

clearstream

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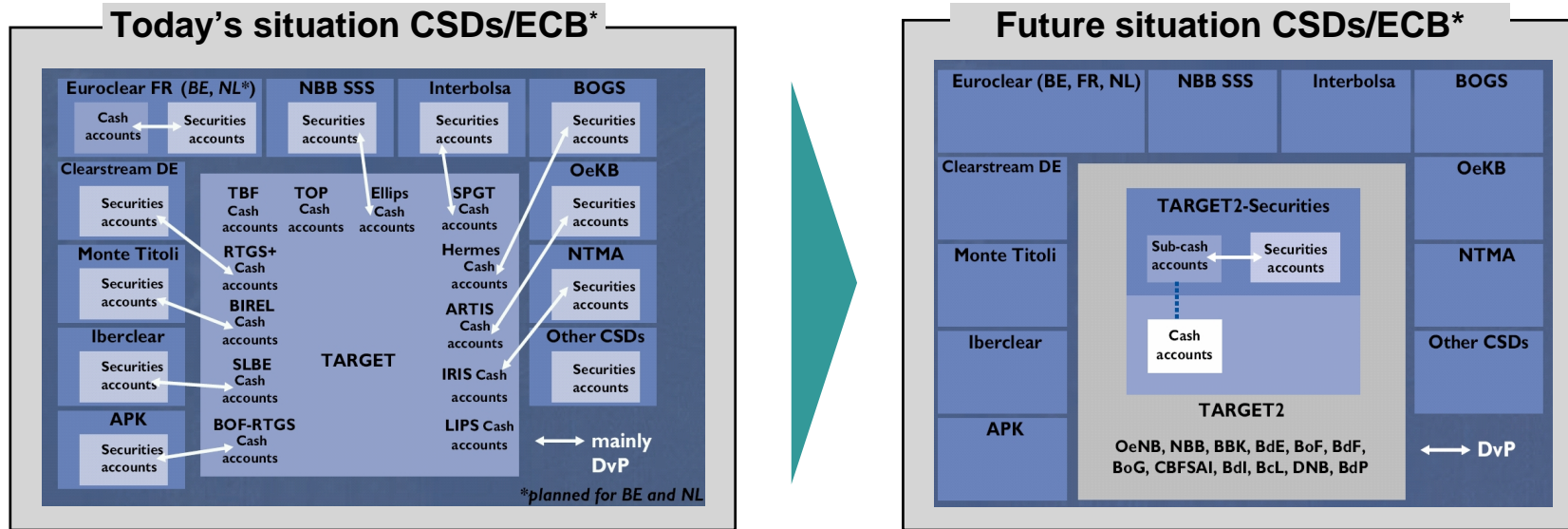


T2S Customer Roadshow – Clearstream

Frankfurt, 6 November 2009



Launch of T2S via the ECB has been granted



Cash systems	TARGET2 has been introduced in multiple waves in 2007 / 2008
Securities settlement systems	<ul style="list-style-type: none"> n Planned for mid 2013: Go live of T2S including the connections to the ECB systems TARGET2 and CCBM2 (Start of testing: end of 2012) n Discussion of test- and migration strategy in the Test- and Migration- as well as in the Project Manager Sub-group
Collateral Management	<ul style="list-style-type: none"> n The CCBM2 project has been restructured n Business specifications will be analyzed

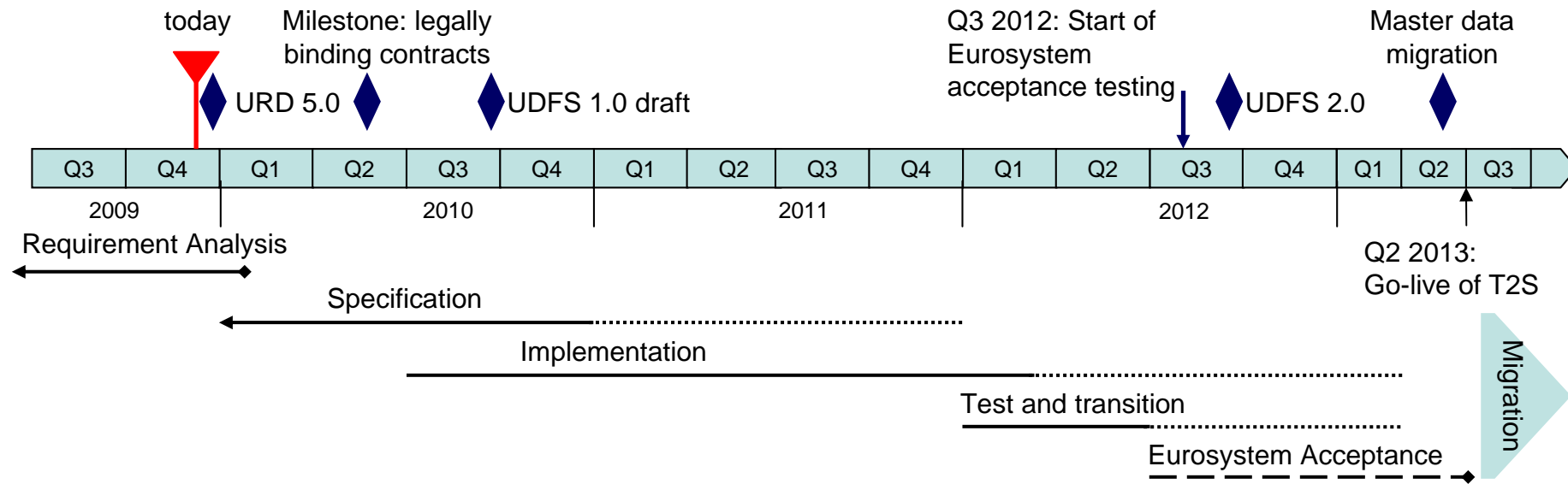
* Source ECB, 2007

** in addition to the EUR central banks, there will be four non-EUR currencies: Lithuanian Lita, Danish, Swedish and Norwegian Krone

