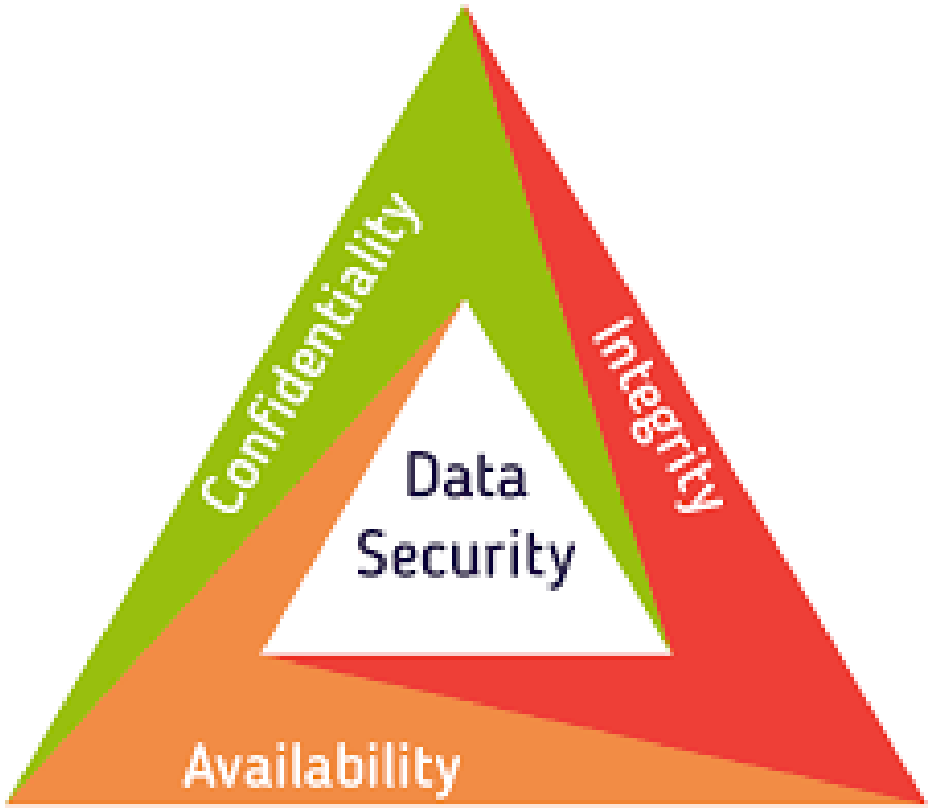
IOT KERETRENDSZEREK ÉS IPARI ALKALMAZÁSAIK

