

Ryder's TapSafe Recovery Is Patent Pending: Distributed Self-Custody Backup System Built on Shamir's Secret Sharing

TapSafe, Ryder's wallet recovery technology to simplify cryptocurrency self-custody, has just got its patent application approved in the USA.

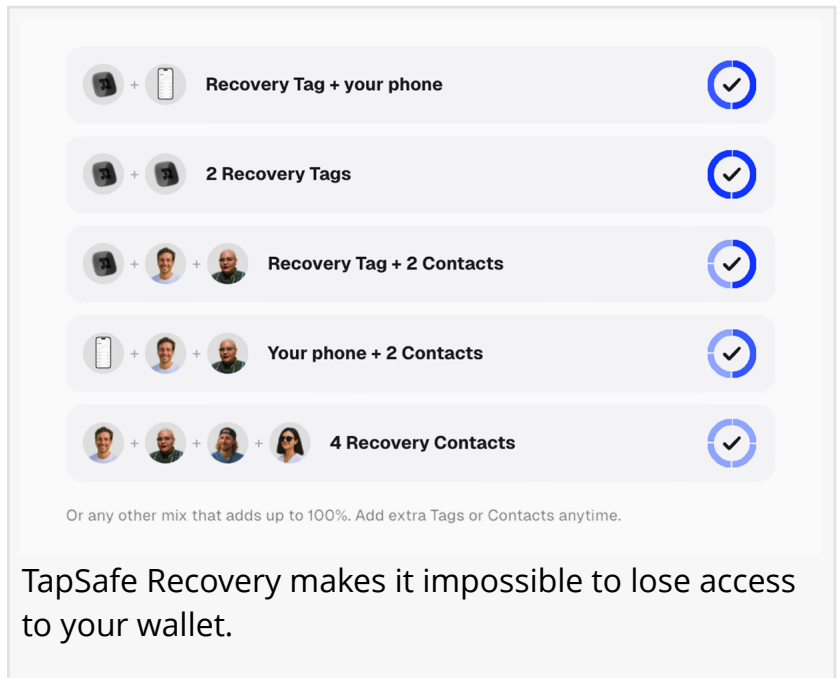
SINGAPORE, SINGAPORE, September 1, 2026 /EINPresswire.com/ -- Ryder, the company behind the [Ryder One](#) hardware wallet, announced that their [TapSafe](#) Recovery technology has been filed as a patent pending invention with the United States Patent and Trademark Office. The filing covers Ryder's distributed wallet recovery architecture, which allows users to back up and restore a self-custodial crypto wallet across multiple physical and digital components without relying on a single seed phrase.

The announcement comes at a critical moment for the hardware wallet industry. In July 2026, over \$130 million in Bitcoin was drained from around 7,700 wallets following a firmware entropy flaw in Coldcard devices. The incident drew widespread attention to the limitations of seed phrase-based recovery, a model that has remained largely unchanged since the earliest days of cryptocurrency.

"Self-custody has a recovery problem the industry has been reluctant to address," said Marvin Janssen, CEO of Ryder. "The seed phrase puts an impossible burden on the user: write down 24 words perfectly, store them securely forever, and never make a single mistake. TapSafe was built to remove that burden without removing self-custody. The patent filing is formal recognition that what we built is a step forward."

How TapSafe Works

TapSafe Recovery is built on a custom implementation of Shamir's Secret Sharing, a



The diagram illustrates five recovery methods for TapSafe, each represented by a horizontal bar with icons and a checkmark:

- Recovery Tag + your phone
- 2 Recovery Tags
- Recovery Tag + 2 Contacts
- Your phone + 2 Contacts
- 4 Recovery Contacts

Below the bars, a note states: "Or any other mix that adds up to 100%. Add extra Tags or Contacts anytime."

TapSafe Recovery makes it impossible to lose access to your wallet.

cryptographic method that divides a wallet backup into multiple pieces where no single piece reveals anything on its own. Recovery requires a valid combination of components, distributed across a Recovery Tag, the user's paired phone, and optional Recovery Contacts.

Unlike traditional Shamir implementations, Ryder's custom Shamir Secret Sharing implementation uses a generator. This allows Ryder One users to add new wallet backups any time, allowing users to generate additional encrypted backups at any time without restarting the wallet setup process, addressing a key limitation of existing distributed recovery systems.

No single component gives complete access to the wallet. Recovery Tags are built on NXP MIFARE DESFire EV3 chips rated CC EAL5+, with 25-year data retention. The user's seed phrase remains accessible on-device as a last resort and follows the BIP-39 standard, ensuring compatibility with any BIP-39 wallet if the user ever needs to migrate.

Industry Context

The patent filing follows a period of significant turbulence in the self-custody space. In the first half of 2026 alone, TRM Labs reported that private key and seed phrase compromises accounted for 76% of all crypto stolen, approximately \$738.7 million in six months. An incident in July added \$130 million to that figure and a data leak in August served as support for widespread reassessment of hardware wallet security standards across the industry.

Ryder One has been independently audited by [Halborn](#), covering the device's BIP-32, BIP-39, and BIP-44 implementation, Shamir's Secret Sharing logic, and side-channel resistance. Ryder also has a public roadmap to open-source TapSafe and its Shamir implementation as part of an ongoing transparency commitment.

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