Project planning for Clearstream's adaptation of its core infrastructure to T2S is dependent on the given ECB milestones

Status: Preliminary draft of Clearstream's project plan

- n System adaptations on the basis of URD Version 4.2 analyzed on high level
- n Planning of functional / technical adaptation started
- n Discussion about strategic planning process for the years 2010 - 2013 started and will be continued in the upcoming year



Why are stable user requirements so important? (1/2)

Origin **for all** on going arrangements

Stable user requirements* constitute the contractual basis between CSDs and the ECB

- n Contractual partner of the CSDs for outsourcing security settlement transactions to T2S will be the ECB / Eurosystem
- n Alignment of CSDs' business relations to their customers – if needed – following ECB's framework conditions

Stable user requirements form the origin of all T2S related planning- and system adaptations

- n Impact analyses for system adaptations including the customer's interfaces
- n Efforts to absorb the adaptations regarding T2S for all indirectly offered Clearstream services and all indirectly connected customers
- n Project planning of necessary system adaptations including test- and migration planning with customer interaction

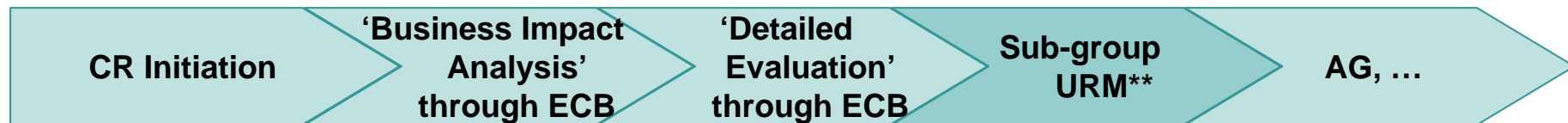
**Stable user requirements form the origin for all ongoing actions:
Contractual framework, planning, impact analyses, system adaptations**

* As documented in ECB's 'User Requirements Documentation' (URD)

Why are stable user requirements so important? (2/2) Controlled change management / change request process – example

User requirements are officially frozen as announced in the AG in June 2009:

- n The Change Request (CR) process of the specification phase* describes the change process to the User Requirements Documentation
- n National specificities are not possible during the specification phase



Nevertheless CRs with considerable impact are still initiated – example:

CR228 'Functionality for settlement banks in T2S / Credit Memorandum Balance (CMB)':

è Significant legal questions are open, e.g.:

- § Is CR228 in the scope of T2S?
- § Is CR228 in general compatible with the 'Lean T2S' concept?
- § Is it possible to manage central bank money limits by customers?
- § Is this a national specificity?

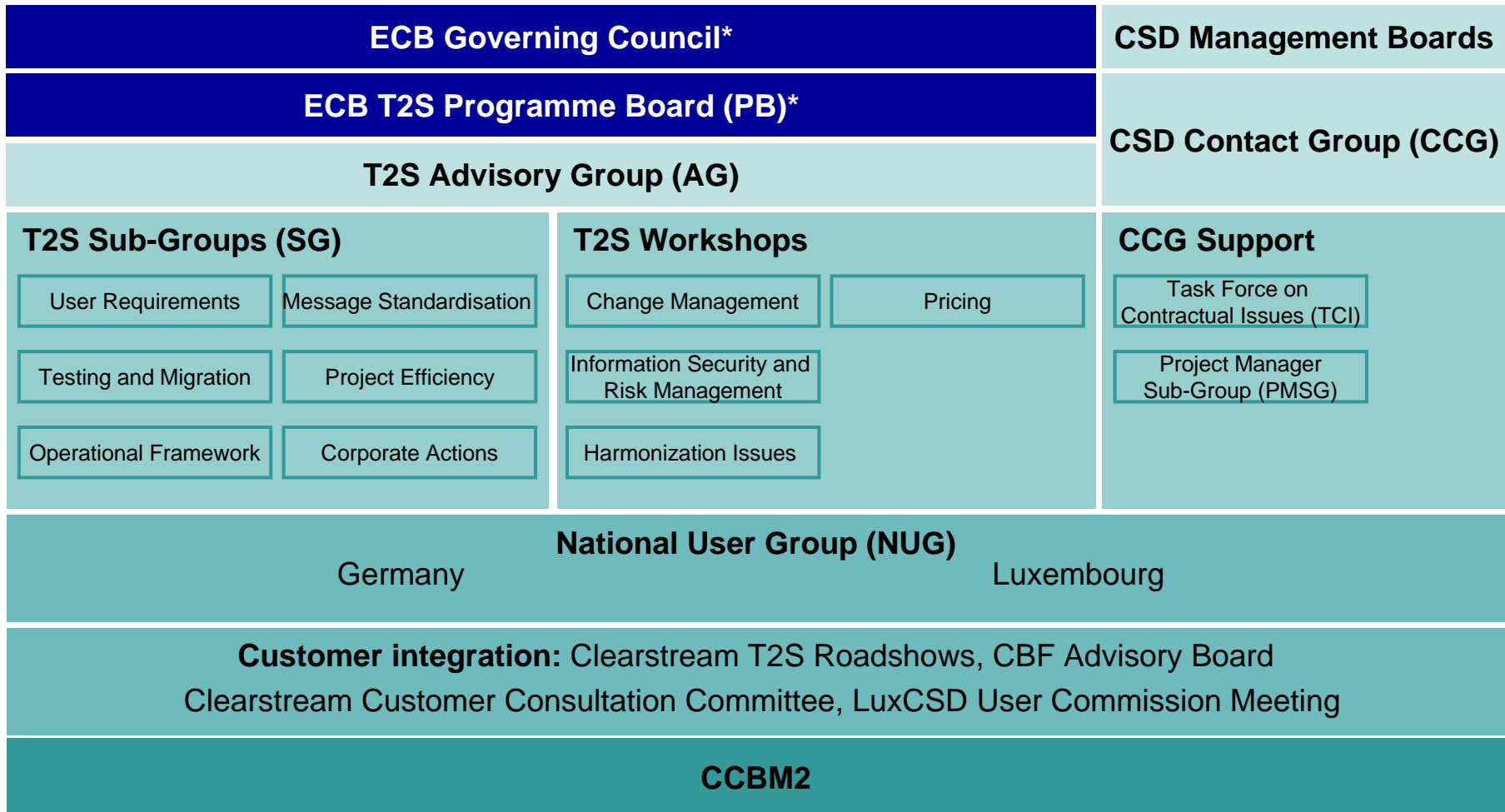
è GFS*** are delayed already for 7 months; further changes prevent a fast signature of the contracts and delay the start of the next project phase

