

POTENTIAL POLKADOT CHANGES overview

BLOCKSPACE

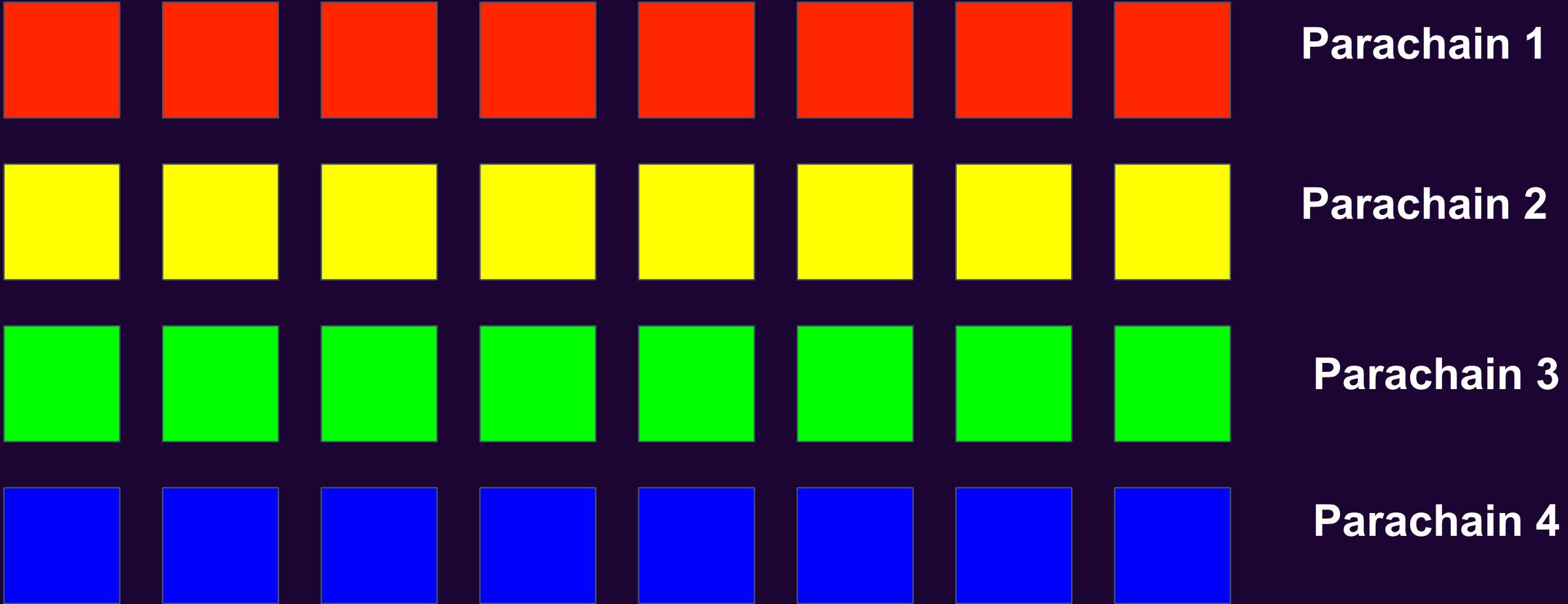


A NEW PERSPECTIVE

Blockspace and apps - not chains
Resilience and unstoppability

“The Polkadot relay chain is the foundation of the ubiquitous, multi-core supercomputer.”

CORES



DO THESE HAVE TO BE PARACHAINS?

