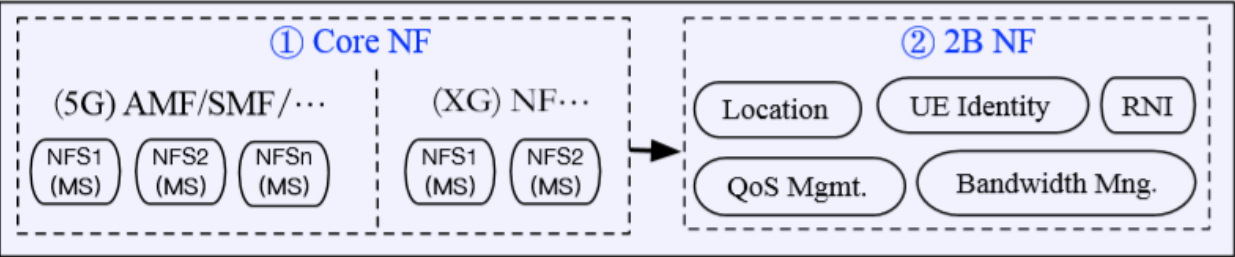# Meeting Contents

- Time: June 12, 2020 at 13:00~14:00 UTC

- Agenda:

  - How to elect TSC efficiently?

  - Logo

  - Project scope discussion (III)
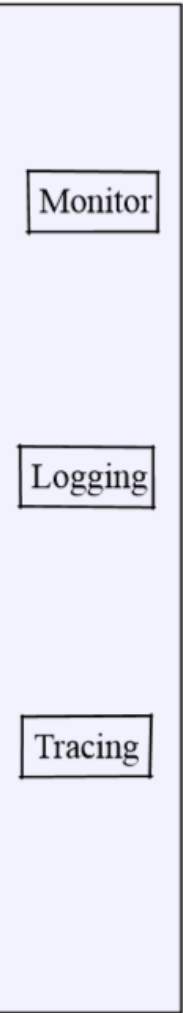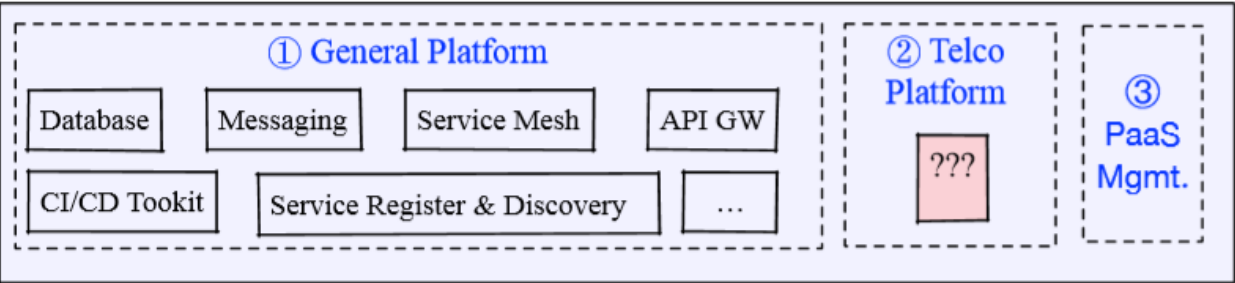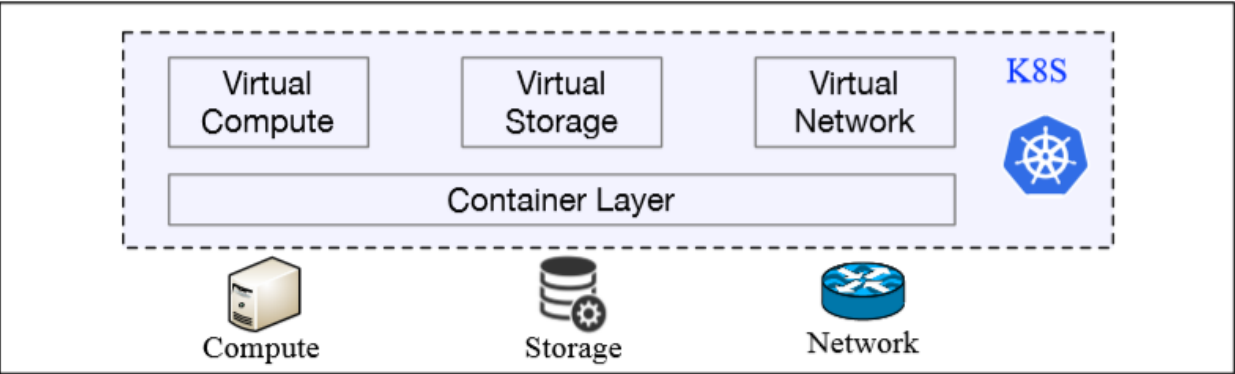
Orchestration & Automation

| Centralized Orchestration | Network Slice Manager | Centralized Operation | Centralized Analytics |

