Analytic Framework for NFV Orchestrator

draft-liu-nfvrg-analytic-framework-00

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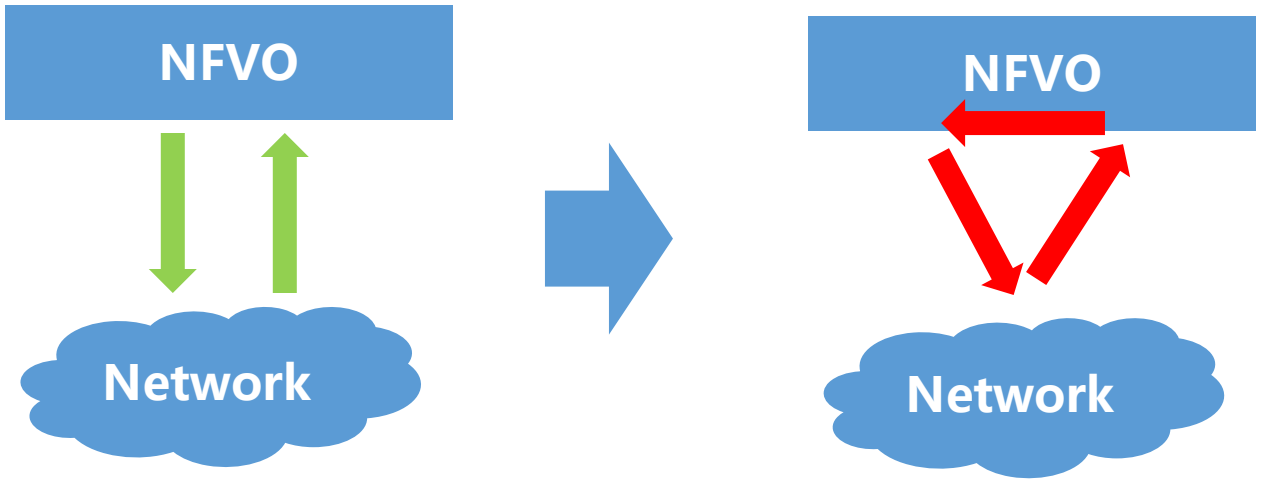
Background

- More and more NFV research focus on Orchestrator.
  - Orchestrator Architecture
  - Task Fulfillment
  - Status Collection and Monitoring
  - Analytic and Policy Management