SmartComLab

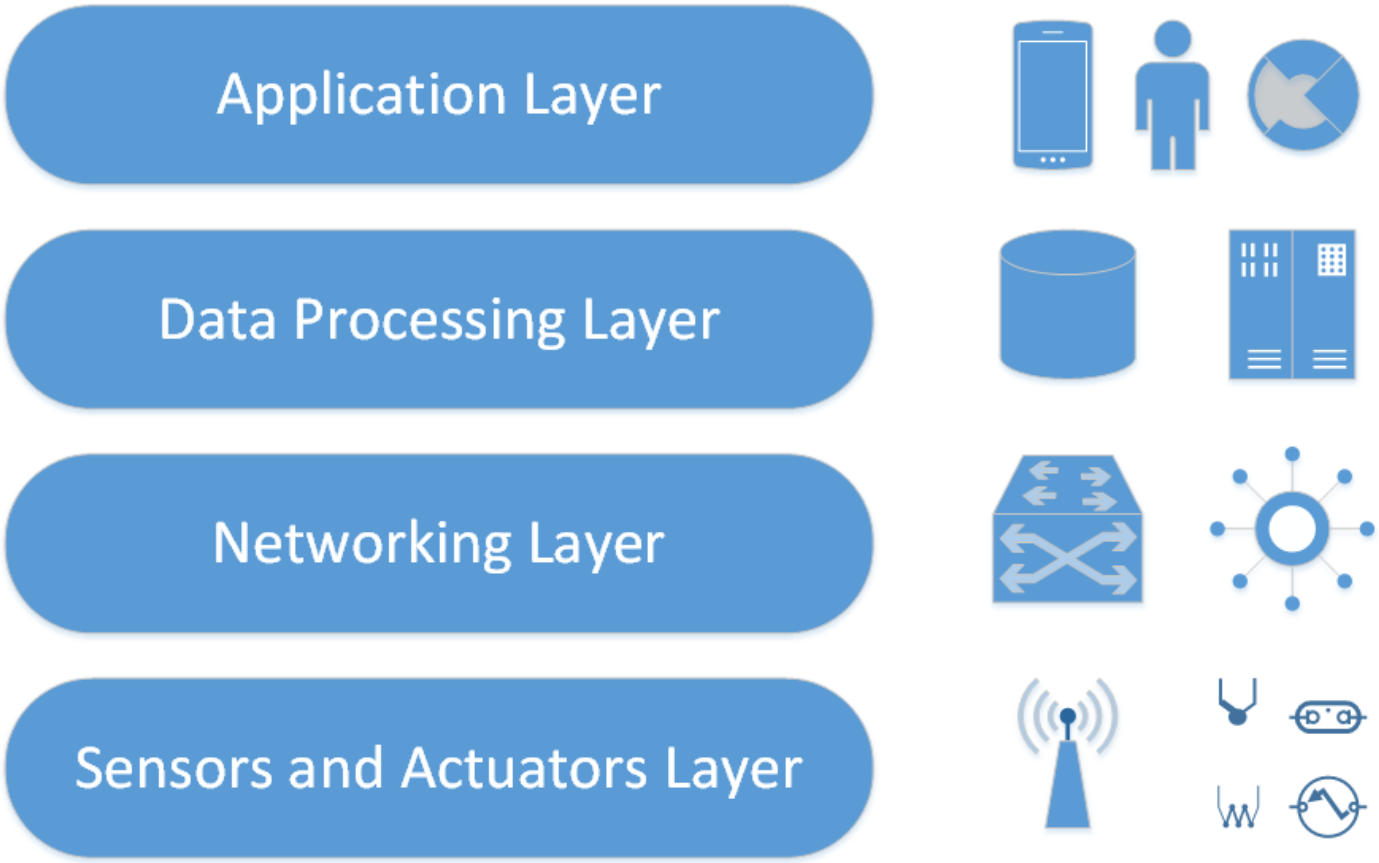
Biztonsági kérdések

Az információ-biztonság alapelvei



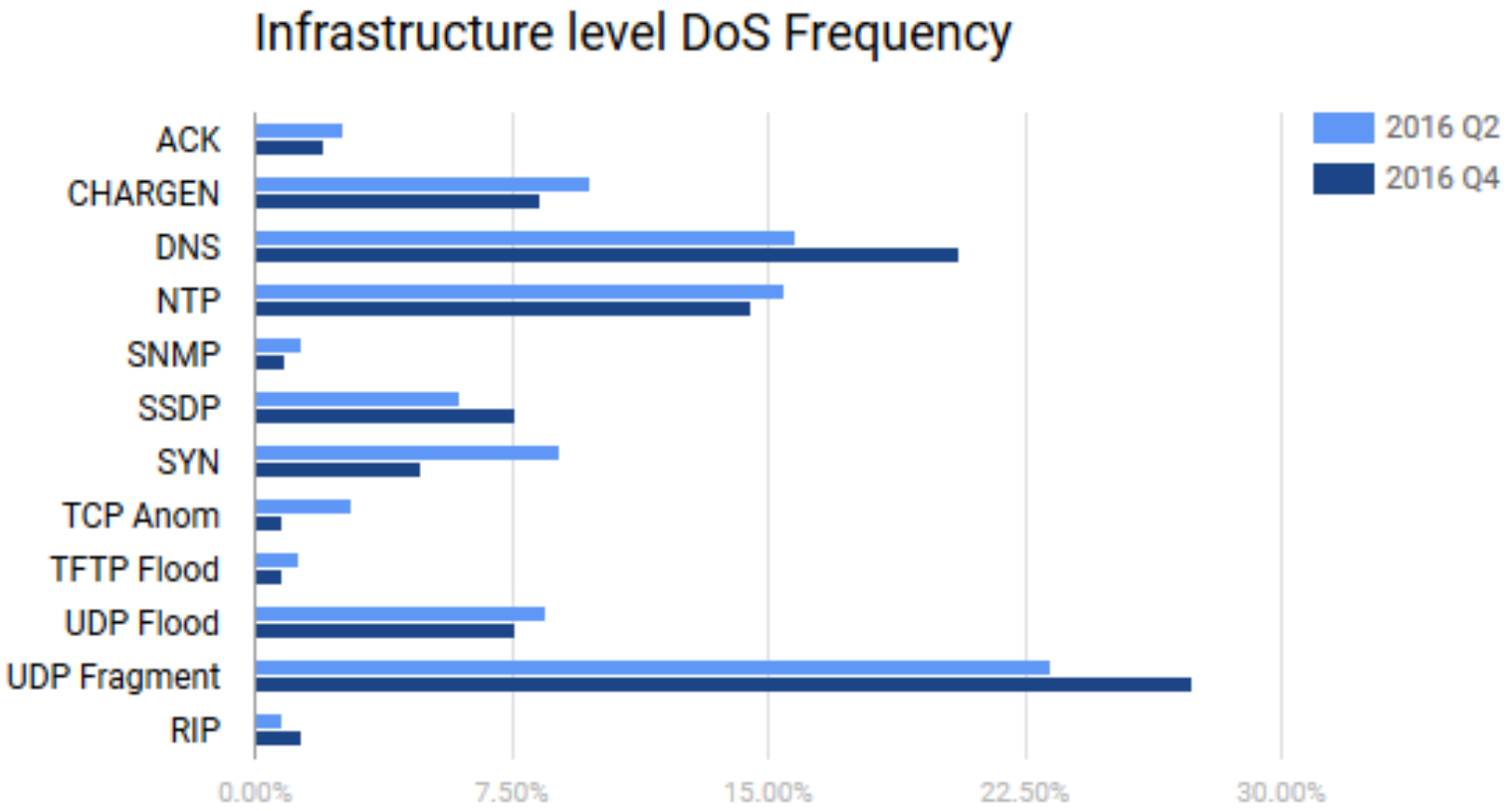
Az IoT-rendszerek rétegei

– egy „vélemény” a sok közül

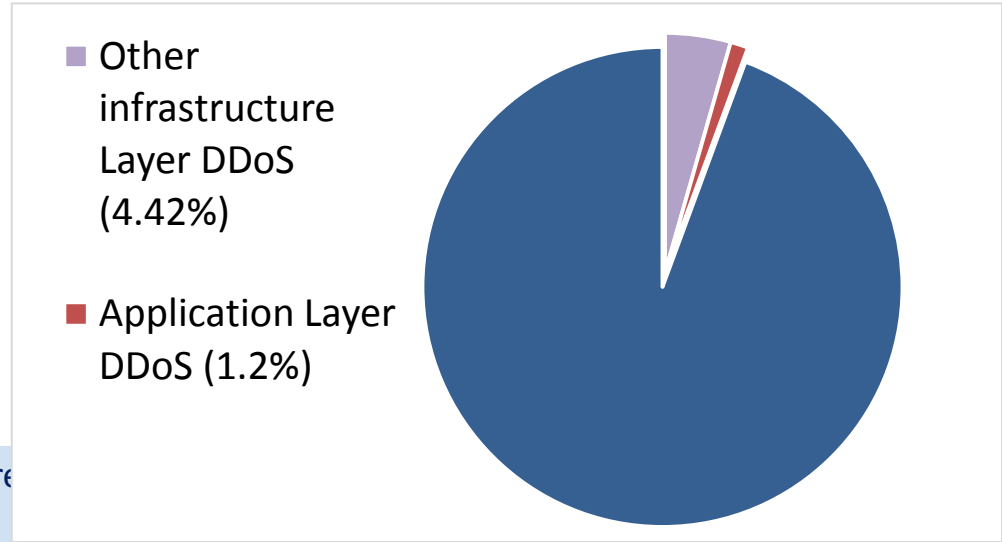


Fenyegetések és védelmi stratégiáik

Layer	Threat type	Mitigation
Physical	Tampering	tamper-resistant packaging
	Eavesdropping	encryption, authorization
	Denial of Service	spread-spectrum techniques