Cloud Native NF

Operation

① Core NF

(5G) AMF/SMF/··· NFS1 (MS) NFS2 (MS) NFSn (MS)

(XG) NF··· NFS1 (MS) NFS2 (MS)

② 2B NF

Location UE Identity RNI

QoS Mgmt. Bandwidth Mng.

Monitor

Telco Platform

① General Platform

Database Messaging Service Mesh API GW

CI/CD Tookit Service Register & Discovery ...

② Telco Platform

???

③ PaaS Mgmt.

Logging

Cloud Infrastructures (Containers)

Virtual Compute Virtual Storage Virtual Network K8S

Container Layer
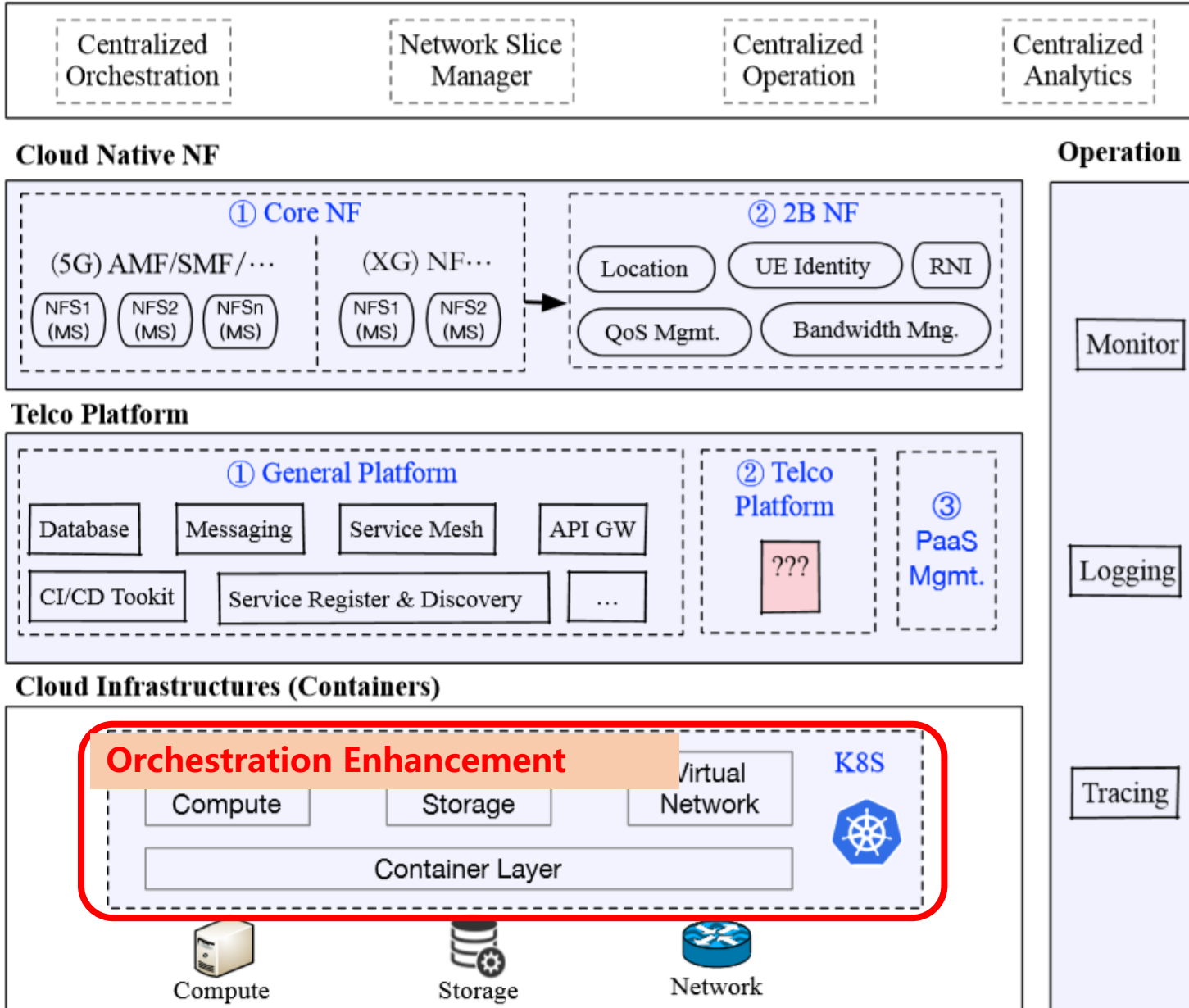
Compute Storage Network

Tracing

1. **Which block should be included in XGVela?**
   - ☐ Infrastructure layer
   - ☐ Platform layer
   - ☐ Network ability layer
   - ☐ Orchestration layer
   - ☐ Operation & maintenance

