PoA

a consensus model with reputation at stake

Adrià Massanet
@codecontext

who + how

sybil control consensus

who

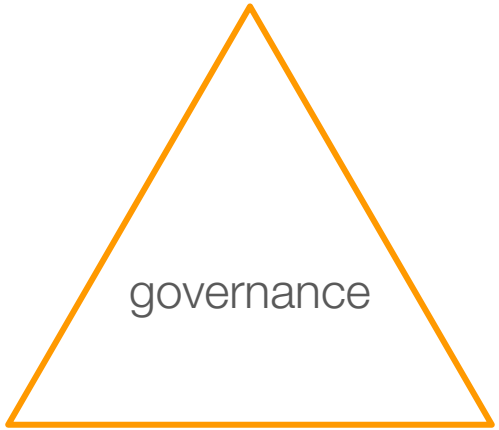
who

Proof of Work

Proof of Stake

Proof of Authority

who



Proof of Authority

who

governance

Proof of Authority

who

Validators: Creating a Trusted Network

The first POA validators were selected at network inception. These trusted individuals met the following validator qualifications:

- United States resident over 18
- Notary public with a valid, verifiable license
- Participation in the test network
- Technical ability to run a node
- Forum participation and public biography

who

Validator Information

Validator Address: 0x6e349be21acb0db3b2092fd4e3b738202842697e

Full Name:	Marat Pekker
Street Address:	2960 Withrow Pl
City:	Santa Clara
State:	CA
Zip Code:	95051
License:	2235772
Expiration:	2022-03-25
Validator Creation:	2018-03-29

Blocks Validated

Block	Time	Transactions	Reward
3134054	40 seconds	0	Coming soo
3134037	2 minutes	0	Coming soo
3134020	3 minutes	0	Coming soo
3134003	4 minutes	0	Coming soo
3133986	6 minutes	0	Coming soo
3133969	7 minutes	0	Coming soo
3133952	9 minutes	0	Coming soo
3133935	10 minutes	0	Coming soo
3133918	12 minutes	0	Coming soo
3133901	13 minutes	0	Coming soo
3133884	14 minutes	0	Coming soo
3133867	16 minutes	0	Coming soo
3133850	17 minutes	0	Coming soo
3133833	19 minutes	0	Coming soo

how

1240 PROCEEDINGS OF THE IEEE, VOL. 66, NO. 10, OCTOBER 1978

SIFT: Design and Analysis of a Fault-Tolerant Computer for Aircraft Control

JOHN H. WENSLEY, LESLIE LAMPORT, JACK GOLDBERG, SENIOR MEMBER, IEEE,
MILTON W. GREEN, KARL N. LEVITT, P. M. MELLIAR-SMITH, ROBERT E. SHOSTAK,
AND CHARLES B. WEINSTOCK

Byzantine General's Problem

making "a reliable distributed system from their unreliable parts"

