



SUPA Proposition

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Technologies

Problem Statement

Services

Network

**Multiple
Vendors**

**Multiple
Technologies**

**Multiple
Paradigms**

**Programmatic
Control**

Syntax

Data Models

SDN, NFV, Legacy

CLI, TL1, scripts

Semantics

Management and Orchestration

Challenges

- **Complicated network infrastructure operation and management**
- **Hard to deploy new and manage existing network services**
- **Difficult to adapt new technologies to existing network operation and management ecosystem**

Problem Statement

Services

Network

Multiple Vendors

Multiple Technologies

Multiple Paradigms

Programmatic Control

Syntax

Data Models

SDN, NFV, Legacy

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Semantics

Policy

Management and Orchestration

SUPA GPIM – Generic Policy Information Model

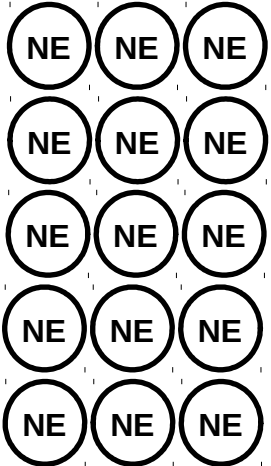
Unified technology independent operation and management framework based on declarative (intent) and/or ECA policies will help to solve the challenges and improve existing SP network

SUPA Framework

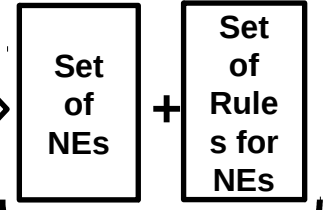
SUPA GPIM
Defines Policy (ECA or Declarative)
for the set of Network Objects

POLICY REPRESENTATION
INSERT NO_DATABASE
L4_ACL = "permit snmp 10.10.0.0/16 any" /*rule we need to apply*/
where NO_TYPE = router /* set of NO*/

OSS Network Objects Database represents SP Network



Filtering NE and Defining Rules



SUPA Policy

Selecting the set of NEs based on specific policy

Defining rules how to handle configuration for selected set of NEs

Feeding selection result and rules to internally implemented translation system

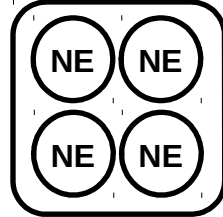
SUPA Framework defines how to build requests for selecting NEs and applying rules to this NEs based on specific conditions or without in terms of a specific IETF YANG Data Models

