



**Project Number 683612**

## **D 1.4 V4 of the VIMpay app**

**1.2**

**22 February 2017**

**Final**

**Public distribution**

**petaFuel**

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## Document Control

Version	Status	Date
0.1	Document outline and first content	20 January 2017
1.0	Version for review	9 February 2017
1.2	Final version	22 February 2017



## Executive Summary

This document constitutes deliverable *D 1.4 V4 of the VIMpay app* of Work package 1 (WP1) of the VIMpay project.

While the deliverable itself is the fourth version of the demonstrator app of the VIMpay app, which can be downloaded online, this document describes the details of the implementation of the various functionalities and acts as a report on the application.

# 1 Scope of this deliverable

This deliverable describes the functionalities and implementation of them for version 4 of the VIMpay app.

## 2 Overview of new functionalities

Version 4 of the VIMpay app extends existing functionalities by providing a more user friendly registration process and support for European bank accounts. There are also new functions to provide better customer support and increase the user experience.

The following table shows these functions and gives a short description of them.

Function	Description
New registration process	less data is for the simple user registration required and the other data is request using the existing escort status process
European bank support	Support for bank accounts in Austria and Poland using the ScreenScraping Framework
Benefits card	Supporting a new credit card product
Snooze / Wake up	Easier way to lock the VIMpay Card for transactions
White Label	support for adding specific brandings to VIMpay

## 3 Architecture overview

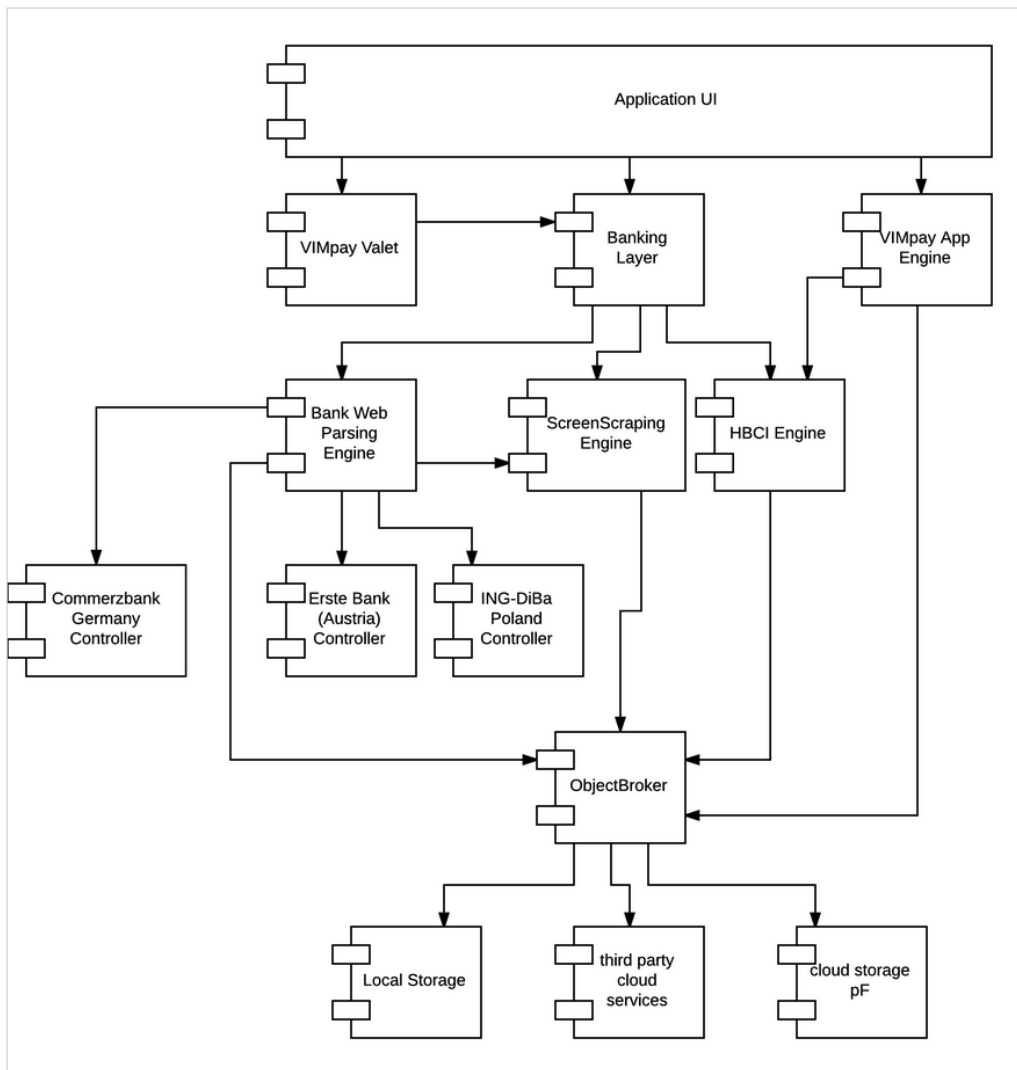
Description of the changed functions or extended existing architecture designs.