how

Impossibility of Distributed Consensus with One Faulty Process

MICHAEL J. FISCHER

Yale University, New Haven, Connecticut

NANCY A. LYNCH

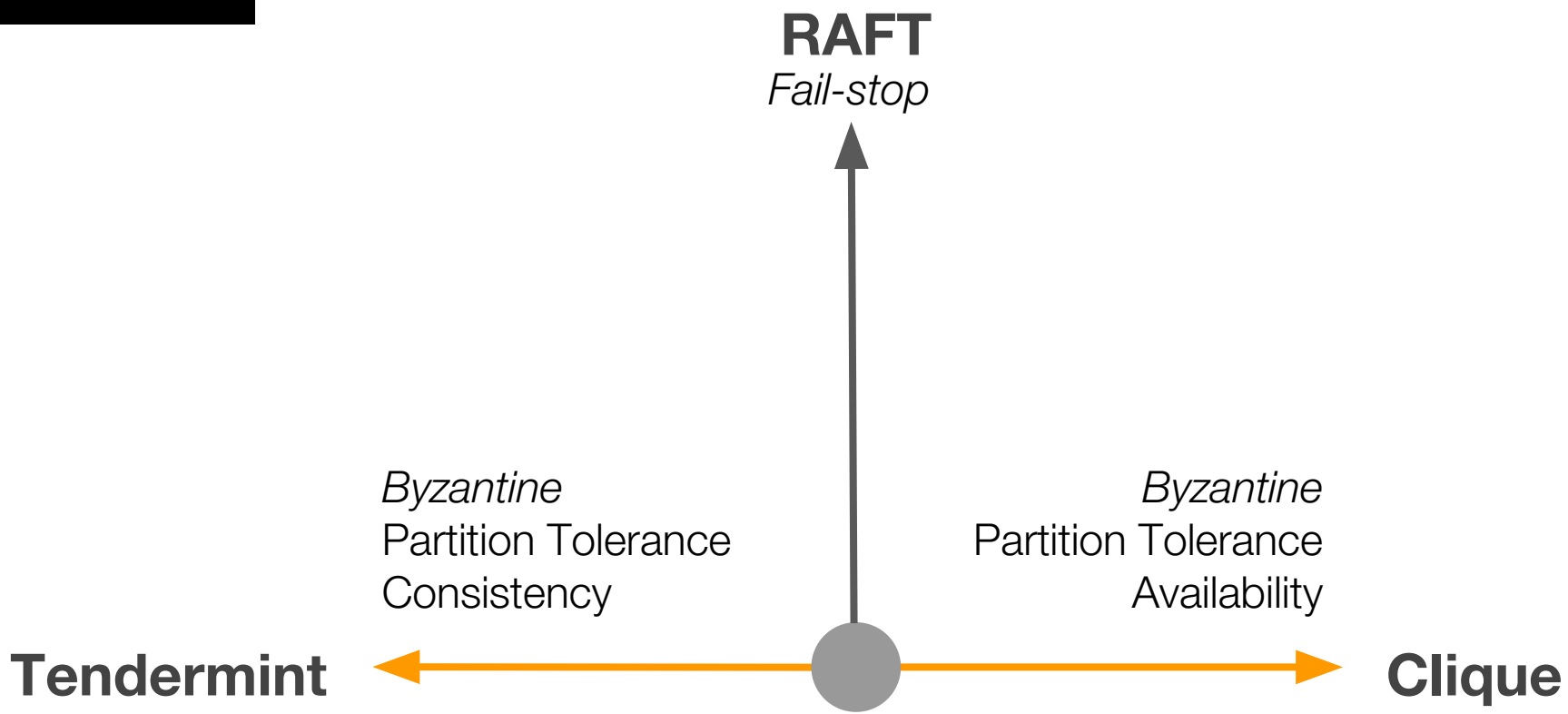
Massachusetts Institute of Technology, Cambridge, Massachusetts

AND

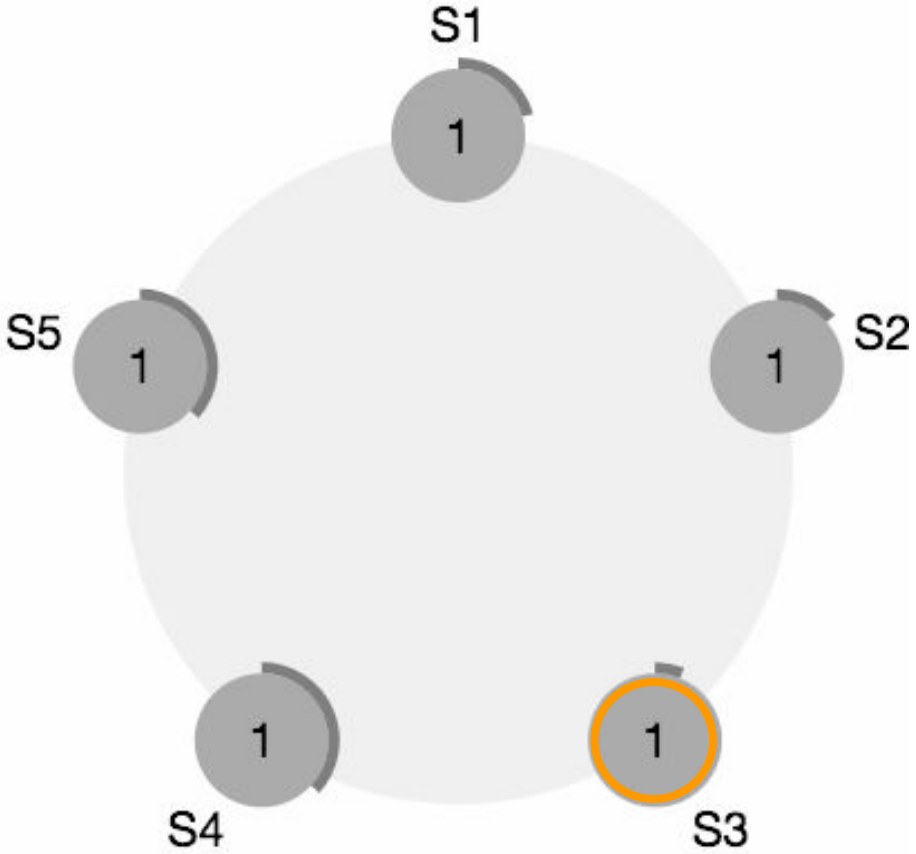
MICHAEL S. PATERSON

University of Warwick, Coventry, England

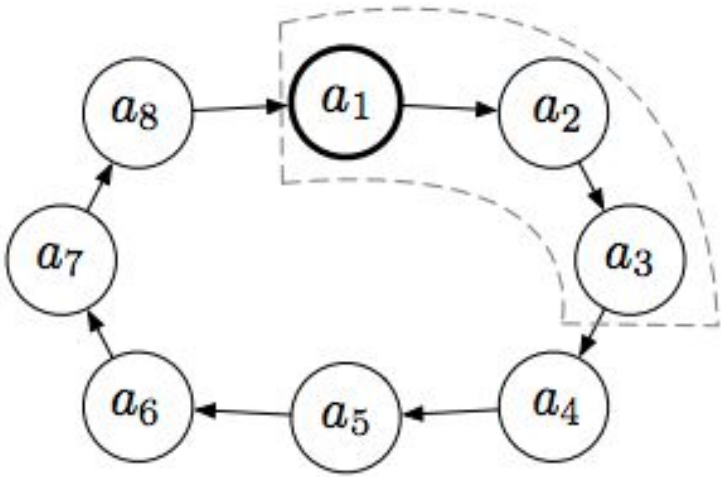
how


RAFT
Fail-stop
Byzantine
Partition Tolerance
Consistency
Byzantine
Partition Tolerance
Availability
Tendermint
Clique

