

A Blockchain-Based Micro-Economy of Bandwidth Tokens to Prevent Freeriding

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Problem Description

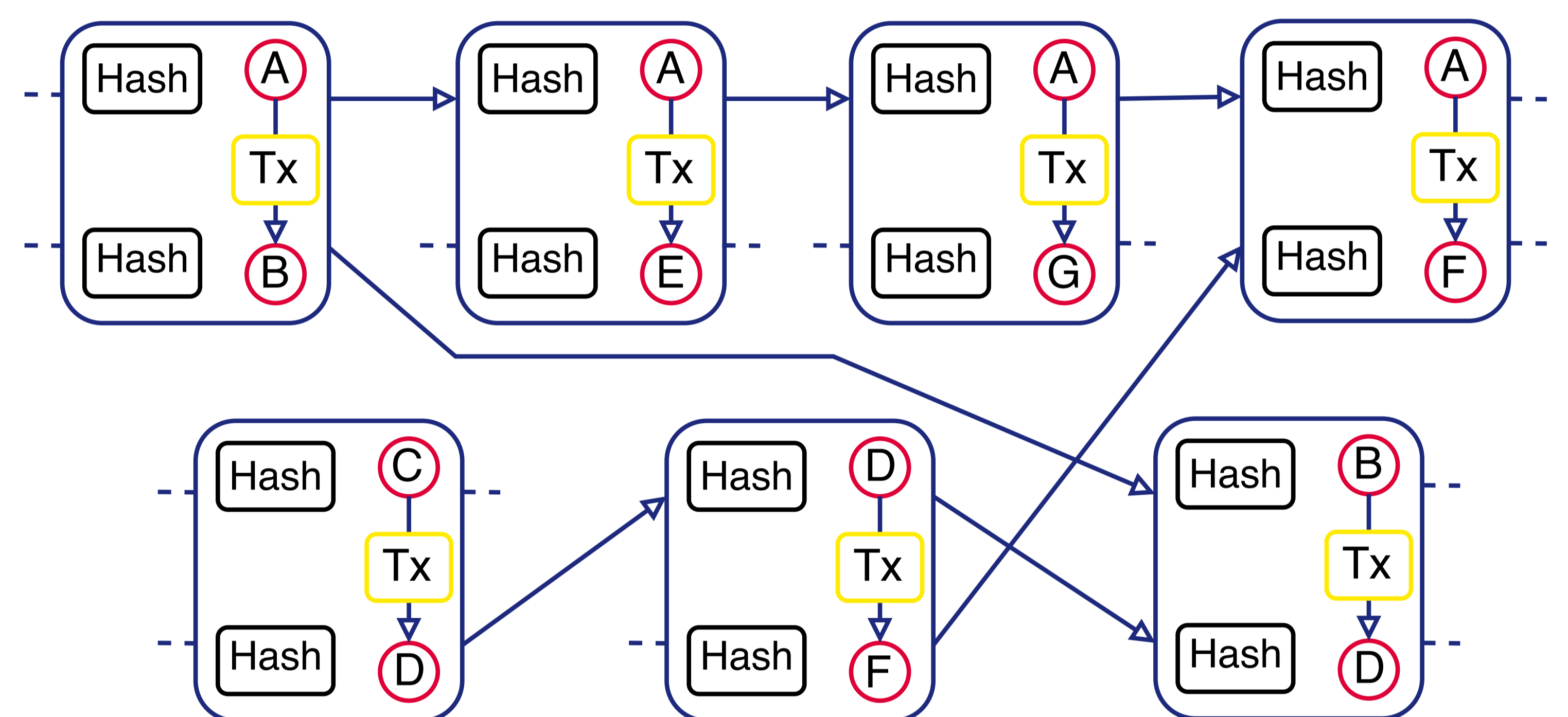
- A challenging problem humanity faces, is dealing with shared access to common resources.
- Selfish people (*freeriders*) consume more than they contribute.
- This impacts long-term sustainability of the community.

Our Solution

- Record community contributions on a tamper-proof, scalable blockchain.
- This creates an economy of tokens, gained when contributing to/consuming from the community.
- Everyone can see the token balance of others.
- This incentivizes people to contribute.

What is a Blockchain?

- A chained data structure to store transactions.
 - Tamper-proof
 - Distributed
 - Each record contains a hash of the previous record
- However, most blockchains have limited scalability.
- We built and deployed a scalable blockchain: *TrustChain*.
- Specifically designed to store interactions.
- Built for *fraud detection*, instead of *fraud prevention*.