### 3.1 European bank support in VIMpay

VIMpay European bank support extends the existing architecture design by adding a new module to provide basic functionalities for data storage and script processing called Bank Web Parsing Engine.

Each online Bank which just offers web based banking functionality is now easy to integrate in VIMpay by implementing a new controller where the parsing of bank account data and revenues is done. The bank also needs a JavaScript file for fetching all necessary information using the existing ScreenScraping Engine which is already used by VIMpay Connect described in D1.3 V3 of the VIMpay app 3.1 VIMpay Connect.

The following figure gives an overview of the extended app architecture diagram.



The ObjectBroker library described in D 1.1 V1 of the VIMpay App#ObjectBroker is now extended to load data from local storage or from the petaFuel cloud storage.

When the local data is changed the cloud data is updated so that other devices are able to load it from the cloud storage and don't need to process the raw data, XML or MT940 revenues for example, again. This saves battery and reduces the network traffic.

## 4 Implementation of functionalities

### 4.1 New registration process

The main goal of the new registration process is providing a more simple and user-friendly registration for the customers. To achieve this goal the necessary data for registration is reduced so that users only need to provide first-, last name and his mobile phone number.



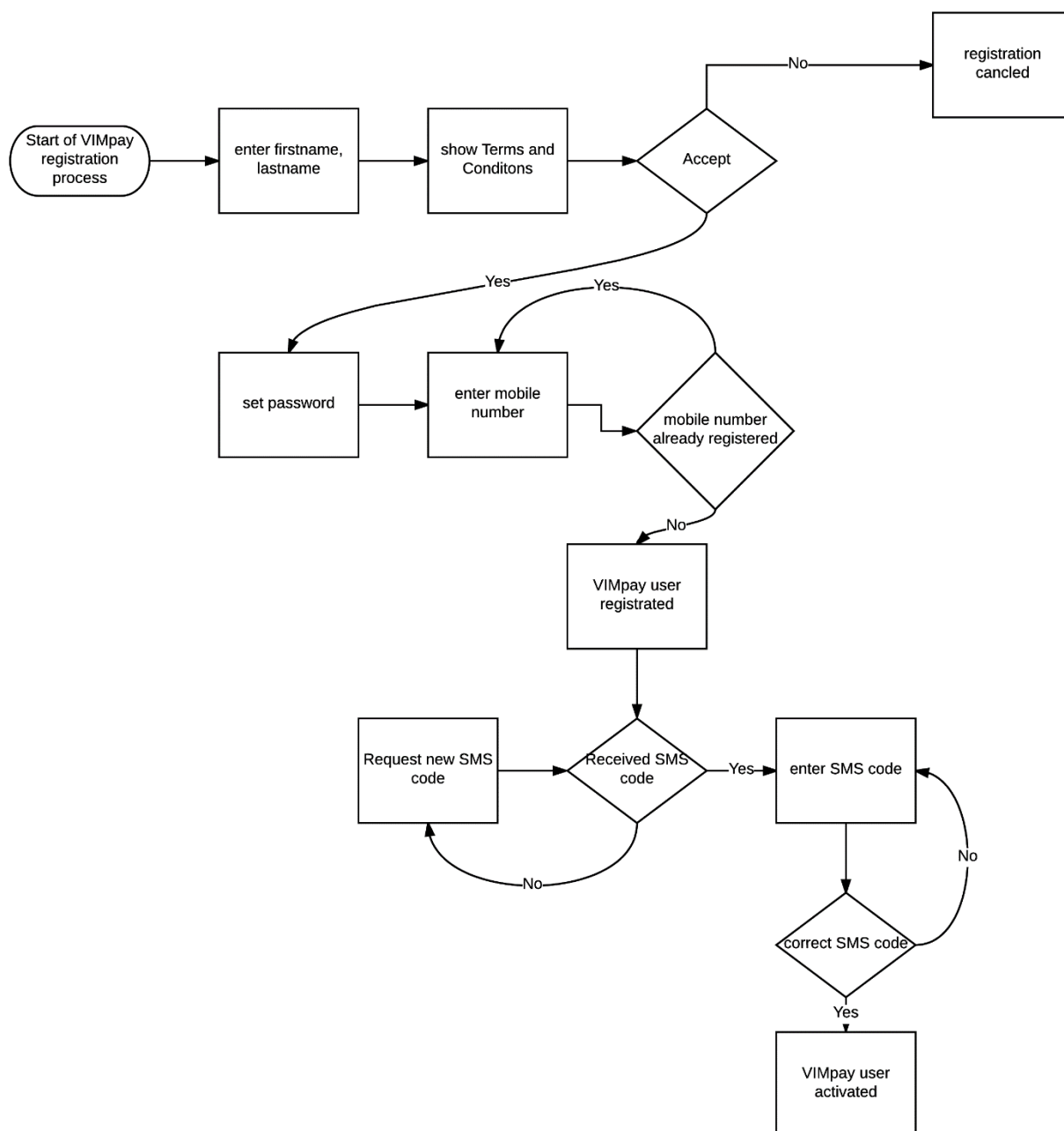
The following table shows the data which is required for the old and new registration.

