each other to validate a block and add it to the blockchain. They do this by churning out enough random guesses on their computer to solve the cryptographic puzzle. Miners have a financial incentive to process as many transactions as quickly as possible. Once the first miner has found the solution, it provides the other nodes with the solution. The solution is then verified and consensus is reached. The miner who validates the new block is rewarded with Bitcoins. The level of difficulty of the mathematical problem increases as blocks are mined to ensure that only one block can be mined every 10 minutes (Kravisz, 2013).

Proof of Stake (PoS – Nxt)

PoS algorithms are meant to overcome the disadvantage of PoW in terms of energy consumption. PoS replaces the mining operation with rewards in proportion to the amount of the validators' "stake" in the network (ownership or assets of cryptocurrency in the network). This arguably enhances network security. PoS is best used by organizations that have limited computing power.

Proof of Elapsed Time (PoET – Hyperledger Sawtooth)

Used by Hyperledger Sawtooth, PoET uses a random leader election model, or lottery-based election, with the protocol randomly selecting the next leader to finalize the block.

Practical Byzantine Fault Tolerance algorithm (PBFT – Hyperledger Iroha)*

Hyperledger Iroha, developed by the Linux Foundation, uses PBFT. In a PBFT system, each node distributes a public key, and messages are signed by each node. When enough identical responses have been achieved, the transaction is deemed valid. After PBFT, several Byzantine Fault Tolerance protocols were developed to improve robustness and performance.

Federated Byzantine Agreement (Ripple and Stellar)

Ripple and Stellar use a federated voting process that is a variant of the Byzantine Fault Tolerance consensus model.