Networking	Exhaustion	active firewalls, passive monitoring (probing), traffic admission control, bi-directional link autentication
	Collision	
	Unfairness	
	Spoofing	
	Selective forwarding	
	Sinkhole	
	Wormhole	
	Sybil	
	Flooding	
Data processing	Exhaustion	traffic monitoring
	Malware	malware detection
Application	Client app.	anti-virus filtering
	Communication	
	Integrity	testing
	Modifications	validation
	Multi-user access	process planning and design
	Data access	Traceability



Gyakori DDoS támadástípusok



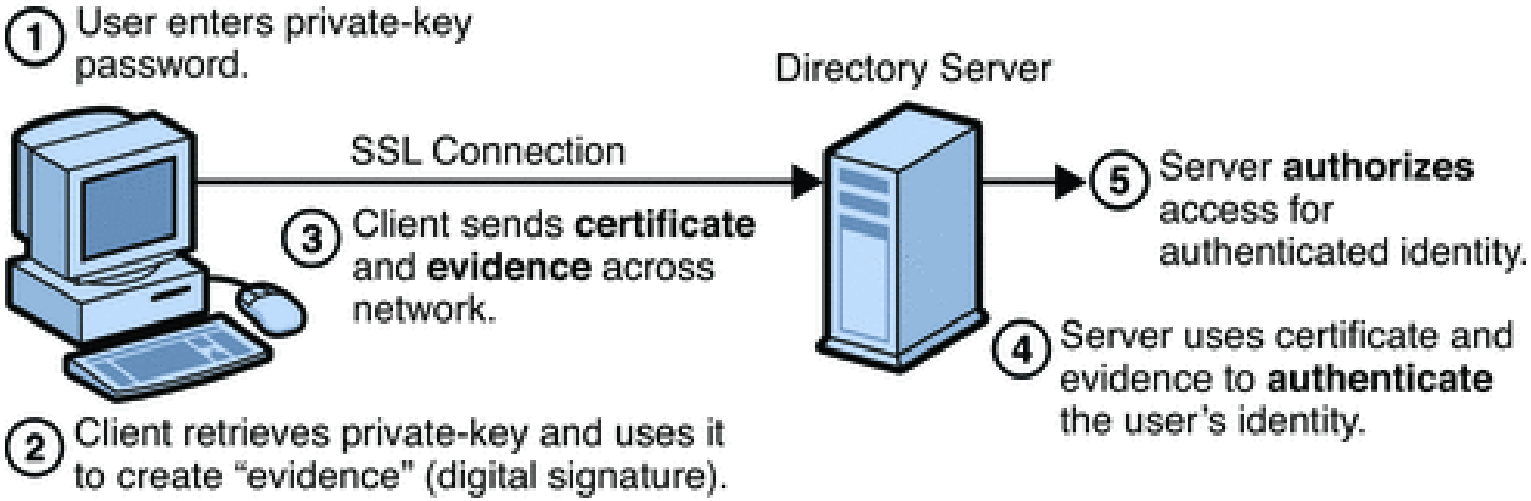
IoT keretrendszere

AAA

- Authentikáció
  - Az-e, akinek mondja magát
    (username/password)
- Authorizáció
  - Van-e jogosultsága ekkor ezt tenni
    (adott felhasználó hozzáférési/változtatási jogosultságának kezelése)
- Accounting
  - mit, mennyit, hogyan, mennyiért csinált
    (számlázás, adatnyilvántartás)