Cores are agile - can also run contracts

Avoids the need for custom chain infrastructure

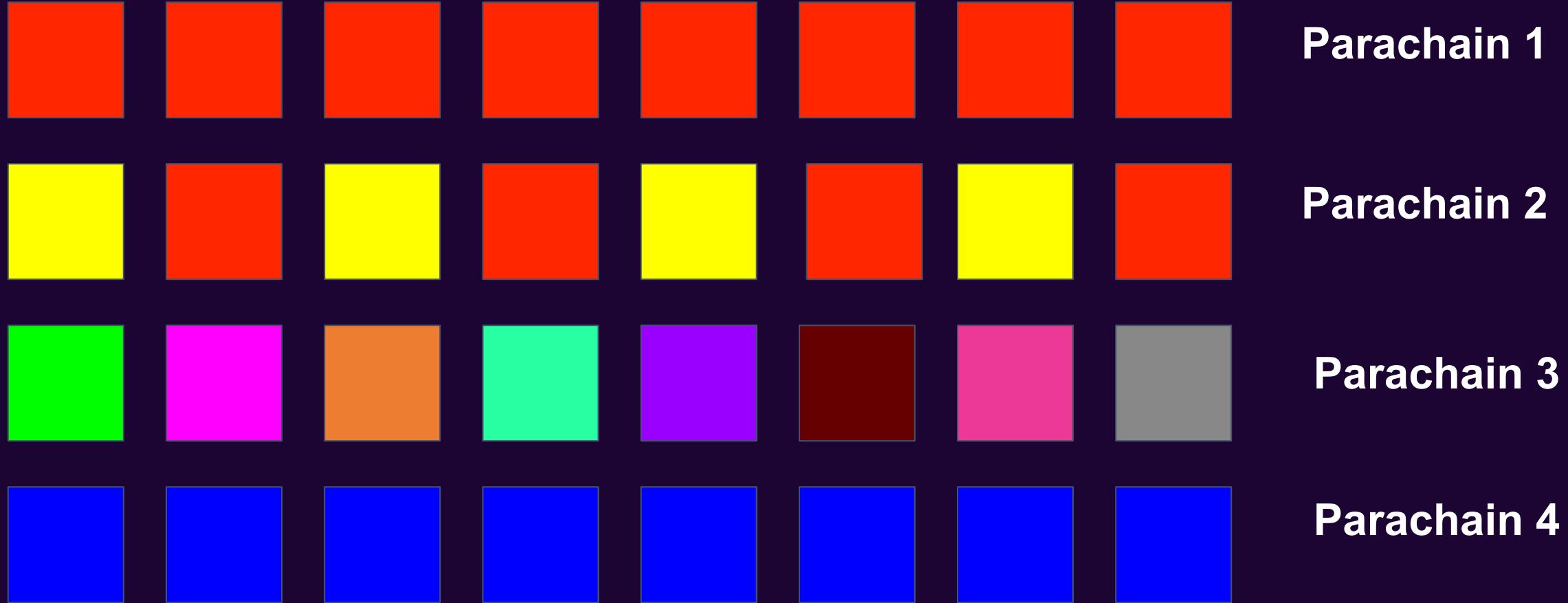
Much lower cost

core rental

No more traditional slot auctions

1. Bulk - Monthly sale of 4 weeks of “coretime”
 - a. Target certain % of available cores available for bulk
 - b. Price adapts based on deviation
 - c. Unrented cores go to instantaneous market
 - d. Considerations for pre-existing tenants
2. Instantaneous: Ongoing sale of coretime for immediate usage
 - a. Automated market maker targeting 100% usage
 - b. Bulk coretime can be sold in this market

ADVANCED SCHEDULING



ADVANCED SCHEDULING

Possible Future Directions

Chains share a core to share costs with no reduction in latency



WHAT DOES IT mean?

