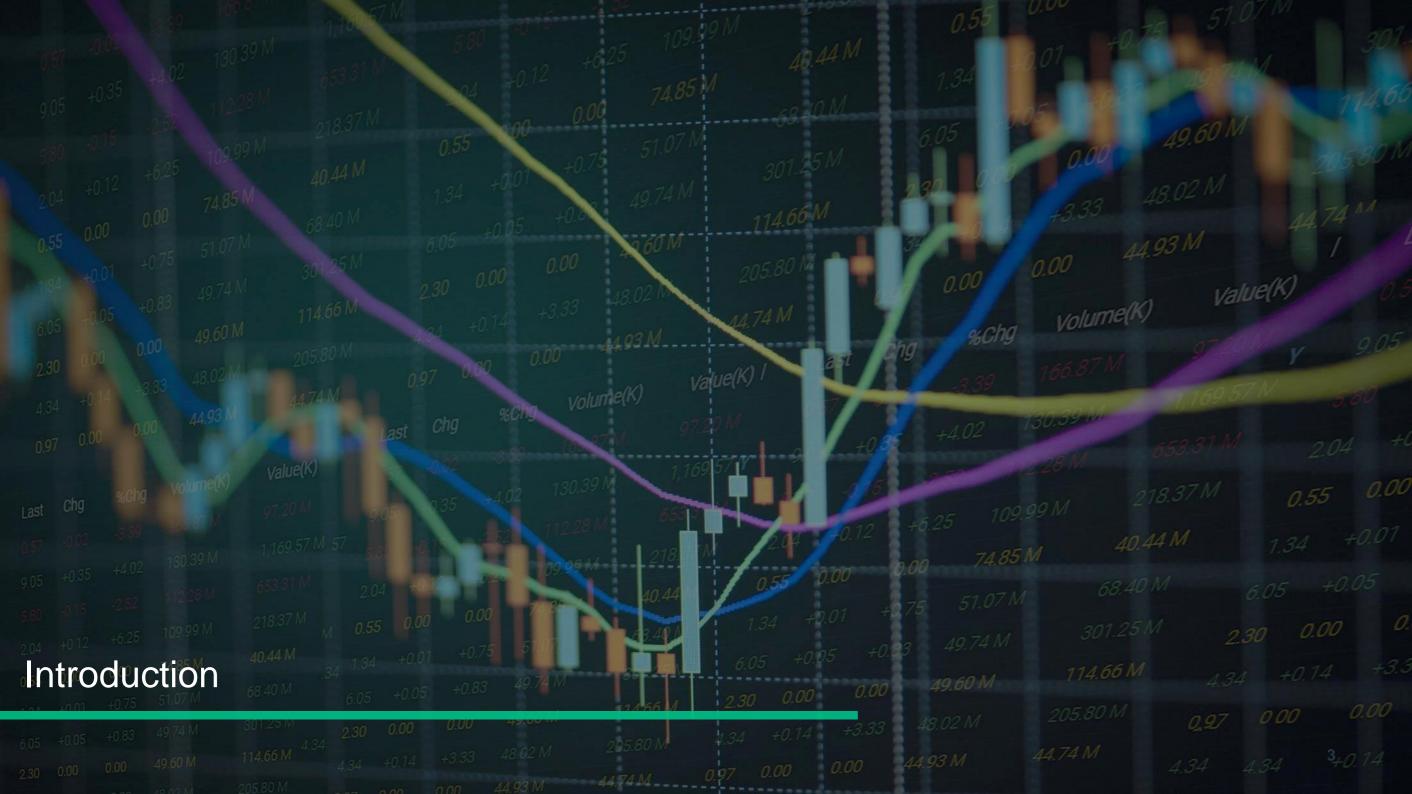


Agenda

- 1 Introduction
- 2 DLT Pilot Regime
- 3 German Digital Securities Act & Next Steps
- 4 Practical Considerations
- **5** Q&A session





