



**An innovative market
solution to mobilise
collateral**

www.hqla-x.com

Overview

HQLA^X is a financial technology innovation firm that leverages distributed ledger technology to deliver liquidity management and collateral management solutions for institutional clients in the global securities financing markets.

The HQLA^X value proposition is to improve collateral mobility across a fragmented securities settlement ecosystem.

In the HQLA^X operating model, there is no movement of securities between custodians. Instead, a digital collateral registry is used to record ownership of baskets of securities, whilst the underlying securities remain in the custody location of the collateral giver.



HQLA portfolio management is a large, complex and costly business challenge

As a result of the financial crisis, the Basel Committee on Banking Supervision (BCBS) introduced a host of new regulations to promote global financial stability by strengthening the capital and liquidity positions of the banking industry. These regulations were implemented through the introduction of global standards, including the following four key financial ratios:

- Capital ratio
- Leverage ratio
- Net stable funding ratio (NSFR)
- Liquidity coverage ratio (LCR)

The banking industry holds over €13 trillion of High Quality Liquid Assets (HQLA.)¹

Applying a cost estimate of 100 basis points to holding a unit of HQLA on a typical bank balance sheet, the total cost of holding an aggregate HQLA portfolio of €13 trillion across the banking industry is over €100 billion per year.

Many institutions are creating centralized financial resource management teams to help manage HQLA portfolios in a holistic fashion across their organizations.

Collateral mobility plays a vitally important role in facilitating effective HQLA portfolio management.

¹ Basel III Monitoring Report, March 2019, Basel Committee on Banking Supervision



New Technology

Today...

The current collateral upgrade market relies on collateral to be managed across a fragmented custody network.

Settlement of transactions occurs at unspecified times during settlement windows.

Current market practice is to settle collateral upgrade transactions either by:

1. Two Free of Payment (FoP) deliveries, or
2. Two Delivery versus Payment (DvP) settlements

Both settlement practices consume costly bank capital. The former consumes intraday credit due to timing mismatches of unsynchronized (FoP) deliveries, and the latter consumes intraday liquidity due to the cash payment legs of (DvP) settlements.



New Efficiencies

Tomorrow...

HQLA^X uses new technology in an innovative way to enhance collateral mobility across the existing custodian / triparty landscape.

The HQLA^X operating model leverages distributed ledger technology to enable atomic Delivery verses Delivery (DvD) for baskets of securities residing at multiple custodians.

DvD reduces consumption of intraday credit and intraday liquidity, thereby providing capital savings.

Not only a date but also a time is specified for the start leg and end leg of a transaction.

HQLA^X could ultimately be used to enhance regulatory transparency over collateral chains, and potentially facilitate risk compression solutions for post default scenarios.

Initial roll-out in Europe, longer term strategy is to expand to APAC and US.



Use Cases

LCR Management

Collateral upgrade transactions,
evergreen / extendible maturities

Intraday Liquidity Management

Transfer of ownership of baskets
of securities intraday DvD

Margin Pledge

Pledge baskets of securities real-time

Funding

Mobilise hard-to-move assets

Benefits

Inter-operability across custodians

Transfer of ownership / pledge at
precise times during the day

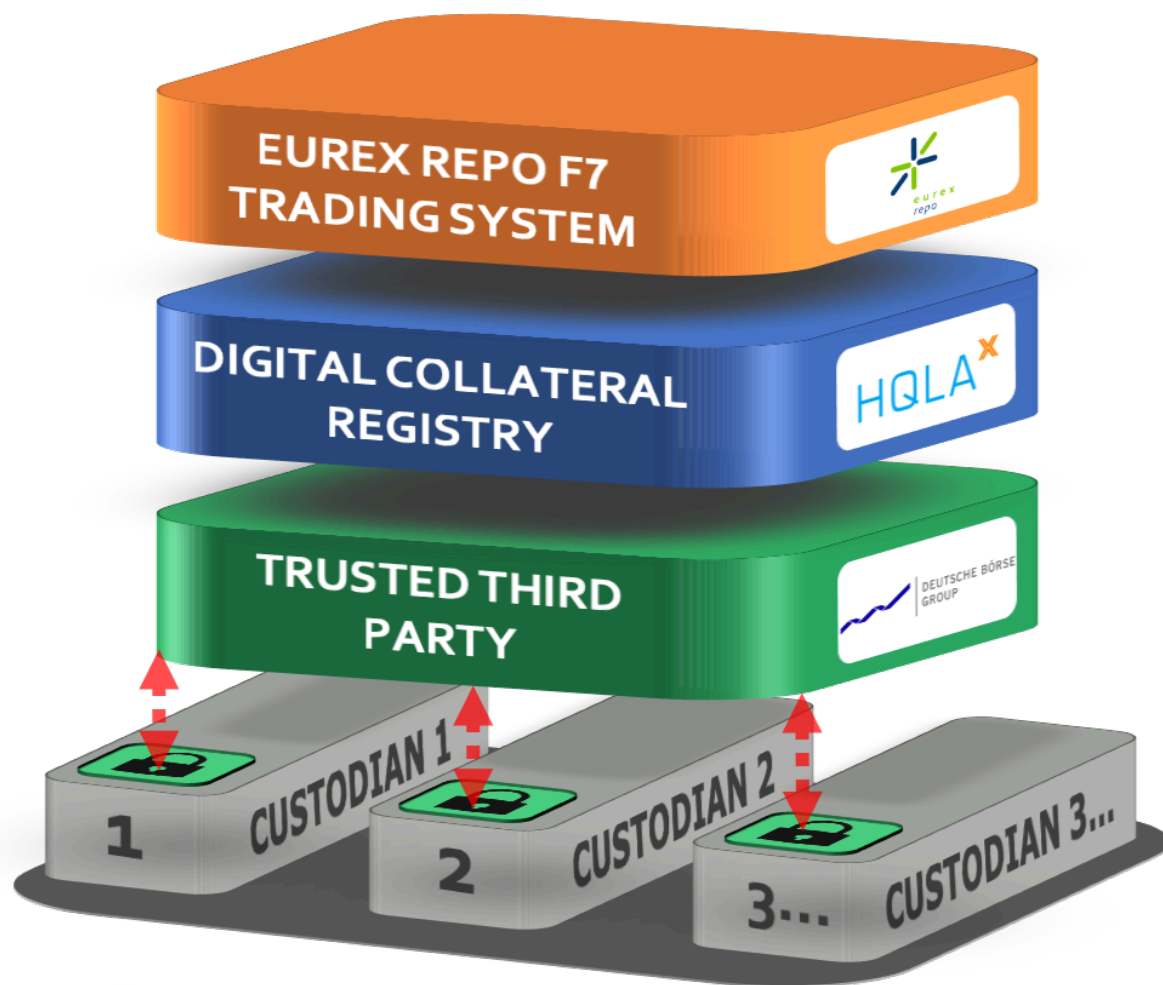
**Reduction in intraday credit
exposures**