Scale transaction bandwidth up or down when necessary

Allows for multicore chains

Potential for periodic or on-demand (PAYG) chains

Allows for efficient low-latency chains

Long-term planning now possible

Tinkering and “trying things out” much easier

APP-CENTRIC EXPERIENCE

CURRENT

A chain-centric paradigm

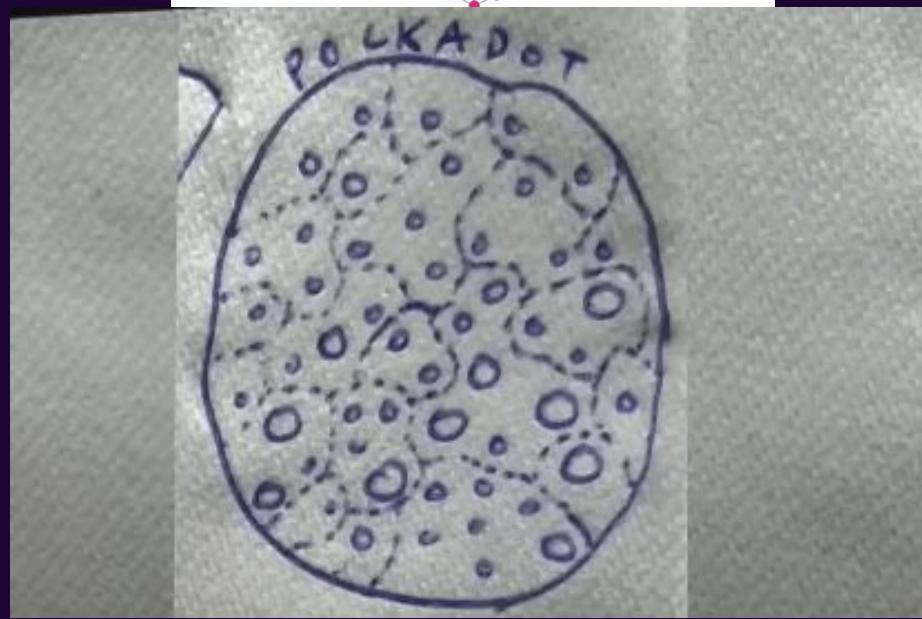
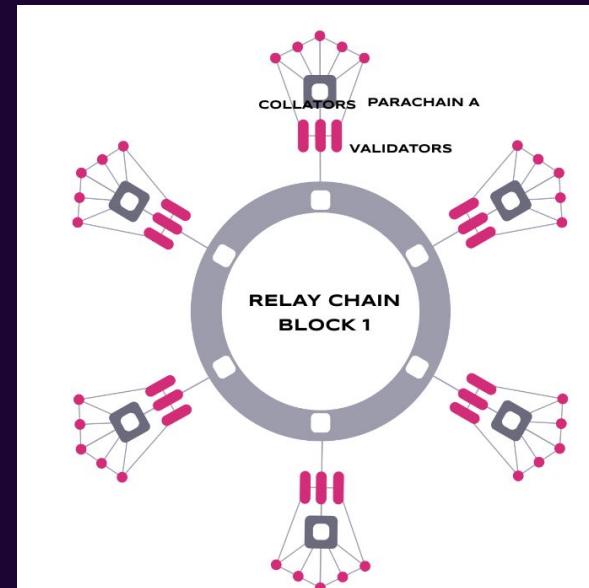
Technically, chains are connected, but UX is similar to
bridged sovereign chains

