- Read all incoming messages (delivered by A). If any incoming message $chain'$ is a valid sequence of blocks that is longer than its local state $chain$, replace $chain$ by $chain'$. (Note that checking the validity of $chain'$ can be done using only $\mathsf{H.ver}$ queries)

- Read local message m (from Z). Pick a random nonce $n \in \{0,1\}^\kappa$ and issue query $h = \mathsf{H}(h_{-1}, \eta, \mathsf{m})$ where h_{-1} is the 4'th element in the last block in $chain$. If $h < D_p$, then Π adds the *newly mined* block (h_{-1}, η, b, h) to $chain$ and broadcasts the updated $chain$.