Feeding results to Translation System

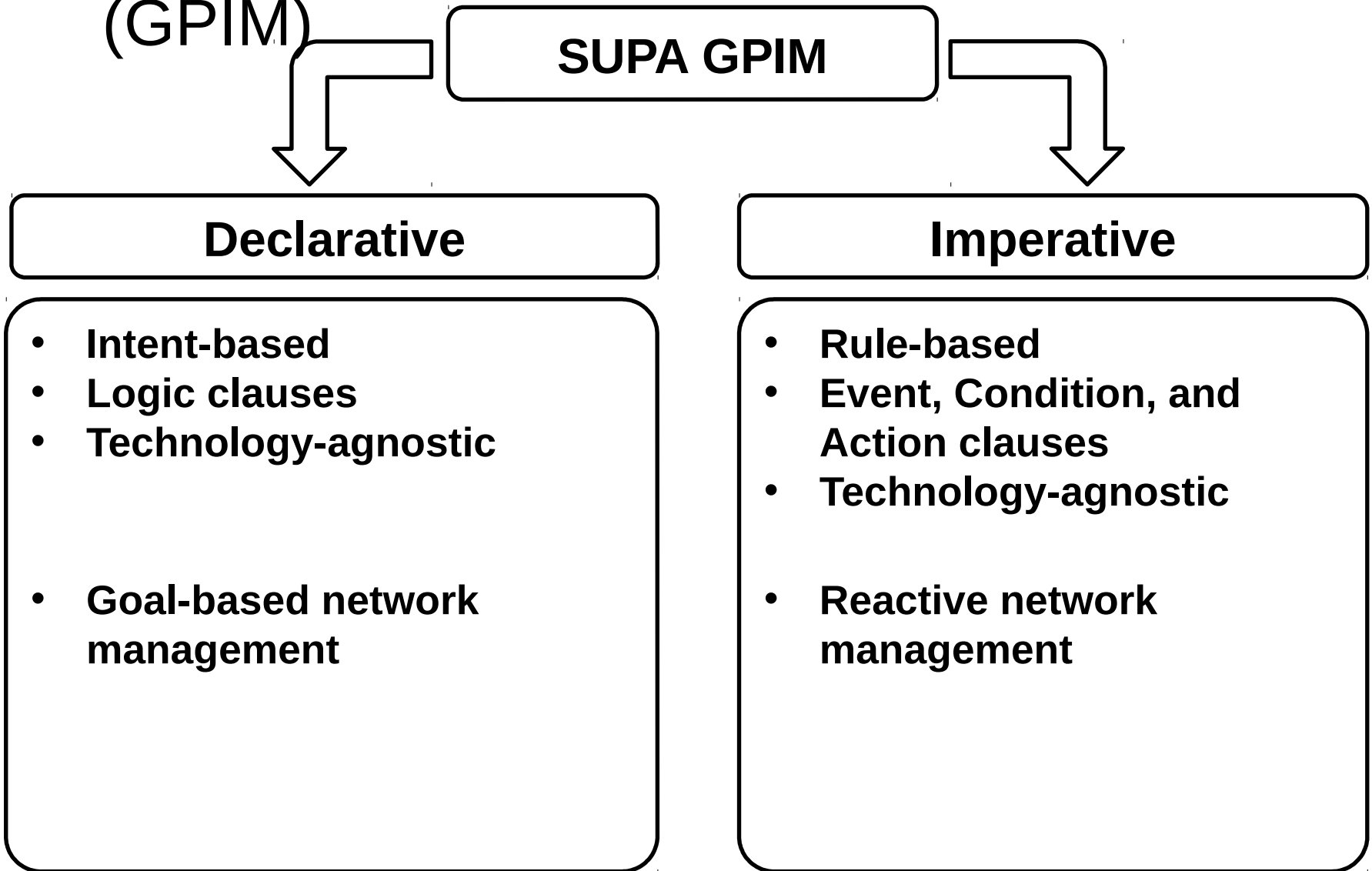
in terms of specific IETF YANG DM
Each SP can use own internal implementation how to translate SUPA Policies to configuration snippets

OSS Orchestration or Translation System under the OSS
(Selecting appropriate IETF YANG DM and building configuration snippets based on selected NEs and Rules)

