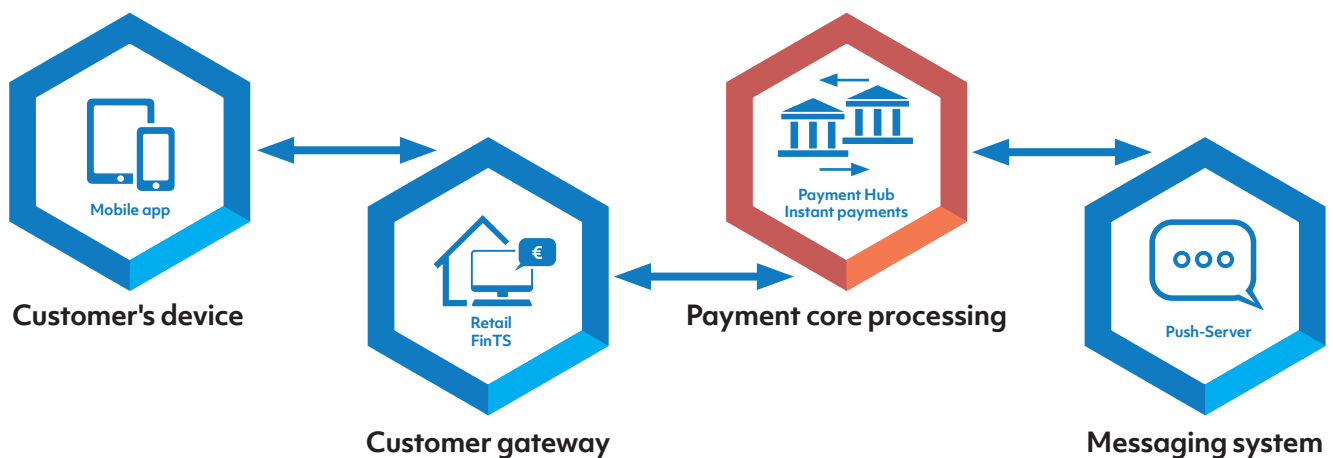




Instant payments

# An all-in-one solution from customer to clearing

PPI's TRAVIC product family enables you to perform the end-to-end processing of instant payments in-house. Everything from a single source. View our showcase to discover all the benefits.





## Instant payments

# Multi-API platform TRAVIC-Retail

### The challenge

Instant payments (IP) – "the new normal" – profoundly changes European payments:

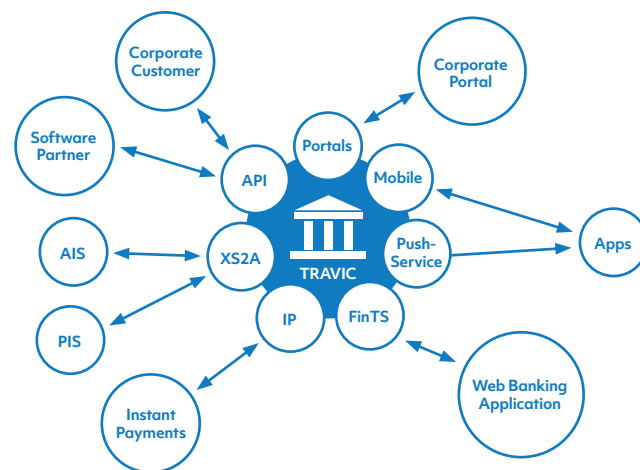
- Immediate availability
- High transaction throughputs
- Uninterrupted 24/7/365 operation
- Pan-European range

Instant payments create completely new requirements for the processing systems of financial institutions. The critical factor is the parallel execution of many single payments. This means: A high-performance and robust online processing is an essential requirement for instant payments. Additionally, suitable access systems that support instant payments must exist, and the customer wants to be actively informed about received and failed payments. These challenges have been solved by the solutions of PPI's product family.

### Online server

Apart from the interfaces to the customer, TRAVIC-Retail also offers various interfaces for the internal systems (authorisation, authentication, core banking system, logging, monitoring). A special feature of these interfaces is their flexibility. They can be adapted to every infrastructure and internal protocol. If no adjustments are necessary, a major portion of the interfaces can be used with standard implementations.

The interface to the core banking system is furthermore characterised by its online capability. After the authorisation and authentication have been checked, all orders are forwarded directly to the back end. Another requirement for instant payments processing is thus met. The back end, of course, also has to be online-enabled.



### Instant payments access channels

TRAVIC-Retail enables instant payments both via the FinTS channel established in Germany and via the emergent European XS2A interface (according to the specification of the Berlin Group). Both interfaces can be used by customers to upload single payments and to query their status. FinTS-enabled clients have been using this interface for over 10 years and have recently started using business transactions for instant payments, as well. The first TRAVIC-Retail customer is currently in the market probation phase with the XS2A interface. Additional interfaces, e.g. XS2A interfaces based on other specifications (STET/France, Corporate-API/Switzerland), can be implemented on request.