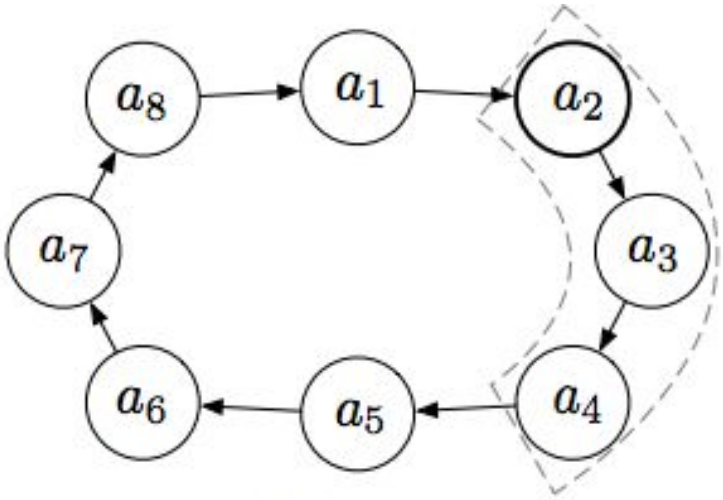
how



how

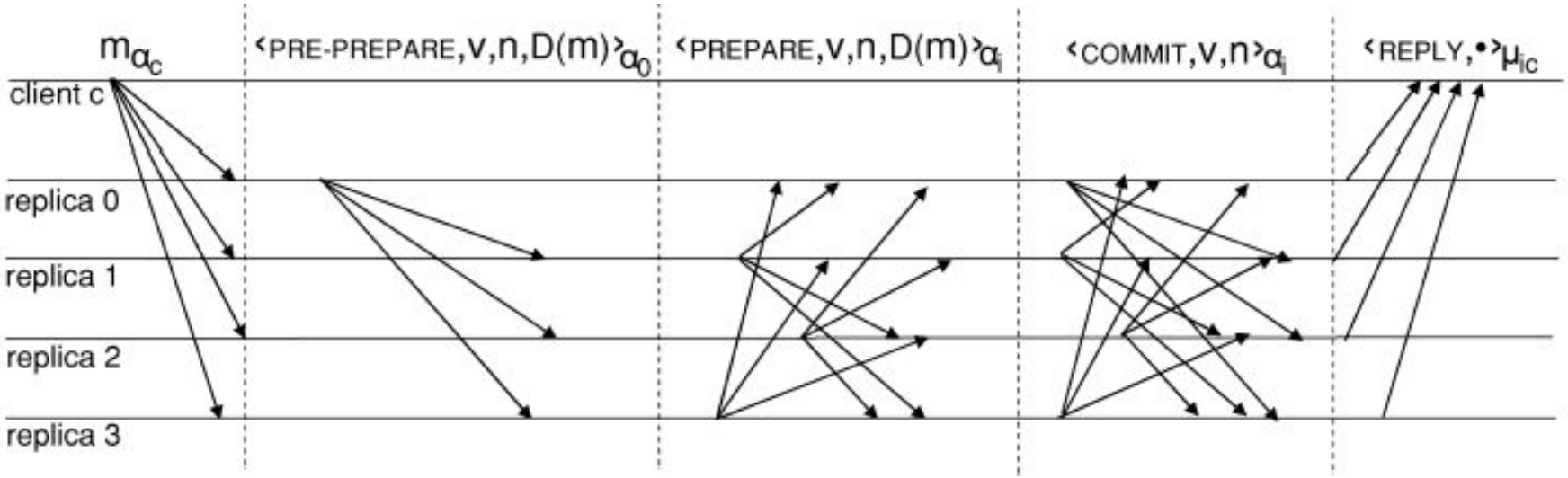


(a) Time t1



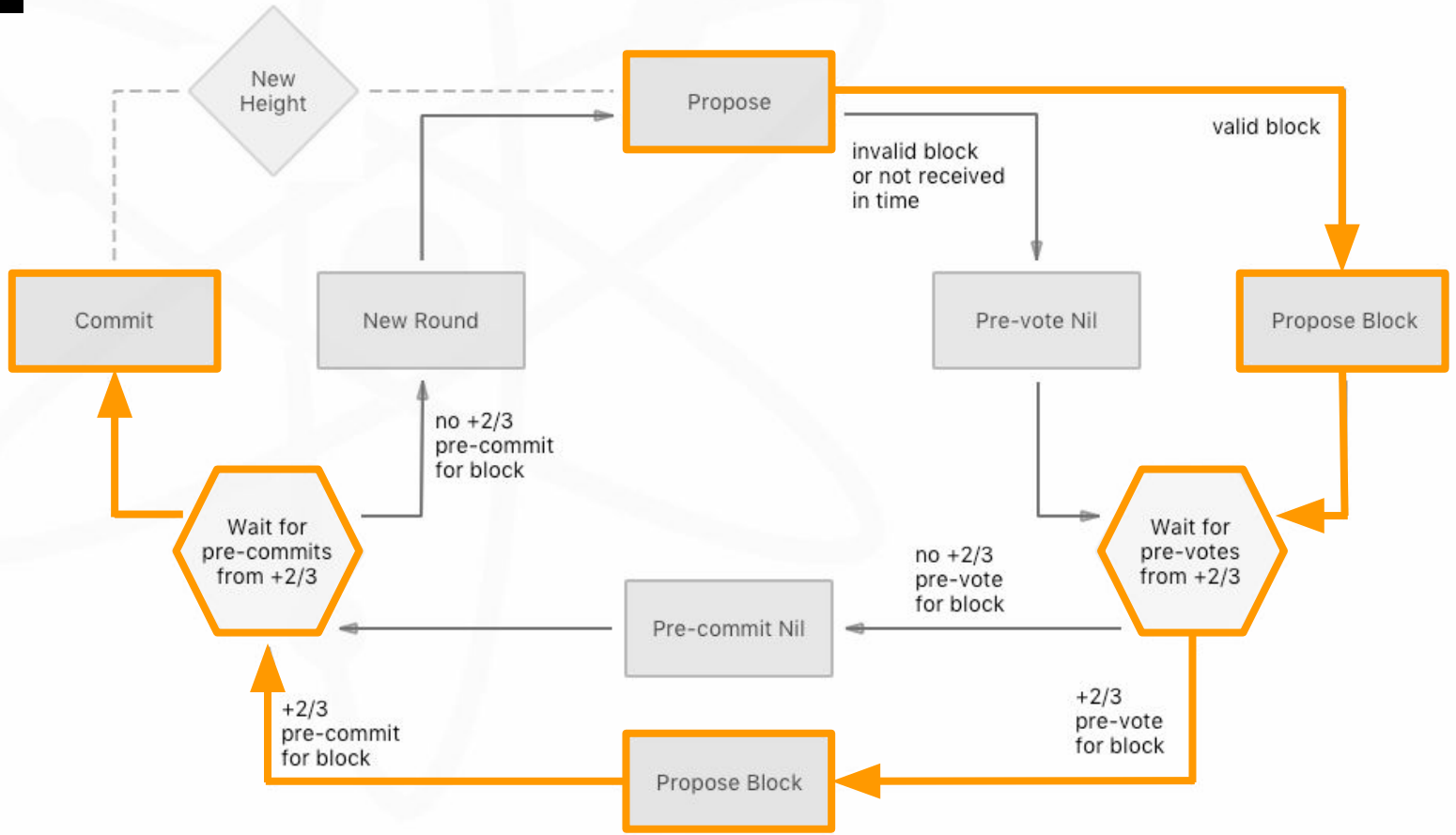
(b) Time t2

how

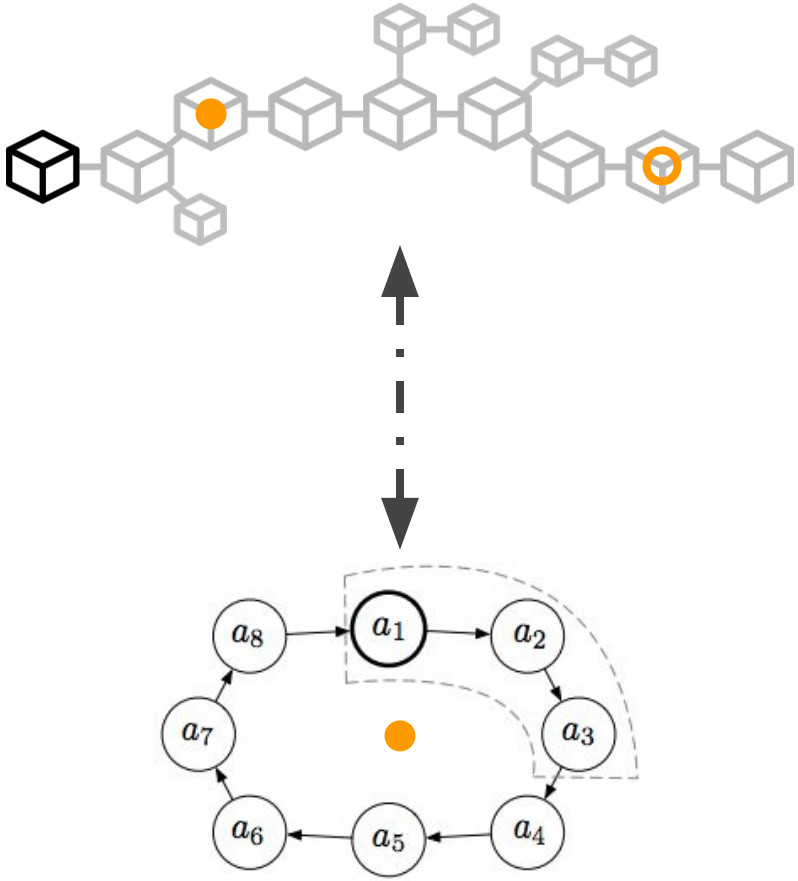


M. Castro and B. Liskov. Practical Byzantine Fault Tolerance and Proactive Recovery

how


New Height
Propose
valid block
invalid block or not received in time
Commit
New Round
Pre-vote Nil
Propose Block
no +2/3 pre-commit for block
Wait for pre-commits from +2/3
Wait for pre-votes from +2/3
no +2/3 pre-vote for block
Pre-commit Nil
+2/3 pre-vote for block
+2/3 pre-commit for block
Propose Block

val



adv

higher tx speed

precompiles

non-sticky

fixed tx cost (now)

?