NSF-triggered Traffic Steering in I2NSF Framework

(draft-hyun-i2nsf-nsf-triggered-steering-01)

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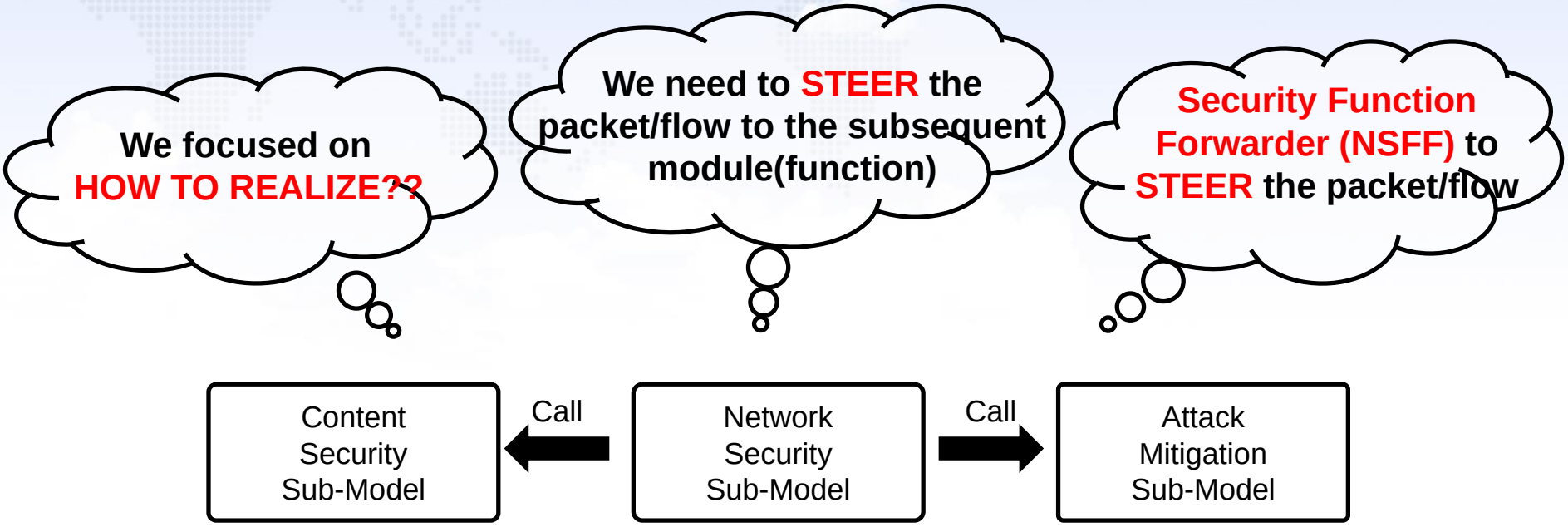
Introduction

- This document describes an architecture of the I2NSF framework to enable traffic steering between NSFs.
- Such traffic steering enables composite inspection of network traffic through various types of NSFs.
- It can also provide load balancing over NSF instances combined with dynamic NSF instantiation with NFV.
- Our traffic steering is based on NSF Capability Information Model.