* Source ECB, October 2008, 'TARGET2 SECURITIES USER REQUIREMENTS CHANGE MANAGEMENT PROCESS' Version 2.0, page 7

** User Requirement Management

*** GFS - General Functional Specifications

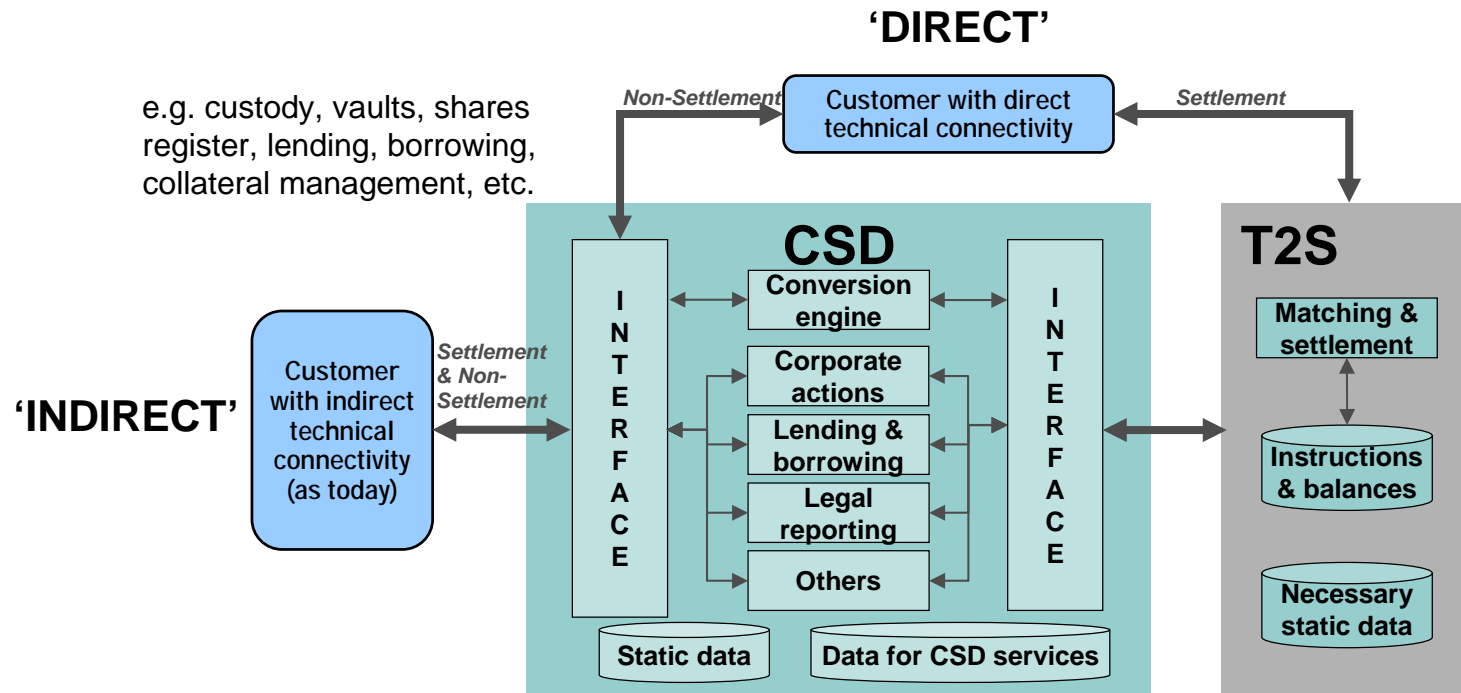
Clearstream's support for the T2S project



Contact: T2SEC@clearstream.com, www.clearstream.com

* ECB-internal board without Clearstream involvement

T2S and potential impact for the German market



- n **Scope of T2S:** All Clearstream services, that are not part of the core 'DvP' securities settlement process will remain at Clearstream
- n **Relevance for T2S connectivity:** Clearstream will try to absorb the T2S related impacts for customers as far as possible. There will be differences between indirectly and directly connected customers at this.

