance Sensor (STAS), was used.

To communicate with the German Hub the sensor API was used.

Attachments
- Picture of the terminal installed in German buses

4. Screenshot, picture of the terminal

Below one picture of the terminal installed in German buses: