

CNaaS in Norway

Vidar Faltinsen
Product manager
May 4th, 2022

1993 – 2021



2022 ->



Norwegian Agency for Shared Services
in Education and Research

CNaas in Norway

Extending the research network to the
researcher, student and lecturer

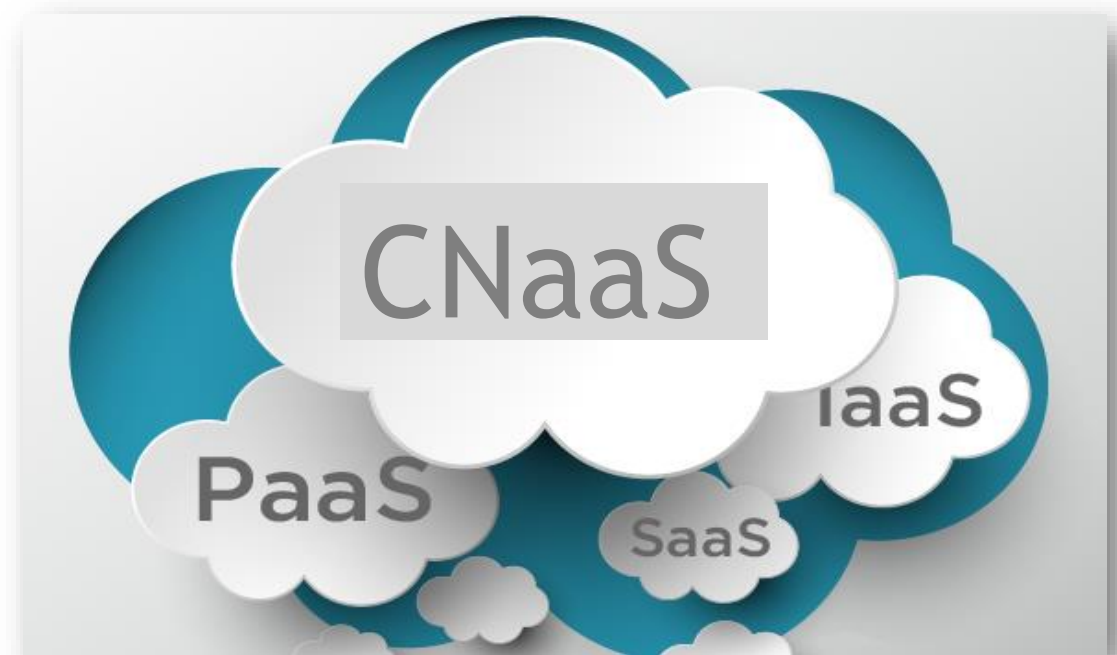
Pilot in 2019 - operational from 2020
10 customers as we speak

Perfect timing for yet another ...aaS

- General trend to outsource basic services
- Growing work burden at the local ICT departments
- Local know-how is vulnerable / retiring / non-existent

CNaaS key benefits

- Build a central, strong team
- Automate and scale
- Improve quality and up time
- Improve security

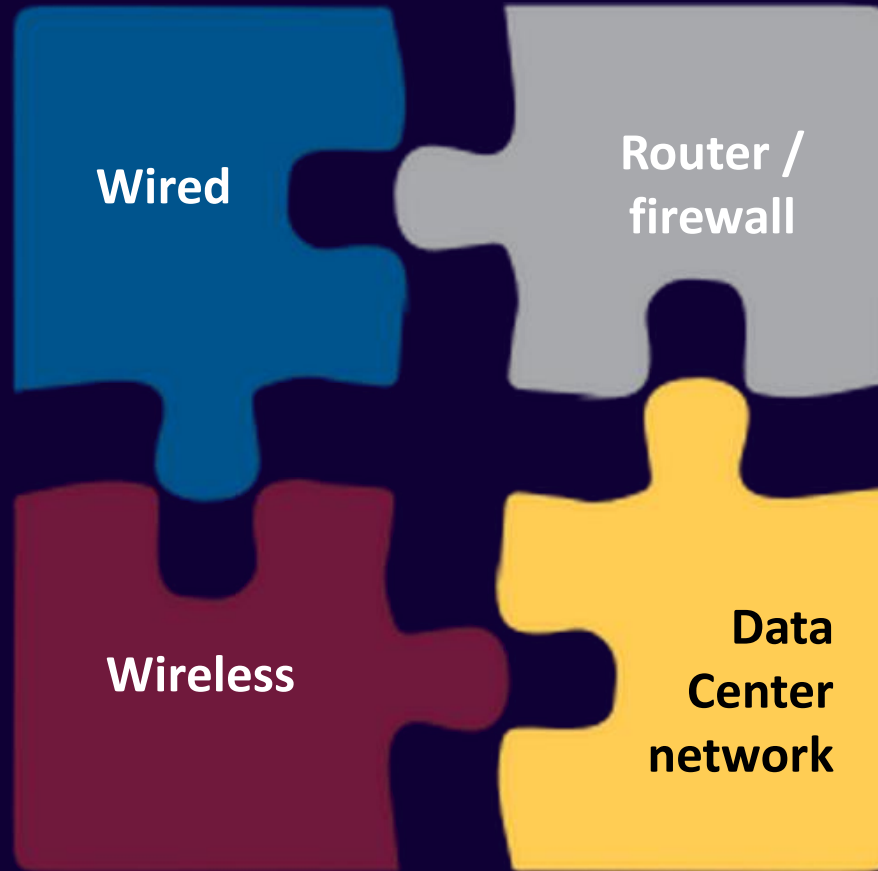


Business model

- ▶ We purchase, own and maintain all equipment
 - framework agreement with supplier
- ▶ Two alternative payments models:
 - a) No establishment - fixed yearly cost
 - b) Upfront cost for all equipment and manpower to establish service + yearly cost for operations



CNaaS pick & choose



we build – we operate

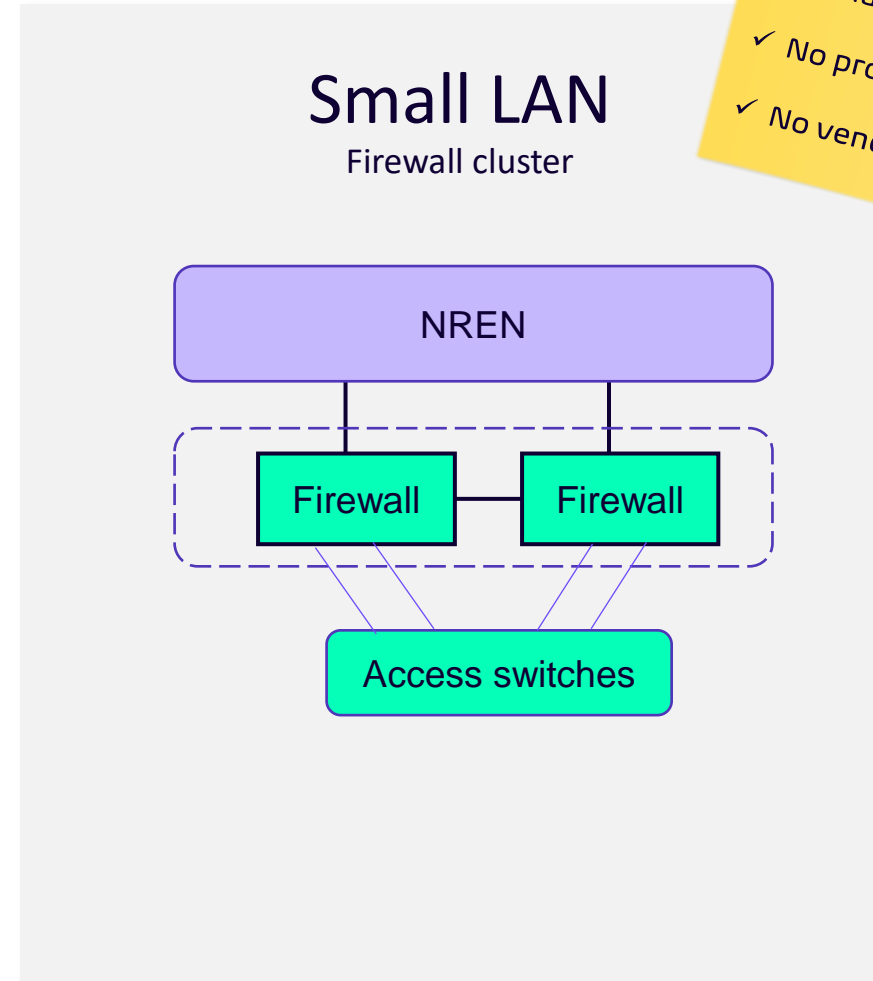
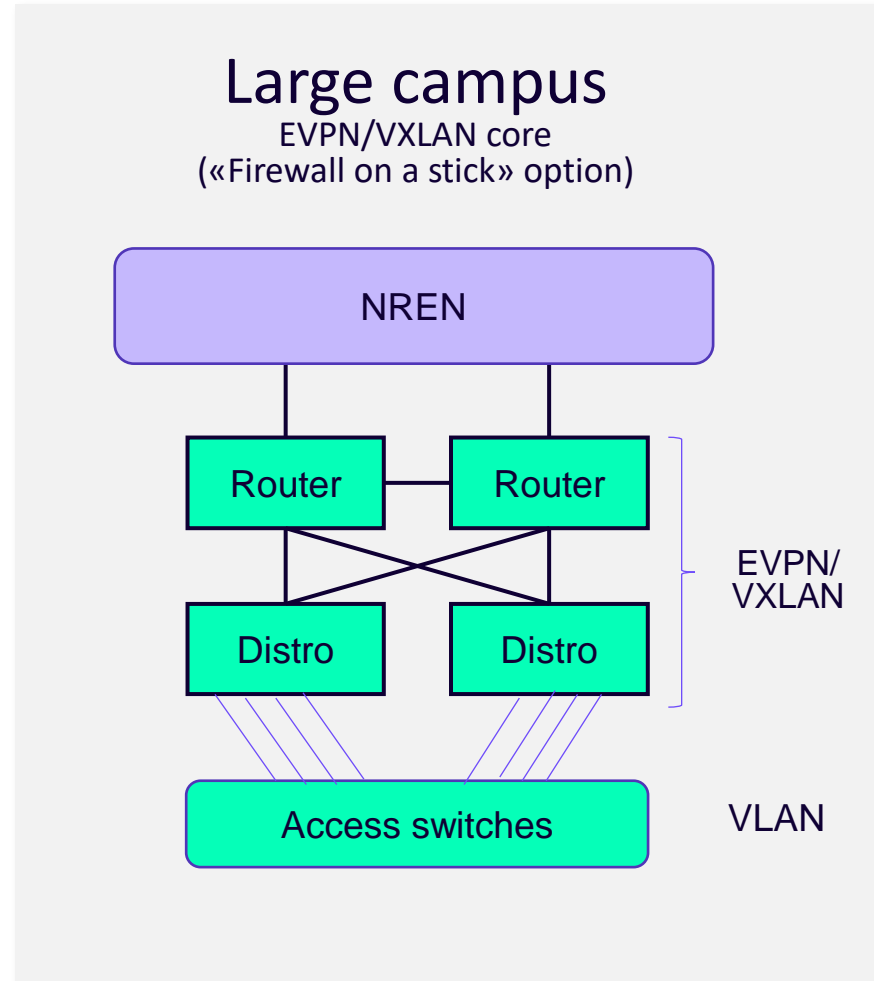
A pragmatic approach necessary



Brown field

Green field

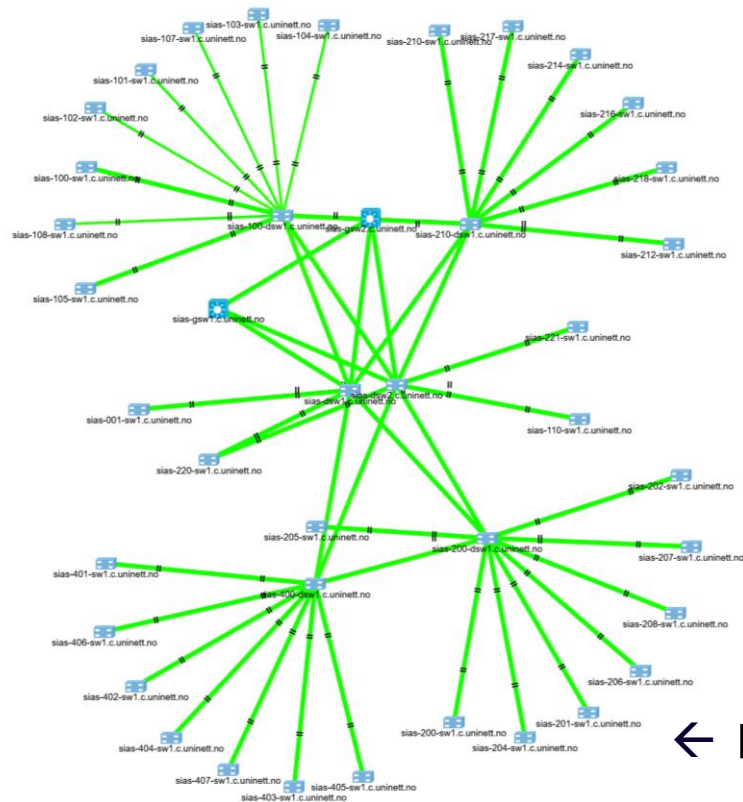
Two main categories of customers



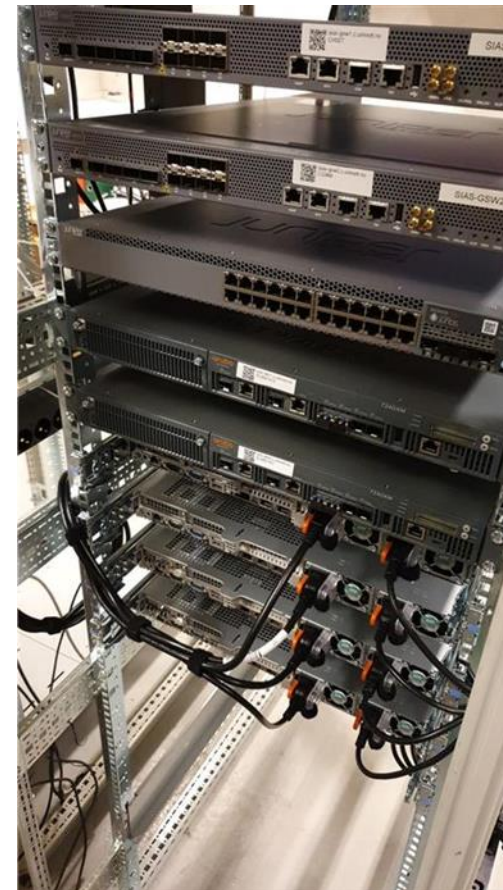
- ✓ Redundant 10 Gbps core
- ✓ Dual stack (public IPv4 + NAT)
- ✓ Scalable and flexible
- ✓ No proprietary protocols
- ✓ No vendor lock-in



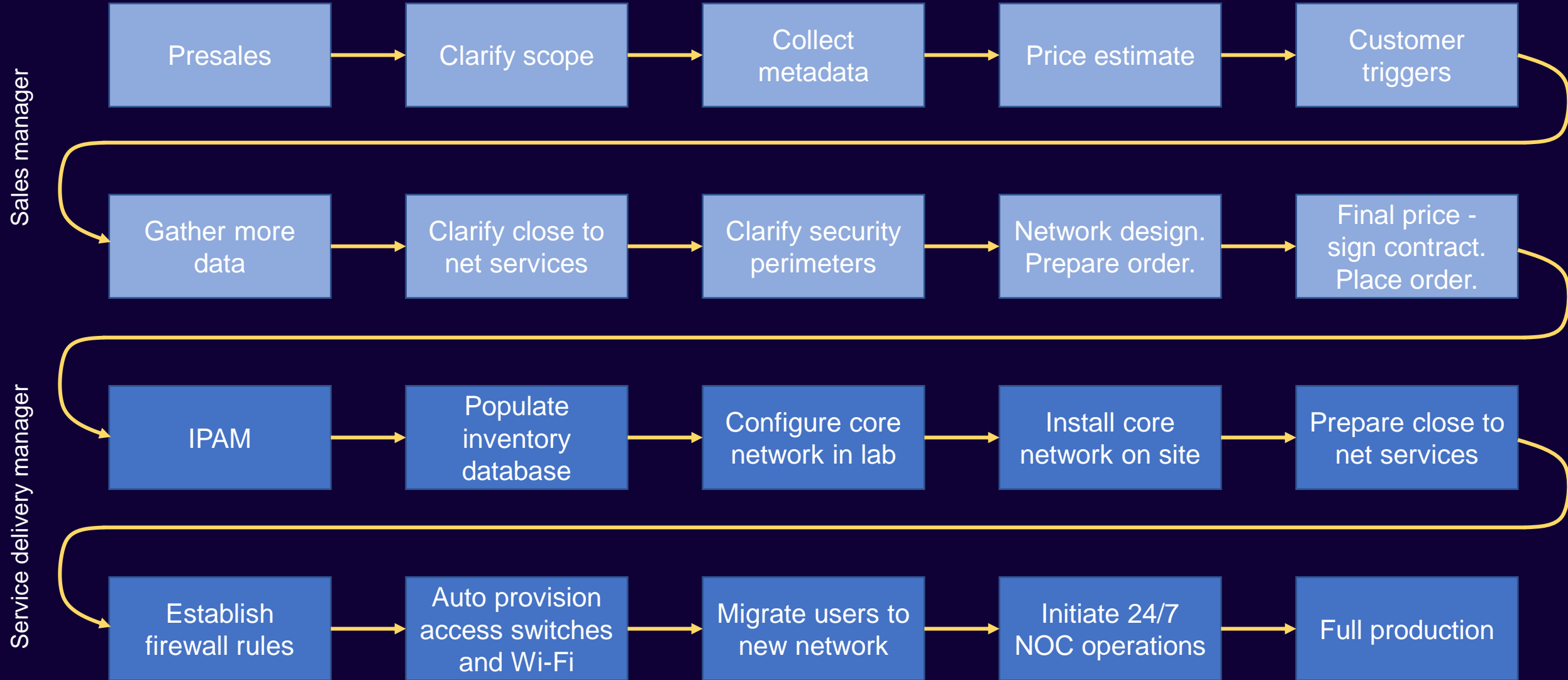
New
network
to 2100
student
dormitory
rooms