T2S and potential impact on the German market

Functional and technical adaptations

- n Adaptation of messaging formats – ISO 20022 standard
- n Changes in the structure of securities accounts
- n 'Lean T2S' – no German national specificities in T2S
- n Test and migration – status

Operational adaptations

- n Changes in day- and night-time processing
- n Operational changes resulting from changed and new functionalities
- n Operational changes of Clearstream processes
- n Changes in CBF systems

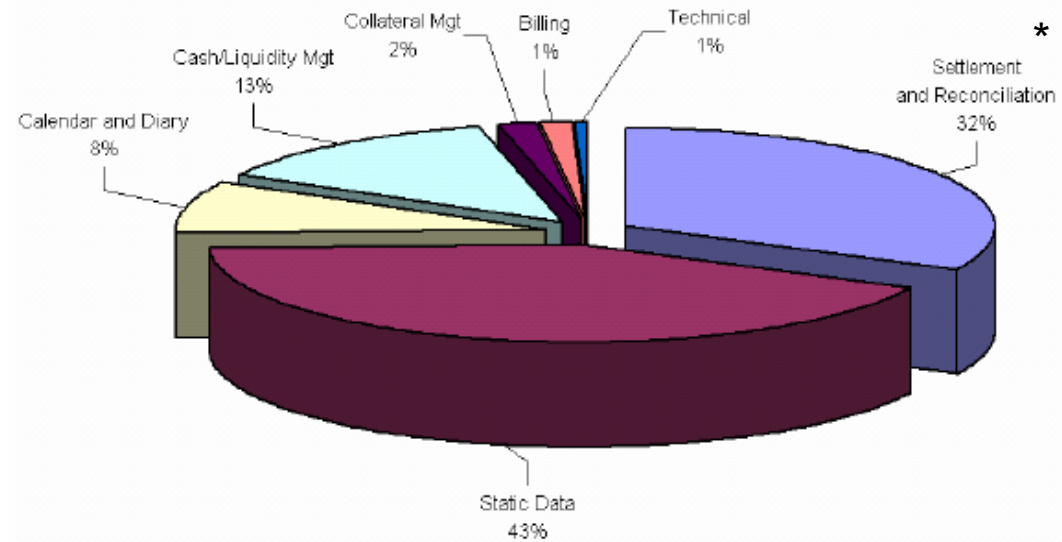
Additional service offering

- n Cross-border services: give you a taste of T2S
- n Questions and suggestions
- n Common approach within Clearstream Group
- n Possibilities of a common T2S interface

Functional and technical adaptations

Adaptation of messaging formats – ISO 20022 Standard

Business Areas	Total
Settlement and Reconciliation	53
Static Data	70
Calendar and Diary	14
Cash/Liquidity Mgt	22
Collateral Mgt	3
Billing	2
Technical	1
	165



- n The draft of UDFS** (containing the messaging formats) is planned for the third quarter of 2010
- n The finalisation of UDFS is planned for the third quarter of 2012

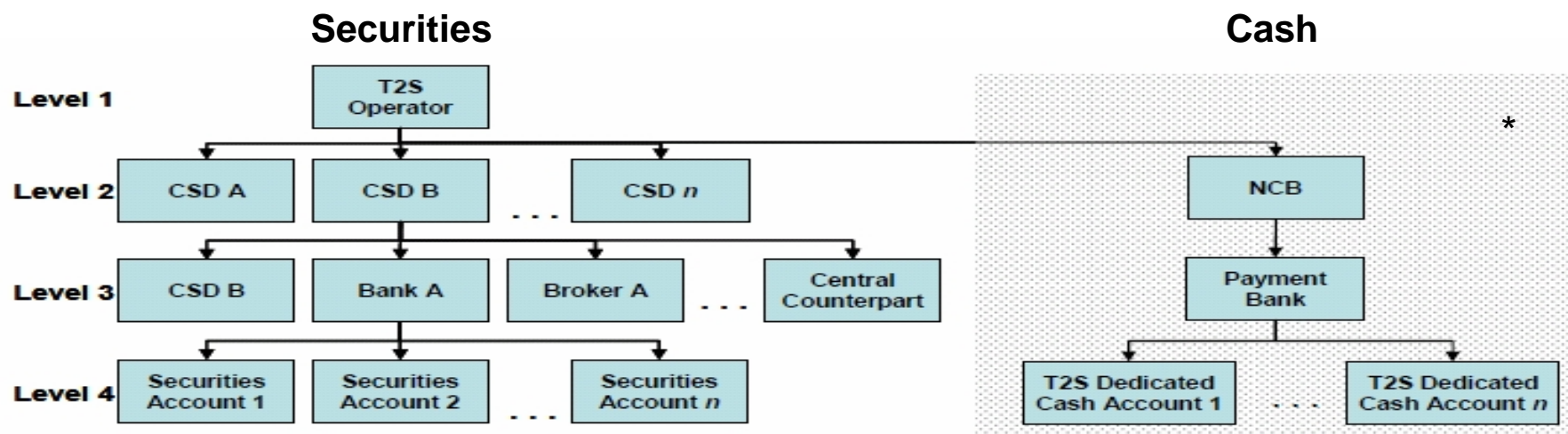
For indirectly connected participants Clearstream will try to absorb T2S adaptations. Each directly connected participant will have to adapt its infrastructure (T2S interface) accordingly.

* Based on presentation of ECB, SG MS, ms_mtg3_T2S_001475.pdf, 12 January 2009

** ECB, User Detailed Functional Specifications

Functional and technical adaptations

T2S Roles and access hierarchy – T2S structure of securities accounts



- n Level 1: Eurosystem / ECB grants access rights to the contractual partners:** the centrals securities depositories and the central banks
- n Level 2: Central securities depositories and central banks grant access rights to the contractual partners:** the customers
- n Level 3: On level 4 securities accounts and cash accounts are assigned to the customers according to the business connection (level 2)**

* Source ECB, URD, Diagram 16.5 - Hierarchical Party Model, see also URD chapter 4

Functional and technical adaptations

Changes in the structure of securities accounts

In T2S today's structure of securities accounts (4-digit 'Kassenvereinsnummer', 3-digit sub-account number) can be mapped using 'Market-Restrictions' (URD, T2S.11.650):