Old registration data	New registration data
Birthdate	First name, last name
Password	Password
Terms and conditions	Terms and conditions
Title	Mobile number
Bank reference account	
First name, last name	
Mobile number	

The other data is requested using the already existing escort status process, described in D 5.2 Business requirements for version 2 of the App#EscortStatus. Thereby the existing views are reused when the user is ready to provide the necessary information.

#### 4.1.1 User Account validation

The registration validation hasn't changed, the user receives a confirmation code and has to it to validate the VIMpay account. The following figure shows the validation procedure.



#### 4.1.2 VIMpay Card upgrade status: Standard & Plus

The Standard or Plus upgrade status of the VIMpay card enables basic replenishment and payment functionalities. Some of the features require additional information after the registration and the user has to enter them when needed. The following table shows the features and the required information.

Feature	Necessary information
Virtual Card	Birthdate
Card replenishment	HBCI reference account
Payment	Address, Title

### 4.1.3 VIMpay Card upgrade status: Premium

A Premium VIMpay Card provides the same functionalities as a normal bank account thereby the user needs a full legitimization. The legitimization can be done using the old PostIdent procedure or in a fast and easy way with the new Videoident procedure. The Videoident legitimization process was already described in D 1.3 V3 of the VIMpay App#Videoident.

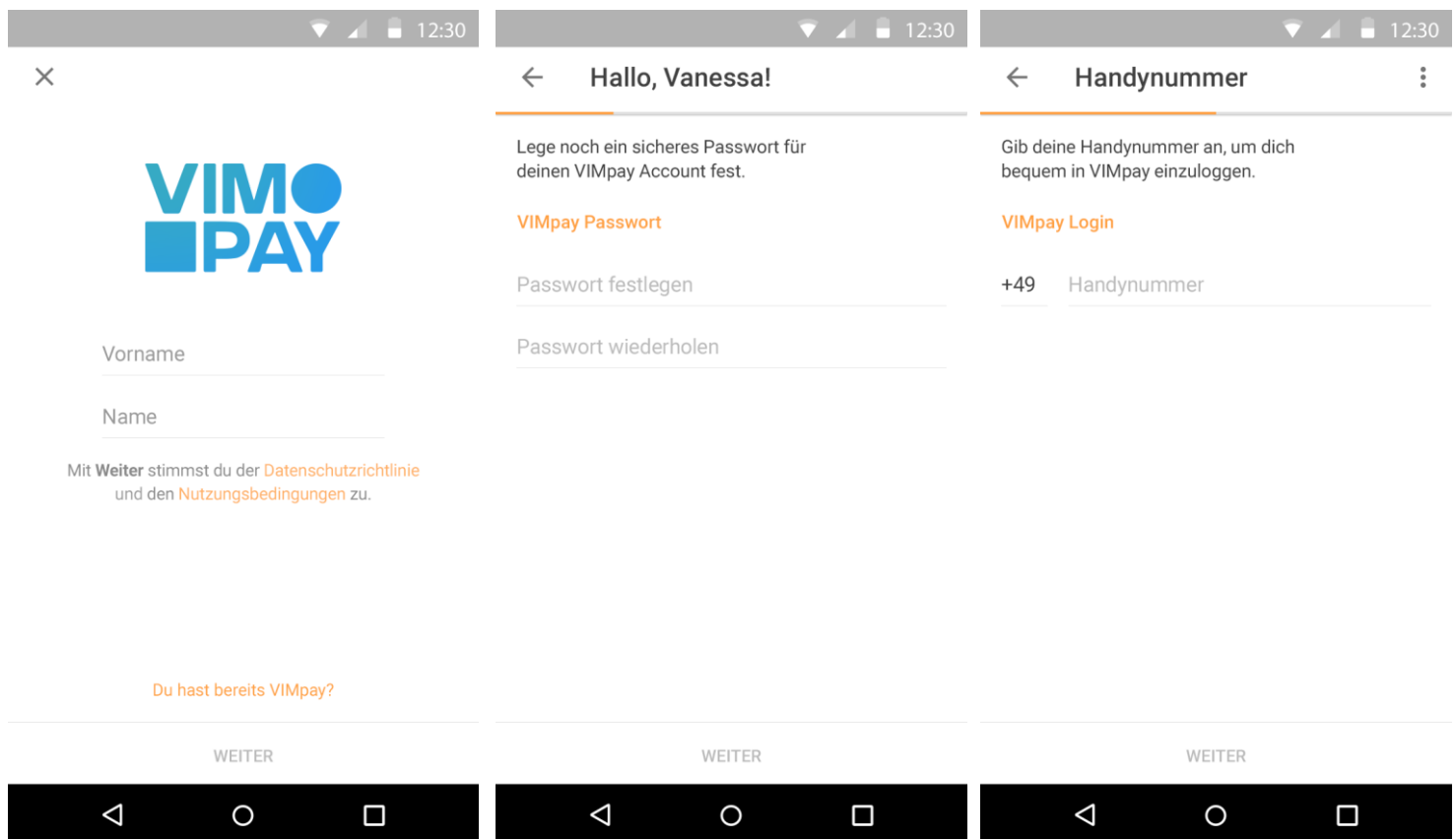
The following table shows the required information for a Premium Card.