Evolution of securities as a financial instrument



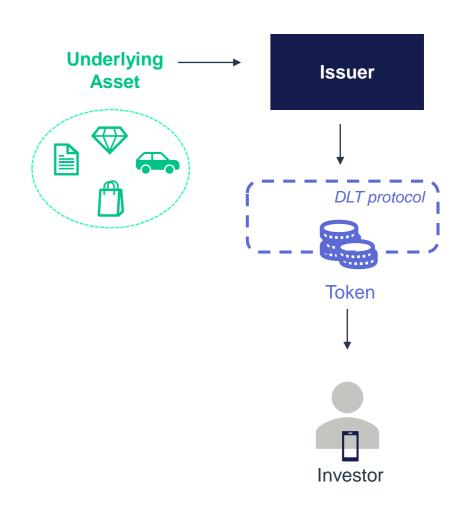
- Promissory notes, shares in a joint stock company (first introduced in the Netherlands and England)
- Securities were traditionally issued in the form of physical (paper-based) certificates
- Transfer of securities required physical transfer of the paper based instrument
- This form was a norm throughout 18th, 19th and the beginning of 20th century

- One global certificate (physical certificate) is being created for the entire issuance and deposited with the depositor
- Individual security holders are deemed to be "co-owners" of the global certificate (legal fiction)
- Holdings of individual holders are being represented in the form of an electronic entry by the CSD (disposals are not related to physical transfer of a global certificate)

- Securities exist solely as an electronic entry in the Central Register (no global certificate)
- Introduced in many countries as a standard form in which securities are being issued (France 1984, UK 1996 etc.)
- There are still some exceptions civil law in some countries prevents introduction of fully dematerialised securities (e.g. Germany until recently)

Digital Securities in a nutshell

- Digital Asset = Digital representation of a value or right in the form of a digital entry on the digital ledger that is based on the distributed ledger technology (DLT)
- DLT = digital system for recording the transaction data in which the transactions and their details are recorded in multiple places at the same time. DLT & related cryptography ensure that digital entries on the ledger cannot be duplicated or manipulated (mathematical fact).
- Digital asset is linked to a smart contract that is basically computer program stored on a DLT that run when predetermined conditions are met.
- Functioning in a "IF-THEN" way, this smart contract governs the way in which digital asset is being transferred on the ledger (so it can automatically trigger certain actions when conditions are met e.g. coupon payment)
- Smart contract governs the main characteristics of the digital asset (i.e. digital security) like face value, maturity, coupon payment etc.
- Offering documentation mirrors the conditions embedded in the protocol



Digital Securities – Why?

Current situation



- T + 2 Rule (settlement and clearing process needs to be completed 2 business days after execution latest)
- The infrastructure that is in the background does not correspond to the reality (orders are created and executed in seconds whereas process in the background takes days)
- Global certificate (Germany) a relict of the past that brings no added value any more

Advantages that digital securities may bring



- <u>Time efficiency:</u> Instant settlement of transactions (use of settlement coins in the blockchain as a recommended option by the EU Commission);
- Cost efficiency: less intermediaries = lower costs



Key challenges for introduction of DLT securities

Technical challenges

- DLT infrastructure used must be designed in a way that fosters investors' and regulators' trust (i.e. technical tamper resistance, compliance with AML/KYC regulations, security from wallet hacking, avoidance of fork events)
- Interoperability and compatibility between blockchains with standards and protocols shall be ensured (enabling the assets to move "outside the box").
- Merging traditional clearing infrastructure with DLT infrastructure (e.g. secondary market liquidity)

Financial Regulation

- The entire existing financial regulatory landscape in the EU was not designed with DLT based securities in mind
- Key pieces of EU financial regulation contain huge impediments to the use of DLT securities
- CSDR: book entry requirement, cash settlement,
- MiFIR: transaction reporting

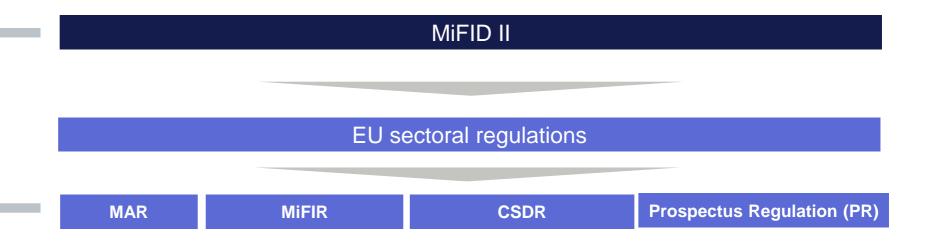
Civil & Corporate Law

- Traditional civil law requires physical form of a financial instrument;
- Property law issues can also arise when it comes to transferability of the instrument via DLT
- Further, corporate law can prevent use of DLT based shares due to the fact that some existing principles of corporate law are inherently in direct conflict with DLT



