



EUROPEAN CENTRAL BANK

EUROSYSTEM

TIPS Hash-Link Service Description overview

Banca d'Italia

ECB Focus Session

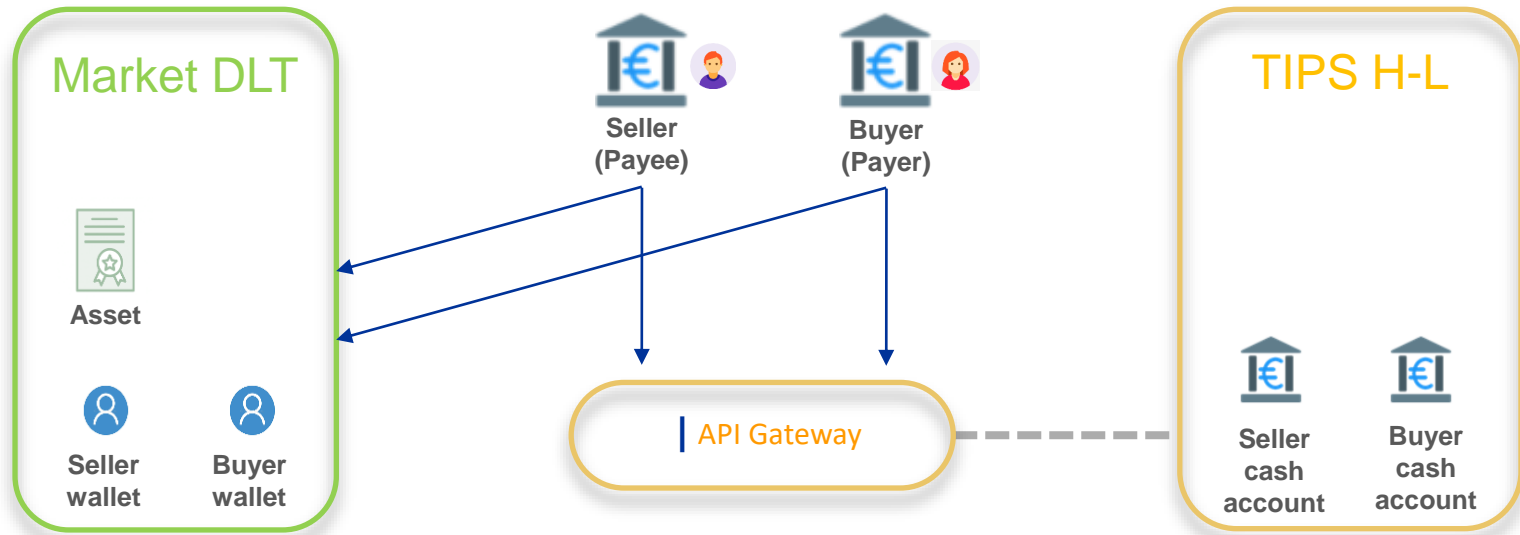
15 December 2023



BANCA D'ITALIA
EUROSISTEMA

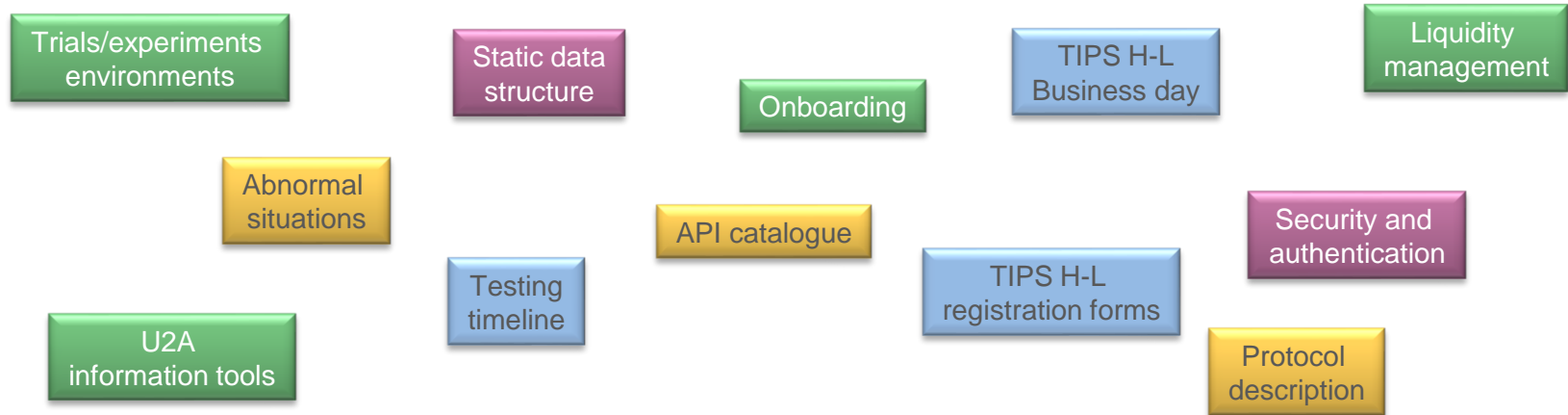
TIPS Hash-Link solution

The TIPS Hash-Link solution (TIPS H-L) offers an interoperability model between a generic Market DLT platform and a payment system, based on a DLT-agnostic Application Programming Interface (API) approach.



TIPS Hash-Link Service Description

The **TIPS Hash-Link Service Description** document provides a detailed description of the solution and covers all the aspects which are relevant for the Eurosystem exploratory work:



TIPS H-L technical onboarding and testing

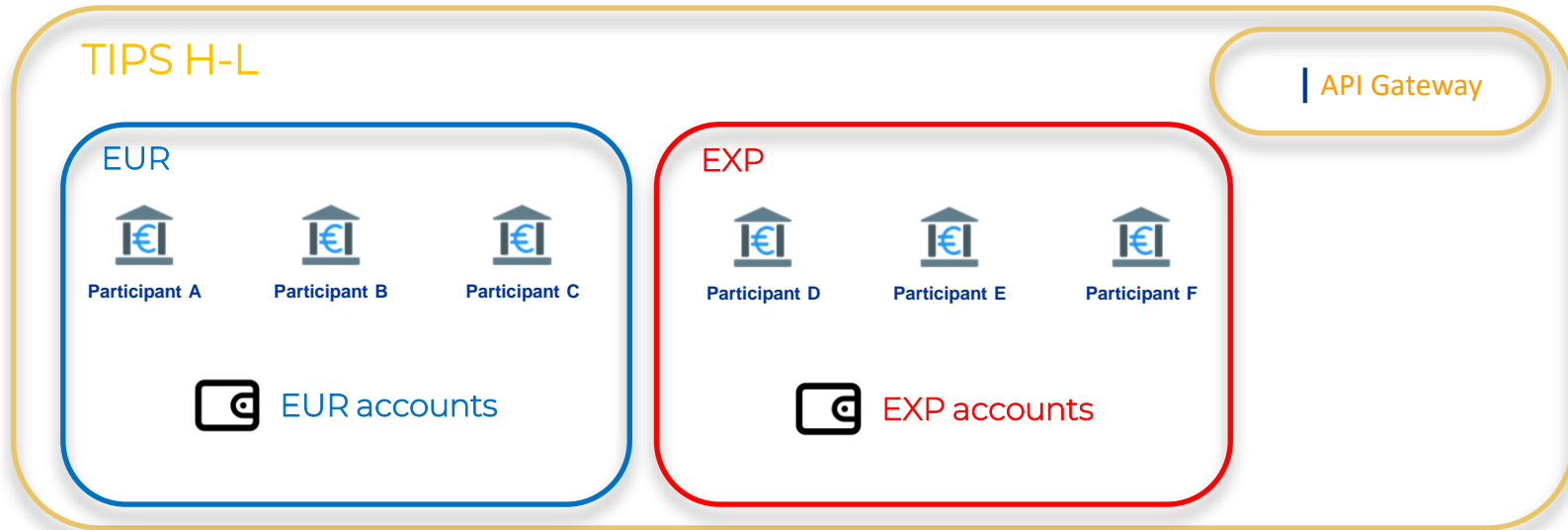
Eligible market participants and market DLT operators must complete the technical onboarding process before taking part in trials and experiments.

- **Market participants/market DLT operators** have to send a signed **form 3** (*TIPS Hash-Link solution-specific*) to **their responsible NCBs** in order to be allowed to operate with TIPS H-L. The responsible NCB will forward this form to Banca d'Italia to proceed with the proper configuration.
- **Testing Phase 1:** market participants and market DLT operators will test the **connectivity and security mechanisms with the API Gateway** and may conduct some operational and functional test.
- **Testing Phase 2:** market participants, responsible National Central banks and market DLT operators would rehearse a full trial daily process for the desired use cases.
- **Signing of legal arrangements** between the Eurosystem and eligible market participants, as well as the Eurosystem and eligible market DLT operators.