Feature	Necessary information
Full account functionality	Full legitimization, Politically exposed person

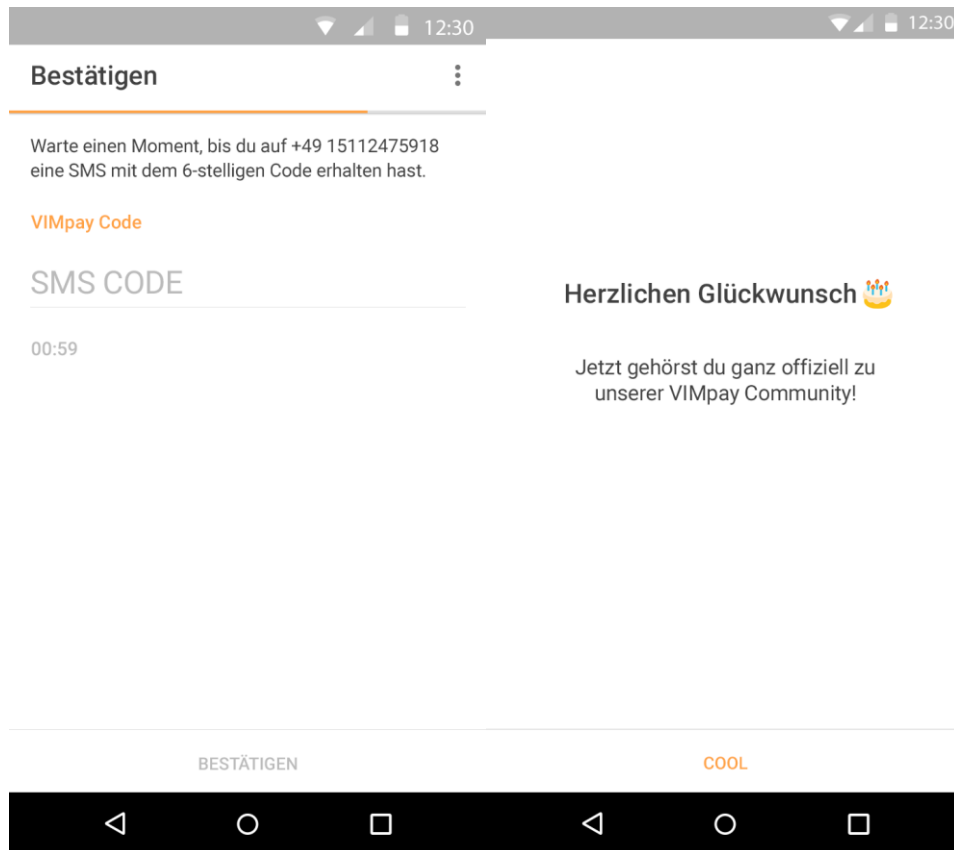
### 4.1.4 User Interface for new registration

The User Interface for new registration has been changed to fit the new requirements. The figures show the screen for the Android App in German.

The first screenshot shows the start of the registration where first and last name are requested. In the second screen the user sets his password for the new VIMpay account. After that the user has to provide his mobile phone number in order to receive the registration code.



The fourth screen shows the registration verification. The user is able to resend the confirmation code and after a successful validation the last screen of the registration is shown.



## 4.2 European bank support

The VIMpay App supports bank accounts from Austria and Poland using the already existing screen scraping library. The process for script update and validation is the same as used in VIMpay connect described in D 1.3 V3 of the VIMpay app#VIMpayConnect. After the login all bank accounts are fetched from the website and the user is able to use them exactly as normal HBCI bank accounts. Revenues for a specific bank account are fetched the same way. Technically each bank just needs one JavaScript file where all fetching is done and one controller implementation which primary handles the parsing of the revenue CSV files.

The following figure shows the process flow for screen scraping.