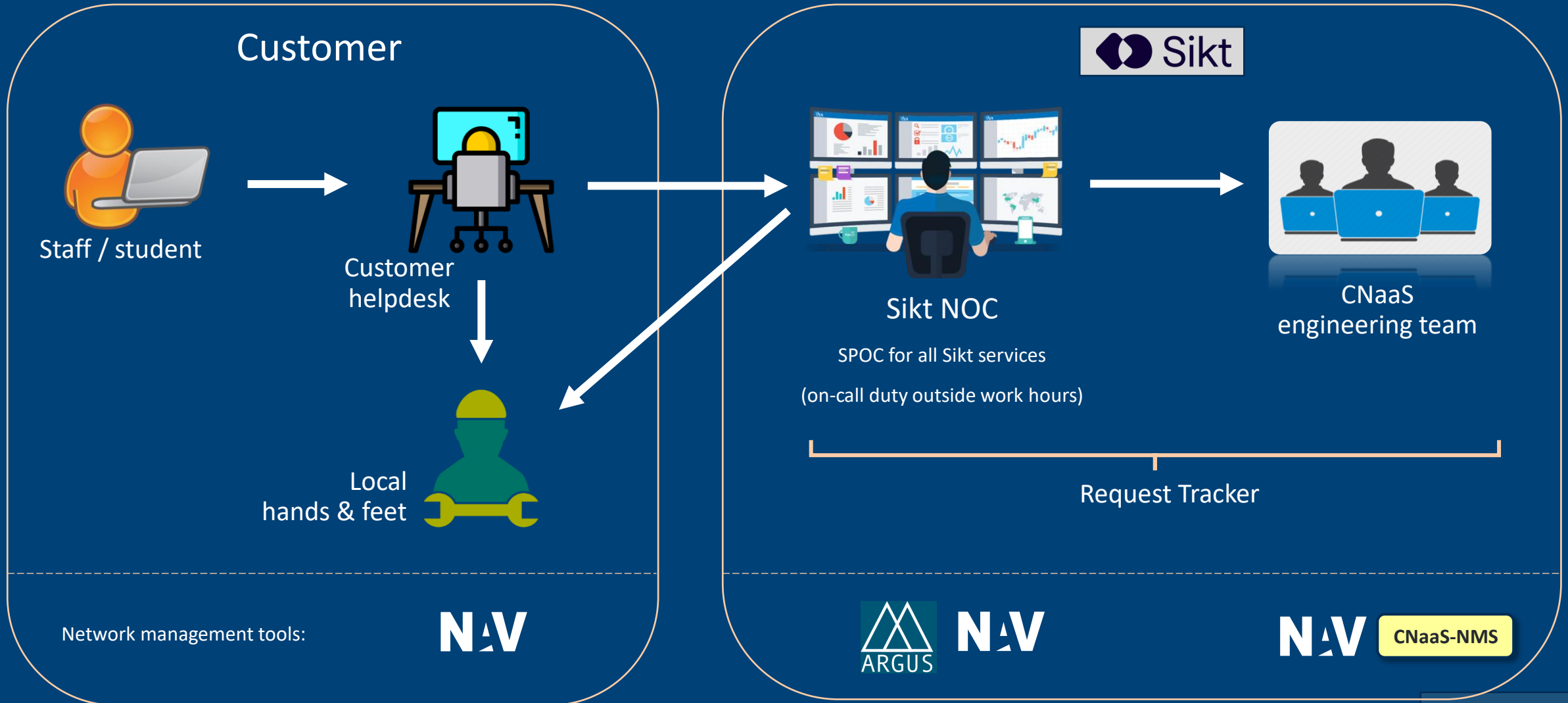
← **NV weathermap**
(showing this network)




The CNaaS journey (6-18 months)



Service delivery model




DownloadTourBlogDocumentation

Monitor your network with ease.


Designed by Scandinavians, this free software makes network administration feel like flying.

[✓ Features](#)[Download](#)[▶ Tour](#)




Alerts

If something in the network goes down, NAV alerts you via your dashboard, email or SMS.




Statistics

NAV gives you VLAN graphs, link loads and customizable reports for your equipment.




Topology

Devices added to the NAV database can be visualized in several interactive network maps.