- n Alternative 1: A new securities account will be created in T2S for each combination of main and sub-account (Example see URD, Annex 6, chapter 2)
- n Alternative 2: A new securities account will be created in T2S for each main account. The sub-accounts will be managed on position level using 'Market-Restrictions' (currently not favoured by Clearstream, analysis in progress)

Indirectly connected parties (ICP):	Directly connected parties (DCP):
<ul style="list-style-type: none"> n Clearstream will absorb T2S adaptations as far as possible: <ul style="list-style-type: none"> n Clearstream will convert formats and accounts n ICPs will continue using their 'Kassenvereinsnummern' 	<ul style="list-style-type: none"> n DCPs need to create new conversions of formats and accounts n DCPs also need to adapt their account reconciliation / synchronisation n In the 'old' world 'Kassenvereinsnummern' will be used in parallel (e.g. for corporate action processing)

* Customers that are connected to several CSDs, will have to check this for each CSD – several ISO dialects are possible as it is today

Functional and technical adaptations

‘Lean T2S*’ – no German national specificities in T2S

The following German national specificities has been analysed in the context of T2S:

- n Fixed value date
- n Serial ISINs
- n ‘Reg-Ueber’ account set-up
- n ‘Abweichendes Depot’ account set-up
- n Custody service: Issue date and tranche information for registered shares



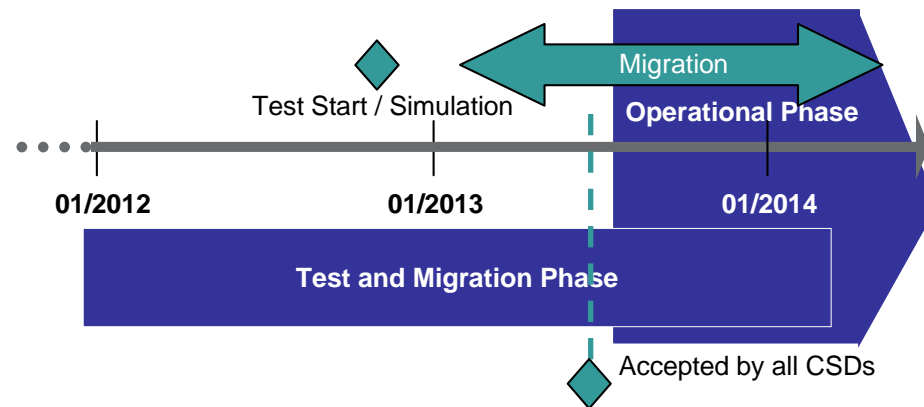
Clearstream can provide all German national specificities within the indirect technical connection, if desired

Indirectly connected parties (ICP):	Directly connected parties (DCP):
<ul style="list-style-type: none"> n Clearstream will try to absorb the changes that will be necessary following T2S n The adapted services will have a fee schedule (service unbundling) 	<ul style="list-style-type: none"> n The DCPs will have to design the required services by themselves, if they need these services

* The ECB mentioned ‘Lean T2S’, the concept without national specificities, on information session on 7 October 2009 in Luxembourg (see also URD, Annex 17)

Functional and technical adaptations

Test and migration – status of challenges*



<p>Agreed schedule for overlapping phases for testing, acceptance testing and migration (waves)</p>	<ul style="list-style-type: none"> n 'T2S User-focussed Programme Plan' presented by ECB on 23 September 2009 n First discussion in Project Manager Sub-group on 29 October 2009 	<p>6</p>
<p>Planning of regression testing</p>	<ul style="list-style-type: none"> n Test strategy will be discussed in Test- and Migration Sub-group 	<p>6</p>
<p>Customer testing in 2012 / 2013 and potentially in each migration phase</p>	<ul style="list-style-type: none"> n Migration strategy will be discussed in Test- and Migration Sub-group n Migration approach 'by CSD' and 'by ISIN' will be analyzed according to the decision of AG on 23 September 2009 	<p>6</p>

Legend: ◆ Point of decision

Legend: not started i , in progress 6, done ü

* Follow-up Clearstream Roadshow in March 2009

Functional and technical adaptations

Test and migration – status of open issues*

Number and capacity of testing and migration environments	<ul style="list-style-type: none"> n Two testing environments are planned n It will be checked in the context of test and migration strategy whether this is sufficient 	6
Release planning / bug resolving and impact on testing activities	<ul style="list-style-type: none"> n 'T2S User-focussed Programme Plan' presented by ECB on 23 September 2009 n First discussion in Project Manager Sub-group on 29 October 2009 	6
No T2S maintenance release during migration phase (Software 'Freeze' Q4 / 2011 until Q1 / 2014)?	<ul style="list-style-type: none"> n Planning still open 	i
Migration schedule of all static data and their maintenance	<ul style="list-style-type: none"> n Static data will be migrated on T2S in advance n Risk decoupling on migration weekends n Basic conditions of static data maintenance still open 	ü ü i
Rollback- / Fallback- / Disaster-scenarios	<ul style="list-style-type: none"> n Sub-group 'Operational Framework' implemented 	6
Roles / responsibilities	<ul style="list-style-type: none"> n Contractual framework still open 	i

* Follow-up Clearstream Roadshow in March 2009

** Advisory Group

T2S and potential impact on the German market

Functional and technical adaptations

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Operational changes of existing processes

Changes in day- and night-time processing – comparison

	CBF Settlement process	T2S Settlement process
Night-time processing	<u>Mandatory:</u> n STD Batch (19.00 h until 21.00 h) n RT-STD Cont (01.30 h until 05.30 h)	<u>Currently two night-time cycles</u> (participation optional, controlled by liquidity provision): n 19.00 h until 3.00 h (timing open) n Maintenance window 03.00 h until 05.00 h
Day-time processing 1. Same-day Settlement	n SDS1 Cont (05.30 h until 10.00 h) n SDS1 Batch (10.00 h until 10.30 h) n SDS2 Cont (10.30 h until 13.15 h) n SDS2 Batch (13.15 h until 13.30 h)	No schedule-driven cycles during day-time processing
Day-time processing 2. Near-time Settlement	n RTS Cont 07.00 h until 10.00 h 10.30 h until 13.15 h 13.30 h until 18.00 h 16.30 h DvP deadline 18.00 h FoP deadline	n RTS 7.00 h until 18.00 h Optimisation cycles and technical netting are started in parallel 16.00 h DvP deadline 18.00 h FoP deadline

