The ledger as register: ledger-based securities

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Switzerland is the only jurisdiction covered by this book that allows the ledger to be the register for securities as a matter of general law. Since 1 February 2021, Art. 973d CO permits a right to be issued as a ledger-based security if the parties so agree in a registration agreement and the ledger meets four functional requirements. The ledger must give the creditors, but not the debtor, power of disposal over their rights through technical processes. Its integrity must be protected against unauthorised modification by adequate technical and organisational measures, such as joint management by several independent participants. The content of the right, the functioning of the ledger and the registration agreement must be recorded in the ledger or in accompanying data linked to it. And creditors must be able to view the relevant information and ledger entries and to verify the integrity of the ledger without the intervention of a third party.[1]

Once those conditions are met, the ledger-based security behaves like a negotiable instrument. Under Art. 973e the debtor may perform only to the creditor shown in the ledger and is discharged by doing so. Under Art. 973f transfer is effected by entry in the ledger according to the registration agreement, with protection for a good-

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faith acquirer. Under Art. 973g the security may be pledged by entry. Under Art. 973h a lost security may be cancelled by the court. The right and the ledger entry are fused in the way a right and a paper certificate are fused in a bearer bond.[2]

The technical consequence is that the ledger must actually satisfy the functional tests, which the practitioner must verify. A token issued on a public chain such as Ethereum or Polygon, through a smart contract that lets only the holder's key transfer it, with the registration agreement linked through the contract's metadata, satisfies all four requirements. A token on a private database controlled by the issuer fails the first and second, because the issuer, in place of the creditor, holds the power of disposal and can alter entries unilaterally. A token on a public chain whose contract contains an issuer-controlled freeze or forced-transfer function raises a hard question: does a power to freeze destroy the creditor's exclusive power of disposal? The Capital Markets and Technology Association (CMTA) blueprint takes the view that a freeze power limited to legal compliance and exercised under published rules is compatible with Art. 973d. The market has followed that view, although no court has confirmed it.[3]

Example

A Zug AG issues 1,000,000 registered shares as ledger-based securities on Ethereum under a registration agreement adopted by its general meeting and incorporated in its articles under Art. 622 para. 1 CO. A shareholder transfers 10,000 tokens to a buyer in Singapore by signing an Ethereum transaction. Under Art. 973f CO the transfer of the share is complete at that moment. The company's share register under Art. 686 CO must then be updated, because the token transfer moves the share but the buyer's entitlement to exercise membership rights against the company depends on registration. Well-designed issuances automate this by treating the token ledger as the share register, which Art. 686 CO permits if the register is kept so that it can be accessed in Switzerland at any time. The Singapore buyer holds a Swiss share directly, with no intermediary, and may pledge it under Art. 973g to a Singapore lender by a further ledger entry if the registration agreement so provides.

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Singapore has no equivalent. A Singapore share must be registered in the company's register of members under the Companies Act 1967, and transfer requires a proper instrument of transfer and registration by the company. A token representing a Singapore share is therefore always a record, never the register, unless the company adopts the token ledger as its register of members, which the Act does not expressly permit and which no company has done. Tokenised shares and bonds in Singapore have proceeded through the second route described below, with a depository or nominee holding the legal title and tokens representing beneficial interests. The Electronic Transactions Act 2010's provisions on electronic transferable records, adopted in 2021, give statutory recognition to electronic bills of lading and similar documents, but they do not extend to shares or bonds.[4]

Notes

1. Code of Obligations, SR 220, Art. 973d paras 1 and 2 nos 1–4, inserted by the DLT Act of 25 September 2020, AS 2021 33, in force 1 February 2021. The provisions are analysed in Part D, Chapter III. ↩
2. Code of Obligations, SR 220, Arts 973e (effects), 973f (transfer), 973g (collateral) and 973h (cancellation). On the debtor's liability for the ledger's functioning see Art. 973i. ↩
3. Capital Markets and Technology Association, Blueprint for the tokenization of shares of Swiss corporations using the distributed ledger technology, version 2.0, 2021, sections 4 and 5 (functional requirements; compliance functions in the smart contract). Part D, Chapter III. ↩
4. Companies Act 1967 (Singapore), ss 126 to 130 (transfer of shares; register of members); Electronic Transactions Act 2010, Part 2A (electronic transferable records), which applies to transferable documents or instruments and excludes securities. Part J, Chapter III. ↩

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