



**UTFPR**

## MODELO TRADICIONAL

Armazenamento distribuído desorganizado

**Distributed Databases**

## MODELO ANTAGÔNICO

Armazenamento em livro razão, assumindo presença de nós maliciosos

**Distributed "Ledgers"  
(DLTs)**

## DADOS ESTRUTURADOS E DIFUSOS

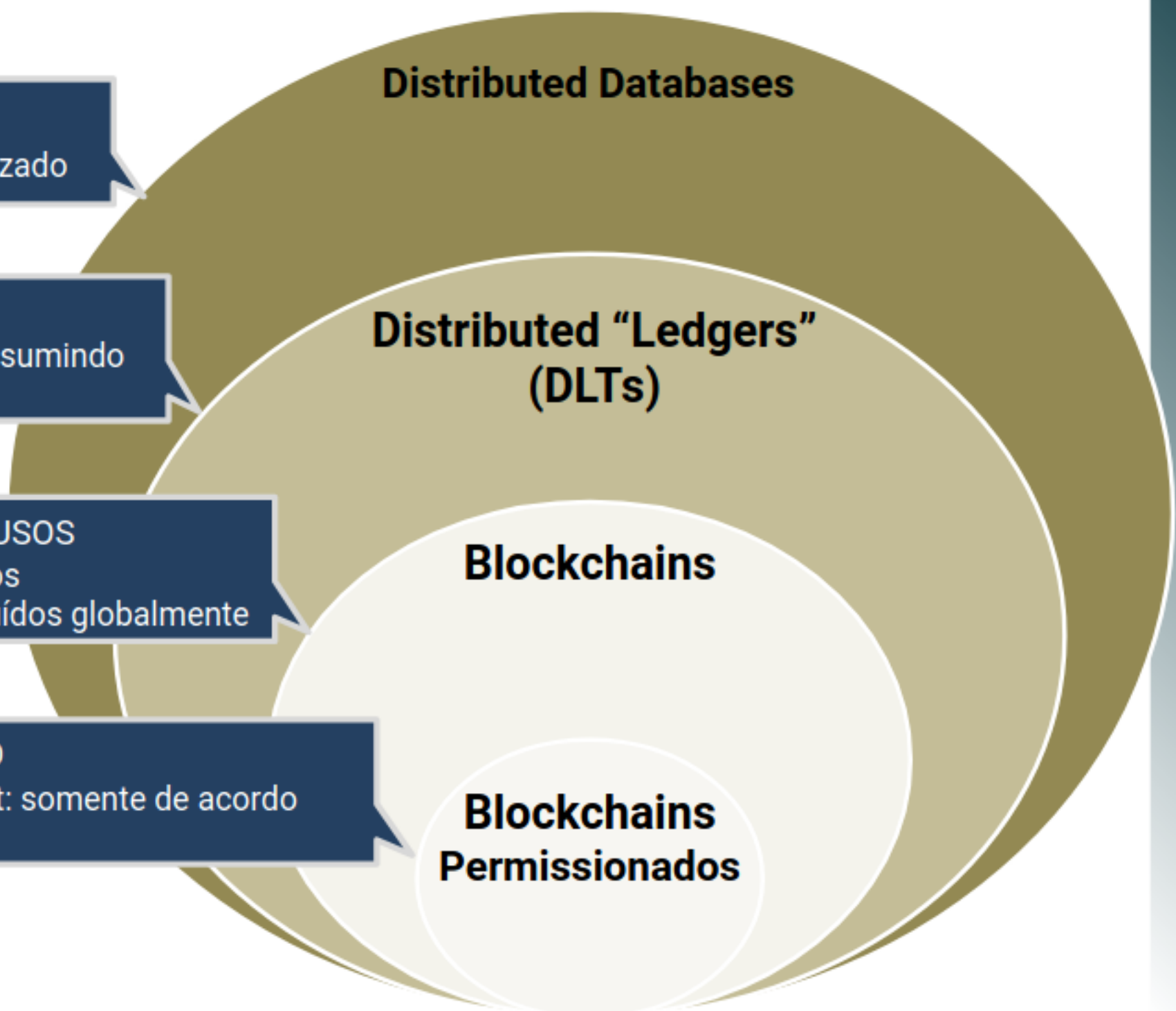
Cadeia de blocos interconectados  
criptograficamente, e/ou distribuídos globalmente







**Blockchains**

## MODELO PERMISSIONADO







Leitura e/ou Escrita/Commit: somente de acordo  
com a permissão definida

**Blockchains  
Permissionados**







 <p><b>HYPERLEDGER ARIES</b></p>	 <p><b>HYPERLEDGER BESU</b></p>	 <p><b>HYPERLEDGER FABRIC</b></p>	 <p><b>HYPERLEDGER INDY</b></p>	 <p><b>HYPERLEDGER IROHA</b></p>	 <p><b>HYPERLEDGER SAWTOOTH</b></p>
Hyperledger Aries Hyperledger	Hyperledger Besu Hyperledger	Hyperledger Fabric Hyperledger	Hyperledger Indy Hyperledger	Hyperledger Iroha Hyperledger	Hyperledger Sawtooth Hyperledger
★ 1,601	★ 1,114	★ 21,713	★ 1,677	★ 705	★ 1,760

