热钱包、冷钱包与密钥管理谱系

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热与冷的区分关乎联网状态。热钱包的密钥位于联网系统上，可以立即签名。冷钱包的密钥离线保存，签名需要人工操作。每一家严肃的托管人都将大部分客户资产冷存储，只在热钱包中保留少量备付资金用于提款。这一比例是一项风险决策，如今监管机构会对其进行审查。MAS的技术风险管理指南及其2023年的客户保护措施，要求DPT持牌机构将大部分客户资产冷存储，并说明热钱包备付资金的合理性。[1]

这一区分的法律后果主要体现在证据方面。热钱包被盗空的托管人，是因安全漏洞而损失了资产，必须向客户和监管机构作出解释。损失由托管人还是客户承担，取决于协议以及关于寄托或保管的一般法律。根据《瑞士债务法》第97条，瑞士托管人须对因自身过失造成的损失负责，且根据第100条不得排除重大过失责任。新加坡托管人的责任取决于其条款，对于消费者客户，还须受《1977年不公平合同条款法》约束。第D部分第V章和第J部分第III章都论述了相关的起草问题。

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注释

1. MAS，Guidelines on Risk Management Practices – Technology Risk（TRM Guidelines），2021年1月18日修订，以及MAS 2023年7月关于DPT客户保护的回应中针对托管的具体期望。FINMA则通过对持牌托管人的基于风险的监管，并自2026年起通过第01/2026号指引，处理相应的期望。 ↩

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