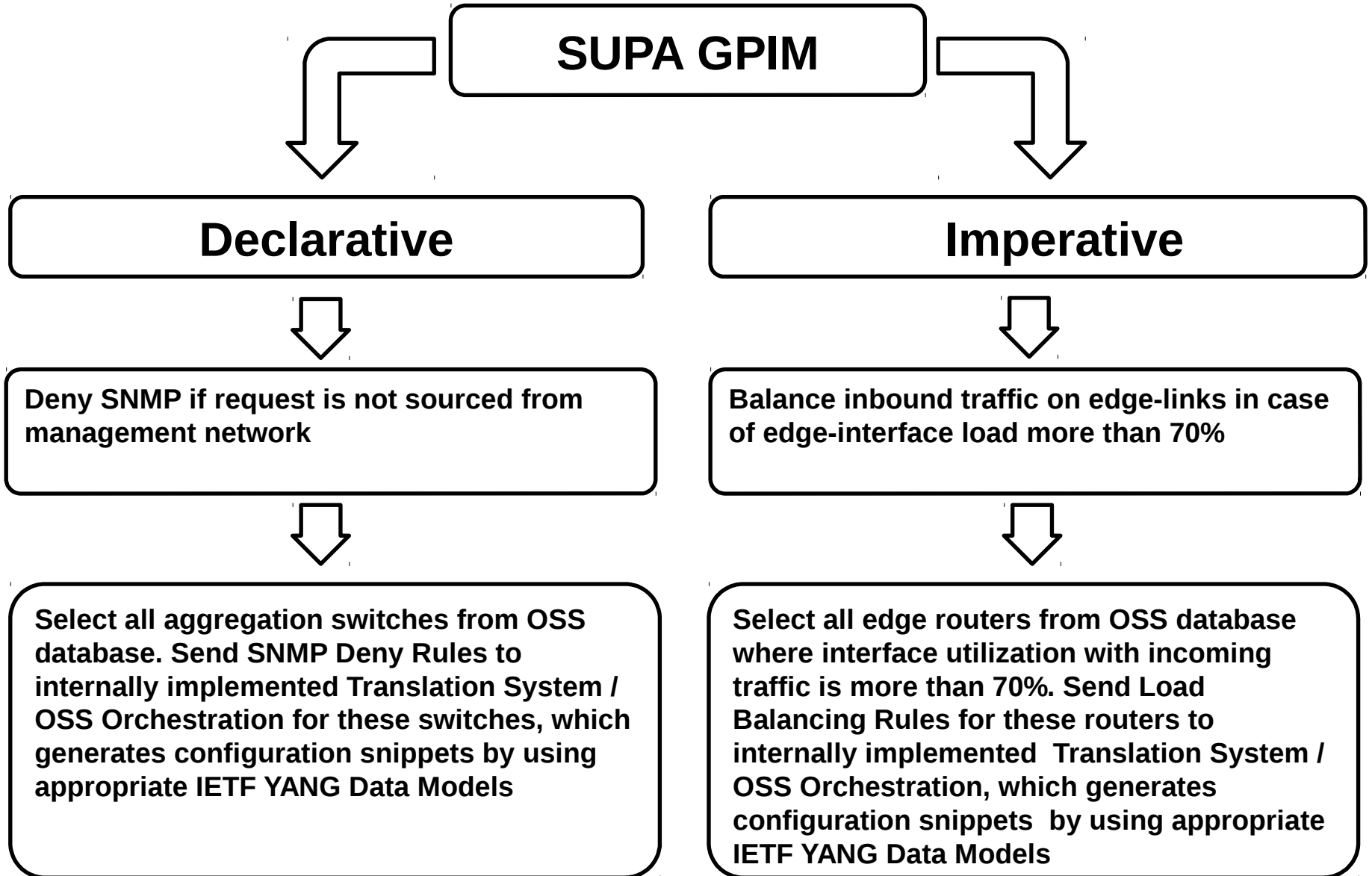
Applying Configuration to NEs



Generic Policy Informational Model (GPIM)



GPIM Application Examples



Value and Benefits of SUPA

Vendor and Technology Independent Policy Framework

Network Policy independence reduces complexity and vendor lockin. Helps unify network management.
Simplifies deployment of new Network Function and Services.

Unified Centralized Network Logic and Capacity Control

Increased abstraction enables simpler management for operators
The network functions and capacities can changes flexibly based on SP requirements and needs

Real-time and event-based Network Management

The network can automatically changes based on context monitored by policy at the current moment of time

Intent-based Network Management

The network can be managed based on intent – simplified and effective network management, similar effect can be achieved by using policy in terms of the different technologies

New Independent Network Management Layer

Policy can help to build intermediate layer between SP and Subscribers, between different SPs or between different administrative domains within one SP in terms of unified and shared management purpose.
Policy-holders can provide an instruments to Policy-users for their network resource management.

Deliverables and goals

- **Generic Policy Informational Model**
 - **SUPA GPIM defines a generic structure for imperative and declarative policies. This is converted to generic YANG data models. The IETF produces the models, and IANA is used to register the model and changes.**

- **Generic Policy Framework**
 - **Define how to construct Generic Policies for Network Infrastructure (Functions, Services and Intermediate layer)**
 - **Define a set of YANG data models that express the concepts defined in the generic policy information model in concrete data models. These models will be designed to be generic and extensible.**

The SUPA is a way to make the alignment for the Network Infrastructure Management based on Unified Policy approach