☐ Within XGVela Scope (for discussion)

2. Scope for infrastructure layer?

- ☐ Determine the components that support running environment and infrastructure orchestration of network elements;
- ☐ Gap analysis: shortage of K8S, K8S plugins and infrastructures, identify telco enhancement point, and develop enhancement software (e.g. plugins) in a loose-coupling way;
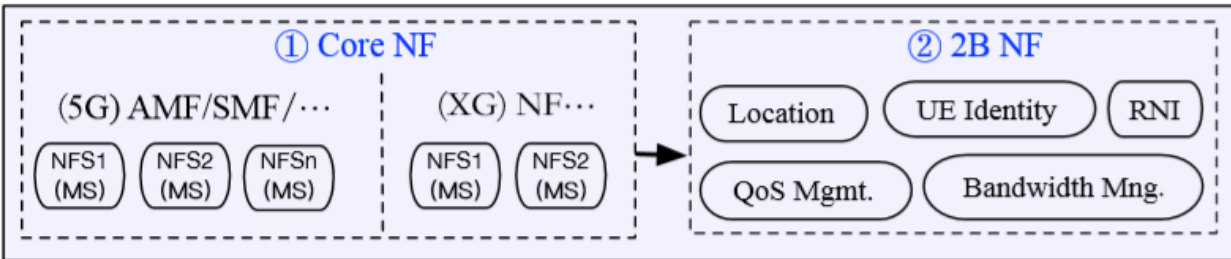- ☐ Fork a telco-specific K8S repository? (consist with the new version of K8S)

Challenge of current orchestration:
- Multi-network connectivity (Multus)
- Service function chaining
- Specific scheduling policies
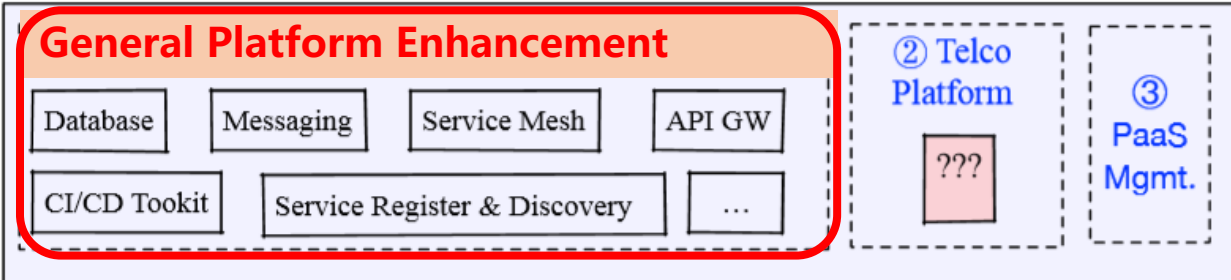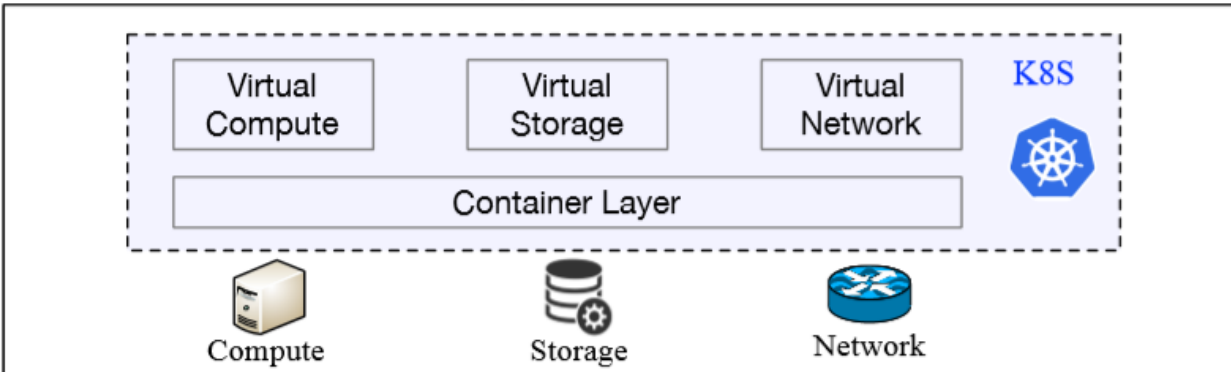- Deterministic performances
- Accelerated data plane