Cerficate-alapú Authorizáció

- A folyamat

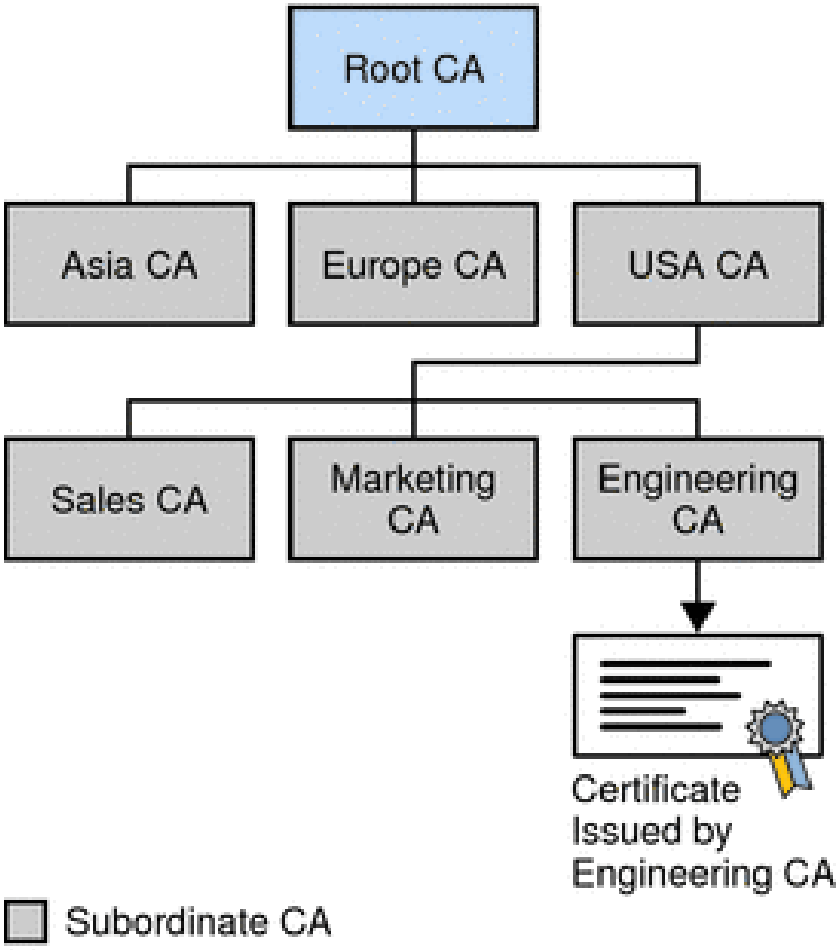


from oracle.com

Certificate-alapú Authorizáció

- Miket ellenőrzünk?
  - Has the Digital Certificate been issued/signed by a Trusted CA?
  - Is the Certificate Expired – checks both the start and end dates
  - Has the Certificate been revoked? (Could be OCSP or CRL check)
  - Has the client provided proof of possession?