Trials and experiments support

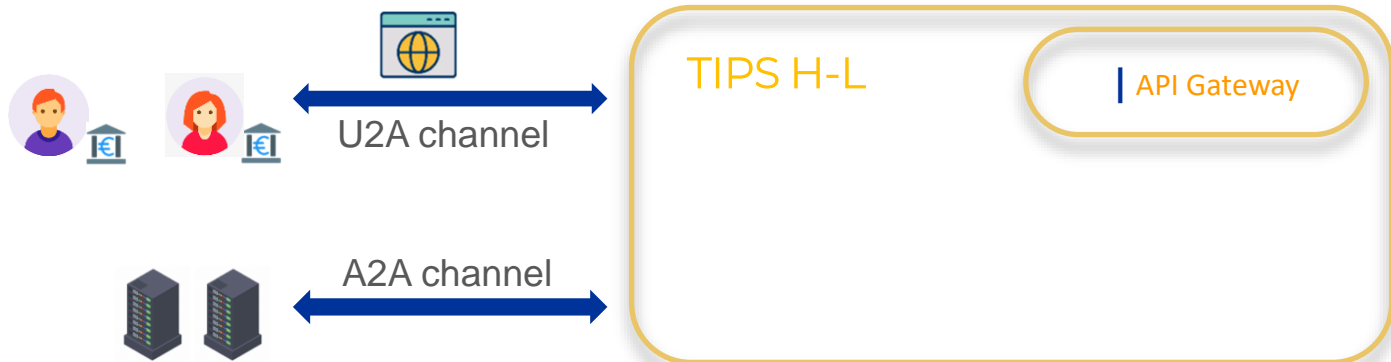
The TIPS H-L solution supports **segregation between trials and experiments** using a single infrastructure/API Gateway and **two logical environments** implemented via different currencies (“EUR” for trials and “EXP” for experiments).



U2A and A2A connectivity

Participants interact with TIPS H-L in two ways:

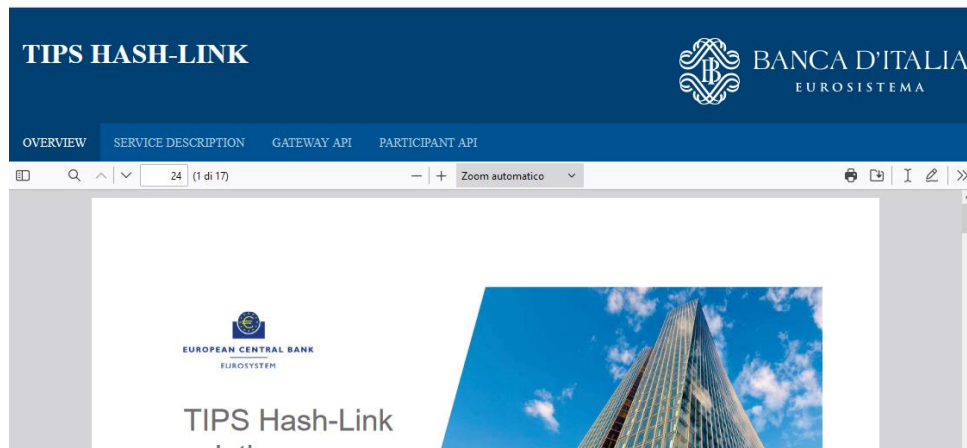
- via **A2A channel** to use the services offered by the API Gateway (e.g. submit DvP transactions):
<https://tipsgateway-ext-cert.bancaditaliatest.it/api/public/dvp/thl>
- via **U2A channel** for information tools and monitoring purposes:
<https://tipsgateway-ext-cert.bancaditaliatest.it/api/swagger/>
<https://tipsgateway-ext-cert.bancaditaliatest.it/api/dashboard/<PRJ-ID>/>
- U2A and A2A channels with the API Gateway are secured (IP filtering, user access control)



Information tools

The URL below provides description of the solution, including technical documentation.

<https://tipsgateway-ext-cert.bancaditaliatest.it/api/swagger/>



Available sections:

- TIPS Hash-Link overview
- Service Description
- Gateway API
- Participant API


Monitoring

A monitoring dashboard is provided for each trial/experiment identified by the label <PRJ-ID>.

Two reports are available: **cash account balances** and **statement of accounts**.