3. Scope for platform layer (General platform)?
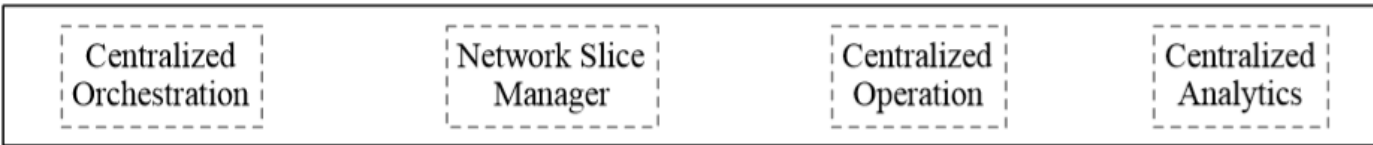
- ☐ General platform definition & scope:
  - ☐ What could be counted as GP;
  - ☐ necessary components;
- ☐ Gap analysis between telco requirements and existing GP components, enhancement feature discovery & implementation;
- ☐ New GP component exploration & creation:
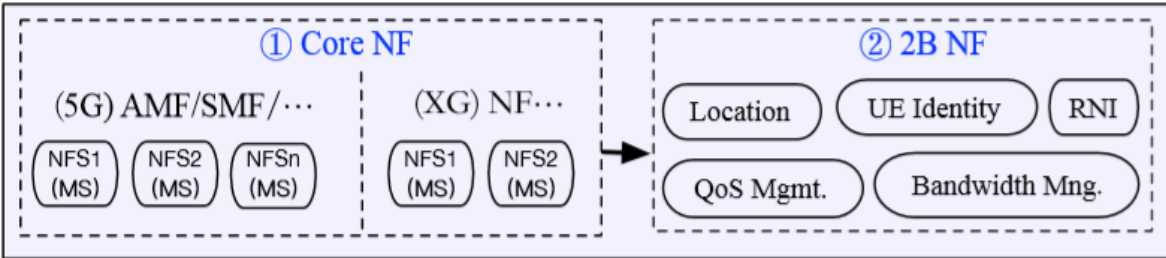- ☐ Others?

General Platform Challenges:

Tools provided by open sourced projects are driven by IT industry, not designed to **address the requirements of telco industry**:

- **Service Mesh**
  - -- performance bottleneck: iptables
  - -- do not support multi-network interface
- **Load Balance**
  - -- IT (TCP/HTTP, hundreds millisecond delay jitter)
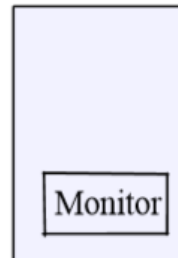 - -- CT (TCP/HTTP/UDP/SCTP/GTP, millisecond delay jitter)

3. Scope for platform layer (Telco platform)?

- ☐ Make clear definition of TP and its scope:
  - ☐ What kind of components can be included as TP;
  - ☐ Difference with GP;
- ☐ Use case exploration;
- ☐ Functional components implementation;

CMCC's ideas on TP for discussion:
- ☐ Target user: operators & vendors
- ☐ Definition: a platform for operators and vendors to build (develop) new network service & better provide those service to users;