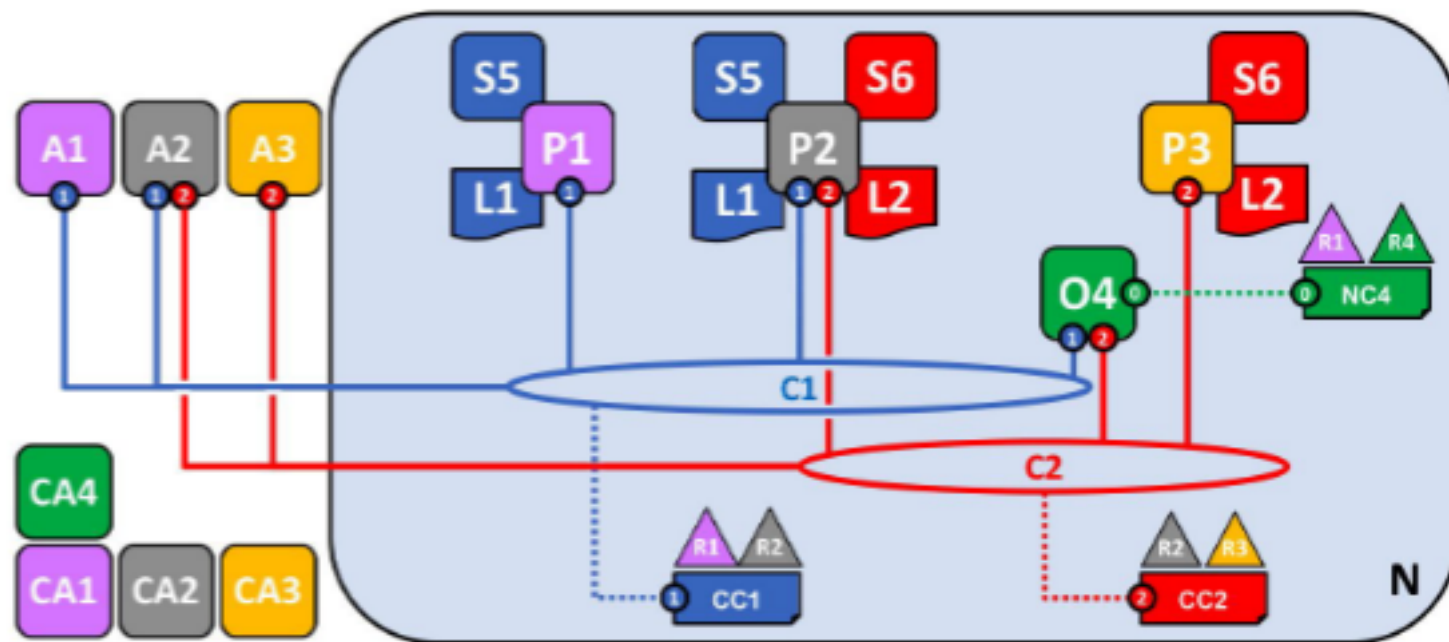
Incubating Hyperledger Projects (10)

 <p><b>HYPERLEDGER ANONCREDS</b></p>	 <p><b>HYPERLEDGER BEVEL</b></p>	 <p><b>HYPERLEDGER CACTI</b></p>	 <p><b>HYPERLEDGER CALIPER</b></p>	 <p><b>HYPERLEDGER CELLO</b></p>	 <p><b>HYPERLEDGER FIREFLY</b></p>
Hyperledger AnonCreds Hyperledger	Hyperledger Bevel Hyperledger	Hyperledger Cacti Hyperledger	Hyperledger Caliper Hyperledger	Hyperledger Cello Hyperledger	Hyperledger Firefly Hyperledger
★ 45	★ 294	★ 252	★ 638	★ 850	★ 553

 <p><b>HYPERLEDGER GRID</b></p>	 <p><b>HYPERLEDGER SOLANG</b></p>	 <p><b>HYPERLEDGER TRANSACTION</b></p>	 <p><b>HYPERLEDGER URSA</b></p>
Hyperledger Grid Hyperledger	Hyperledger Solang Hyperledger	Hyperledger Transact Hyperledger	Hyperledger Ursa Hyperledger
★ 245	★ 941	★ 78	★ 348

- R1..R4: Organizações 1 a 4
- CA1..C4: CAs das Orgs
- C1, C2: Channels 1, 2
- L1, L2: Ledgers 1, 2
- P1..P3: Peers das Orgs 1..3
- O4: Ordering Service
- S5, S6: Chaincodes
- A1..A3: Clientes



Peer



MSPs



Ledger



Chaincodes(endorsing)



State:  
CouchDb  
ou  
LevelDb