### High availability

A feature that is not trivial, the high availability, applies to TRAVIC-Retail. Instant payments can only be offered if the infrastructure and all systems included in it are highly available, i.e. 24 hours a day and 7 days a week. If the connected database is highly available and TRAVIC-Retail is run on at least two instances, software updates, updates of the database model and changes to the configuration can be performed during running operation.

# Clearing solution TRAVIC-Payment Hub

### Interfaces to other products

The remarkable thing about the PPI product family is the continuity of the solution. All products are connected via open interfaces. TRAVIC-Retail has both an MQ interface to the clearing system TRAVIC-Payment Hub and a REST interface to the TRAVIC-Push-Server.

### PSD2-ready

In conclusion, TRAVIC-Retail is ready for the PSD2. The demand for a strong customer authentication (SCA) has been met with the newest FinTS specification and is available for all customers in TRAVIC-Retail as of version 3.0.

TRAVIC-Retail implements an XS2A interface based on the Berlin Group specification.

### Flexible workflow engine

The workflow engine of TRAVIC-Payment Hub is the basis for an automated and flexible payment processing. The processing process can be individually adapted to the customer's needs. The connection of peripheral bank systems is custom-fitted via provider interfaces.

### Liquidity management

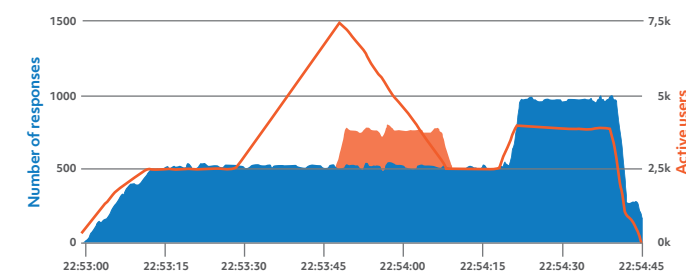
TRAVIC-Payment Hub is fully multi-client capable and designed for the connection of indirect participants. TRAVIC-Payment Hub can monitor the liquidity of affiliated institutions and customers independently of the booking system. This ensures, for example, that balance checks can be performed for instant payments and the payments can be credited even though no web-enabled balance check and booking system is connected.

### 6,000 SCT instant payments per second

At peak load in our standard test environment, the instant messaging server reached a data volume of 6,000 transactions per second. A reading of the entire process chain including later downstream process steps such as archiving or statistics on the same standard hardware resulted in a data volume of 1,000 transactions per second. Yet TRAVIC-Payment Hub has low hardware requirements.

### Avoiding bottlenecks

The peak load behaviour is decisive for a smooth operation at high data volumes. If, for example, a correspondent or a connected system does not respond in time due to technical problems, this should not cause a bottleneck that affects the remaining transactions in a negative way. We have proven the successful implementation in tests such as the one depicted below:



The figure simulates a delay of 500 transactions per second. At 22:53:30, a partner's response is considerably delayed. The number of transactions active in the system increases (orange line). The delayed transactions (orange) are rejected due to timeout. The transactions of other partners (blue) are processed without problems. One minute later, the affected partner is online again and the data volume increases.



## Instant payments

# TRAVIC-Push-Server and TRAVIC-FinTS-API-Mobile

## Active notification

The TRAVIC-Push-Server is a great addition for instant payments. It is a flexible messaging system that allows active communication between a central banking application, such as TRAVIC-Payment Hub, and smart phones. Customers are actively informed about inbound instant payments and outbound instant payments that are late and/or have been aborted due to errors.

## Security

For security reasons it is not possible for the customer to directly receive messages from the TRAVIC-Push-Server. Instead, accesses go through TRAVIC-Retail for authentication by means of the FinTS protocol. This way, the established security procedures in the context of FinTS ensure that the access is secure. Furthermore, no messages are sent from the financial institution to providers of push services (Apple, Google). Only a general note informs the customer about a newly received message from his financial institution. The message itself is transmitted via the secure FinTS protocol between customer and financial institution.

## Interfaces

As mentioned before, external accesses are routed via TRAVIC-Retail. For internal accesses the TRAVIC-Push-Server offers an easy REST interface. The interface can already be used productively by TRAVIC-Payment Hub.

## Customer product

Instant payments are initiated by the customer. The TRAVIC product family also offers solutions for this process. With TRAVIC-FinTS-API-Mobile, applications on mobile devices can be extended by a functionality for online banking. The API encapsulates the complexity of the protocol and enables developers to integrate the functionality into their own application as usual via calls of methods (Java for Android, C++ for iOS).

## Supported platforms

- Linux (Suse, RedHat and CentOS)
- AIX
- Oracle
- IBM Websphere and Tomcat

## For questions and further information:



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