Telco Platform Challenges:
1. What kind of component can be defined as a telco platform function?–**telco specific** (99.999% LB? HA? OMU?)
2. For 5GC, is there already any telco components can be abstracted from core network function?
3. Enhanced general platform is enough or not to support core network?
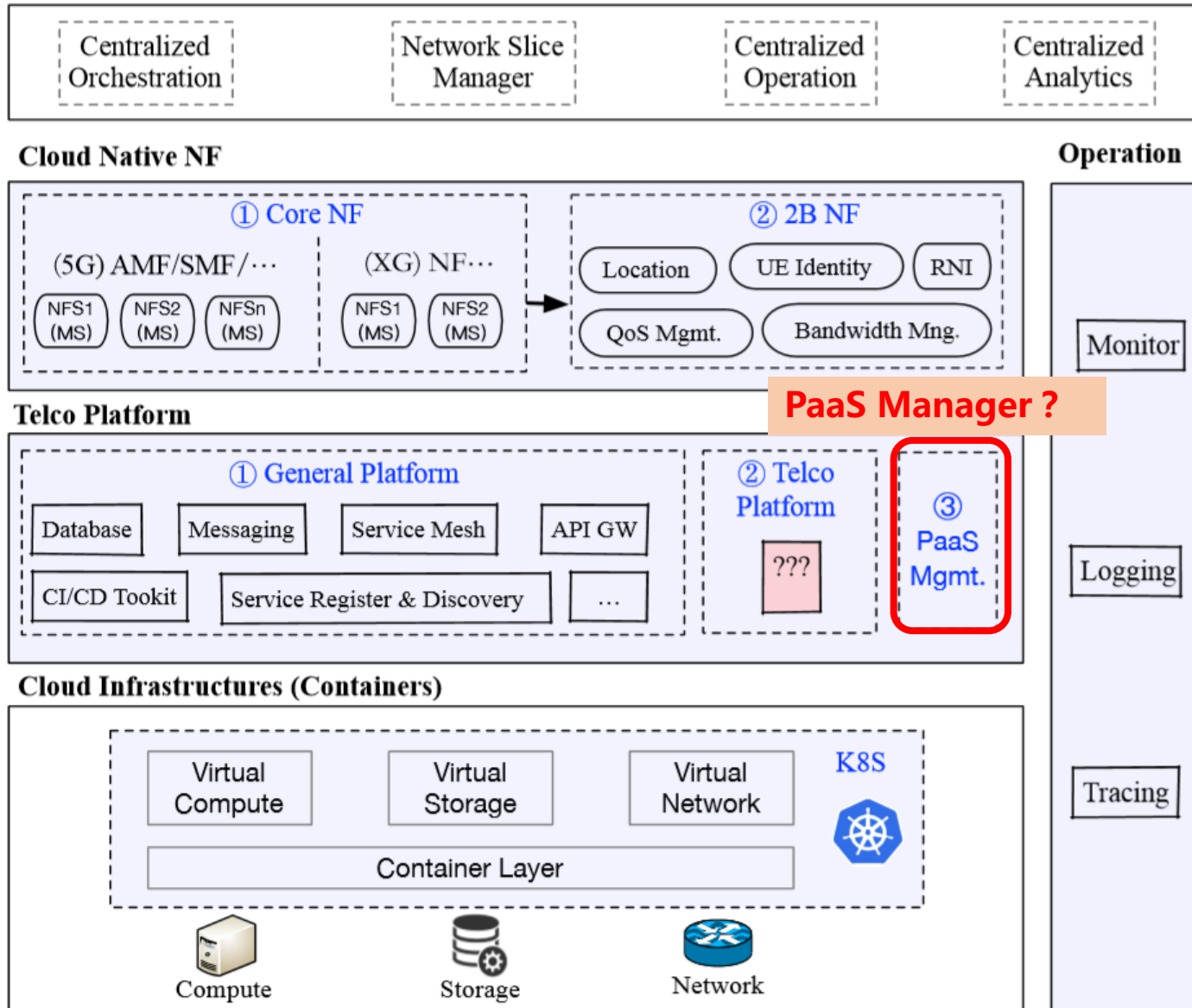
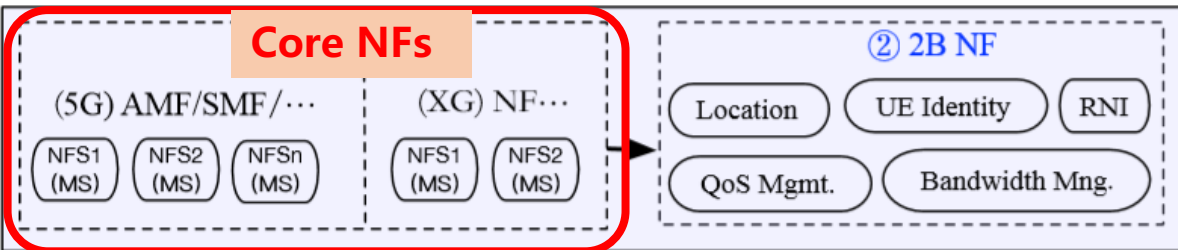3. **Scope for platform layer (PaaS Manager)?**
   - ☐ Do we need a new PaaS manager?