Certificate Authority: the hierarchy



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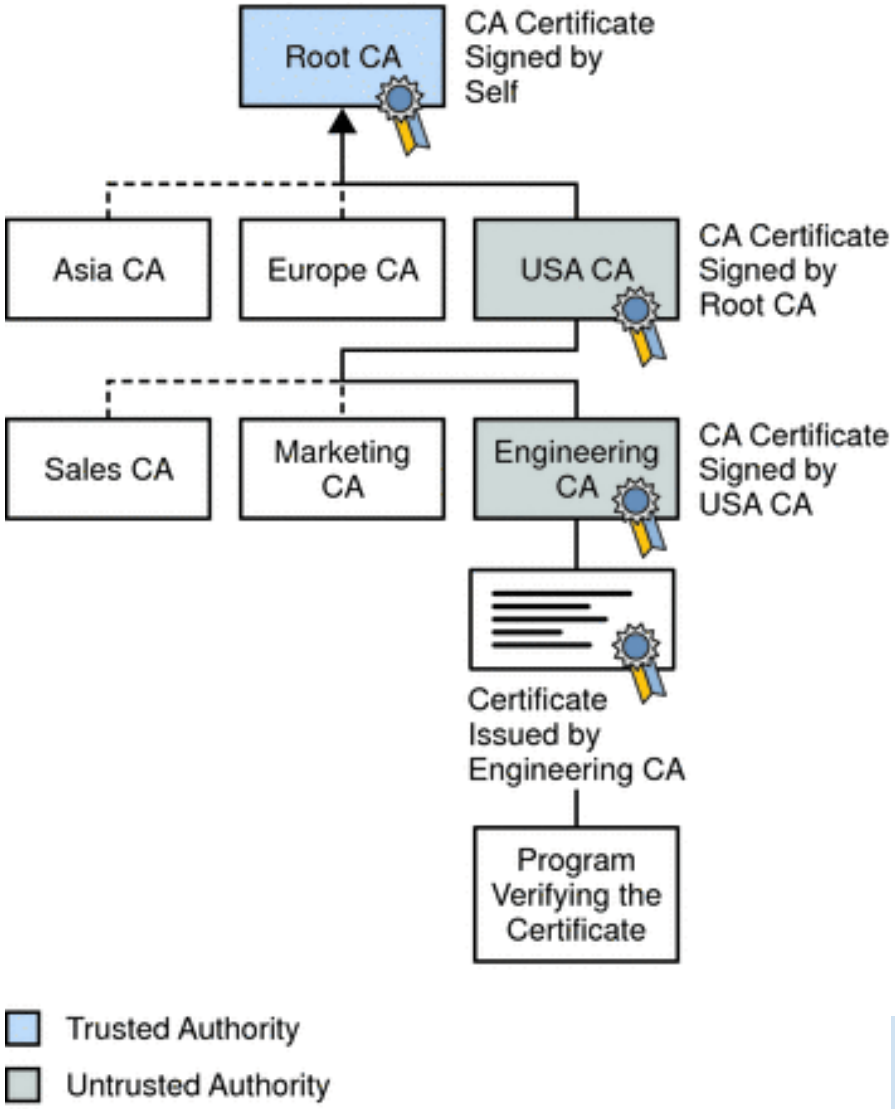
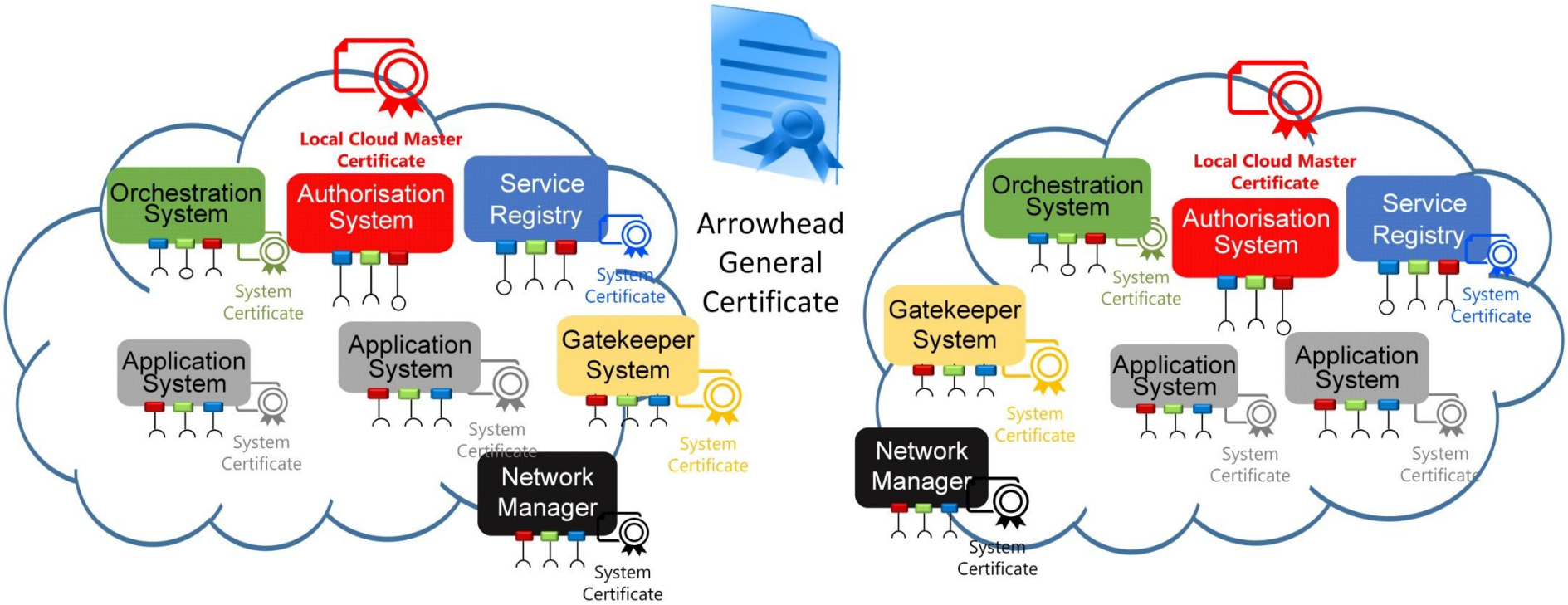
Certificate Authority: the Chain of Trust