<https://tipsgateway-ext-cert.bancaditaliatest.it/api/dashboard/<PRJ-ID>/>

TIPS HL REPORTING - PRJ1



Choose a version: 2023-08-28 15:30 ▾

* New versions available every 30 minutes (only during the current day settlement window)

CASH ACCOUNT BALANCES STATEMENT OF ACCOUNTS

Copy CSV Search:

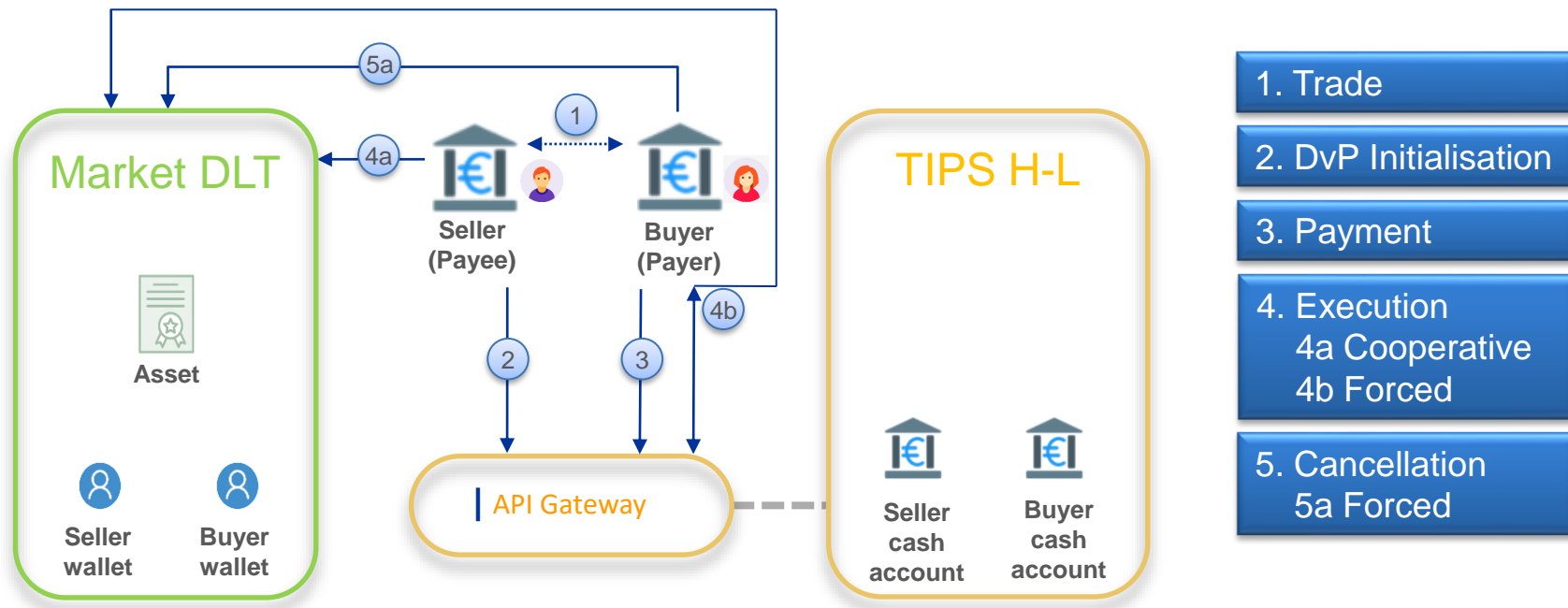
PARTY BIC	PARTY ACCOUNT	OPENING BALANCE	BALANCE	CURRENCY	BUSINESS DATE
BENTAE1XXX	IITEXPBENTAE1XXXDCA	0	10000	EXP	2023-07-03
BENTAR1XXX	IITEURBENTAR1XXXDCA	4000	8000	EUR	2023-08-15
BITAITRRXXX	EUR Transit Account	-5000	-9000	EUR	2023-08-15
BITAITRRXXX	EXP Transit Account	-10000	-10000	EXP	2023-07-13
ORJITAR1XXX	IITEURORJITAR1XXXDCA	5000	1000	EUR	2023-07-13

Showing 1 to 5 of 5 entries Previous 1 Next

Dashboard users can:

- visualize the selected report data in a tabular format
- change the date the report refers to
- copy or export the data in csv format

Protocol description



....and now.. let's go with the TIPS Hash-Link Demo!

