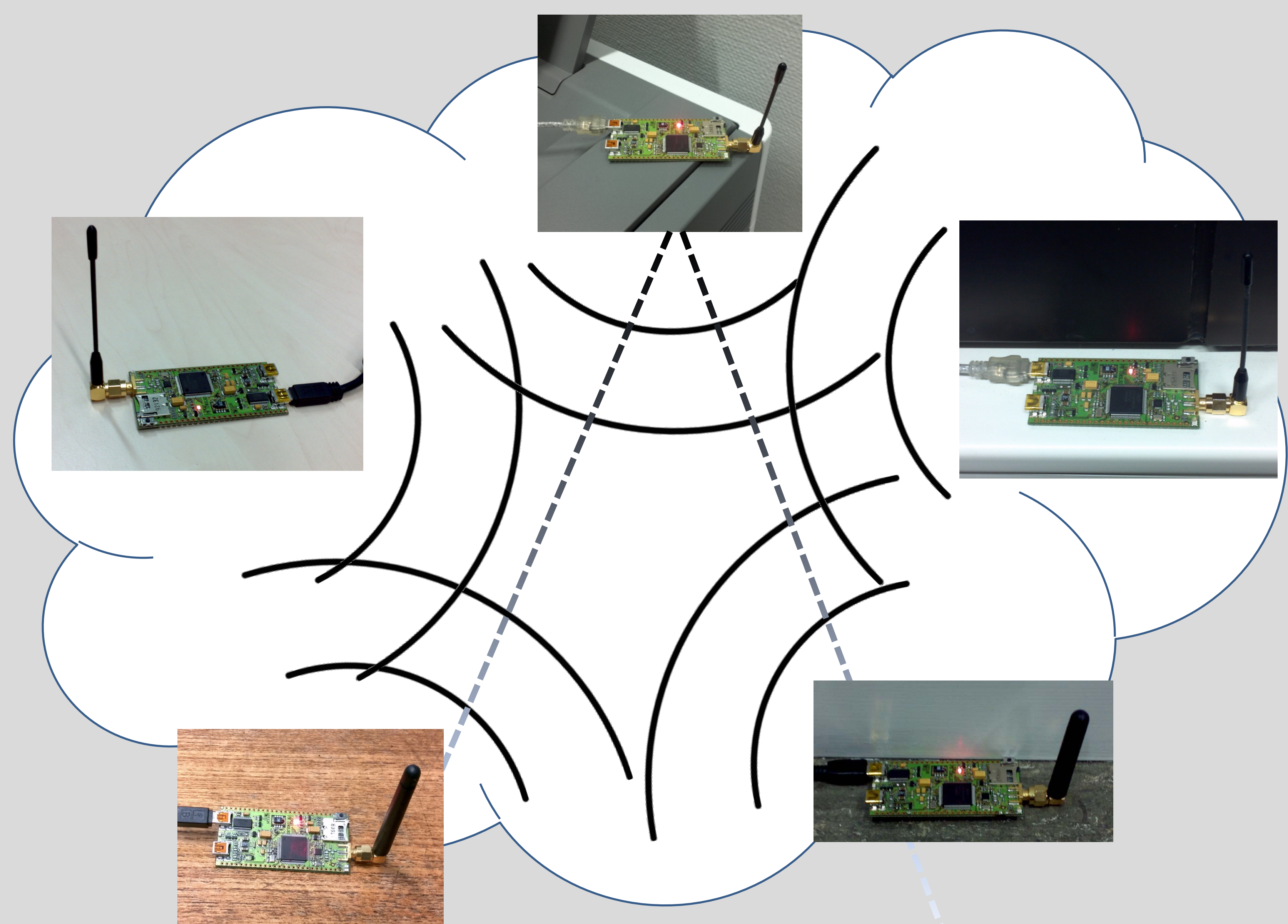


SAFEST

Secure Communication for Increased Civil Security

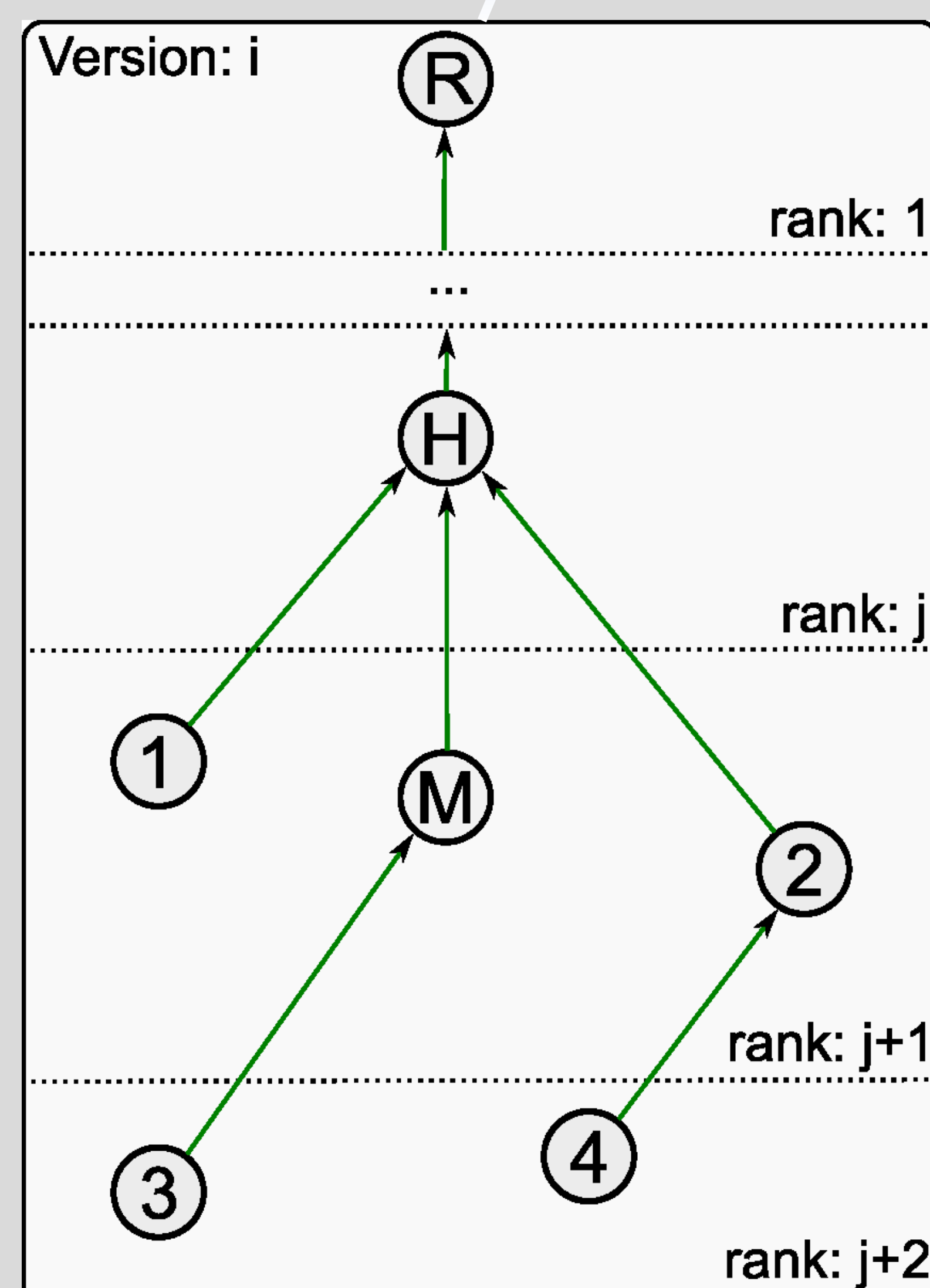
Problem Statement

- Providing secure routes in low-power and lossy networks
- Sensor nodes are vulnerable against traffic redirection and packet drops
- The topology requires the ability to detect and counter attacks
- **Attackers or misbehaving nodes have to be isolated from the network**