Definition of a security in the EU and national laws

- Differentiates between transferable securities and other financial instruments (investment fund units, CFDs, emission allowances)
- Transferable security: securities that are negotiable on the capital market (shares, bonds, securitised derivatives)
- Contain either a direct reference to MiFID II definitions or small variations thereof (e.g. contain a list of in-scope instruments like Prospectus Regulation)



EU Level

Member State Level

- Definitions of regulated financial instruments vary across different key piece of German legislation
- Banking Act broad scope of instruments that include both transferable securities as well as other instruments (e.g. crypto-assets and units of account)
- Prospectus Act, follows the definition in the Prospectus Regulation
- German law also recognises some types of financial instruments that are not regulated at the EU level (capital investments – Vermögensanlagen) which makes the national landscape even more complex



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Paving the way for the EU regulatory framework on crypto-assets



- On 24 September 2020 the EU Commission has adopted the Digital Finance Package
- By making rules more digital-friendly and safe for consumers, the Commission aims to leverage synergies between high innovative start-ups and established firms in the financial sector while addressing associated risks

Digital Finance Package

Regulatory framework on crypto-assets

- Proposal for Regulation on Markets in Crypto-Assets (MiCAR)
- Regulatory framework on issuers of cryptoassets and service providers such as cryptoexchanges, wallet providers etc.

DLT Pilot Regime

- Proposal for Regulation on a pilot regime for DLT market infrastructures (DLT Pilot Regime)
- EU wide regulatory sandbox enabling deployment of DLT in securities trading through targeted exemptions from existing requirements

DLT Pilot Regime: Overview (1/2)



Key pieces of the existing financial regulation in the EU create impediments for the use of DLT based financial instruments and DLT in financial markets.



Regulation creates an EU-wide regulatory sandbox regime which aims to remove obstacles under the current regulatory framework to the implementation of DLT in financial market infrastructures



- DLT financial instrument: a financial instrument that is issued, recorded, transferred and stored using distributed ledger technology (definition refers to all types of financial instruments under Annex I C MiFID II)
- National Competent Authorities (NCAs) will be entitled to grant targeted exemptions from provisions which currently restrict market infrastructures (trading venues and settlement systems) from deploying DLT



- Published in the EU Official Journal 2 June 2022
- Started to apply on 23 March 2023
- By 24 March 2026 ESMA needs to present report as to whether the framework shall be maintained in this form for another 3 years/amended/made permanent/terminated



DLT Pilot Regime: Overview (2/2)



DLT Market Infrastructure

DLT multilateral trading facility ("DLT MTF")

 multilateral trading facility, operated by an investment firm or a market operator, that only admits to trading DLT financial instruments;

DLT securities settlement system ("DLT SS")

 securities settlement system, operated by a central securities depository (CSD), that settles transactions in DLT financial instruments;

DLT trading and settlement system ("DLT TSS")

• DLT MTF or DLT SS that combines services performed by a DLT MTF and a DLT SS operated by an investment firm, market operator or alternatively a CSD.

DLT Pilot Regime: Limitations



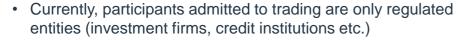
- shares, the issuer of which has a market capitalisation,
 or a tentative market capitalisation, of less than EUR
 500 million;
- debt securities (bonds, money market instruments, securitized debt excluding instruments that embed derivative or have complex structure) with an issue size of less than EUR 1 billion;
- units in collective investment undertakings the market value of the assets under management of which is less than EUR 500 million.



- Maximum aggregate market value of all the DLT financial instruments that are admitted to trading on a DLT market infrastructure shall not exceed EUR 6 billion!
- In case where the aggregate market value of all DLT financial instruments that are admitted to trading on a DLT MI, or that are recorded on a DLT MI, has reached EUR 9 billion, the operator of the DLT MI must activate a "transition strategy"
- Transition strategy = a strategy for reducing the activity of, transitioning out of, or ceasing to operate, a particular DLT MI, including the transition or reversion of its DLT operations to traditional market infrastructure

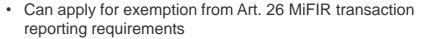
DLT Pilot Regime: Exemptions

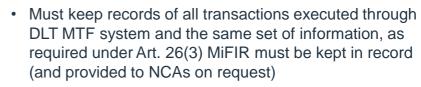
Direct retail participation



- NCA may permit an operator to enable to grant access to a wider group of participants (including individuals) to deal directly in DLT financial instruments
- Precondition participants need to meet certain requirements (e.g. sufficient level of trading experience, knowledge, including knowledge of the functioning of DLT systems).