Operational changes result from changed and new functionalities*

	Clearstream GUI	Reports	Delivery instructions	Additional impact
Partial settlement	X	X	X	Process changed
Bilateral cancellation			X	Process changed
New instruction types	X	X	X	DWP, PFOD
Linked instructions	X	X	X	Process changed
Liquidity management	X	X	X	TARGET2 Cash and T2S
Blocking / reservation / earmarking	X	X	X	Possible on account level and position level
Self-collateralisation	X	X	X	<ul style="list-style-type: none"> n Replaced with 'auto-collateralisation' in T2S n CMB: Only REPO allowed**
Conditional Security Delivery (CoSD)	X	X		New process

* List is non-exhaustive

** If change request 228 'Functionality for settlement banks in T2S / CMB' is realised

Operational changes of Clearstream processes*

	Security settlement	Day-time processing	CSD Links	Additional impact
Custody services	X	X	(X)	Reconciliation / synchronisation process
Securities lending and borrowing	X	X		XEMAC and LMS will be adapted
National specificities	X			Management of securities' positions
ICSD		X	X	Customer relations to CBF

The impact is different for indirectly and directly connected customers.

* List is non-exhaustive

Changes in CBF systems*

The necessary system changes has been analysed roughly based on URD version 4.2:

	Affected CBF systems
New systems	T2S interface; T2S system for management of static data (including 'subscription service'); module for synchronisation and reconciliation
Significant impact	Reduction of functionality of CASCADE; graphical user interface; LION
Medium impact	Cash forecast; cash lifecycle; cash information; KADI; LIMA; XEMAC; NCB-Link; regulatory reporting; CASCADE RS; general central services
Low impact	Reporting securities accounting; invoicing; LMS; SAFIR

* List is non-exhaustive

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Operational adaptations

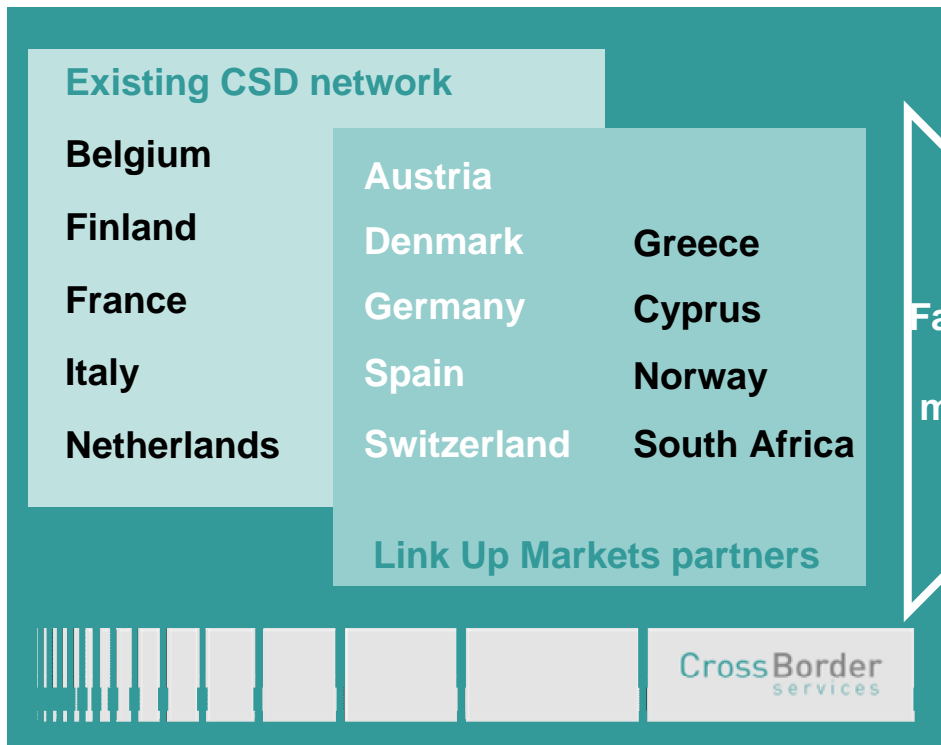
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Cross-border services: give you a taste of T2S

Continuous services upgrades realising T2S benefits already by 2011/2012



Access to domestic liquidity pools – accounting for nearly 70 % * of European domestic transactions



Access to remaining 13 % ** of European domestic transactions

* Thereof 50 % by Link Up Markets partners
Source: ECB Bluebook

** Additional 17 % if UK joins T2S
*** Only participation in Euro is planned at present time

New business areas with T2S

Questions and suggestions

Clearstream's cross-border services facilitates migration on T2S.

Clearstream intends to provide investor services* for all T2S eligible securities.

For customers who are active cross-border or who plan to do so in the future, the following questions arise regarding the technical connection to T2S:**

- n For which of the back-office processes can efficiency improvements be achieved and how?
- n Where can synergies be realised?
- n Where is cost reduction possible?