UX isolated to individual chains, not cross-chain applications

FUTURE

System chains host applications

System features/UX span multiple system chains



XCM and ACCORDS

XCM IN A NUTSHELL

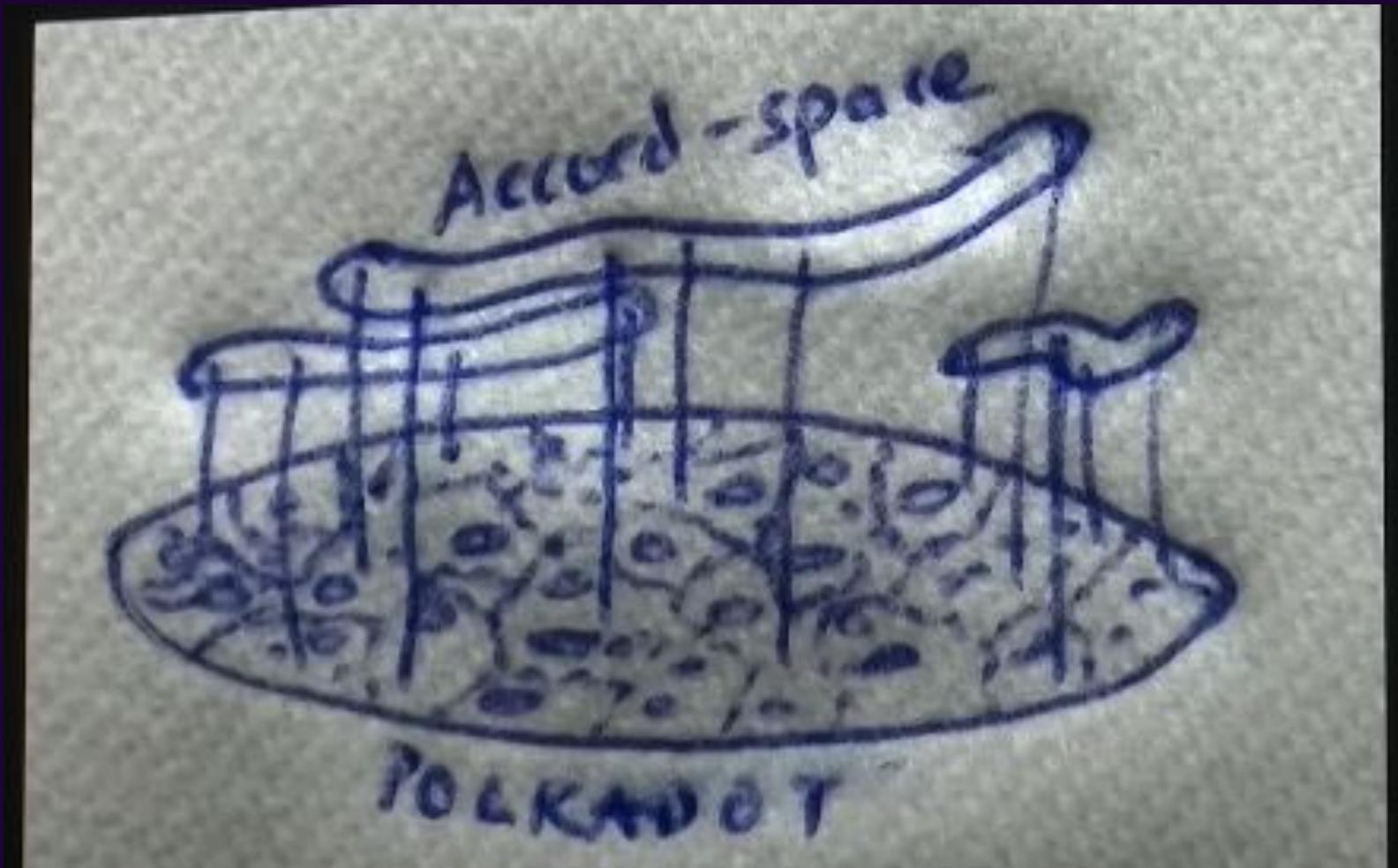
- XCM is a language that abstracts common functionality in chains (XCMP is the protocol that delivers messages)
- It explains what you want to do, not how to do it (for programmers - think Prolog or SQL, not Java or C++)
- “Good” chains interpret XCM correctly
- But how do you know you’re dealing with a good chain?

ACCORDS

- An “opt-in treaty” across 2 or more chains
 - Chains are held by Polkadot to have specific business logic
 - It cannot be changed by the chain itself
 - This ensures faithful execution of the XCM across chains
- SPREE is the technology that enables accords