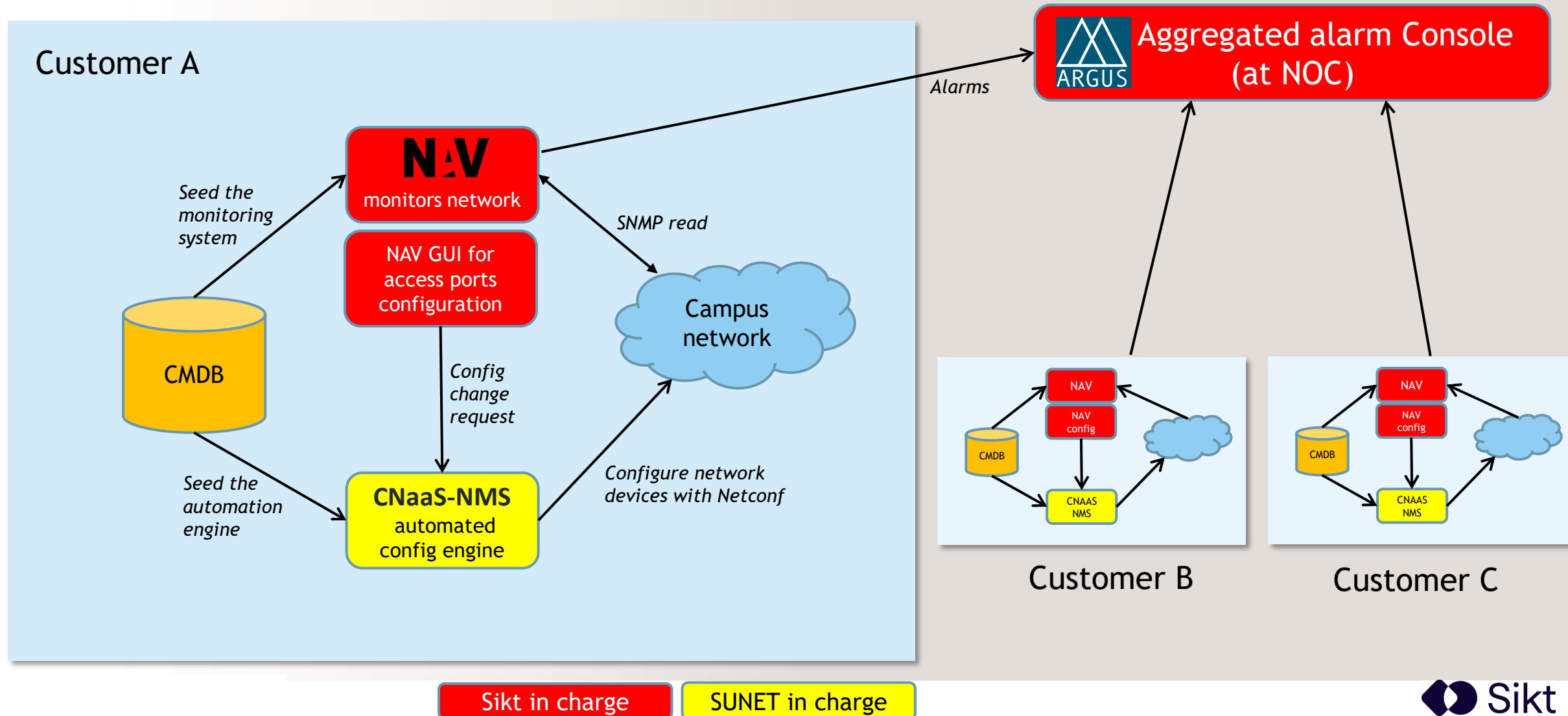
Management

Use NAV to monitor your inventory and configure network equipment, such as switches.

- ✓ Active open source project
- ✓ 23 years of development
- ✓ Used on campus networks around the world
- ✓ Developed by  Sikt