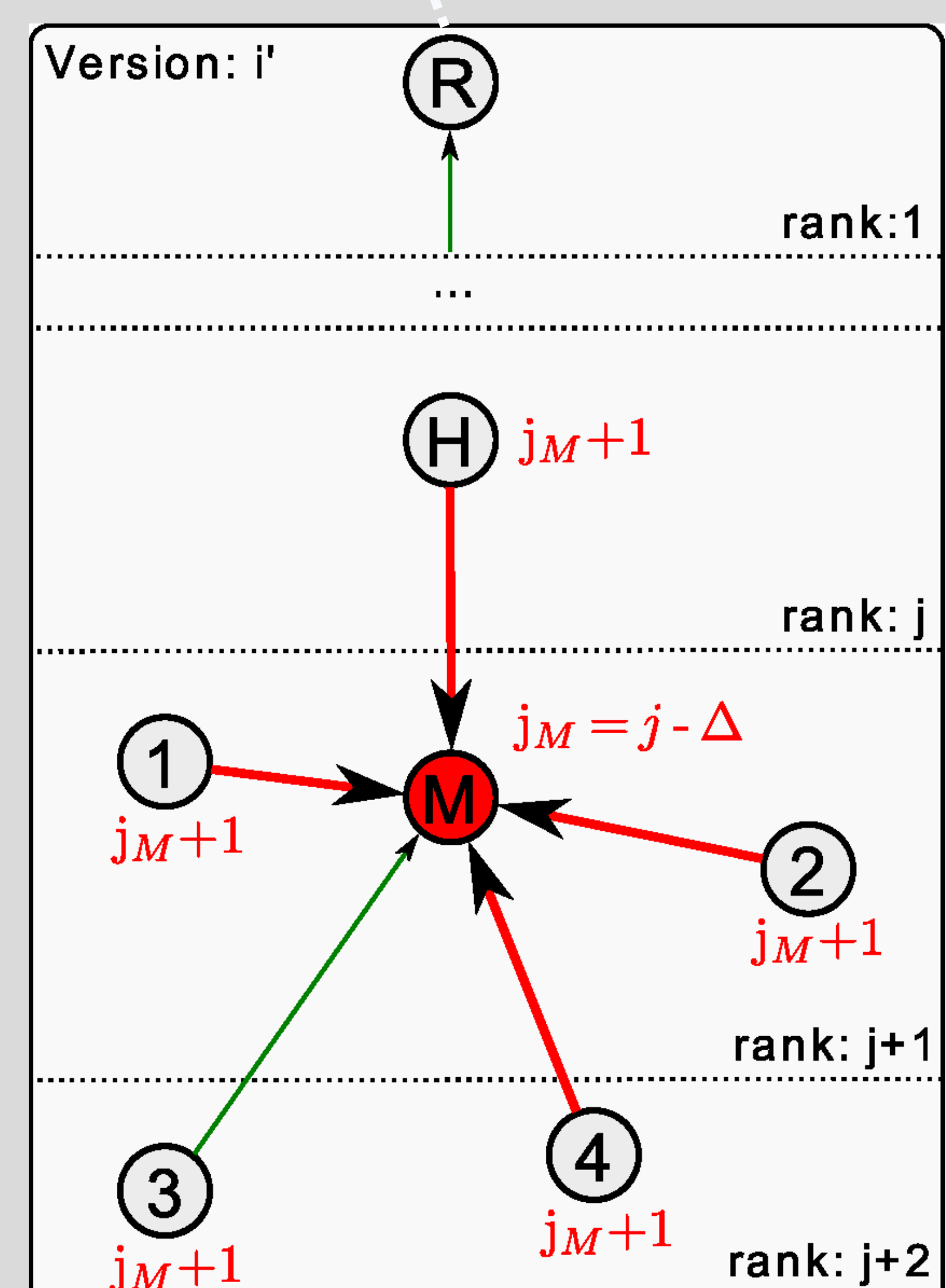


Path Validation by TRAIL

- TRAIL detects and counters version number and rank attacks
- Path validation by sending a single round-trip-message towards the root
- **Lightweight solution that takes advantage of topological properties**
- **No need for heavy cryptography**



Regular Routing Topology



Rank Attack in RPL