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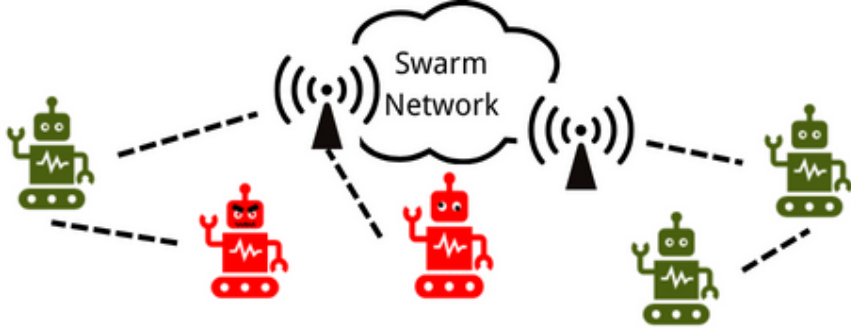
Standards-based Remote Attestation for Internet-of-Things Swarms

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How to ensure that **ONLY** robots with *verified and trustworthy* software and hardware configurations are allowed to join the swarm?

Assumption

Individuals in the swarm are attested through a **central node** before allowing them to join the swarm.

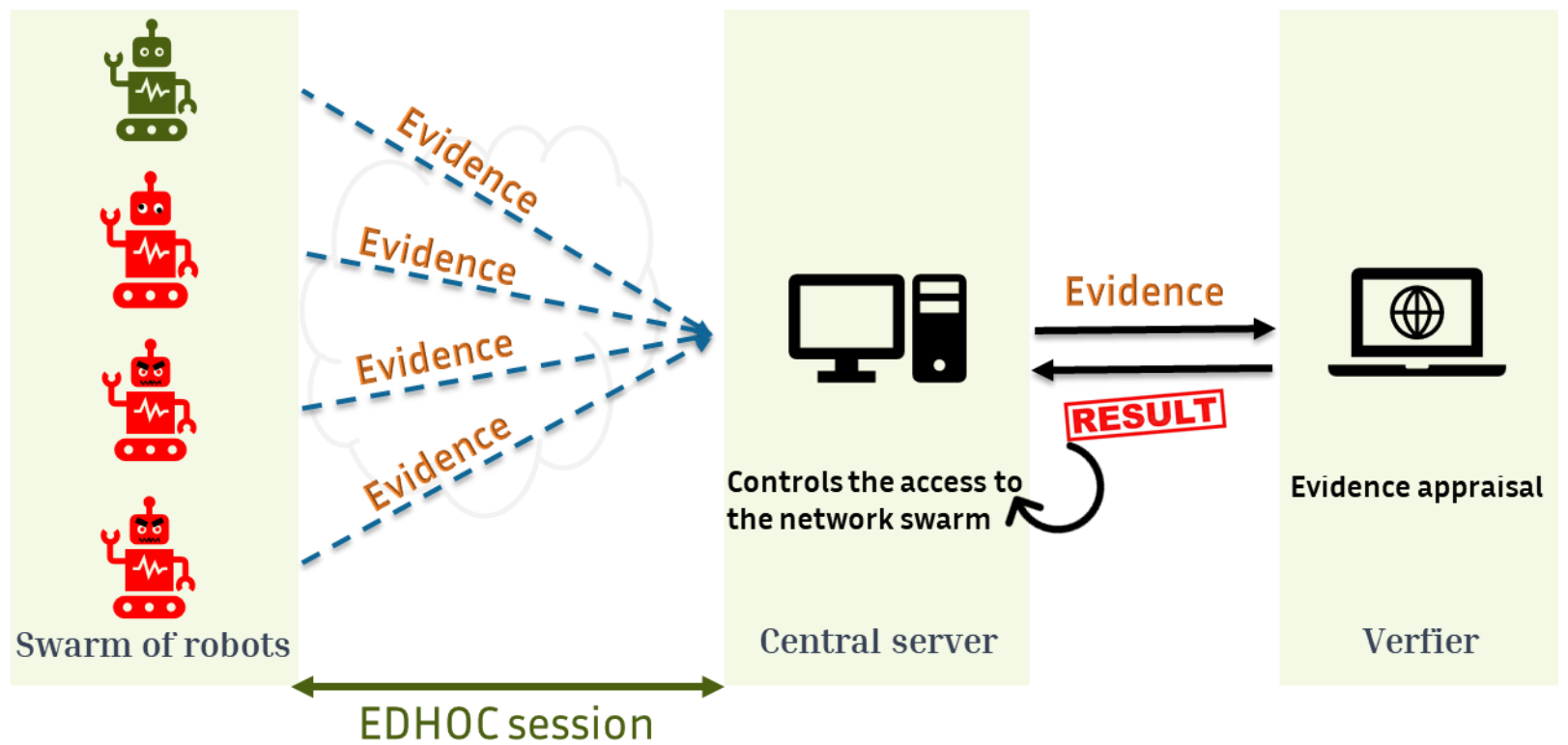


Background: Remote attestation

Remote attestation [1] is a **security process** that can help the swarm central server establish a level of trust in the robot before allowing the robot to join the swarm.