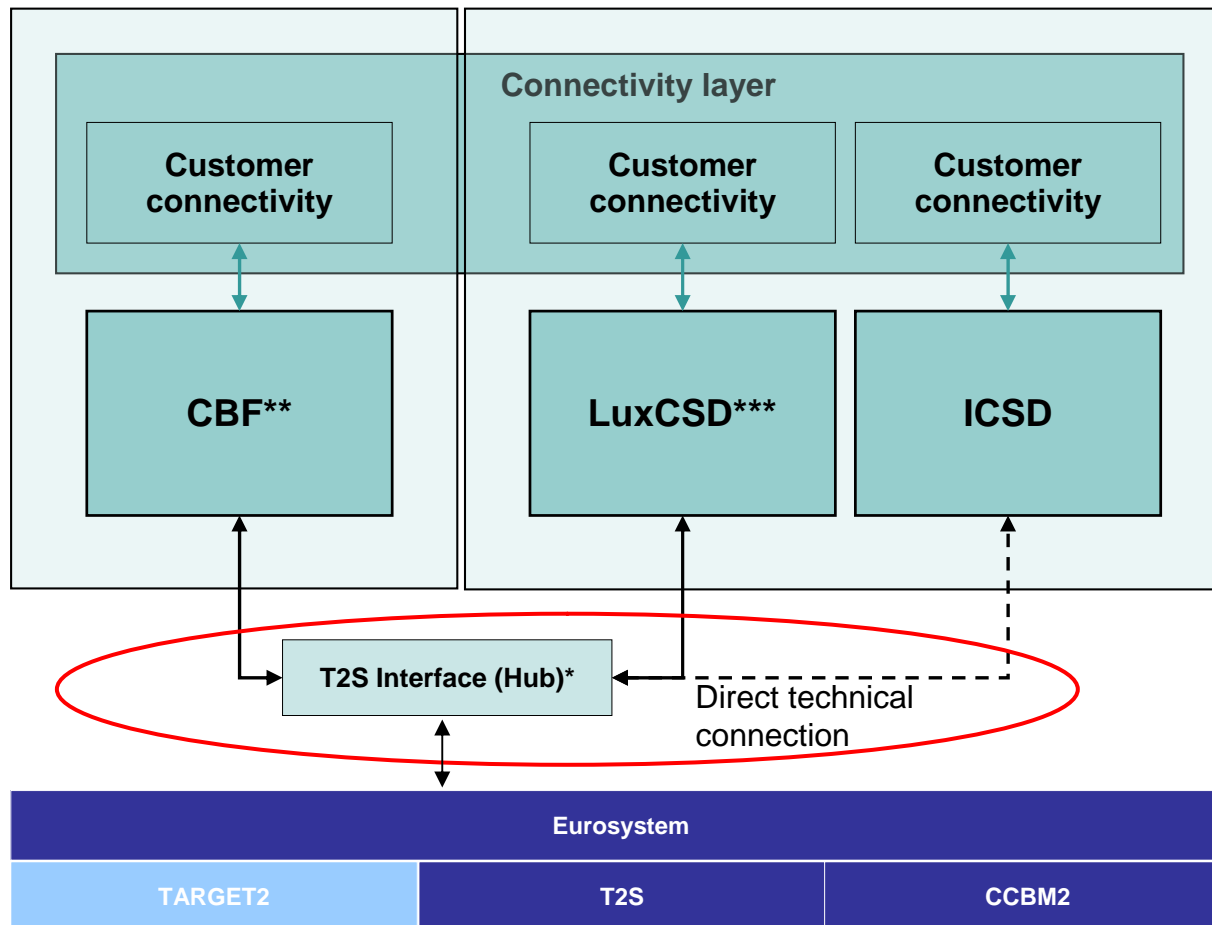
Clearstream plans to offer a 'T2S Interface (Hub)' to its customers for the connection to T2S.

* Including custody services

** Statements about system environment or strategy in each institute are not available by Clearstream

Common approach within Clearstream Group

One T2S Interface (Hub) for reduction of costs



Advantages

- n **For Clearstream**
 - n One single access to T2S
 - n Efficiency improvement
 - n Synergies in development and maintenance
- n **For Clearstream and our customers**
 - n Synergies in system architecture and network
 - n Re-usage of the well-established network of Clearstream/ Deutsche Börse Group
- n **For customers**
 - n Reduced adaptation efforts
 - n Clearstream plans to offer this service also to its customers

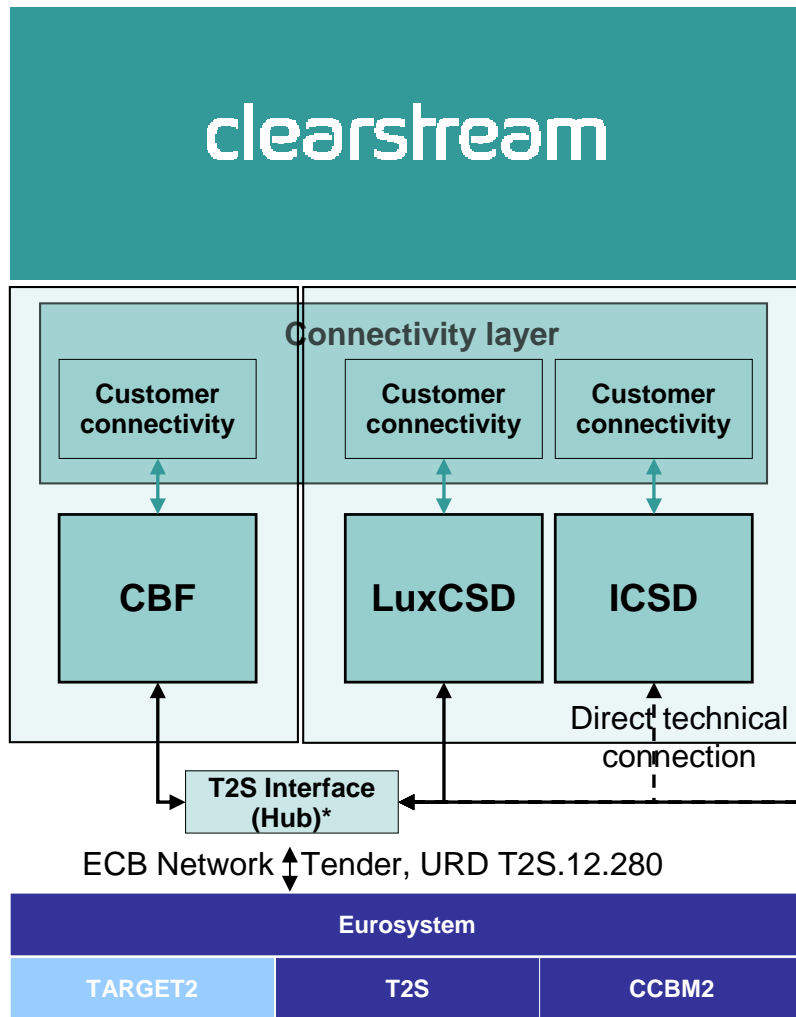
* Based on the experience of the group-wide TARGET2 Cash Hub