   - ☐ Definition and function:
     - ☐ What's the gap between this new PaaS manager and existing PaaS manager? What's the telco enhancement?
     - ☐ A PaaS ability orchestrator to support operators and vendors to manage existing PaaS abilities (GP & TP) to create new PaaS abilities.
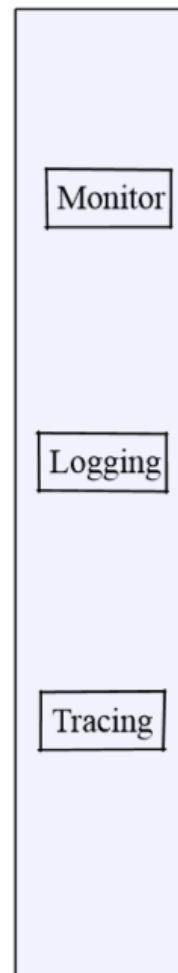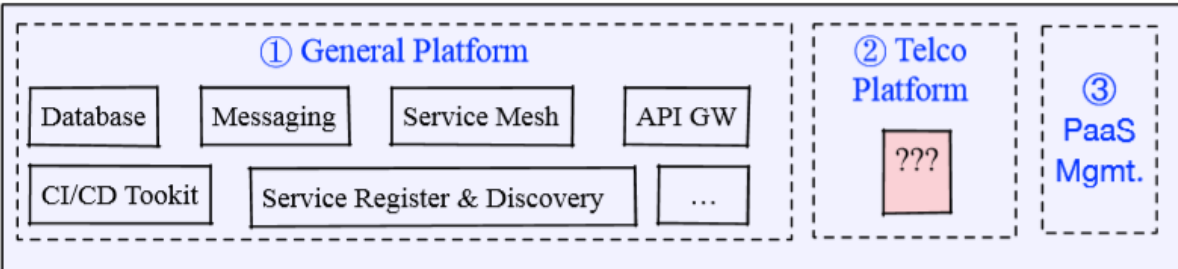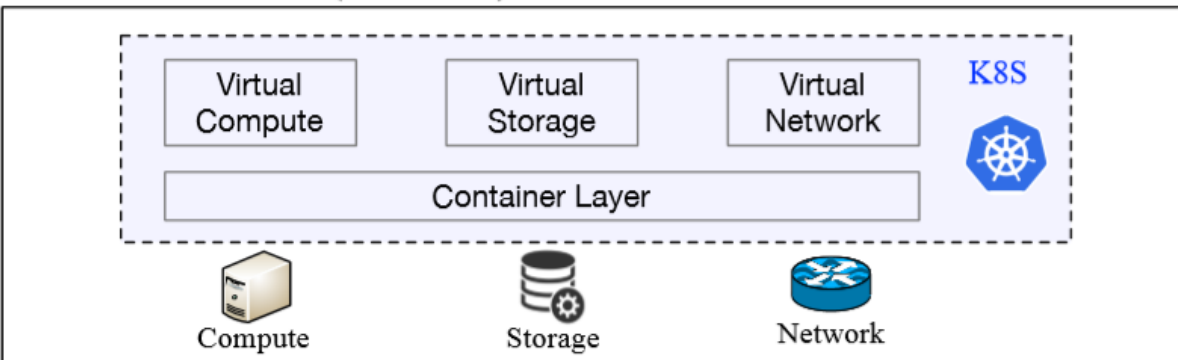
4. Scope for network ability layer (telco core)?