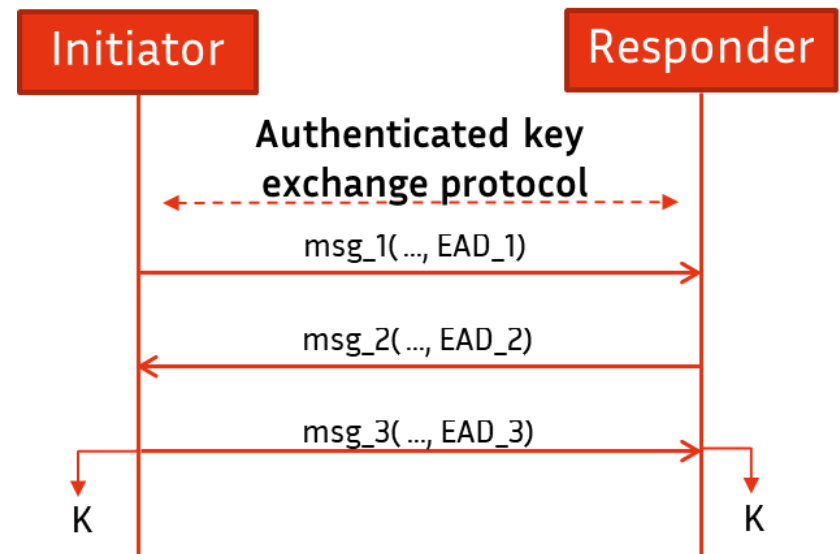
Remote attestation over EDHOC for robot swarm

- ✓ Good version
- ✗ Old version
- ✗ Compromised
- ✗ Tampered



Background: EDHOC protocol

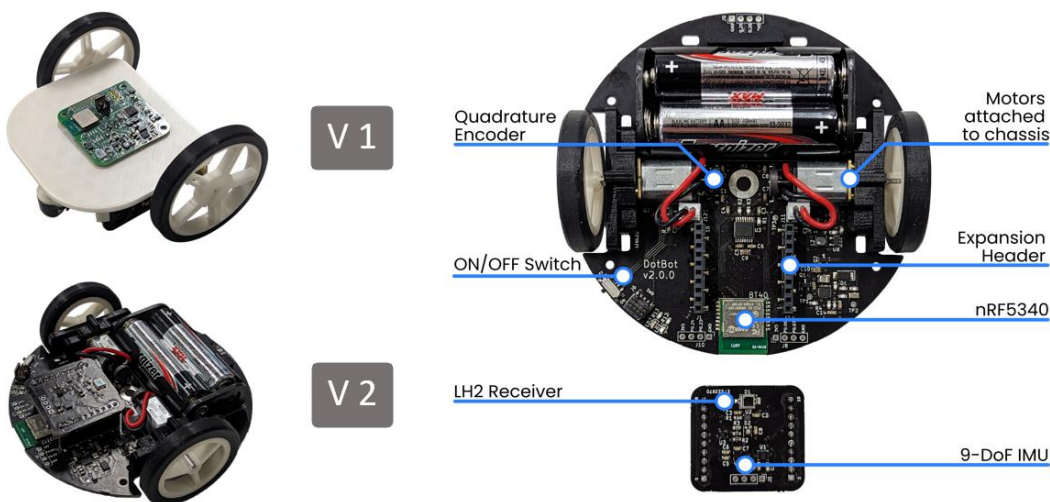
Ephemeral Diffie-Hellman over COSE (EDHOC) protocol [2] is a highly compact and efficient protocol that enables **authenticated key exchange** in **constrained** scenarios.



Attestation evidence is carried in EDHOC's External Authorization Data (EAD) fields.

Evaluation

The micro-robots run on the nRF52840 microcontroller and the nRF5340 microcontroller.



Result

The feasibility of hashing the entire evidence on the constrained platforms.