Transaction Reporting





DLT MTF

Book-entry



- NCAs can grant exemption from the book-entry requirement stipulated under Article 3 CSDR that should enable recording of financial instruments on DLT ledger;
- Applicant needs to demonstrate that he uses adequate alternative measures to safeguard, record and segregate DLT financial instruments

Settlement



- Under CSDR all transactions need to be settled in cash (cause for prolonged settlement periods i.e. T+2)
- This exemption shall enable instant settlement by the use of tokenized instruments (settlement coins, e-money tokens etc.).
- Exemptions from settlement discipline requirements under CSDR will be possible (given that DLT based systems are not exposed to same risk of settlement failures)

DLT SS/ TSS

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DLT Pilot Regime: Authorisation requirements (1/2)

ESMA Guidelines (Guideline 2) published on 15.12.2022, contain a list of all required documents, that shall include (among other) the following:

- i. a business plan of the applicant (must include a detailed description of the technology used);
- ii. written documentation setting out the rules under which the DLT market infrastructure is to be operated, defining rights and obligations, responsibilities and liabilities of the operator of the DLT market infrastructure (MI), as well as that of the members, participants, issuers and/or clients using DLT MI;



- iii. Information on the criteria based on which the operator will be granting participation at the DLT MI,
- iv. detailed technical description of the DLT infrastructure and technology that will be used;
- v. information on the governing law, jurisdiction, dispute resolution processes as well as insolvency protection mechanisms that will be used;
- vi. Policies on internal IT framework and compliance with digital operational resilience requirements;
- vii. Policies on compliance with recording and record-keeping, safeguarding and investor protection requirements (i.e. internal policies and procedures)
- viii. Information on the transition strategy that the operator intends to use.

DLT Pilot Regime: Authorisation requirements (2/2)

For each exemption from MiFIR, MiFID II and/or CSDR requirements, applicants will be required to provide their NCAs with:

- Short justification for the exemption (expected to be pretty simple given that the use of DLT is inherently incompatible with the compliance with existing requirements);
- Information on compensatory measures that they are planning to take for the purposes
 of meeting the objectives of these regulations i.e. safeguarding and segregation of client
 assets, recording, reporting and record keeping etc.); and
- 3. Information as to how exactly the applicant is ensuring compliance with minimum requirements under the DLT Regulation.

Applicants must demonstrate that each exemption requested is:

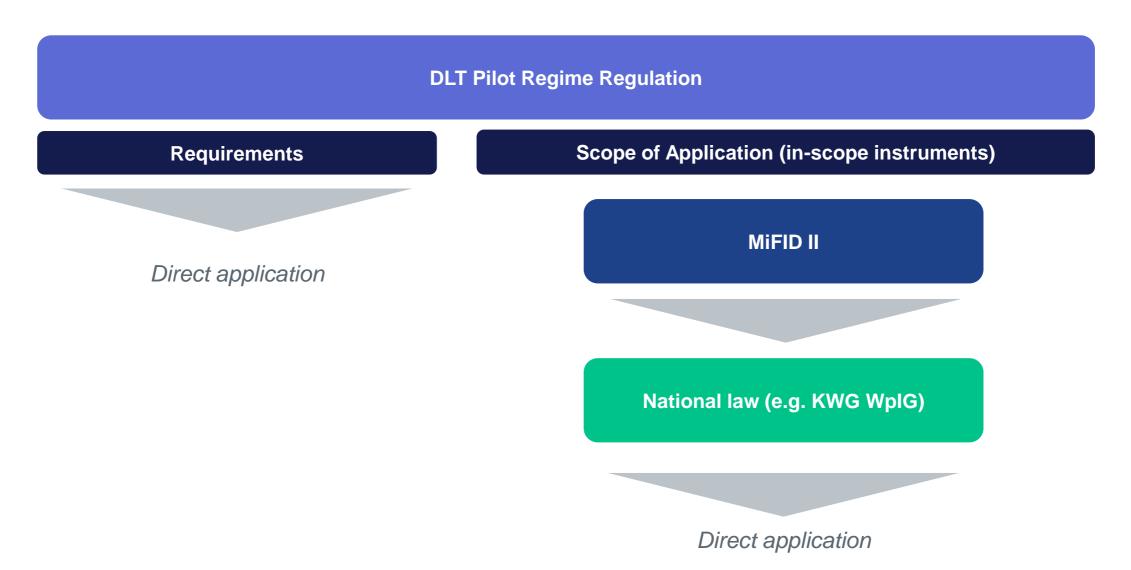
- 1. proportionate to, and justified by, the use of DLT; and
- 2. limited to the DLT MI applied for and does not extend to other MTFs or securities settlement systems operated by that applicant.