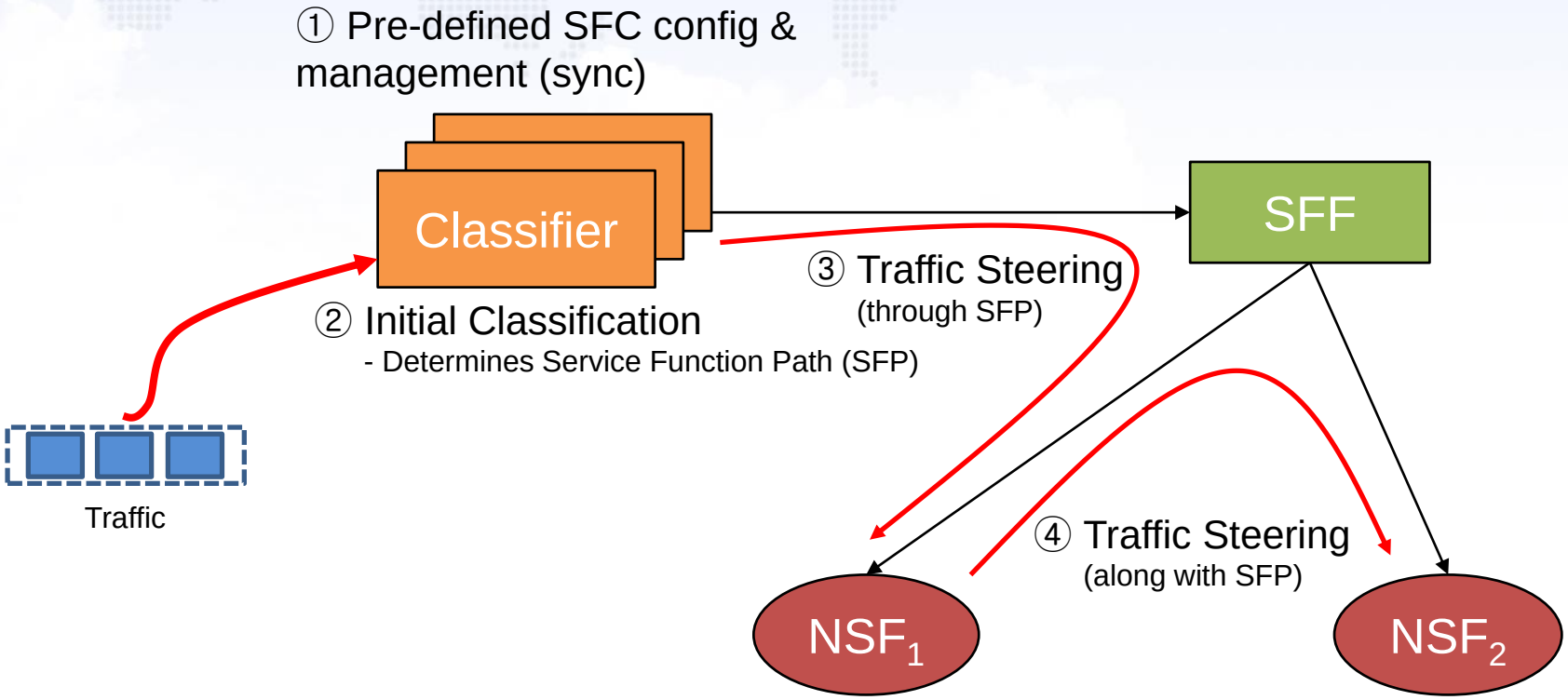
Motivation



<Information model of NSFs Capabilities>
Reference: **draft-xibassnez-i2nsf-capability-00**

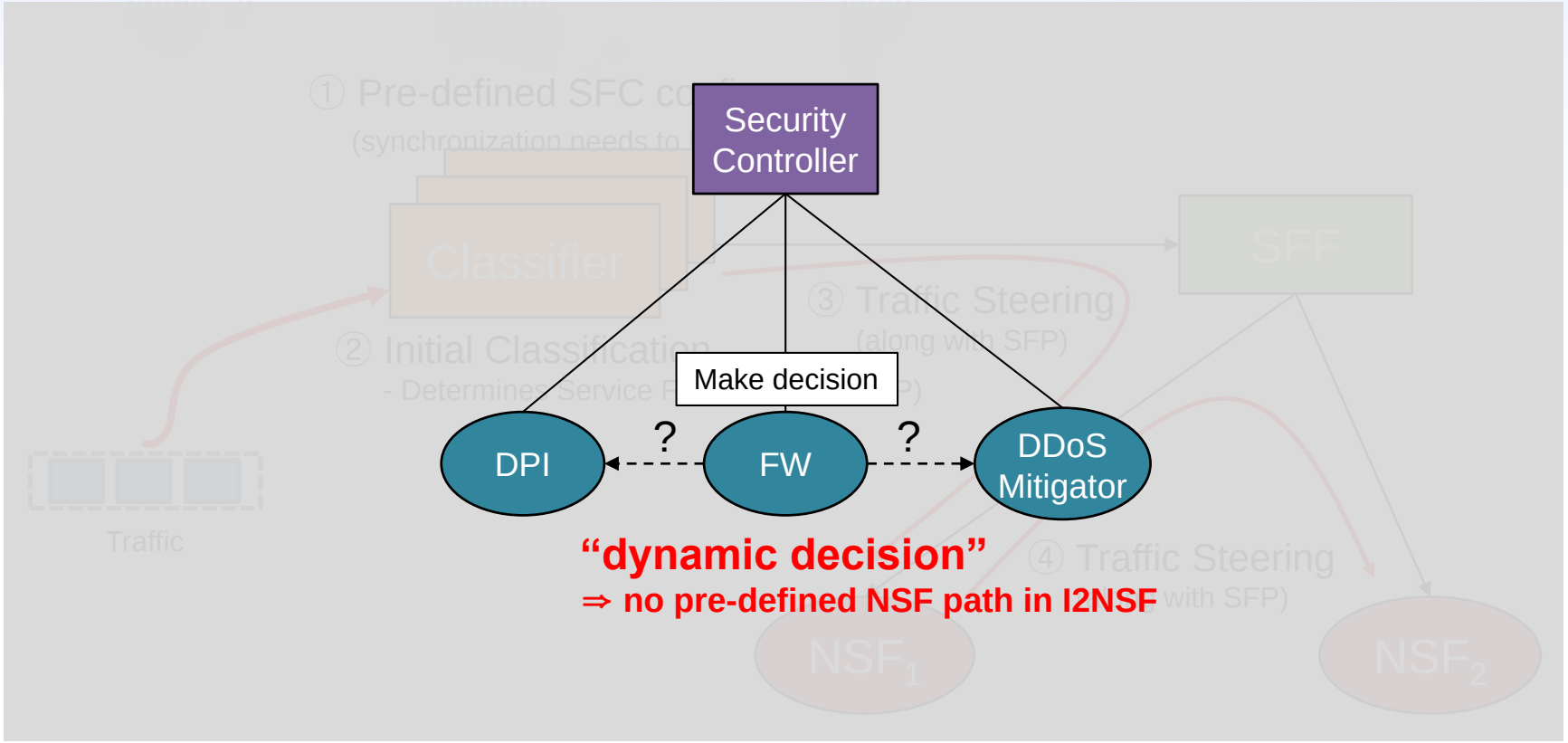
Motivation

- Existing Service Function Chain (SFC) Architecture
  - In [draft-hyun-i2nsf-sfc-enabled-i2nsf-01], we integrated SFC arch into I2NSF framework.