**Reduction in intraday liquidity
requirements**

Reduction in fails

**Regulatory Transparency and risk
compression** post default

Scalable for future digitised assets



EUREX REPO F7 TRADING SYSTEM

- Eurex Repo electronic trading market (new segment for HQLA^x collateral swaps)
- Ability to enter specific opening/closing date & time (to the nearest minute)

DIGITAL COLLATERAL REGISTRY

- Enables atomic change of ownership of baskets of securities
- Delivery vs Delivery "DvD"

TRUSTED THIRD PARTY (TTP)

- Holds baskets of securities at multiple custodians on behalf of beneficial owners
- Initiation of exposure requests to triparty agent services

CUSTODY LAYER (Triparty Agents and Custodians)

- Safekeeping of securities in accounts opened by the TTP
- Collateral management of securities in and out of segregated TTP accounts



From concept to reality



Press releases for the above milestones available here:

www.hqla-x.com/category/news

“A New Order of Things is Needed”

Whilst the collateral upgrade market provides market participants with balance sheet efficiency achieved from exchanging non-cash collateral baskets, the incumbent securities settlement infrastructure suffers from the inability to provide an industrial strength solution for atomic Delivery versus Delivery (DvD) of baskets of securities. Atomic DvD refers to the instantaneous exchange of one basket of securities versus another basket of securities across a fragmented securities settlement system.

Current market practice is to settle collateral upgrade transactions in one of two ways: 1) two Free of Payment (FoP) settlements, or 2) two Delivery versus Payment (DvP) settlements. Unfortunately, both settlement practices have drawbacks and consume costly bank capital. The former consumes bank capital due to intraday credit exposures caused by timing mismatches of unsynchronized FoP deliveries, and the latter consumes bank capital due to the requirement to run higher intraday cash reserves to facilitate the cash payment legs of DvP settlements. In the analysis below, we estimate the cost of holding intraday liquidity reserves as part of an average sized HQLA portfolio for a Globally Systemically Important Bank (G-SIB.)

The true cost of holding unencumbered HQLA buffers will vary widely from bank to bank, and so will the manner in which the cost is attributed to various business lines, but generally speaking the range that is quoted by bank treasurers is 50-125 basis points. According to a recent report by Oliver Wyman “Intraday Liquidity: Reaping The Benefits of Active Management,” the cost of holding HQLA reserves for intraday liquidity management is 100 basis points.

The Oliver Wyman report elaborates that between 10-30% of bank HQLA buffer requirements are driven by intraday liquidity needs, and that proactive management of intraday liquidity can lead to a reduction in a bank's intraday liquidity requirements of 25% (or more.) Here is an illustrative estimate of intraday liquidity costs for a G-SIB, using inputs from the Oliver Wyman report:

10% - 30% of total HQLA Buffer
is driven by intraday liquidity requirements²



Proactive intraday liquidity management
reduces total HQLA Buffer requirements

Average Size of G-SIB HQLA Buffer
~ €237 bn¹

Average Cost of Holding HQLA Buffer per G-SIB, basis points
~ 100 bps²

Average Cost of HQLA Buffer per G-SIB
€2.37 bn

Taking a conservative assumption that only 10% of a G-SIBs
HQLA buffer is related to intraday liquidity requirements, the
estimated annual holding cost per G-SIB is:
€237 mm

¹Source: Basel III Bank Monitoring Report, October 2018

²Source: Analysis by Oliver Wyman

Applying a conservative estimate that only 10% of a G-SIB's overall HQLA Buffer is driven by intraday liquidity exposures, the estimated cost of a G-SIB's intraday liquidity buffer is €237 million per year.

Assuming a holding cost of 100 basis points for intraday liquidity reserves, we can estimate that every €1 billion reduction of intraday liquidity reserve requirements equates to approximately €10 million in cost savings per annum.

It is difficult to forecast the precise intraday liquidity exposure reduction from which a bank may benefit by using HQLA[×]. That is because the potential benefit is a function of a bank's unique secured funding footprint, which can vary significantly from one bank to the next bank. However, we do know that intraday liquidity exposures are generally large and expensive, and therefore the economic benefit of reducing these exposures is also large and relevant to bank shareholders.



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