

Appendix – AOM Goal Model

The agent-oriented goal model for BlockVoke follows the notation given in Figure 1.






Symbol	Meaning
	Goal
	Quality goal
	Role
	Relationship between goals
	Relationship between goals and quality goals

Fig. 1: Goal model notation [1]

The goal hierarchy is divided into multiple figures for readability. For this reason, the goals with additional hierarchy in another figure is denoted with a grey background. Figures 2, 3, 5, 4, 6, 7 show the complete agent-oriented goal model for BlockVoke.

References

1. Sterling, L., Taveter, K.: The Art of Agent-Oriented Modeling. MIT Press (2009)

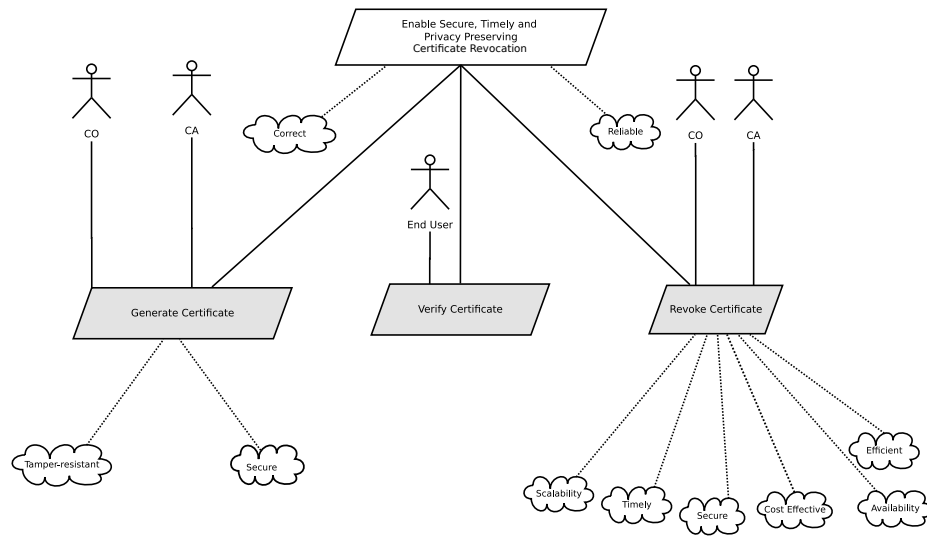


Fig. 2: Top-level AOM goal model for BlockVoke

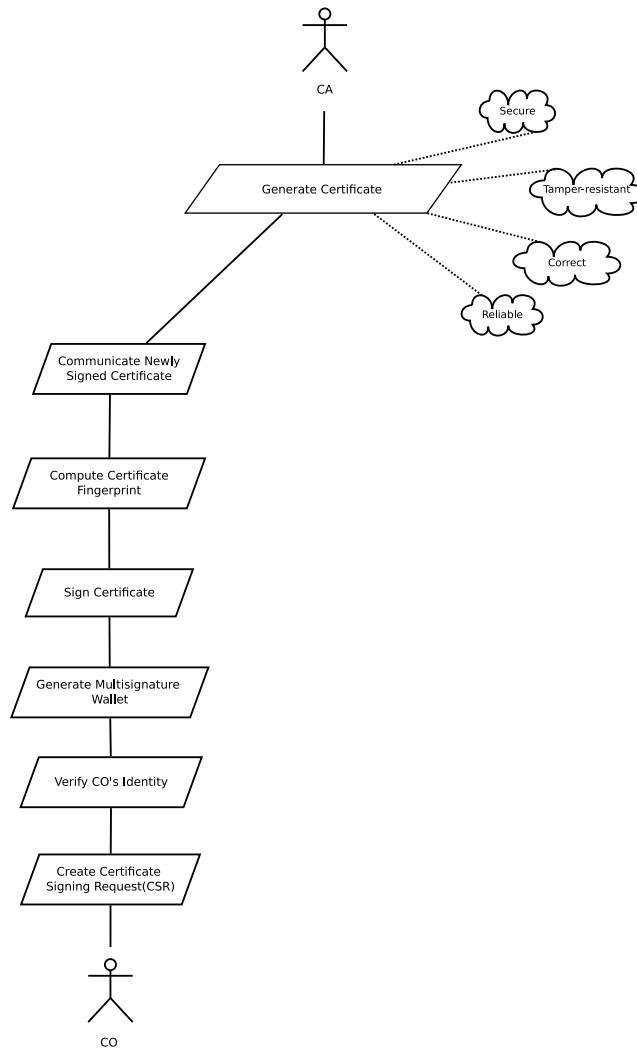


Fig. 3: Goal model for 'Generate Certificate'

