

IETF

Interim 2024 ANIMA 01

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This session is being recorded

Note Well

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Definitive information is in the documents listed below and other IETF BCPS. For advice, please talk to WG chairs or ADs:

- [BCP 9](#) (Internet Standards Process)
- [BCP 25](#) (Working Group processes)
- [BCP 25](#) (Anti-Harassment Procedures)
- [BCP 54](#) (Code of Conduct)
- [BCP 78](#) (Copyright)
- [BCP 79](#) (Patents, Participation)
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Relating proposed new work to ANIMA charter

- **ANIMA is an OPS WG to standardize / experiment with in-network automation.**
- **This side meeting is targeted to introduce a range of proposed future work items to the ANIMA community**

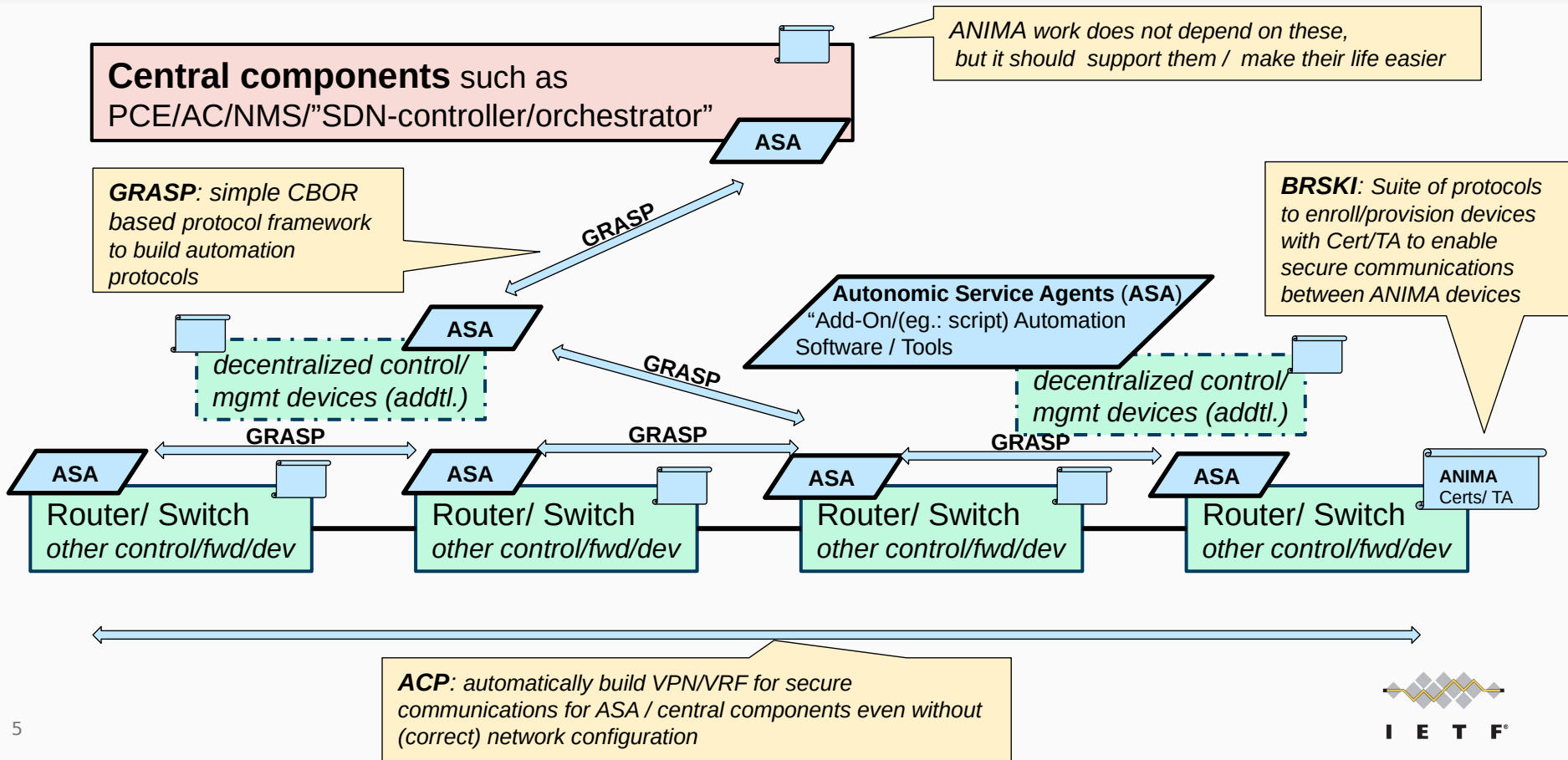
Agenda

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

Each topic ≤ 10 min slides, ≤ 5 minute discussion



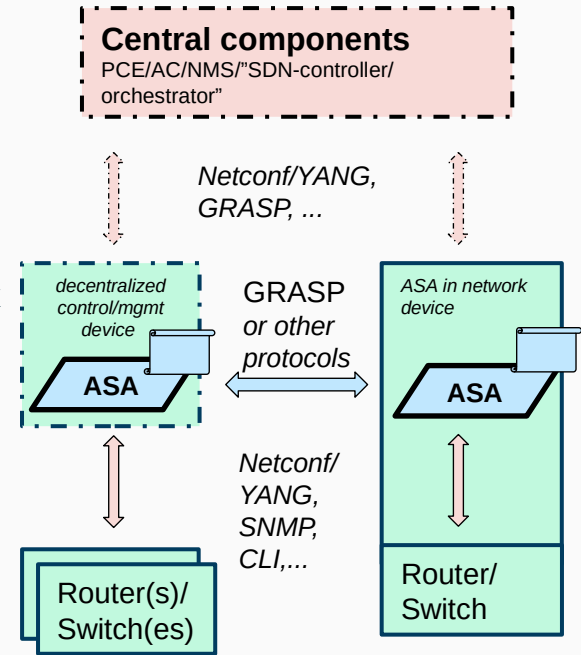
OVERVIEW OF ANIMA FRAMEWORK (ANI, BRSKI/GRASP/ACP)



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 other management tools”.
- They can communicate (“southbound”) with the existing control/management 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 (preferably 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



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.

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