A & A in Arrowhead

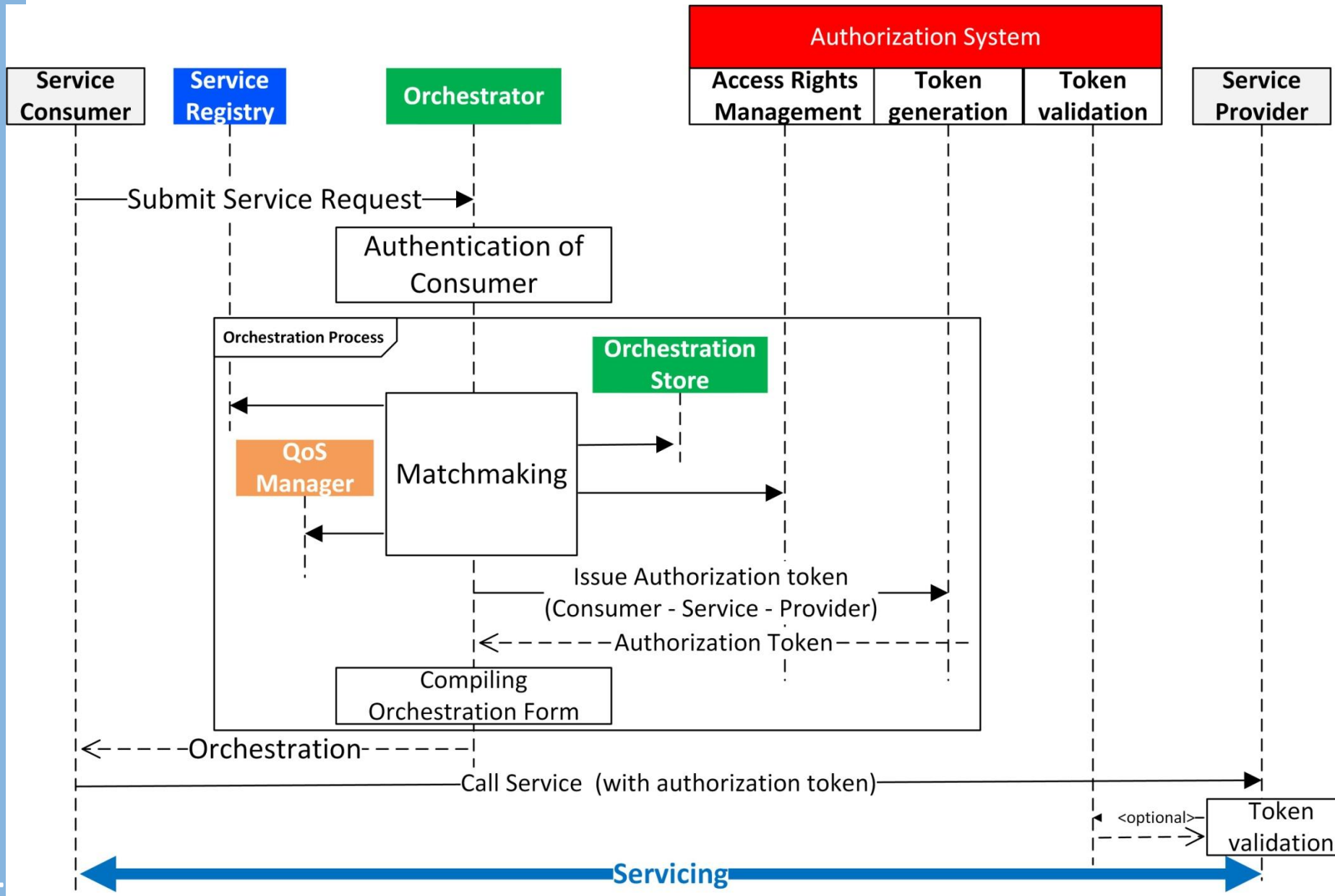
- Authentication
  - Identity verification (at System wake-up)
- Authorization
  - Admission control (new device wakes up in an Arrowhead Cloud)
  - Static access rights management (are you entitled to use that?)
- Admission control: transactional aspects; at the Service Provider (!)