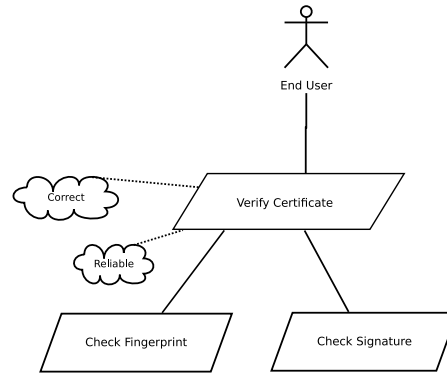


Fig. 4: Goal model for 'Verify Certificate'

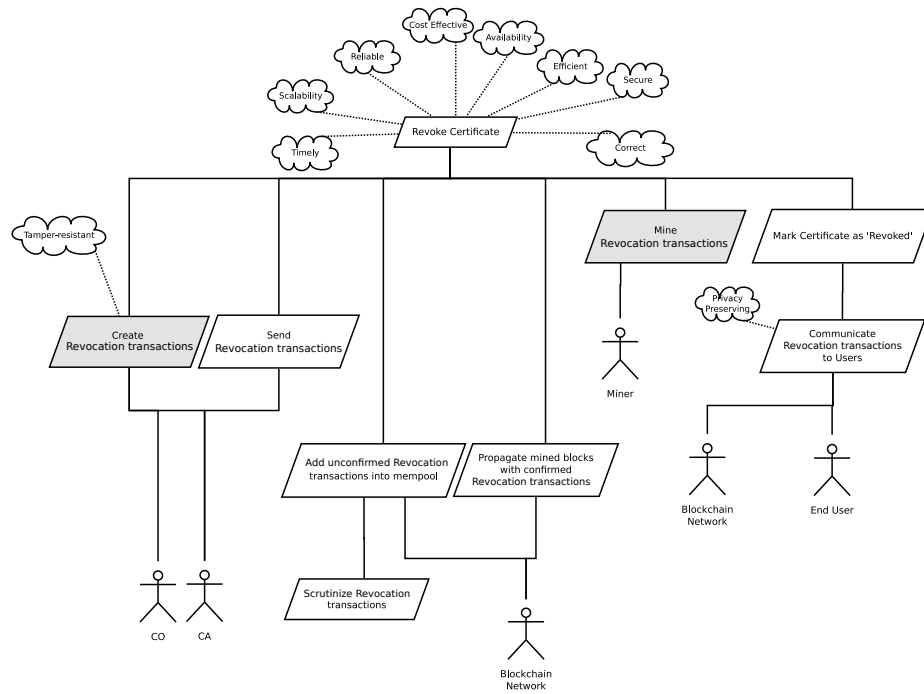


Fig. 5: Goal model for 'Revoke Certificate'

```
graph TD; A[Mine Revocation Transactions] --> B((Miner)); B --> C[Create new block with revocation transactions]; C -.-> D((Tamper-resistant)); C --> E[Find nonce]; E --> F[Select revocation transactions from mempool];
```

The flowchart illustrates the Bitcoin mining process. It begins with a parallelogram labeled "Mine Revocation Transactions". A vertical line descends from this box to a stick figure labeled "Miner". From the "Miner", a vertical line continues down to another parallelogram labeled "Create new block with revocation transactions". A dotted line branches off to the left from the line between the "Miner" and the "Create new block" box, pointing to a cloud shape labeled "Tamper-resistant". From the "Create new block" box, a vertical line leads down to a parallelogram labeled "Find nonce". Finally, a vertical line leads from "Find nonce" down to the bottom-most parallelogram, labeled "Select revocation transactions from mempool".

Fig. 7: Goal model for ‘Mine Revocation Transactions’