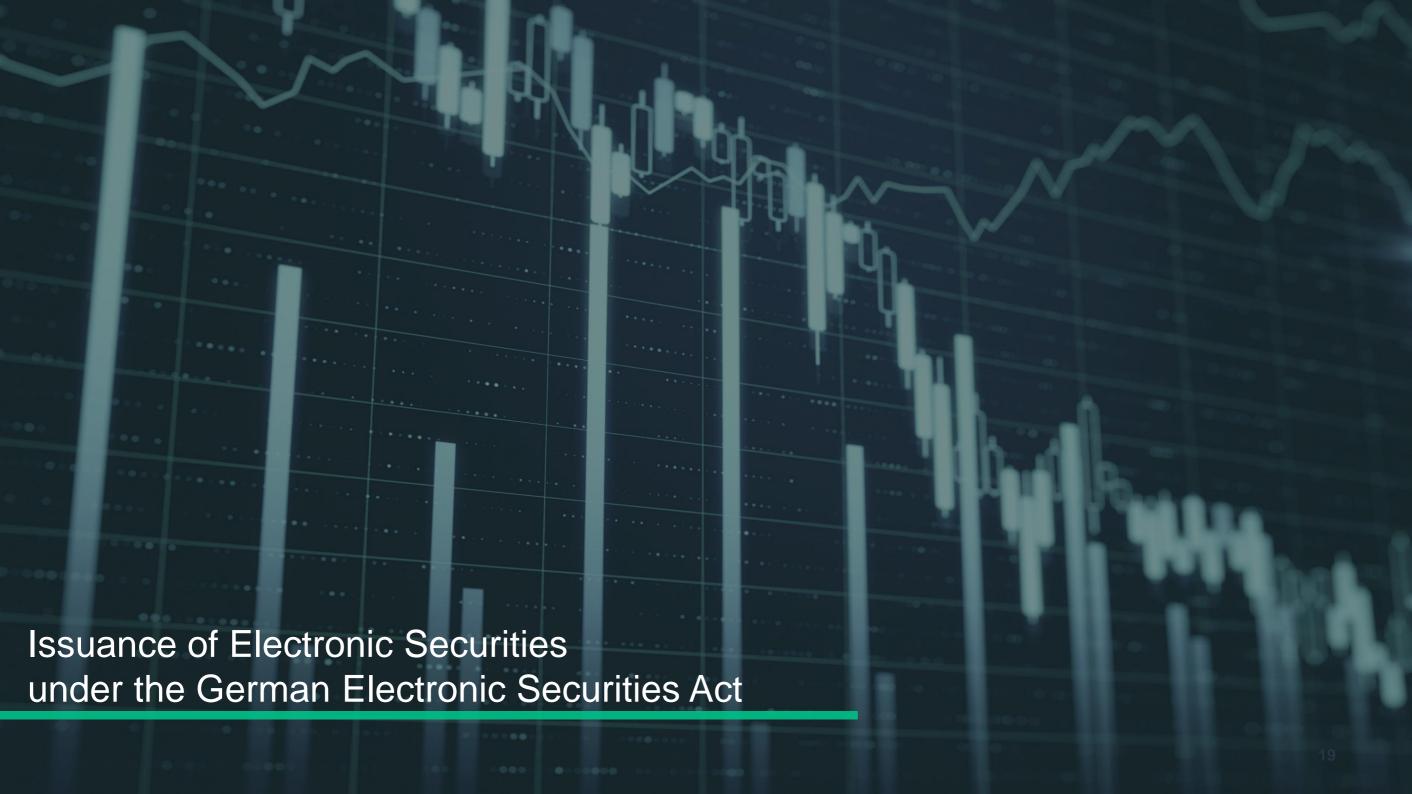


DLT Pilot Regime: Application process

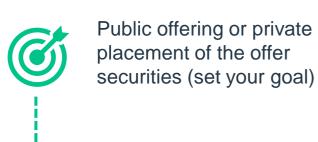


DLT Pilot Regime – piece of a broader puzzle





Issuance of Electronic Securities



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Settlement

- To enter all required entries into the register
- To deposit T&Cs with registrar and do all additional actions pursuant to Sec. 4 eWpRV
- If Crypto Securities are being used:
- Publication in the German Federal Gazette
- Creation of register excerpts (retail)