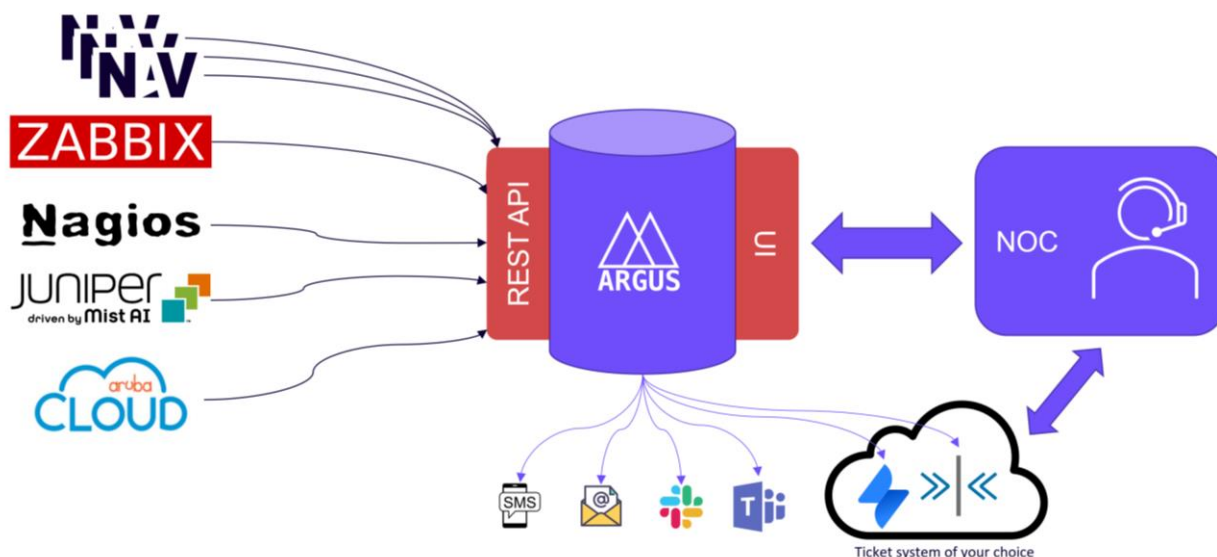
Network Administration Visualised - NAV.uninett.no

CNaaS NMS architecture (Sunet and Sikt collaboration)





Argus – an aggregated Alarm Console



Aggregate incidents from all monitoring applications into a single, unified dashboard and notification system

Acts as a single pane of glass in your NOC

Timestamp	Status	Severity level	Source	Description	Actions
2022-04-28 09:56	Open Non-acked	3 - Moderate	nav.customer1.example.org	box down example-sw.customer1 192.168.42.42	[icon]
2022-04-27 11:42	Open Non-acked	4 - Low	mobility-master.example.org	AP down: AP1553 at somecollege	[icon]
2022-04-02 13:12	Open Acked	1 - Critical	nav.customer1.example.org	box down main-gsw.customer1 192.168.0.1	[icon]
2022-04-02 09:32	Open Acked	3 - Moderate	nav.someschool.example.org	nav.devices.holophonor-sw1_someschool.sensors.xe-1_2_2_jnxDomCurrentRxLaserPower exceeded at -37.32 <-14	[icon]
2022-04-02 08:32	Open Acked	2 - High	zabbix.example.org	slurm.example.org: Software RAID: Device md0 is active,degraded	[icon]

Rows per page: 25 1-5 of 5

Last refreshed 2022-05-03 15:35:50 updating every 30
Backend v1.5.1.dev1+g18faa05, API v1(stable), frontend v1.5.4

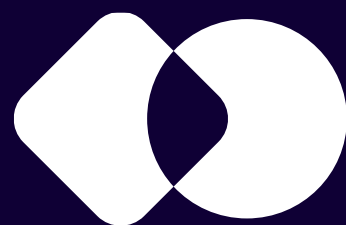
Lessons learned and plans ahead



- Close interaction with customer is key
 - Technical staff at customer need to work WITH us
 - SLA/mutual expectations - both Sikt and customer
 - Clear demarcation line - who is responsible for what
 - Day-to-day low risk changes must be done by the customer
- CNaaS reference architecture can influence campus design for all campuses in Norway

Plans ahead

- CNaaS processes need continuous improvement - will we ever be done?
 - Improve processes, tools portfolio and integrations
 - Improve automation
 - Better IoT support
 - Strengthen integration with SOC
 - And more....



Thank you 😊

vidar.faltinsen@sikt.no