☐ ?

Core network functions challenges:

More vendors establish the 5GC by microservices, components and abilities can be provided through standard APIs for assembling.

- No standards for microservice redesign?
- How to achieve this on an open source PaaS platform while still reserve operators' and vendors' core value?
- Components of telco core network can be extracted as telco platform? (used to support 5GC development & XG NF creation)
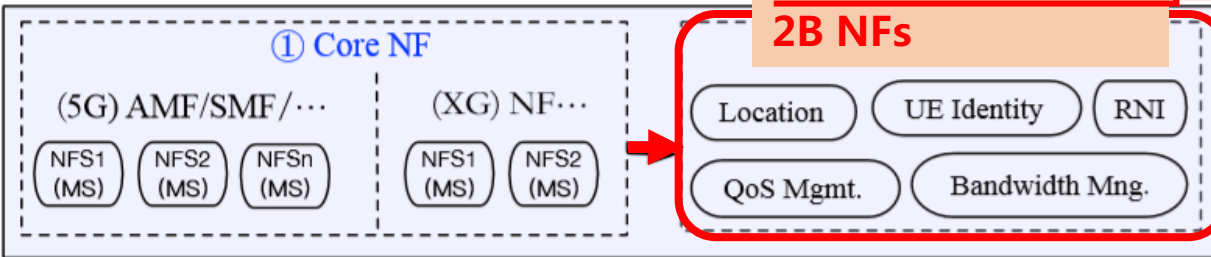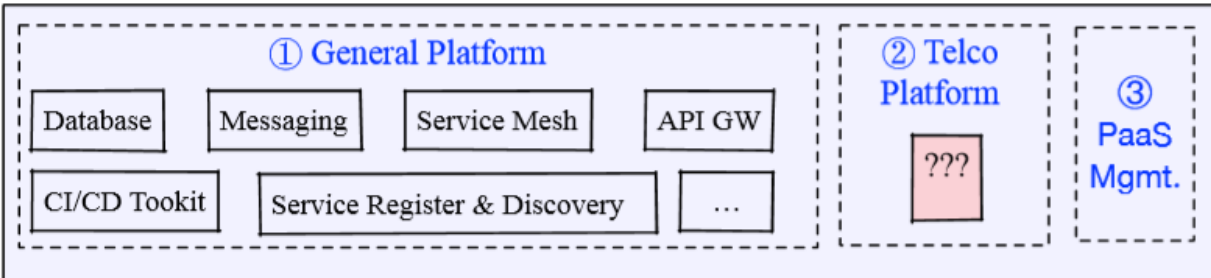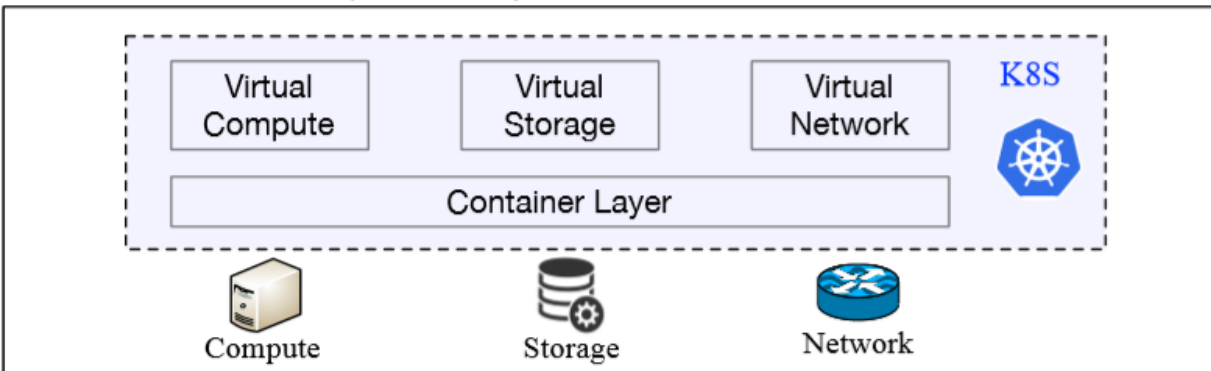
4. Scope for network ability layer (2B NFs)?

☐ Encapsulate core network ability as 2B NFs and expose them (Location, UE Identity, QoS Mgmt., etc.) to industrial users and enterprise users through standard APIs;

☐ Explore use cases and requirements on network abilities, discover the combination of different network abilities;

☐ Integrate with telco platform to provide service to 2B users;