Subscription- or Registration Agreement between issuer and initial purchaser



- Electronic securities validly created
- Issuer to fulfill its obligation
- Investors can dispose (transfer) Electronic Securities based on principals of German property law

Requirements for Legal Creation of Electronic Securities

	Securitization (Skripturakt)	Subscription (<i>Begebungsvertrag</i>)
Traditional Securities	Creation/signing of a certificate or global certificate (which is usually kept in safe custody)	Execution of a subscription agreement (or equivalent arrangement) between Issuer and dealers/initial investors
Electronic Securities	 To set entries of the Electronic Securities into the register (with all required details, Sec. 13,17 eWPG) To deposit terms and conditions (T&Cs) with the registrar (<i>Niederlegung</i>, Sec. 5 eWPG) Registrar to publish T&Cs on a webiste and to meet all other requirements set out in Sec. 4 eWpRV 	Execution of a subscription agreement (or equivalent arrangement) between Issuer and dealers/initial investors

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German Electronic Securities Act (eWpG)

Types of Electronic Securities

Central Register Securities (Zentralregisterwertpapier)

Crypto Securities (Kryptowertpapier)



Central Register

Central Depositary (Clearstream Banking AG)

Custodian (appointed by the Issuer)

- Central Depositary as registrar must be admitted in Germany under Regulation EU 909/2014 (Clearstream Banking AG)
- Alternatively: Issuer to appoint selected custodian (authorized for custody business)
- But: If securities are to be traded in a regulated market, MTF or OTF, a central depositary is required by CSDR.



- Issuer to appoint registrar or act as registrar
- Registrar to be licensed under Sec. 1 Abs. 1a Satz 2 Nr. 8 German Banking Act (Kreditwesengesetz)
- Issuer to disclose registrar to holders

- In-scope securities include
 - Bearer form of
 - Fixed or floating rate bonds
 - German Pfandbriefe
 - Structured products (certificates)
 - Warrants or futures
 - Share certificates of funds (Anteilsscheine, Sec. 95 KaGB)
 - Future Finance Act (Zukunftsfinanzierungsgesetz): Bearer Shares only as Central Register Shares
 - Registered form of:
 - Future Finance Act (Zukunftsfinanzierungsgesetz):
 Registered Shares as both Central Register Shares or Crypto Shares
 - Other Registered securities (Namenspapiere) and order paper (Orderpapiere) remain out of scope

German Electronic Securities Act (eWpG) – Register entries

Central Register Securities (*Zentralregisterwertpapier*)

Crypto Securities (Kryptowertpapier)



- Essential content of the rights attached to the securities
- Issue volume
- Nominal value / principal amount
- Indication of individual or collective registration
- Holder
- Information to mixed stock (if relevant)
- In case of individual registration: restrictions on disposal and rights of third parties
 - Registrar to send register except in text form (e.g. email) to holder on request or, in case of retail holder (*Verbraucher*) at entry or change of content and annually.
 - Registrar to publish in the German Federal Gazette (Bundesanzeiger) certain information on the crypto security.

- Registrar to ensure that:
 - the confidentiality, integrity and authenticity of the data are guaranteed (section 7 (1))
 - the register accurately reflects the legal situation at all times
 - Measures to protect against data loss and unauthorised data modification are in place
 - All requirements for the deposit (Niederlegung) of the Electronic Securities in the register are met (Sec. 4 eWpRV), incl. publication of the T&Cs on a website and in case of changes of the T&Cs, comprehensible republication (with numbering and timestamp of the amendment in the republication)
- Supervision by BaFin

German Electronic Securities Act (eWpG) – Crypto securities

München

 Example of initial entry in the German Federal Gazette of a €60 million Siemens crypto security from Feb. 2023. Veröffentlichung der Eintragung eines Kryptowertpapiers in ein Kryptowertpapierregister gemäß § 20 Abs. 1. Nr. 1 des Gesetzes über elektronische Wertpapiere ("eWpG")

("EUR 60.000.000 Fixed Rate Notes")

