Theorem 1 (Accountable safety). The finalized chain $chFin_i$ is accountably safe, *i.e.*, two conflicting finalized blocks imply that at least n/3 adversarial validators can be detected to have violated either [slashing condition] $E1$ or $E2$.

$AccountableSafety \triangleq$
    LET $finalized\_checkpoints \triangleq get\_finalized\_checkpoints(single\_node\_state)$
        $finalized\_blocks \triangleq \{$
            $get\_block\_from\_hash(checkpoint.block\_hash, single\_node\_state) :$
                $checkpoint \in finalized\_checkpoints$
        $\}$
        $there\_are\_conflicting\_finalized\_blocks \triangleq$
            $\exists\, block1,\, block2 \in finalized\_blocks :$
                $are\_conflicting(block1, block2, single\_node\_state)$
        $slashable\_nodes \triangleq get\_slashable\_nodes(single\_node\_state.view\_votes)$
    IN $there\_are\_conflicting\_finalized\_blocks \Rightarrow$
        $(Cardinality(slashable\_nodes) * 3 \geq Cardinality(Nodes))$