Certificate Handling in Arrowhead



Certificate Hierarchy in Arrowhead

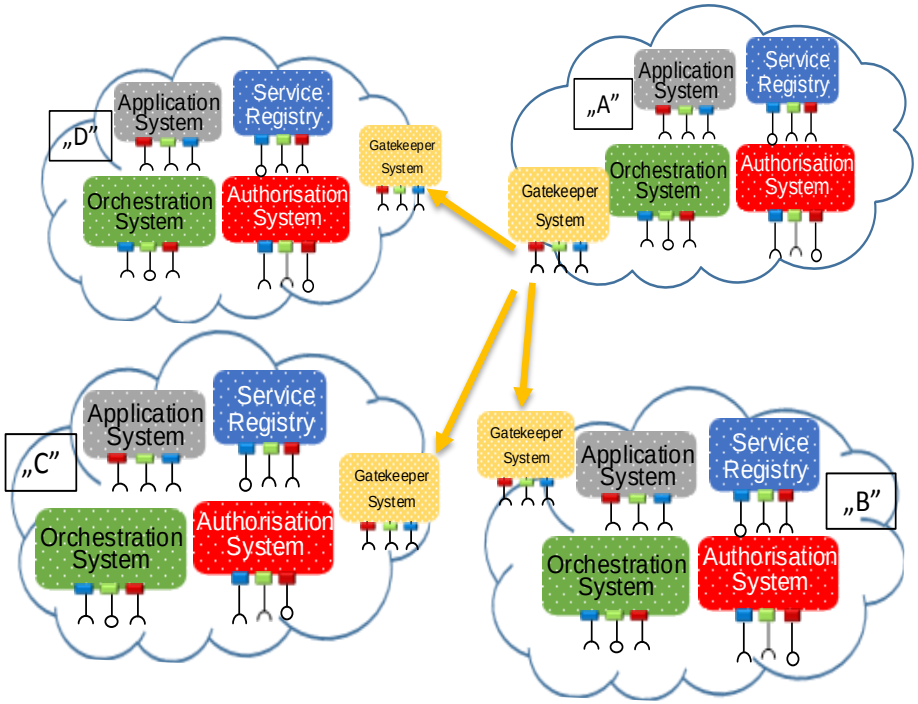
Authorization Token handling in Arrowhead



The Gatekeeper Services

Global Service Discovery

- Initiated by the Orchestrator
- To localize, where we can find an appropriate Service Provider



Inter-cloud Negotiations

- Configuring and preparing the servicing instance