ISIN: DE000A30V6H0 WKN: A30V6H

Die Siemens Aktiengesellschaft veröffentlicht hiermit gemäß § 20 Abs. 1 Nr. 1 eWpG in Verbindung mit § 20 Abs. 2 eWpG die Begebung von EUR 60.000.000 Fixed Rate Notes als Kryptowertpapier durch Eintragung in ein Kryptowertpapierregister wie folgt:

Emittentin: Siemens Aktiengesellschaft

Werner-von-Siemens-Str. 1

80333 München Deutschland

Rechtsträgerkennung (LEI): W38RGI023J3WT1HWRP32

Handelsregister: HRB 6684 (München)/ HRB 12300 (Berlin, Charlottenburg)

Informationen zum

Kryptowertpapierregister: Das Kryptopwertpapierregister wird auf der öffentlichen "Polygon" Blockchain

betrieben.

Registerführende Stelle: Hauck Aufhäuser Lampe Privatbank AG

Kaiserstraße 24

60311 Frankfurt am Main

Deutschland

Tel.: +49 69 2161-1100

Email: DA-Registrar@hal-privatbank.com

Wesentlicher Inhalt des Rechts: Der wesentliche Inhalt des Rechts ergibt sich aus den bei der registerführenden Stelle

niedergelegten Emissionsbedingungen mit der ISIN DE000A30V6H0, die einem eingeschränkten Personenkreis, gem. § 5 Abs. 1 Satz 2 eWpG, zugänglich sind.

Datum der Eintragung des Kryptowertpapiers in das

Kryptowertpapierregister: 13. Februar 2023

Gegenstand der Veröffentlichung im

Sinne des § 20 Abs. 2 Nr. 6 eWpG: Eintragung

München, 13. Februar 2023

Der Vorstand

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German Electronic Securities Act (eWpG) – practical issues

Central Register Securities (Zentralregisterwertpapier)



 Use of traditional infrastructure (Effektengiro) undermines cost and timing advantages of Electronic Securities Crypto Securities (Kryptowertpapier)



- Registrar to be licensed under Sec. 1 Abs. 1a Satz 2 Nr. 8 German Banking Act (*Kreditwesengesetz*) with requirements:
 - Initial capital of € 125,000
 - Plus funds for operation of the register management
 - Business plan
 - Fit and proper assessment for managing directors
 - Approval of significant shareholders and holdings
- Traditional disclosure requirements (German Federal Gazette) slow down settlement process
- No qualification under CSDR (Regulation EU 909/2014) as a result of which no admission to trading on a strock exchange or inclusion into trading on a MTF or OTF is possible (OTC-trading only)

German Electronic Securities Act (eWpG) – Recent issuances



Jan 2023: £50 million digital floating rate bonds issued under Luxembourg law which are registered in a private blockchain (HSBC Orion) but mirrored on an anonymized basis for transparency reasons on a public blockchain. Custodians are BNP Paribas Securities Services business in Luxembourg, RBC and HSBC



Feb. 2023: € 60 million digital bonds issued under German law which are registered in a public blockchain (Polygon). Hauck Aufhäuser Lampe Privatbank acted as registrar and custodian. Payments have/will be traditionally settled. Private placement to DekaBank, DZ Bank und Union Investment.



Aug. 2022: € 20 million digital bonds issued as central register security under German law which are registered in a private blockchain maintained by Deutsche Börse D7 platform operated by Clearstream.