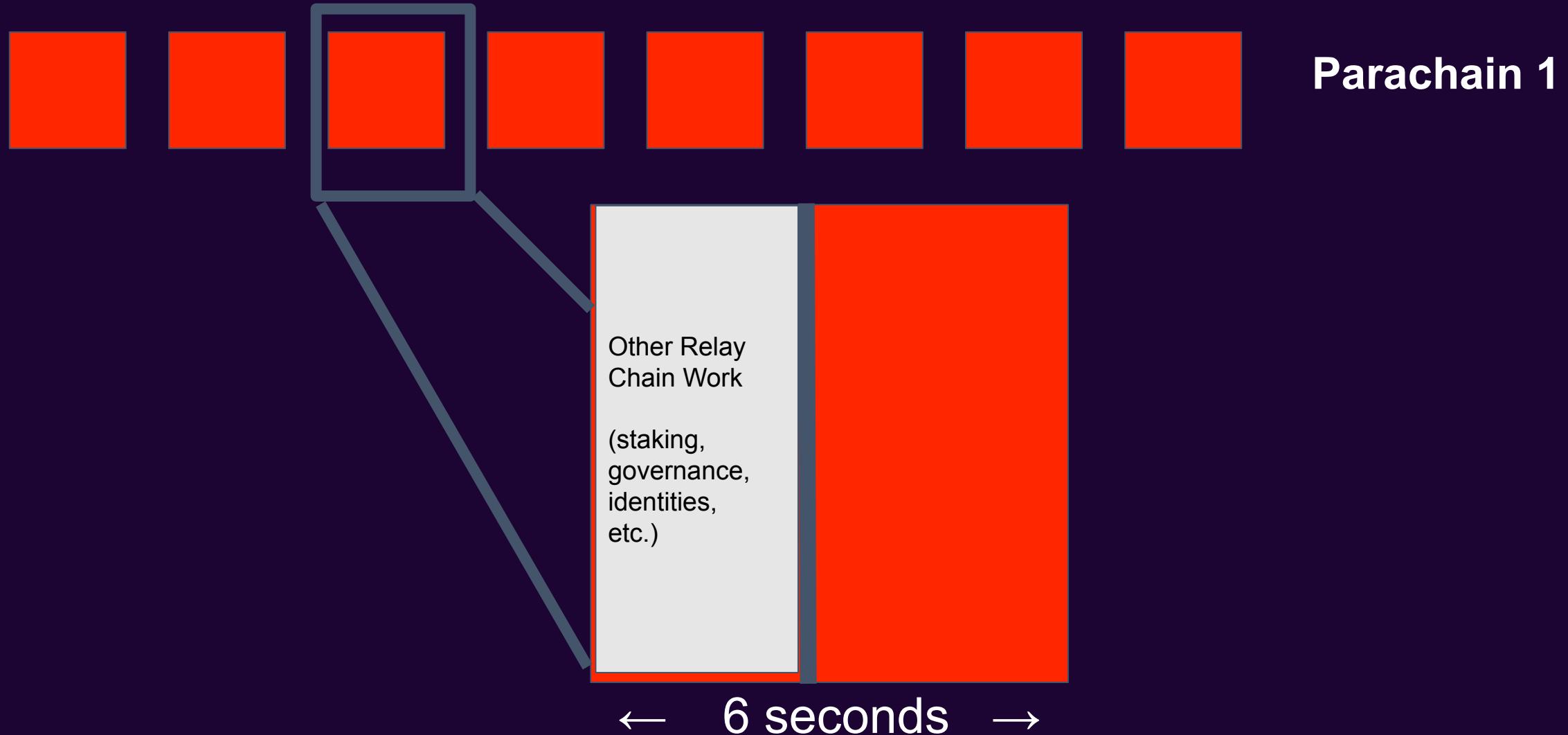


A new way of viewing POLKADOT

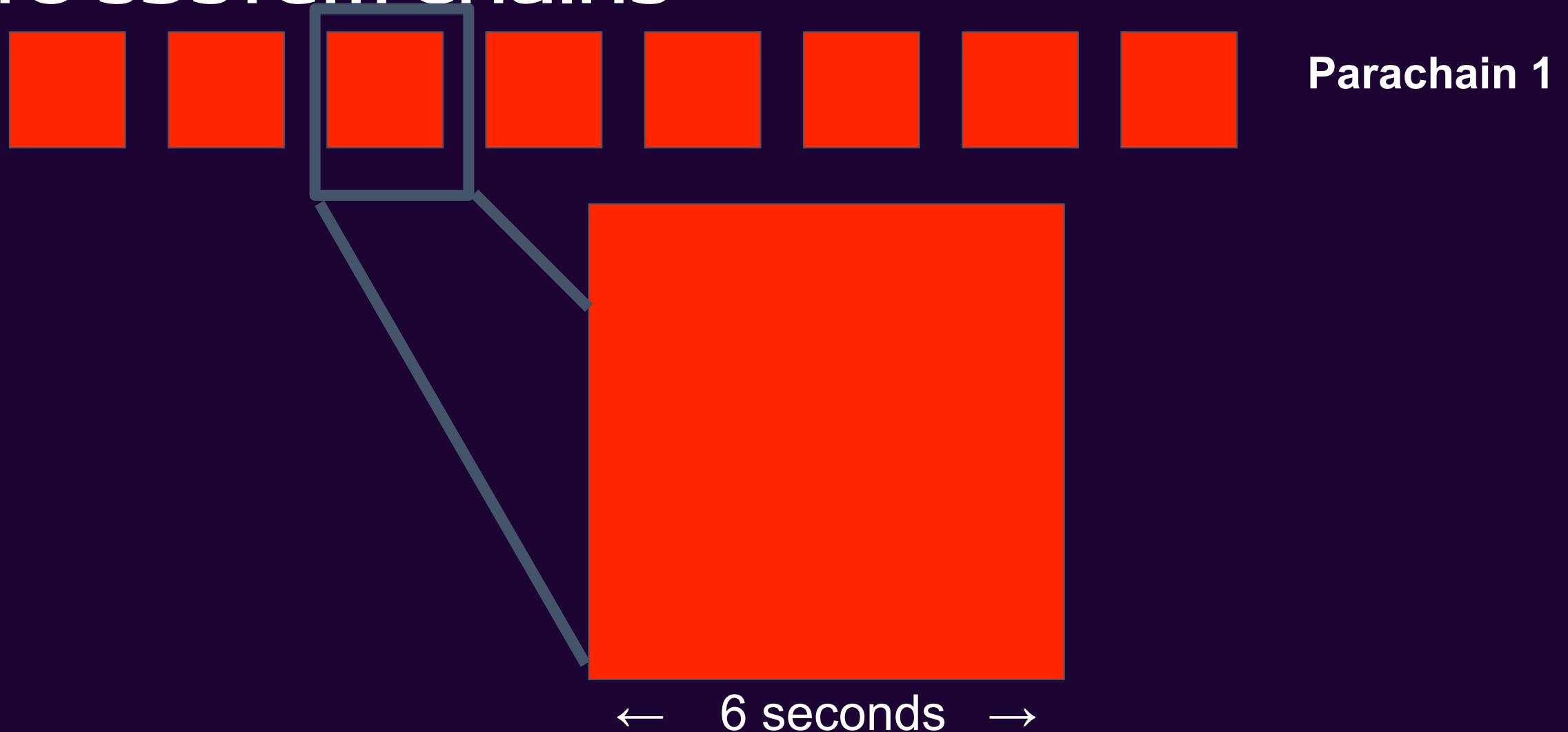


HERMIT RELAY CHAIN

CORES



MOVE USER-LEVEL FUNCTIONALITY TO SYSTEM CHAINS



WHY a HERMIT reLAY CHAIN?

Relay chain should be focused on validating state transition functions

The more time it spends on other things, the less time it has for cores to execute other code

MISCELLaneous

PROJECT CAPI

- App-centric middleware
- Allows Polkadot-based apps to easily span multiple chains
- Can connect to multiple chains simultaneously via multiple light client instances

SASSAFRAS

- Replacement for BABE
- Forkless consensus algorithm
- Improved parachain performance
- Potential MEV benefits - encrypted transactions prevent front-running
- Improved parachain performance



ZK PRIMITIVES

- Building a library high-performance ZK primitives
- First is almost done! Provides privacy for on-chain collectives like the Polkadot Technical Fellowship
- Made for specific use cases - zero-knowledge proofs are quite heavyweight

INTRANODE MIXNET

- Coming to Substrate soon!
- Shielded transport for short messages
- Avoids leaking IP addresses
- General messaging between users, chains, and off-chain workers

HUMAN DECENTRALIZATION

- Governance
- Spending, salaries, grants
- Collective expertise
- Oracles
- Administration

Bring more people into the system!

This increases resilience - this is not something that can be done by technology alone.