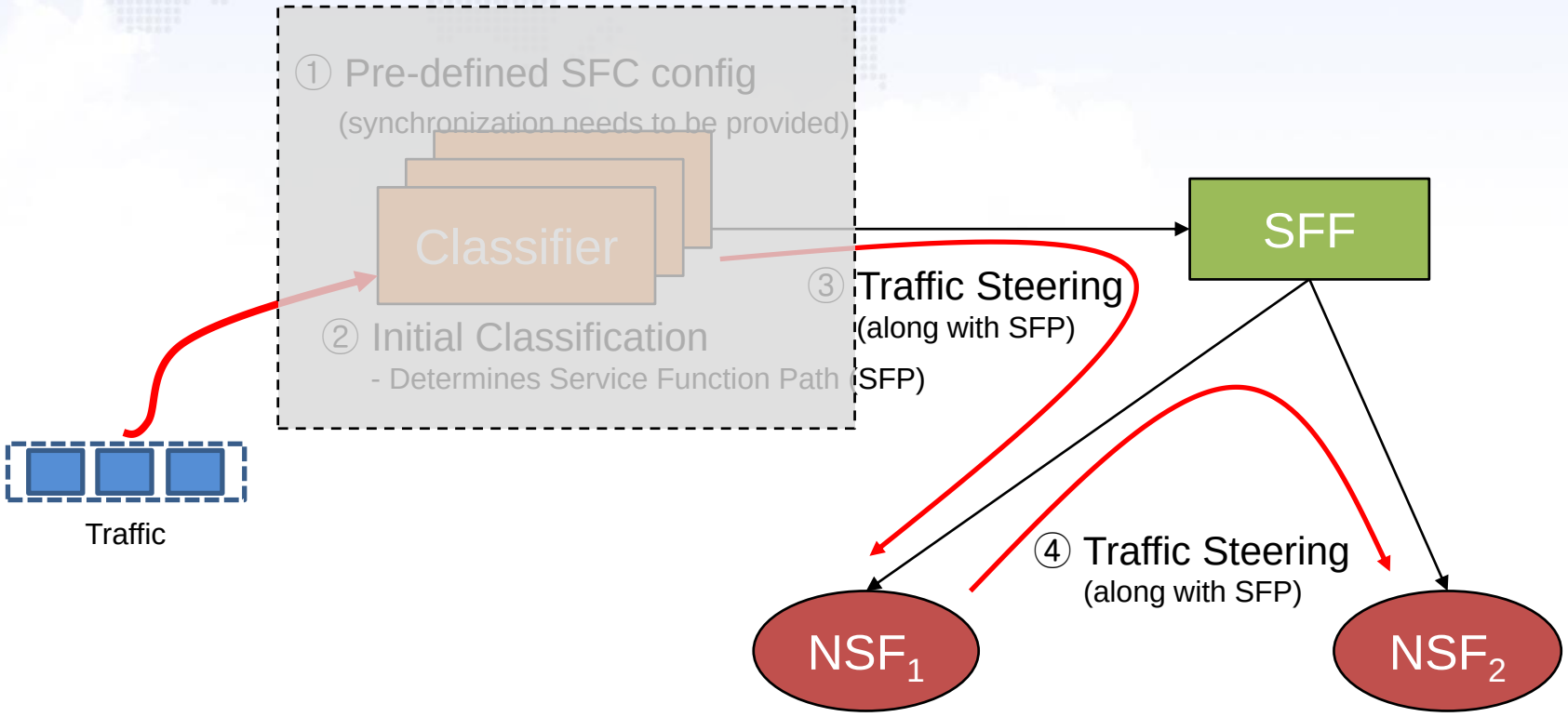
Motivation

- In I2NSF framework: Information model for NSFs capabilities

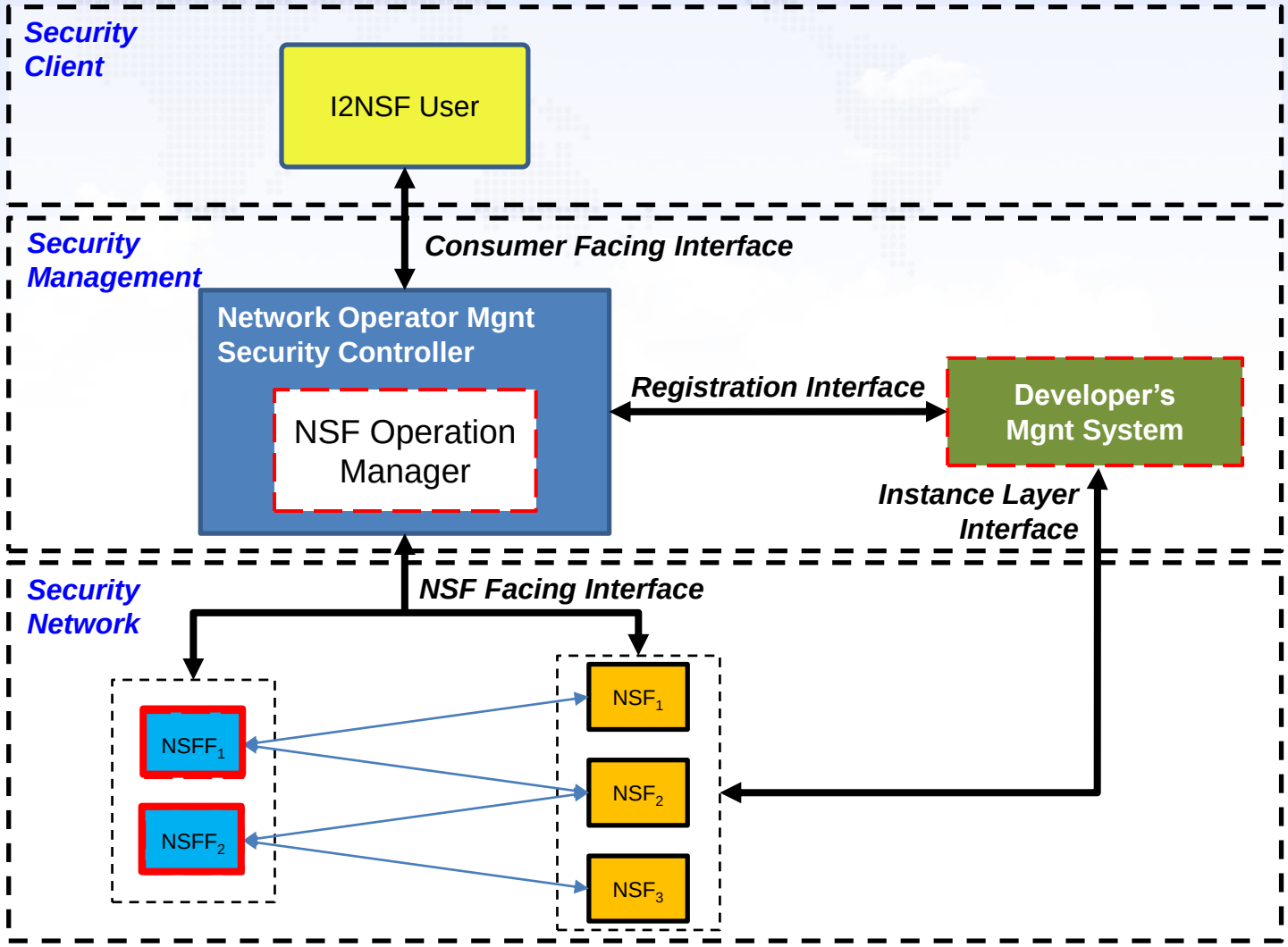


Motivation

Can skip this part!!