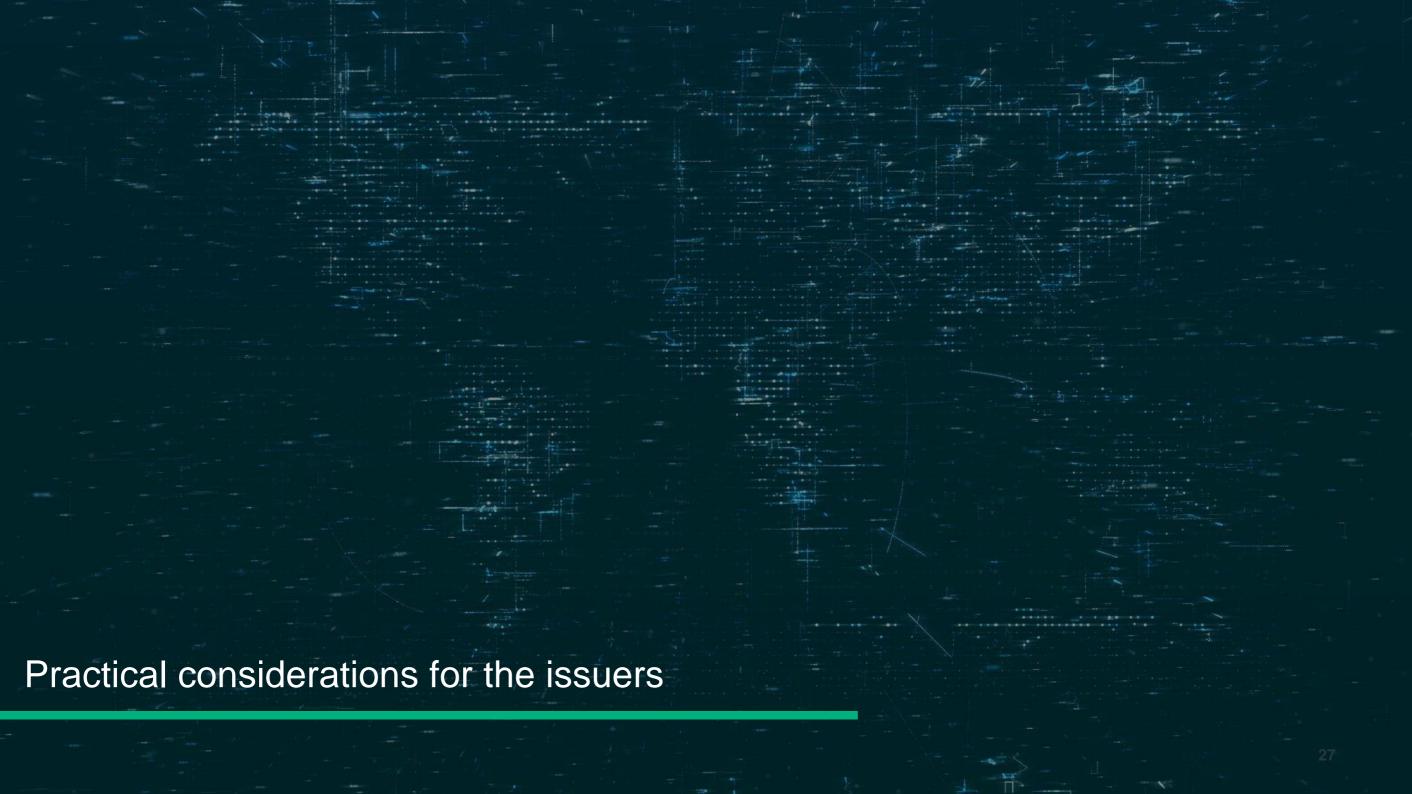


Okt 2023: €100 million digital bonds issued under English law (under IBRD's debt issuance programme) which are registered in Euroclear's Digital Securities Issuance (D-SI) service, enabling the issuance, distribution and settlement of fully digital international securities on Distributed Ledger Technology (DLT) in compliance with CSDR. As a result, the bond was listed on Luxembourg stock exchange.

"The D-SI service operates as part of Euroclear's D-FMI DLT platform. The D-FMI is connected to the traditional settlement platform of Euroclear for secondary market operations on the DNN, granting investors full access to trading venues and liquidity management facilities. A key benefit of this service is full CSDR compliance."

Background information:

Euroclear's D-FMI is based on a private and permissioned Blockchain (R3 Corda Distributed Ledger Technology), which is used for the issuance and primary distribution of the DNNs. After the primary settlement between issuer and dealer on the D-FMI, the DNNs were deposited with Euroclear Bank allowing secondary market transfers between holders of accounts on Euroclear's legacy system just like any other internationally settled global bond.



Practical considerations for the issuers

Strategy

- Define the type of financial instrument: Bearer/registered form, denomination
- Standardised/individualis ed form (security/capital investment);
- Markets EU/EEA or other as well (US/UK selling restrictions)
- Distribution limitations

Regulatory compliance

- How the issuance process will be structured?
- Authorisation requirements (platforms, websites)
- UK: Financial Promotion Restriction

Operational aspects

- Platform for issuance, distribution and settlement?
- Third party involvement (cooperation agreements e.g. custodian for underlying assets)
- Interoperability between different DLT infrastructures
- Investor communication and payments post issuance.

Thank you!



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