$\langle$ Send | q, m $\rangle$ send m to q

$\langle$ Deliver | p, m $\rangle$ delivers m from p

FAIL STOP = You can detect failures

⇓

FAIL NOISY = You can make mistakes

⇓

FAIL SILENT = You can't detect failures

STRONGER ↑

QUORUM = n processes → $|P| = n$, a quorum is a subset of P of size $\geq n/2 + 1$

BROADCAST

BEST EFFORT BROADCAST (BEB)

(REGULAR) RELIABLE BROADCAST (RB)

FD P

LAZY RB
(FAIL STOP / SYNCH)

EAGER RB
(FAILSILENT / ASYNCH)

UNIFORM RELIABLE BROADCAST (URB)

ALL-ACK URB
(FAIL STOP / SYNCH)

QUORUM

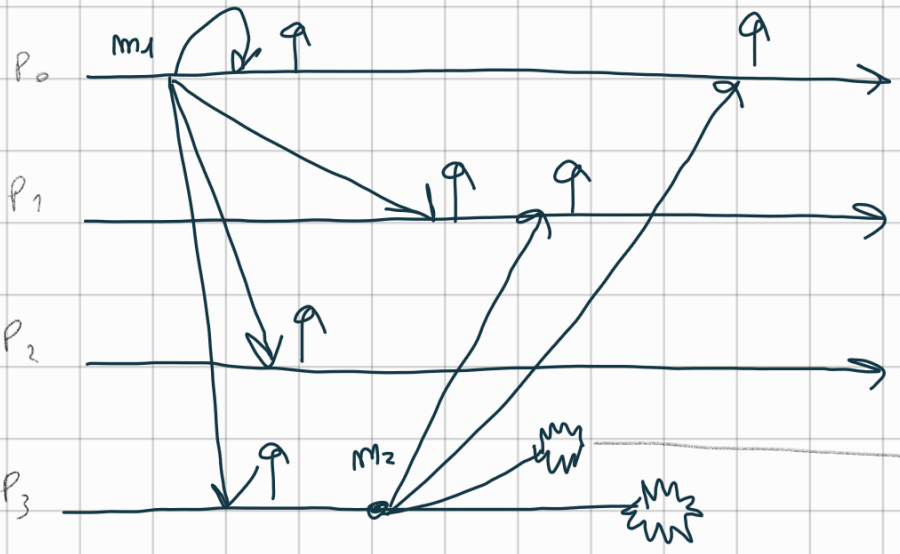
MAJORITY ACK URB
(FAILSILENT / ASYNCH)

PROBABILISTIC BROADCAST (PB)

EAGER PB

MAIN BROADCAST IDEA

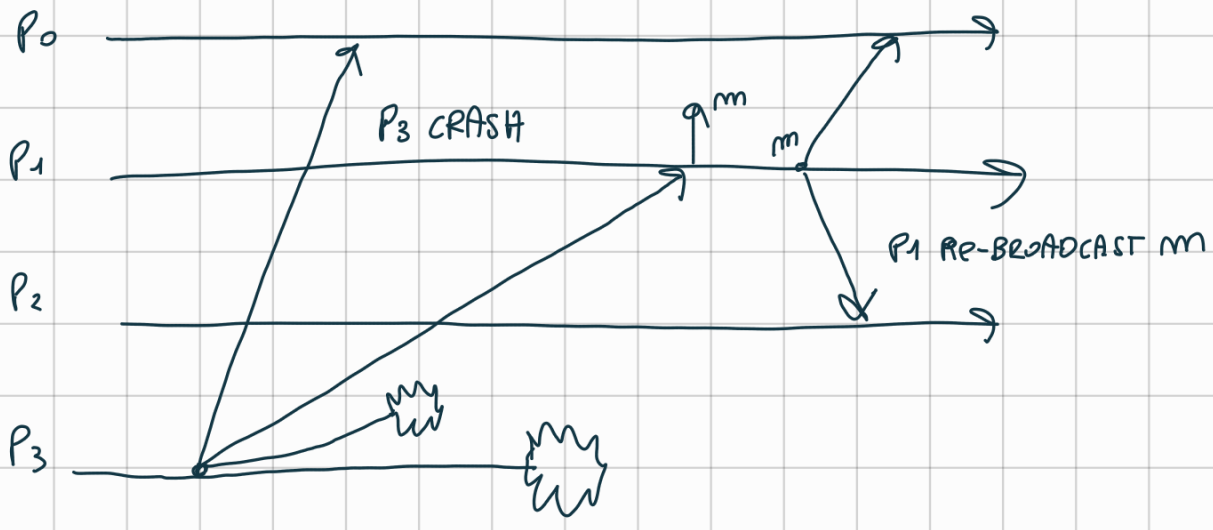
BEST EFFORT BROADCAST (BEB): In Asynchronous system, if a process want to broadcast, it send a message to all the processes. The delivery of messages is ensured as long as the sender does not fail.



se un processo corretto broadcasta, prima o poi tutti i corretti delivereno, se broadcasta un faulty non importa

if P_3 crash before to send the message P_2 will nevere receive it.

(REGULAR) RELIABLE BROADCAST (RB): When i receive a message m from a process, if the process is NOT-CORRECT I RE-BROADCAST the message. When a process crash, all the messages of that process are BROADCASTED.



ALL-CORRECT PROCESS must deliver or nothing

↓

(at least)

UNIFORM RELIABLE BROADCAST (URB): Also the messages delivered by the FAULTY processes, are eventually delivered by every correct process.

set of messages delivered by a CORRECT PROCESS ⊃ set of messages of the ones delivered by a FAULTY PROCESS

ORDERED COMMUNICATIONS

FIFO RELIABLE BROADCAST (FRB): The order is just within the single sender, not among different senders.
FIFO allows to ORDER the messages from the SAME SOURCE.