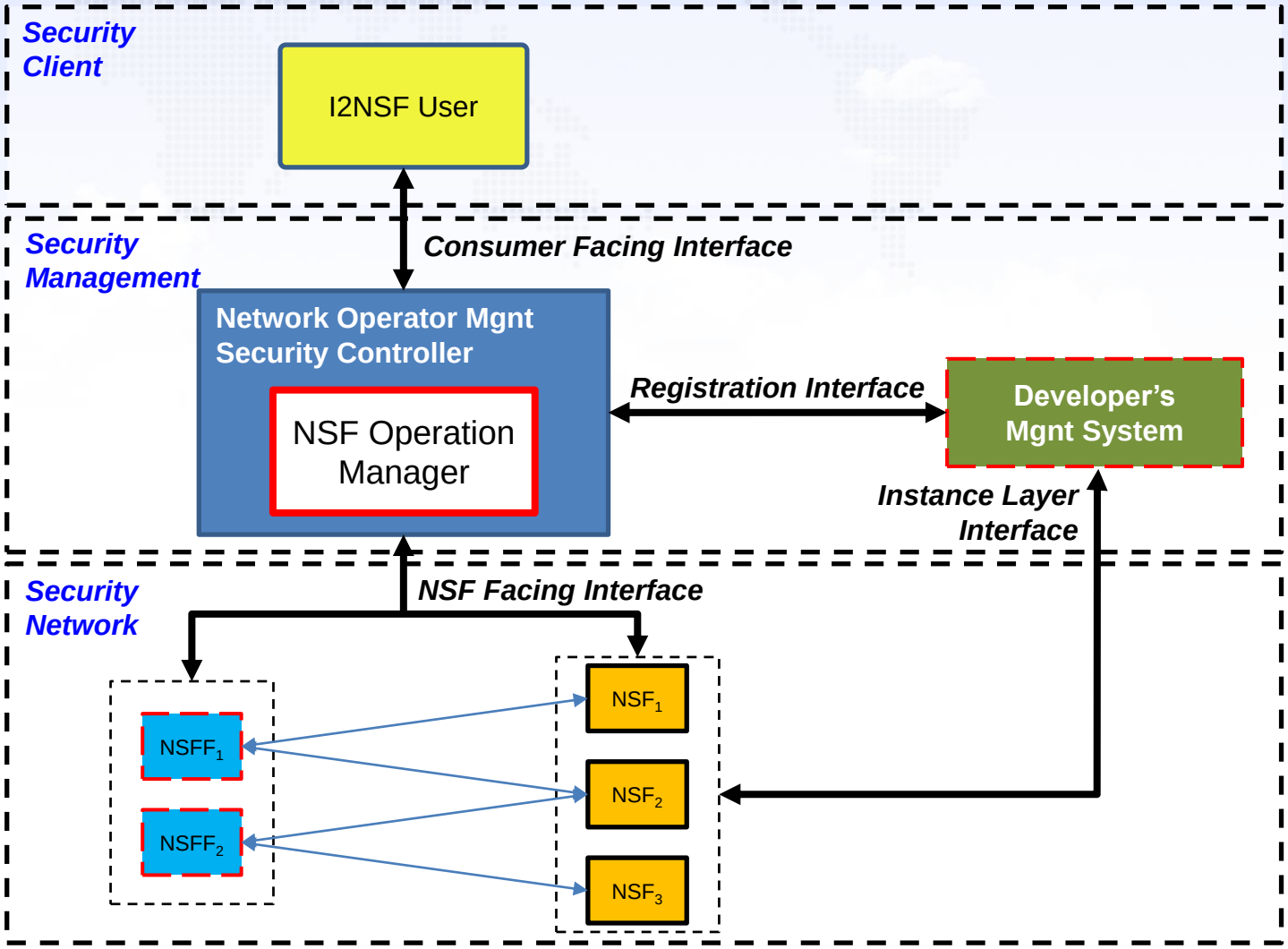
Architecture & Components



NSFF

- Forwards packets from one NSF instance to another.
- Consults with NSF Operation Manager about the next NSF instance to forward a packet.

Architecture & Components



NSF Operation Manager

- Maintaining the information of NSF instances.
  - NSF Profile
  - Forwarding information (i.e., IP, VxLAN etc.)
  - Capacity & load status
- Provides the forwarding information of the select NSF instance to NSFF.
- Requesting Developer's Management System for the dynamic instantiation or elimination.

Summary & Next Step

- Discussion on the existing SFC approach vs. Ours

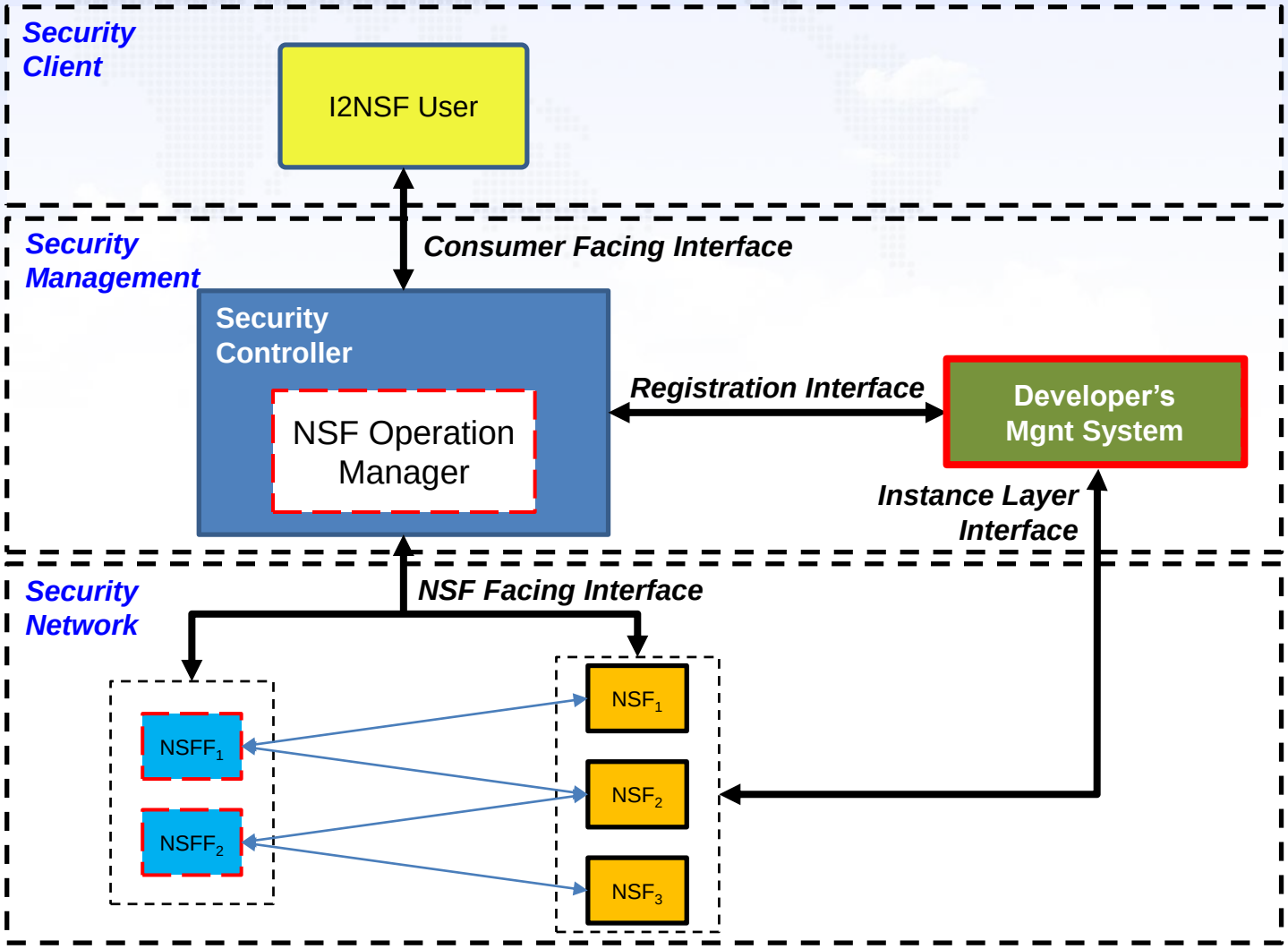
SFC Architecture-Friendly Approach	I2NSF Framework-Friendly New Proposal
✓ Existing standard ✓ Good for enforcing a static service function path	✓ No pre-defined NSF path configuration & management ✓ No classifier and initial classification required ✓ No re-classification required

- We proved the feasibility of our NSF-triggered traffic steering in IETF-97 I2NSF Hackathon Project.