☐ ? How to create a mechanism support flexible and self-assemble 2B NFs?
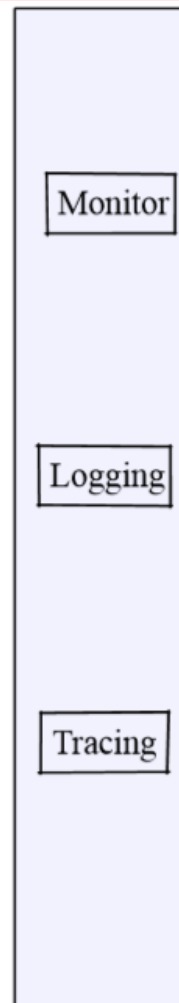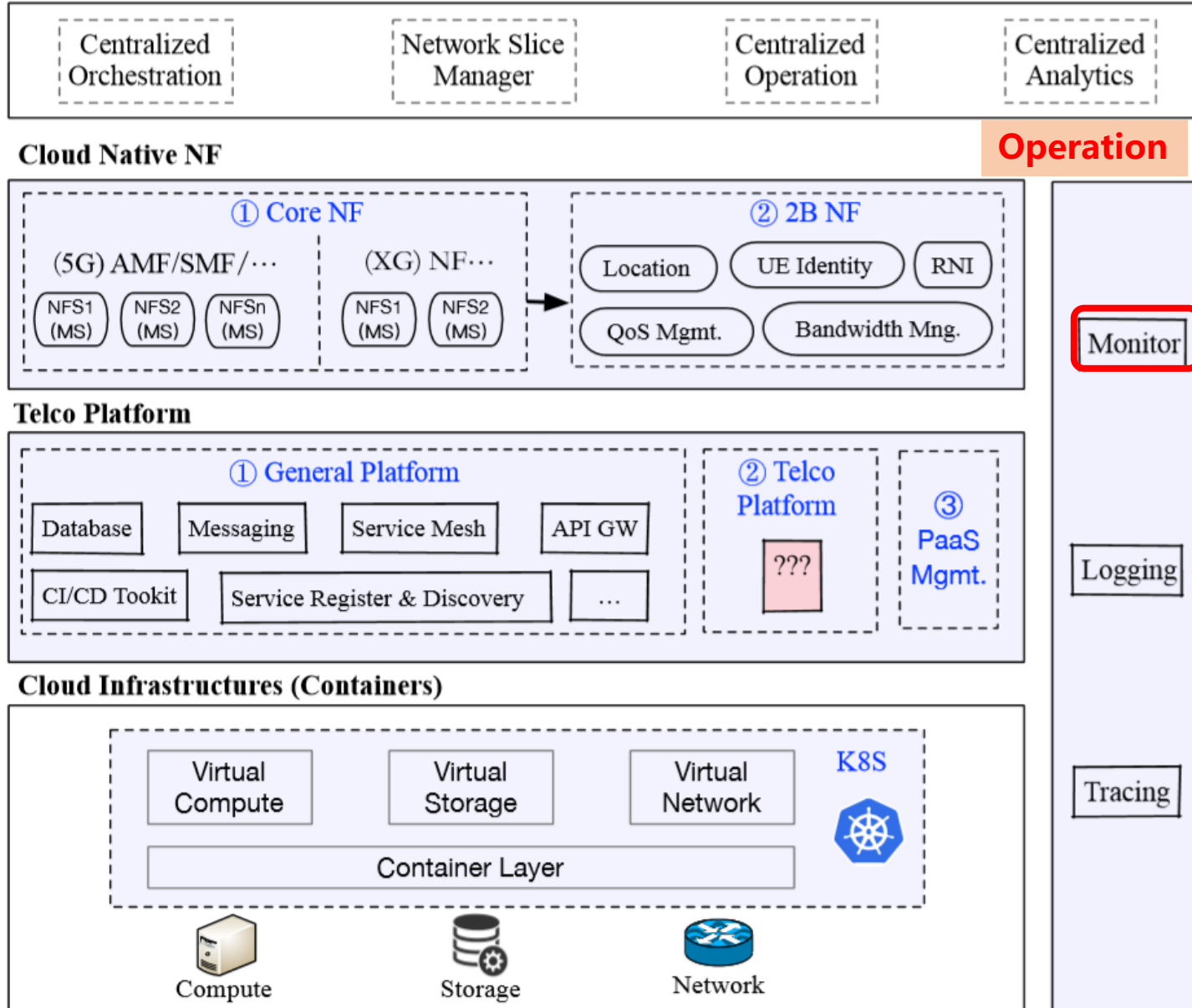
5. Scope for operation and maintenance?

- ☐ Enhancement of existing O&M software;
- ☐ Define monitoring metrics of network functions;
- ☐ Others?

O&M Challenges:

- Some excellent observation and analyzation software are designed for IT industry.
- **Prometheus** has become the de-facto standard for monitoring in Kubernetes environments, **how to use Prometheus at scale?**
- Different kinds of VNFs (vswitch, vFW, vDNS, etc.) need metrics from different dimensions?

Notes: