IETF123 Bangkok, ANIMA WG Session

July 21, 2025

Summary for Interim 2025 ANIMA 01, 20-Feb-2025

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References

- **Agenda/Notes:**
  https://notes.ietf.org/notes-ietf-interim-2025-anima-01-anima
- **Youtube recording**
  https://www.youtube.com/watch?v=wMb-ztvpccw

- **This side meeting is targeted to introduce a range of proposed future work items to the ANIMA community**
  - Most work ideas presented where pre-draft, or associated with drafts where technology aspects brought for other WG could be combined with ANIMA work

- **Work wor ANIMA WG / chairs:**
  - Is the use-case of interest to ANIMA
  - What work is doable for ANIMA
    - Without or with charter extensions
  - Help authors to create drafts that fit the bill

Topics

1. Autonomic Distributed troubleshooting
   Bing Leo, Huawei
2. Knowledge Modeling Method for IP Network Fault Management
   Hanting Dang, Chinese Telecom
3. Application responsive network
   Yangfeng, China Mobile
4. Automatic Network Congestion Relief
   Qin Zhao, China Unicom
5. Autonomic Mobility Capability Negotiation Mechanisms
   Zhiwei Yan, CNNIC
6. Bootstrap of campus network and Service VLAN Auto-Deployment
   Bing Leo, Huawei
7. Home broadband autonomic installation and maintenance
   Hanting Duan, Chinese Telecom
8. Distributed Operations in NASR (Network Attestation for Secure Routing),
   Luigi Iannone, Huawei

Relating proposed new work to ANIMA charter

- Explain how proposed new work can fit the charter:
  - Extensions/modification to existing ANIMA components CERTS/TA, BRSKI, GRASP, ACP
  - How will new work interwork / integrate with existing solutions/deployments
  - ASA
    - ASA do not need to use any of those pre-existing ANIMA components
    - But only re-invent any existing wheel with good cause (IETF OPS mantra).

- MUST specify enough for a useful minimum “Proof of Concept” deployment example
  - Enough specificity so that independently developed, interoperable implementations can be built from the specifications.
  - Ideally provide PoC source or binary code yourself before WG adoption or during WG work
    - Up to WG to decide when its feasible
  - Sometimes it is easier to first code and then write spec.
    - It is a lot easier to forget a lot of required spec when you do not code.

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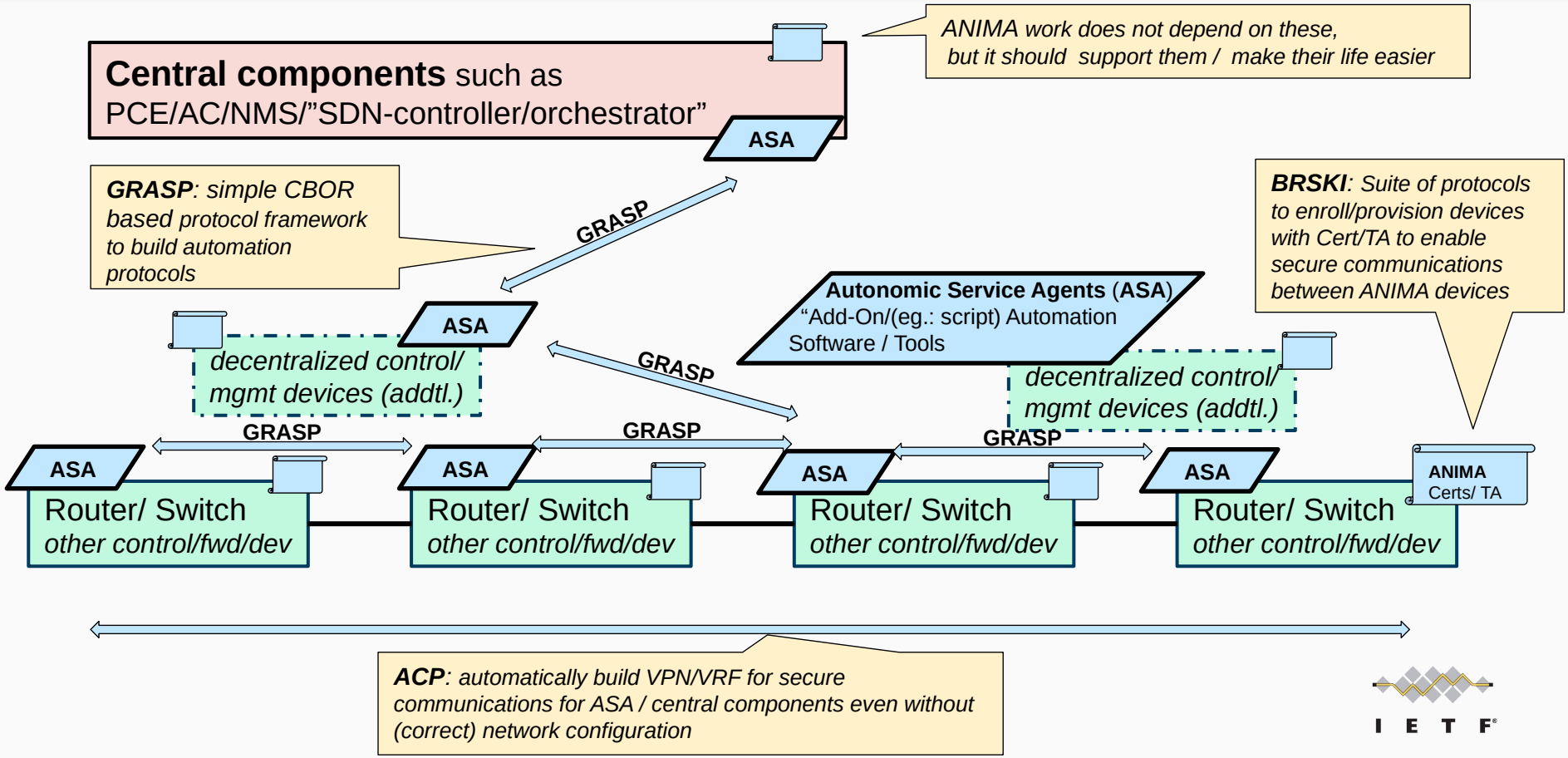
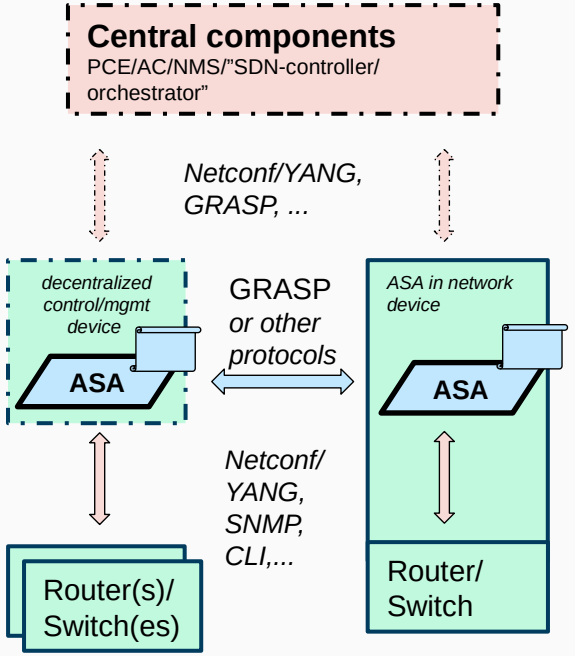
Overview of ANIMA framework (ANI: BRSKI/GRASP/ACP)



Relating proposed new work to ANIMA charter

Decentralized software agents (ASA):
add automation intelligence into the network without requiring central components

- They can run on every or only on some network devices. Or on additional devices, e.g.: “POP-PC used also for othre management tools”.
- The can communicate (“southbound) with the existing control/mamagement software on those devices via existing API: CLI, Netconf/YANG, SNMP, …
- ASA can provide (“northbound”) API to look like extensions of network device control/management software (preferrably Netconf/YANG ?!).
- They can communicate amongst each other with any fitting protocol. If you need to design a new protocol – ANIMA suggests to make it use GRASP
- If needed (likely!) These agents can securely communicate amongst each other and with existing network and central device software due to ANIMA Certs/CA (provisioned by BRSKI – other other mechanisms)
- These agents can discover each other across L2 via (DULL) GRASP
- If needed: These agents can discover each other across L3 via ACP/GRaSP
- If needed: These agents can communicate across L3 even without configured network via ACP (any protocol over IPv6).
- ASA could be python (or other) scripts, downloaded into routers from



Summary

- The ANIMA framework allows to define in-network automation through communicating ASA that perform some novel form of Automation Function (AF) and leverage existing / new south, east/west and optionally northbound protocols / data-models