** Clearstream as Issuer CSD for German securities und Investor CSD for all T2S eligible securities

*** Clearstream is currently planning to set up an Issuer CSD for all Luxembourg issued securities, including Investment Funds

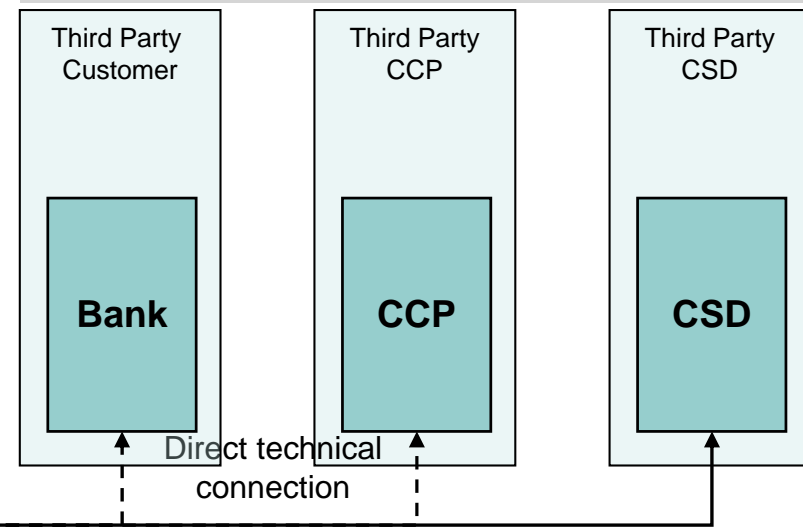
Possibilities of a common T2S interface

Common usage of T2S Interface – additional synergies possible



Future possibilities for connectivity:

- n Possible cost reduction e.g. in back-offices
- n Rationalisation of processes, ...



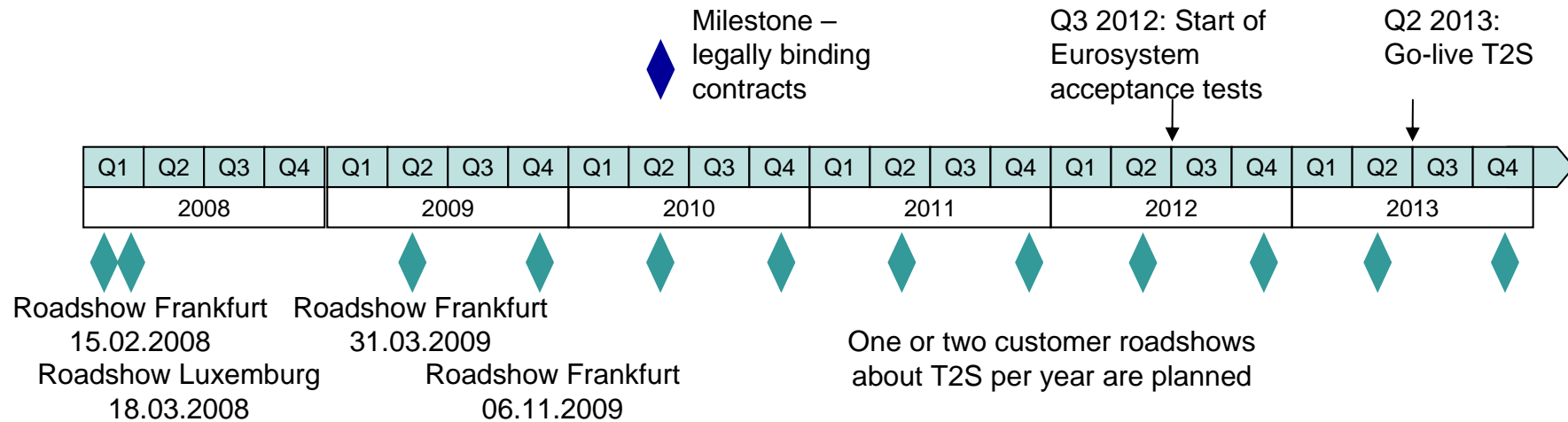
Usage of the existing Clearstream network is possible

* Based on the experiences of the group-wide TARGET2 Cash Hub that is used in the whole group

T2S information and status updates for customers

Roadshows / National User Groups / Workshops

1. Customer Roadshows planning jointly with ECB T2S project team, Deutsche Bundesbank and Banque Centrale du Luxembourg



2. National User Groups (NUG) in Germany and Luxembourg bring together providers and users of securities settlement services within their national markets in order to support the development and implementation of T2S
3. Bilateral workshops with customers hold on demand, already several bilateral workshops held in 2009
4. Clearstream is planning to organise T2S trainings for customers in due course

Thank you

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