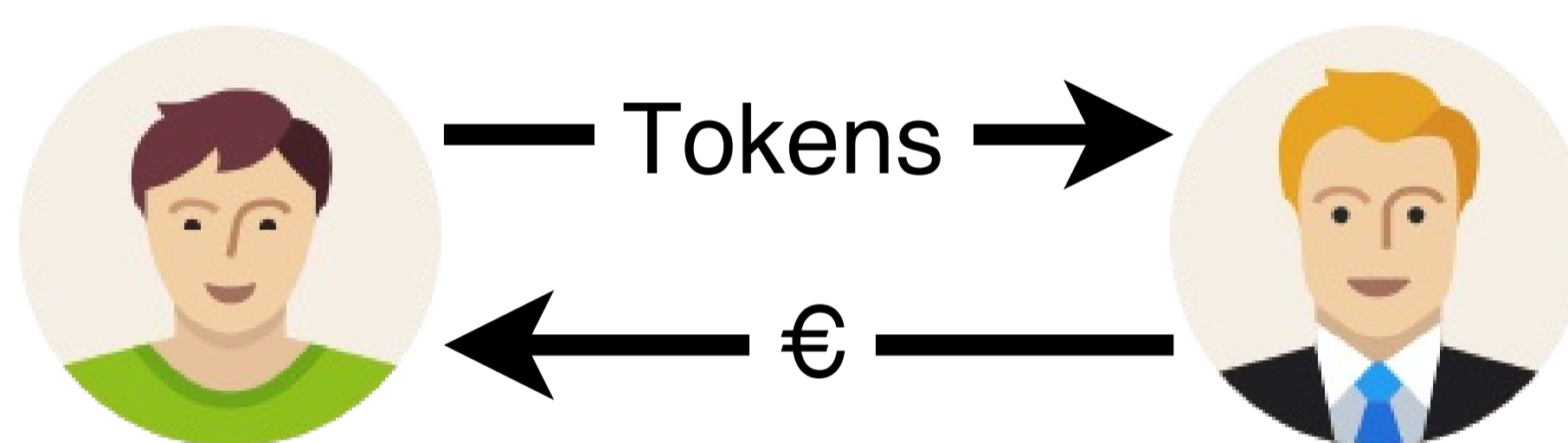
TrustChain with four intertwined chains.

Earn and Spend Tokens



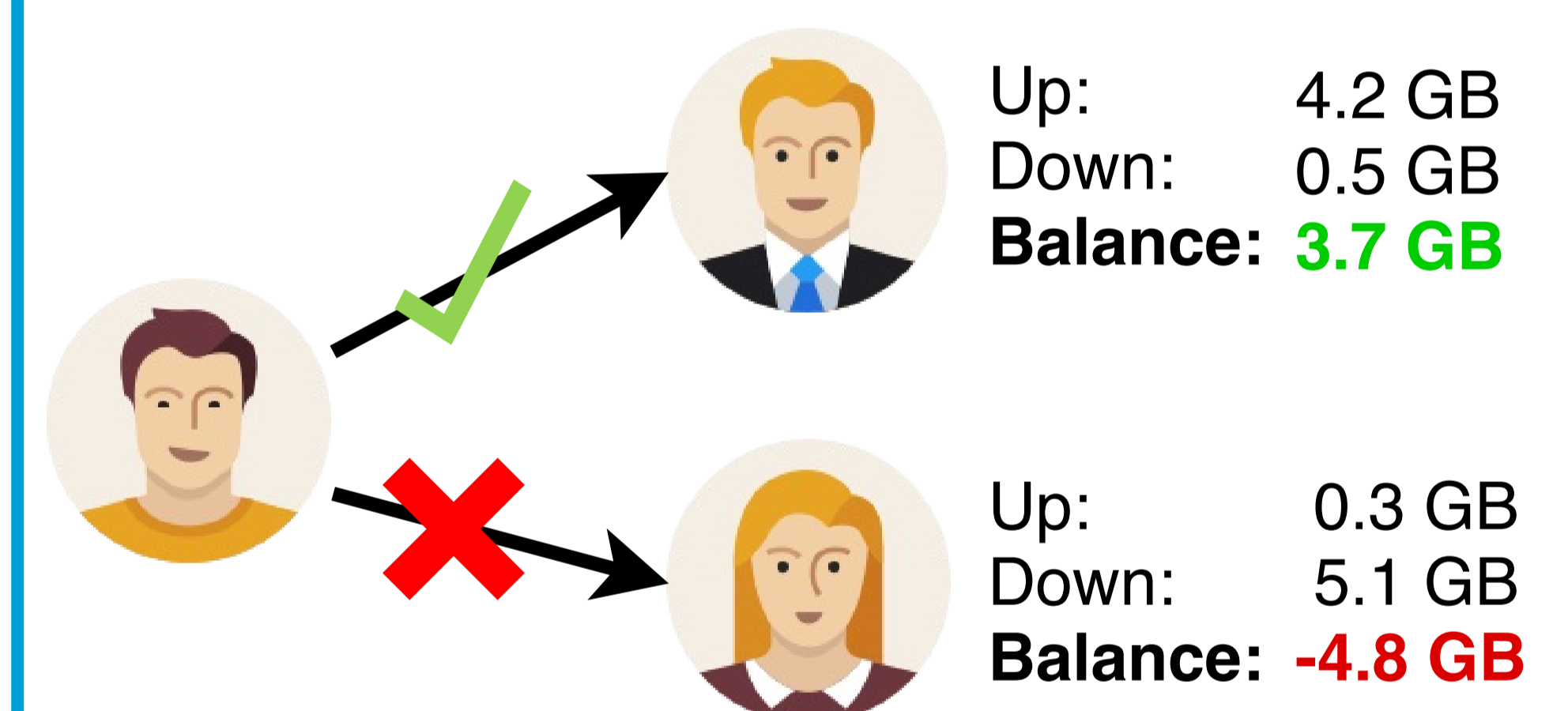
Earn and spend tokens by uploading and downloading content to/from others.