- We will design more details of information that should be exchanged
  - ✓ between NSFF and NSF Operation Manager and
  - ✓ between NSFF and NSF.

Appendix

Architecture & Components



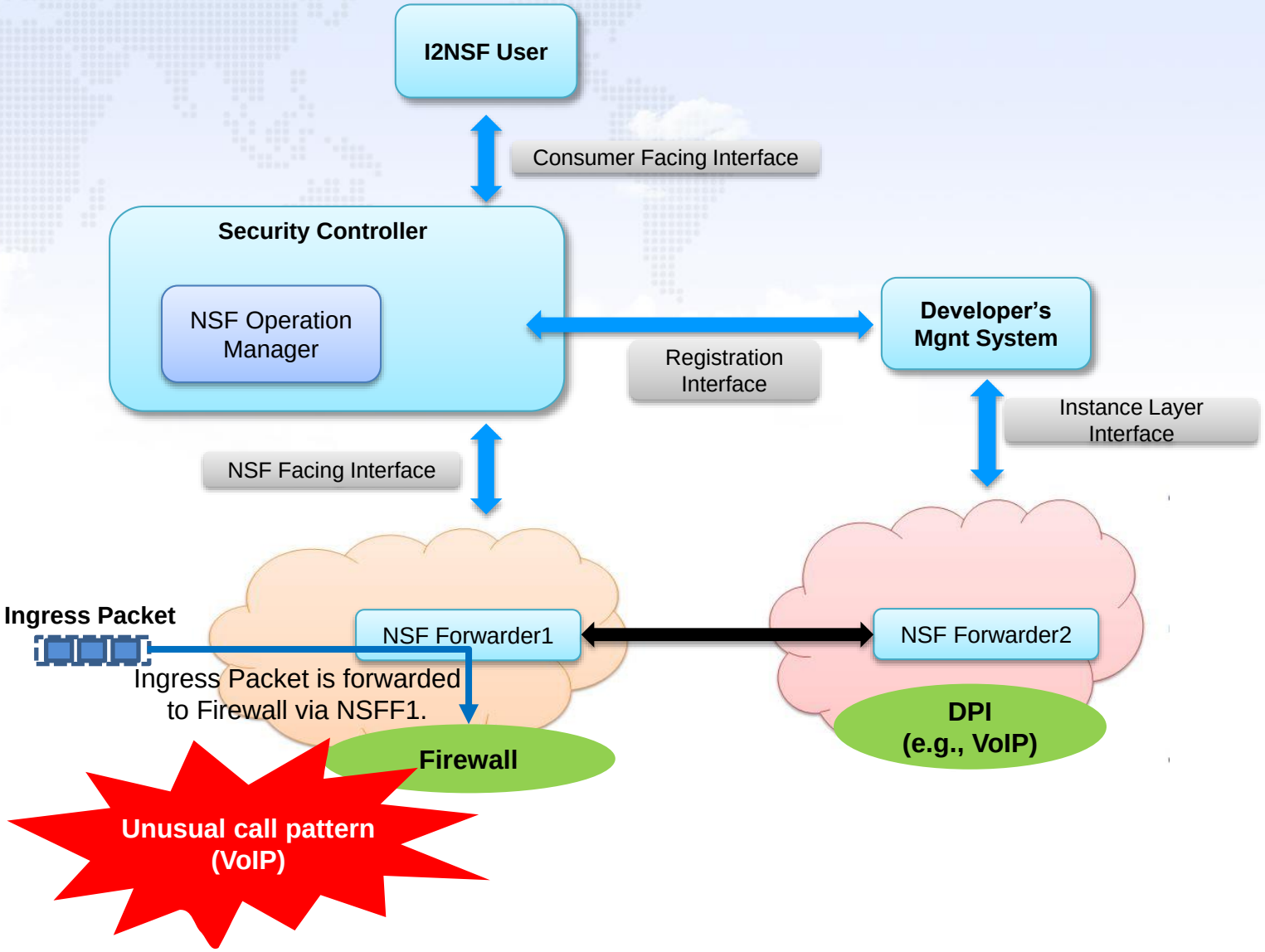
Developer's Management System

This component might exist in a third party domain (e.g., NSF vendors' clouds).

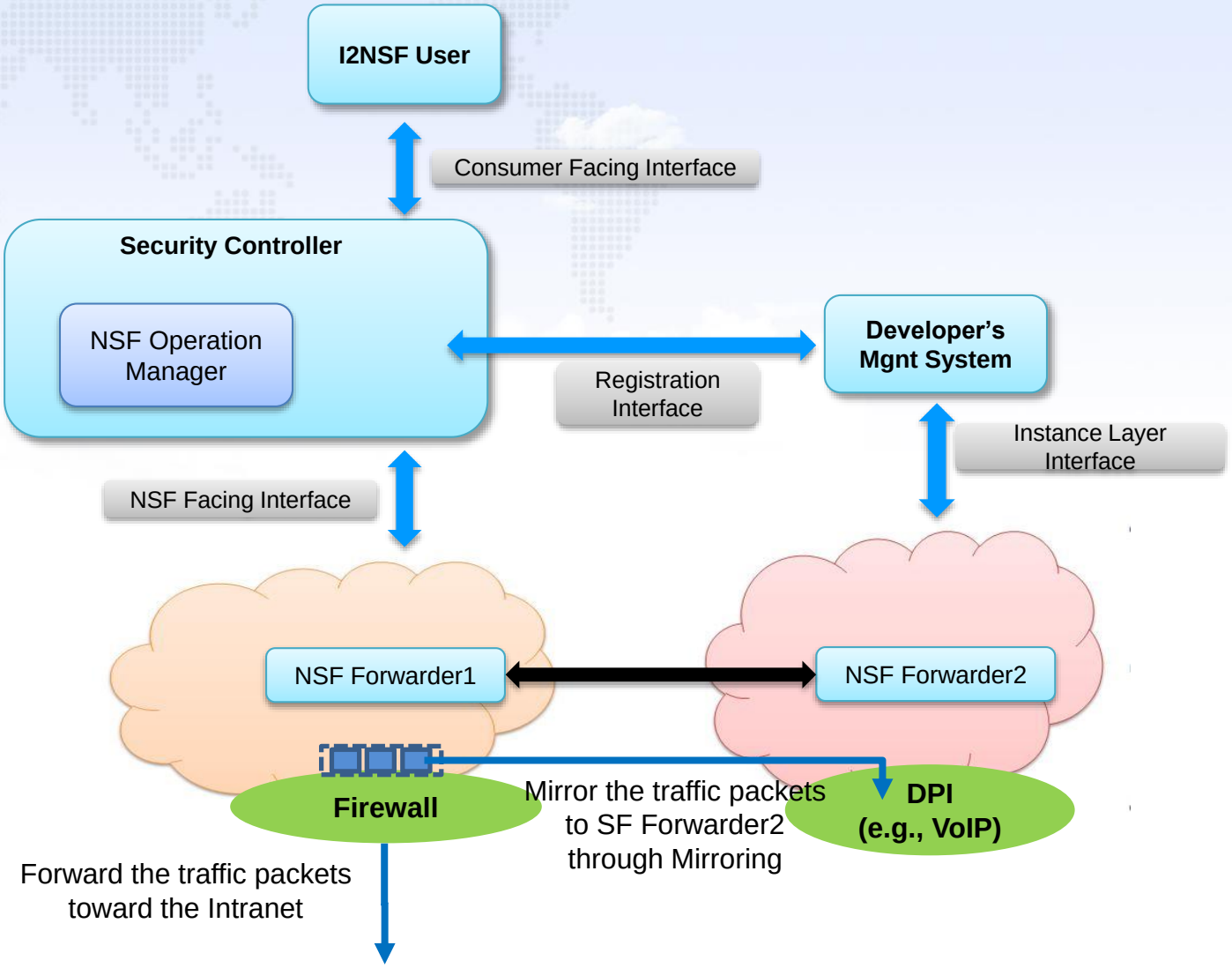
- Creates additional NSF instances when the existing NSF instances are congested
- Eliminates some of the NSF instances which are unused

NSF Operation Manager will request NSF instantiation or elimination based on NSF instances' current status.

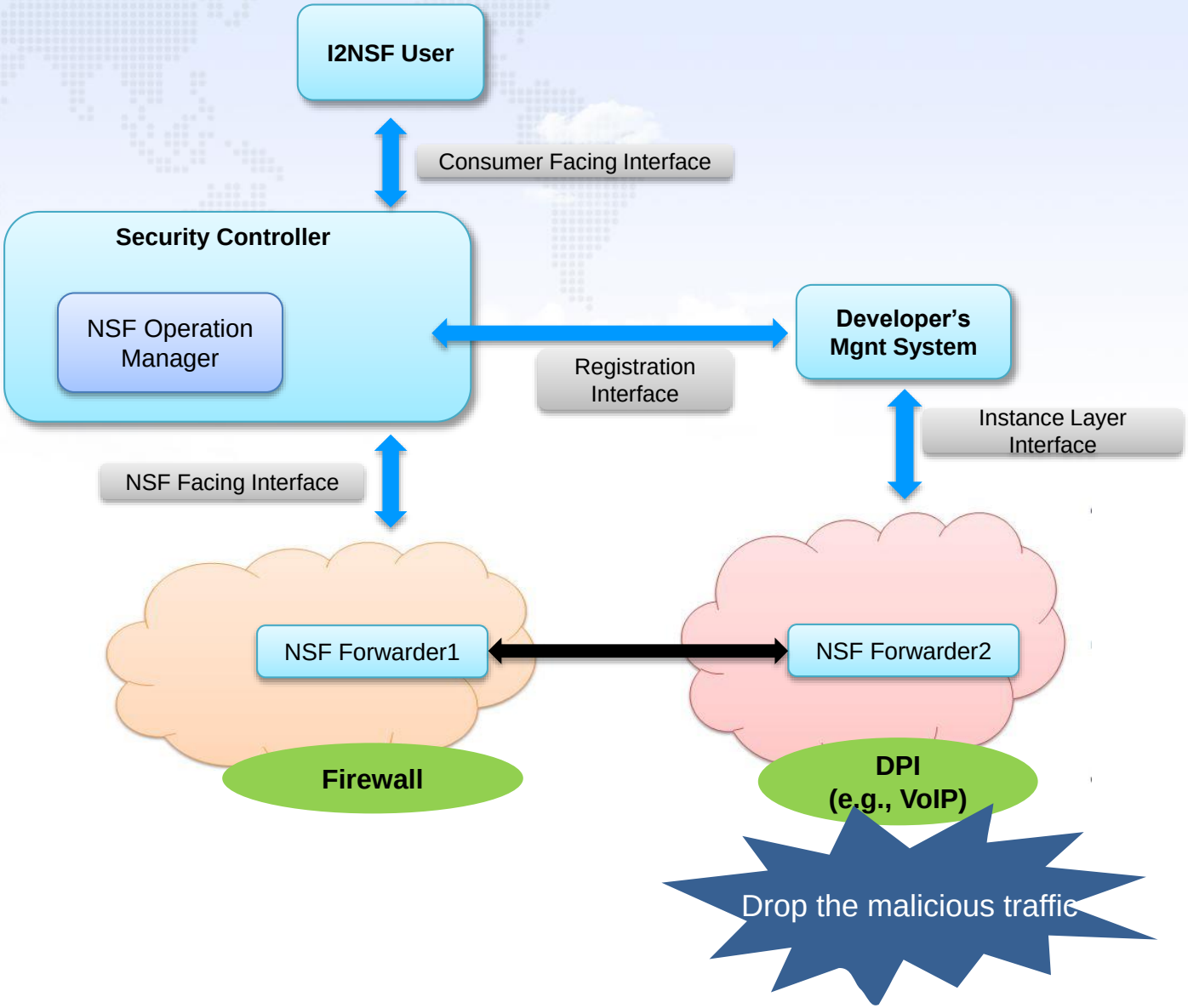
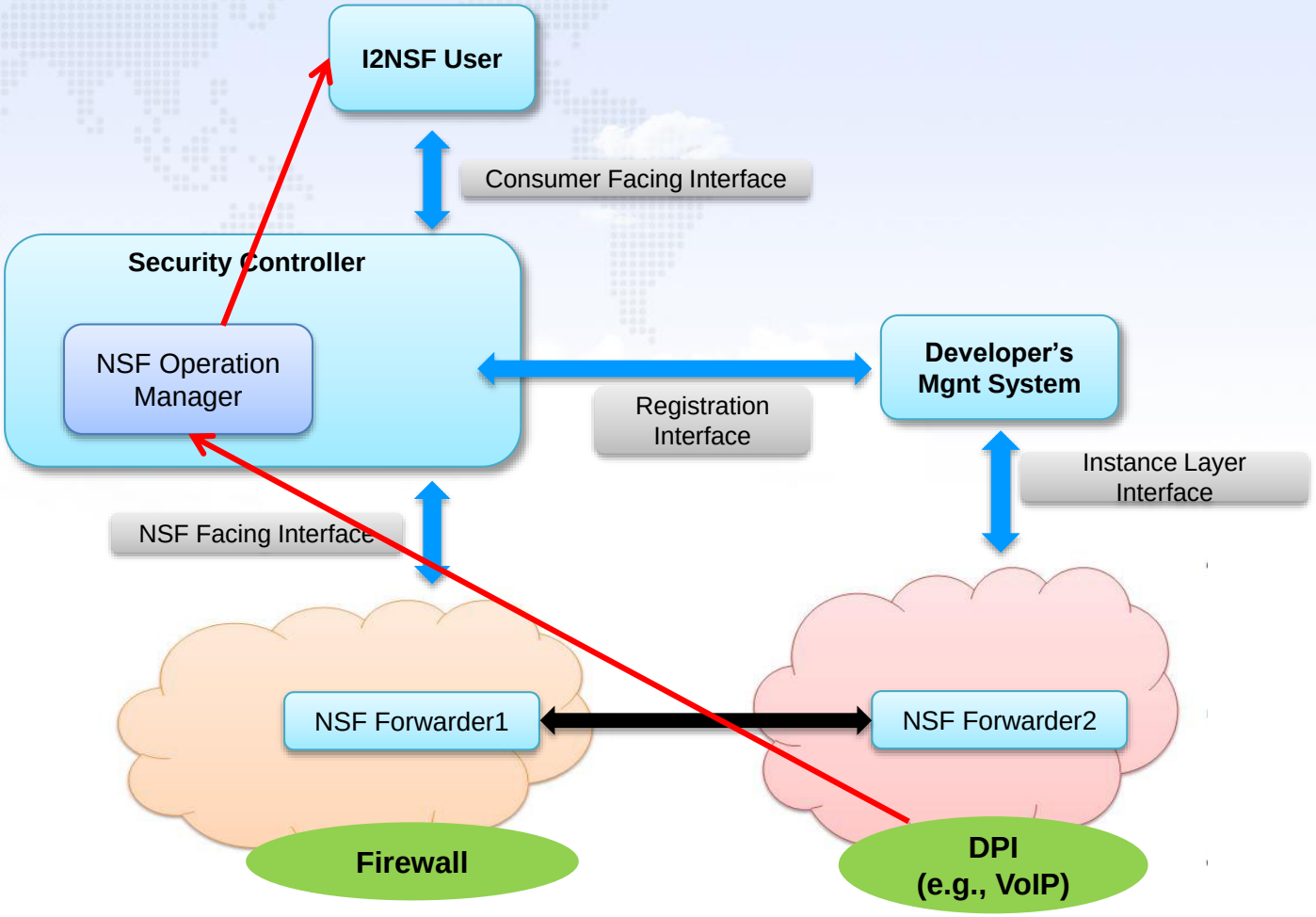
Use Case of VoIP/VoLTE (1/4)



Use Case of VoIP/VoLTE (2/4)



Use Case of VoIP/VoLTE (3/4)



Use Case of VoIP/VoLTE (4/4)