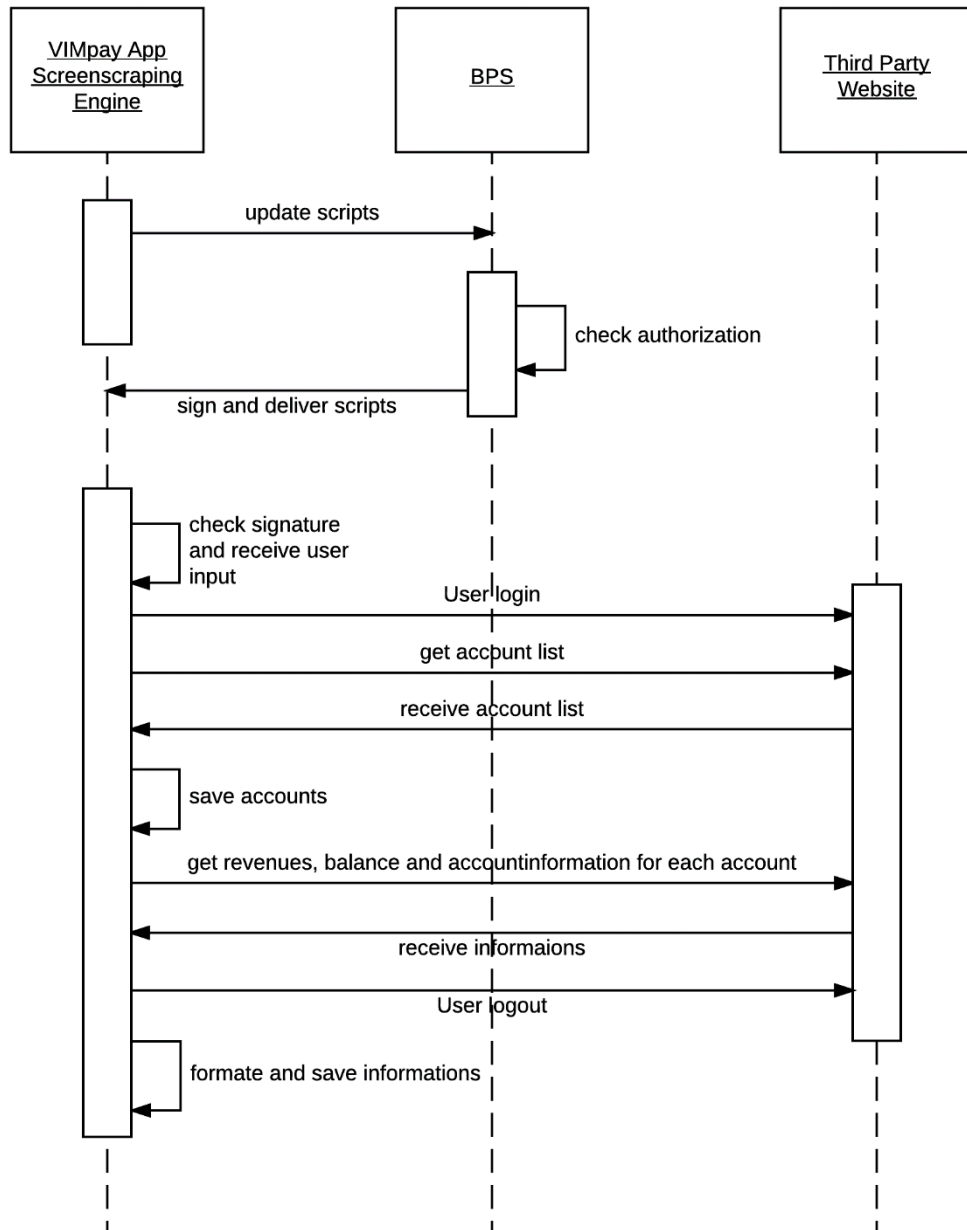
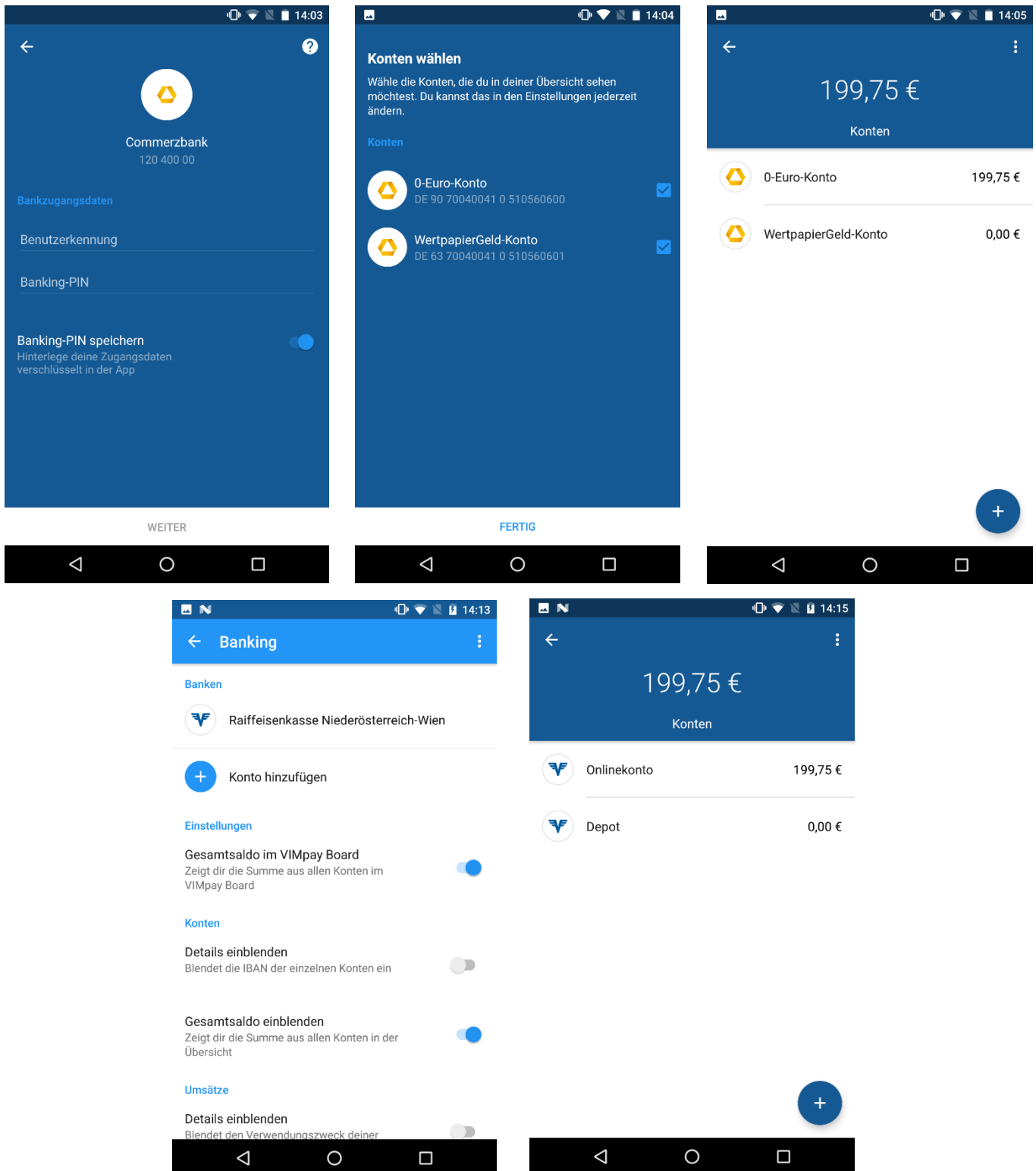


Figure 1 and 2 show the login procedure for a German non HBCI bank account of the Commerzbank. The accounts appear as all other in the account overview (figure 3, 5) and there is no optical or functional difference for the user. Figure 4 shows the bank settings for an Austrian bank account of “Raiffeisenkassen Niederösterreich-Wien”. The UI is designed to make no difference between screen scraping bank accounts and HBCI bank accounts in order to achieve the best user experience. Note that the screenshots are in German.



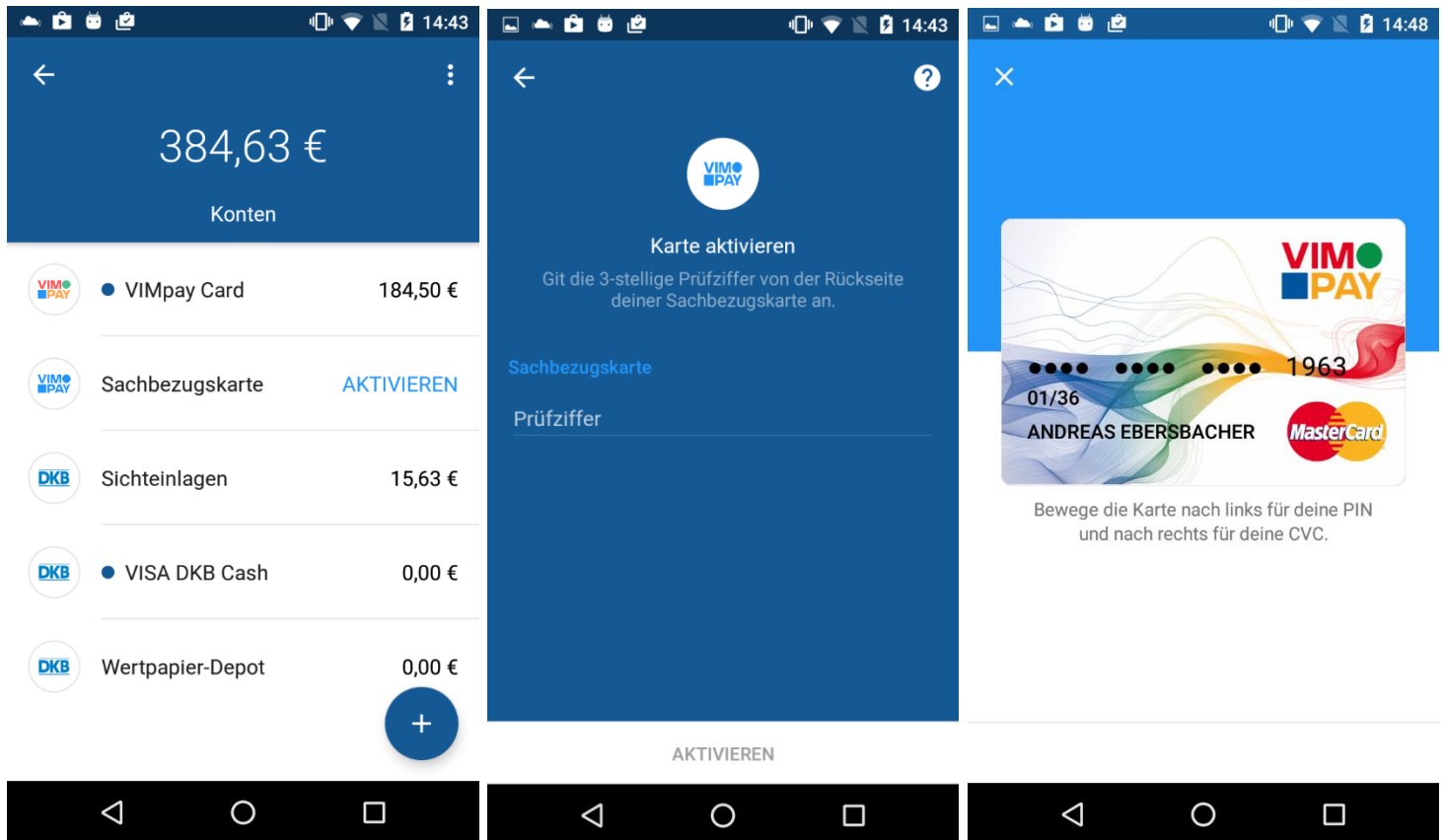
### 4.3 Benefits Card

A Benefits card is a special prepaid MasterCard which can be used by companies to pay their employees tax-exempt services. Such tax-exempt services are grouped in six different categories which are defined by law:

- In-kind benefit
- Vehicle advertisement
- Gifts for special occasions
- Internet fixed rate
- Recovery aid
- Lump sum for material allowances

The VIMpay Engine is extended to support multiple prepaid MasterCards simultaneously because the VIMpay Benefits Cards are in technical aspects like normal VIMpay Cards with special properties. Also the VIMpay App UI was updated to fit the new requirements for Benefits Card. These requirements are listed below.

- Activate Benefits Cards with CVC2 Validation
- New virtual Card screen for Benefits
- New registration process



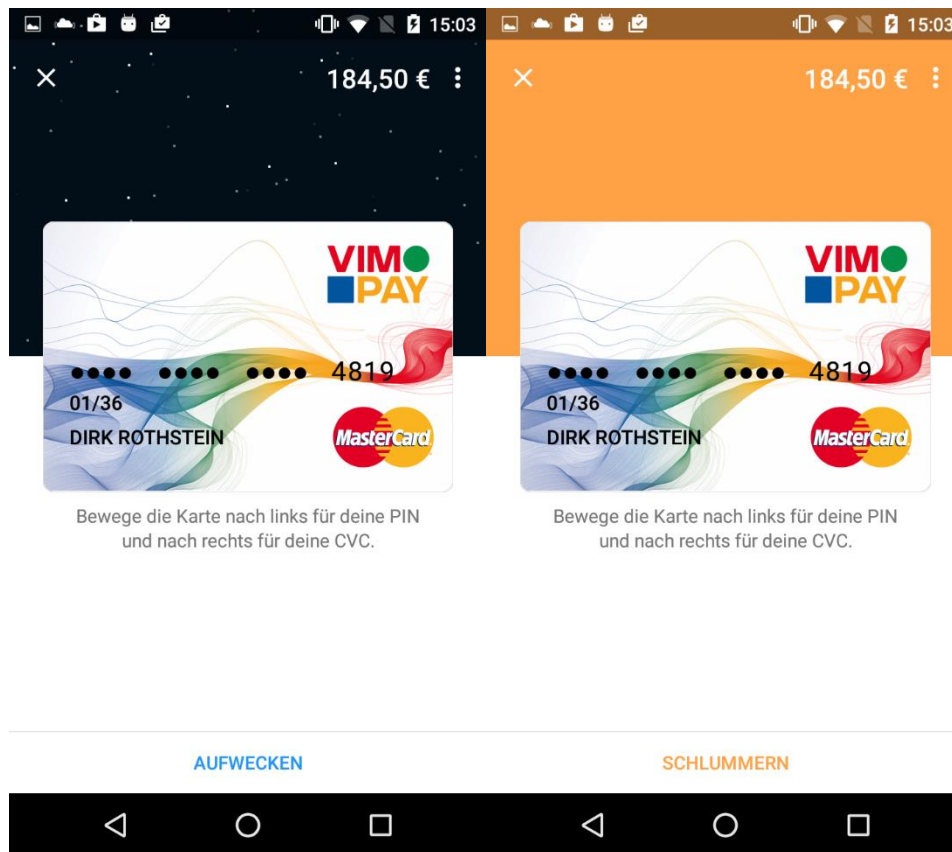
The first screen shows the account overview with a non activated VIMpay Benefits Card (German "Sachbezugs-karte"). On the second screen the Benefits CVC2 validation is shown. The user has to enter the CVC2 Code of his Benefits Cards in order to confirm the ownership of the Card. After a successful confirmation the user is able to see his revenues and the card data of his Benefits Card. Note that the screenshots are in German.

## 4.4 Snoozed / Wake up VIMpay Card

The former VIMpay Card security status has been changed. In comparison with D 1.2 V2 of the VIMpay App #SecurityStatus the states secure and open results into Snooze and Wake up. The Standby state has been removed without any replacement.

The Card will remain in the current state even after a payment. That allows the user to purchase more than one item at a single time and the user is able to lock the Card when finished.

The following figures show the User Interface for Snooze state on the left and Wake up state on the right.

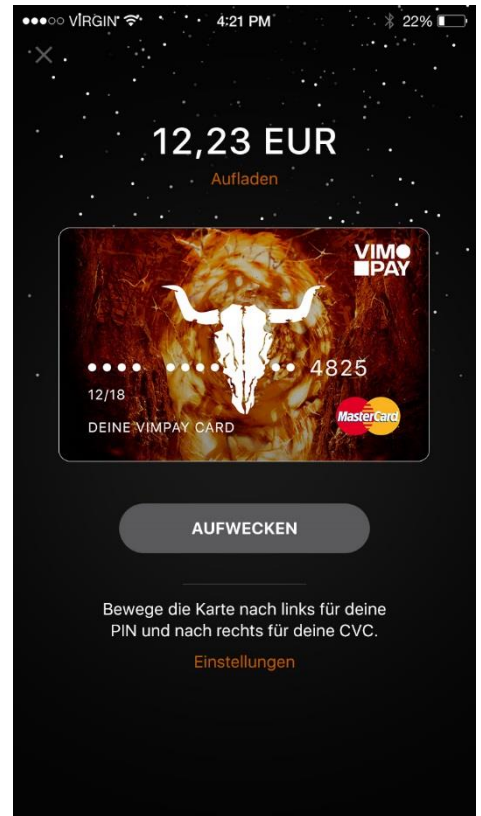
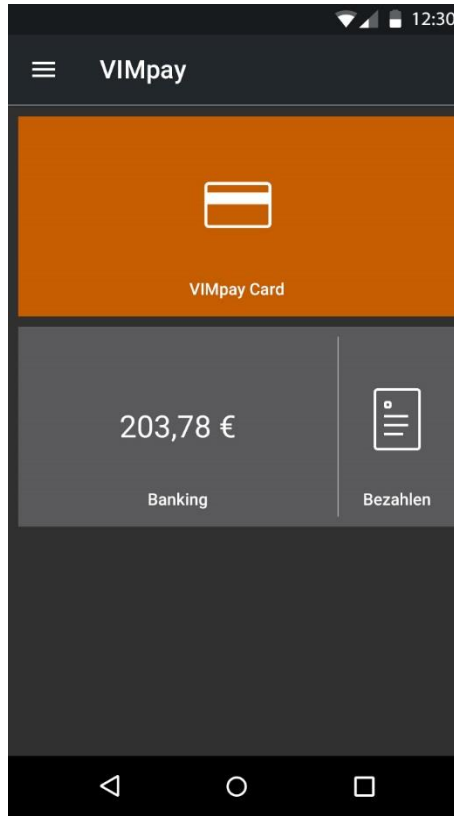


## 4.5 White Label

The VIMpay app provides a very easy way to create specific app brandings by just replacing the existing images and color files. This allows the support for partner products in a fast way with the advantage that all bug fixes and new features are included without any additional code changes. That helps that all the quality standard tests are made on each version of the VIMpay app the same way and makes short and frequently releases possible.



To following figures show a specific branding, called VIMpay Wacken, for the iOS version of the VIMpay app.



## **5 Availability**

### **5.1 Android**

Version 4 of the VIMpay app Android is available on the VIMpay BETA Community on Google Play.

### **5.2 iOS**

Version 4 of the VIMpay app iOS is available on the App Store.