Trade Tokens



Trade tokens on our decentralized market for Bitcoin, Euros or Dollars.

Block Freeriders



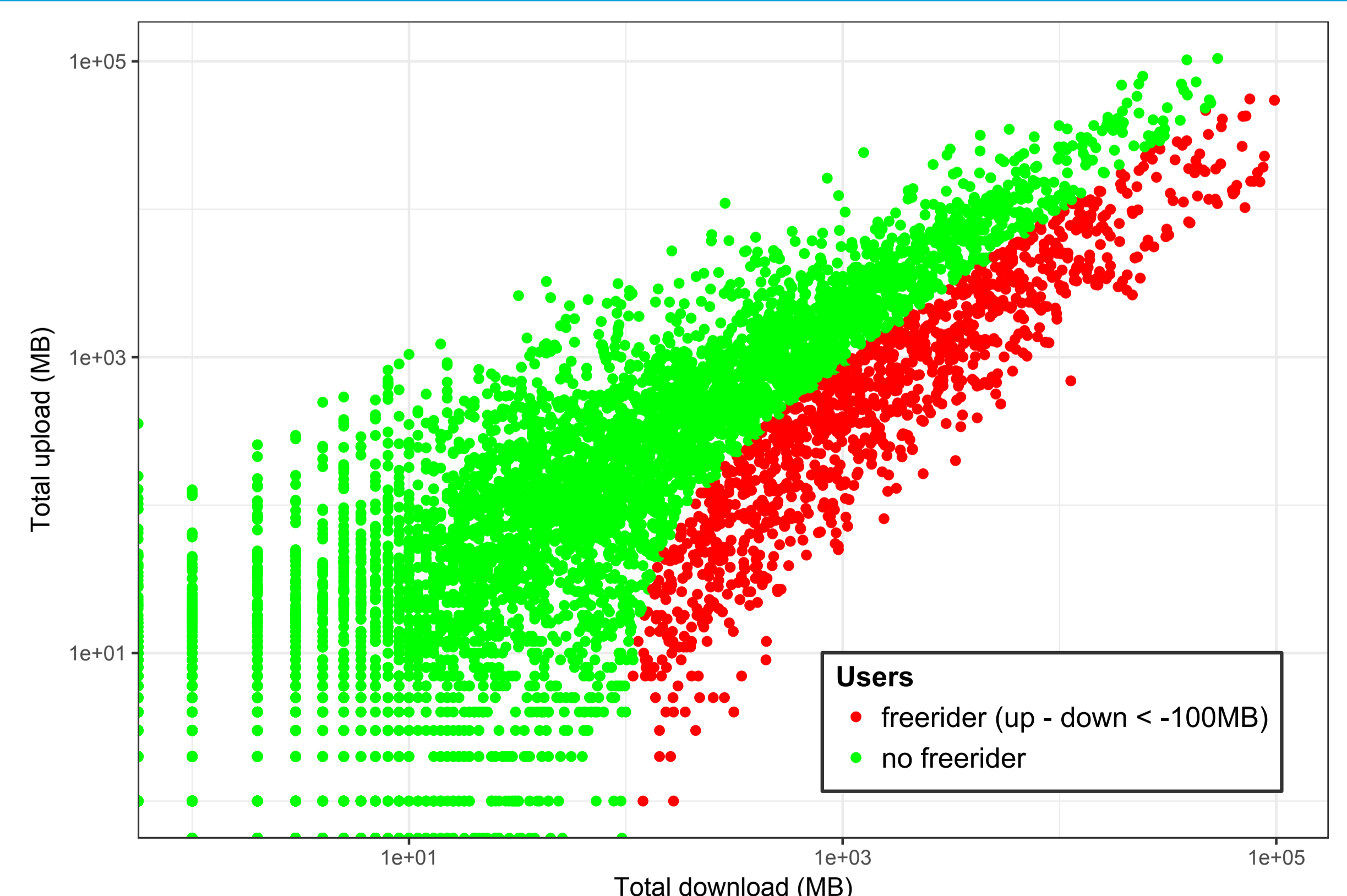
Users limit services to freeriding users.

Real-world Evaluation

- A large-scale evaluation in the wild.
- Integrated into our file-sharing client Tribler (over 1 million unique downloads).
- Crawl TrustChain records and analyze them.
- **Do TrustChain tokens address the freeriding problem?**



You can participate in our study! Scan the QR code to the left to download Tribler.



Preliminary results gathered from TrustChain, without freeride policy.