- This draft focus on Analytic and Policy Management

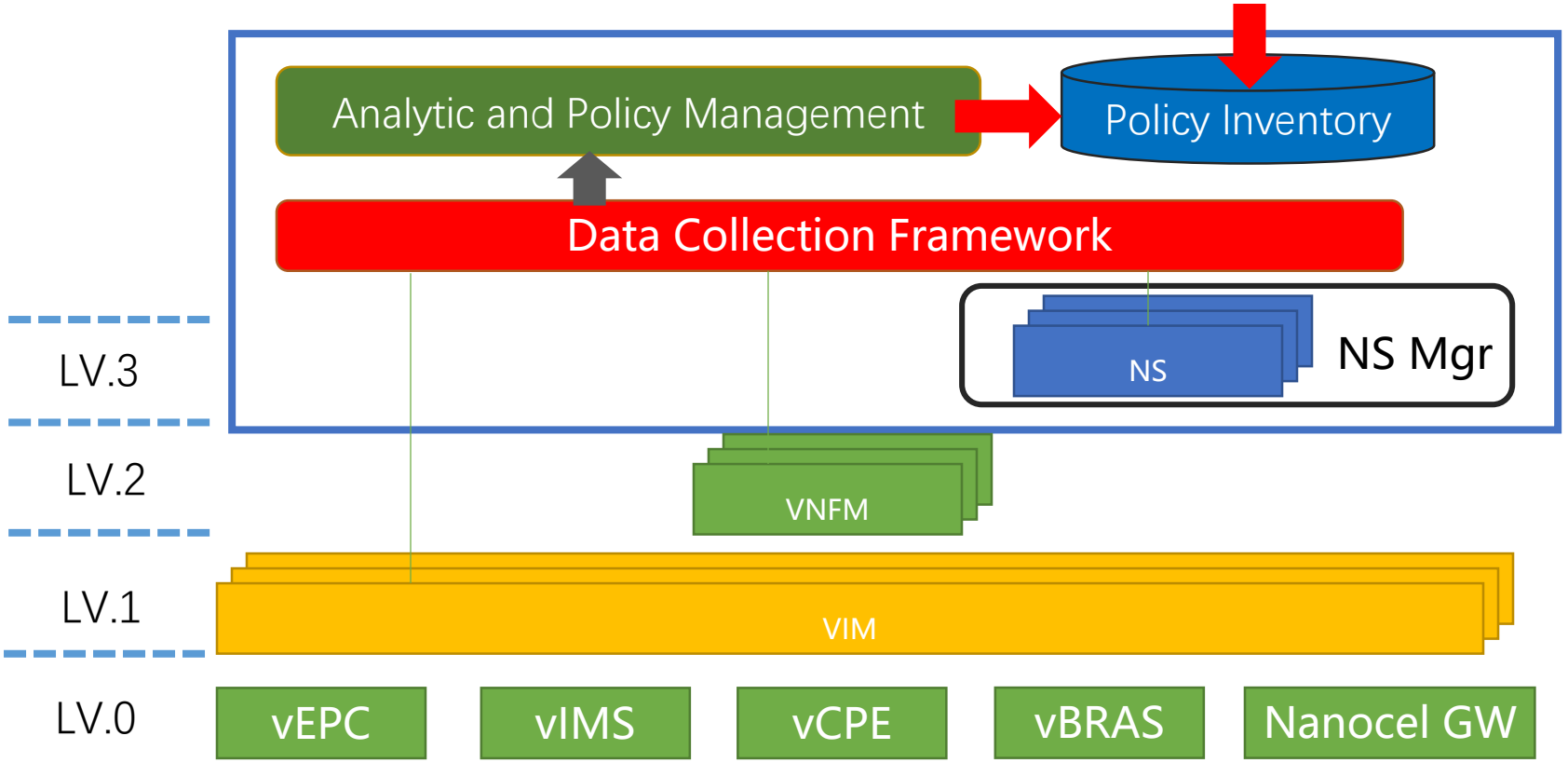


Introduction & Outline

-00 Version

- **Part 1** Monitoring data collection and policy inventory
- **Part 2** Analytic model
  - Real-time analytic model
  - Non-real-time analytic model
- **Part 3** Architecture in NFVO

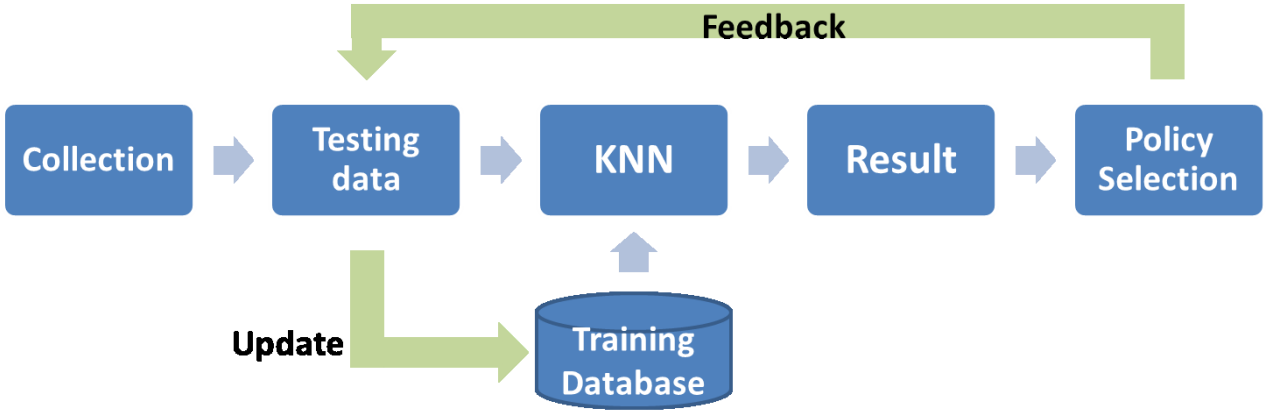
Data collection and policy inventory



LV.1 VIM	LV.2 VNFM	LV.3 NS Mgr
Server CPU Usage	VNF CPU/Memory/Disk/NIC Performance Metric	VIM Virtual Resource Statistic
Server Memory Usage	Fault Report	VNF Performance KPI
Server File System Usage	Event Report	Event Report
Server NIC (Network) Usage	Alarm Report	Fault Report

Analytic model and framework

- **The Real-Time Analytic Model**
  - ➢ K-Nearest Neighbor (KNN) algorithm



✓ Training phase

$X = [a_1(x), a_2(x), \ldots, a_n(x)] \sim I$

✓ Classification phase

Euclidean distance

$$d(x,y) = \sqrt{\sum_{i=1}^{n} \left(a_i(x) - a_i(y)\right)^2}$$

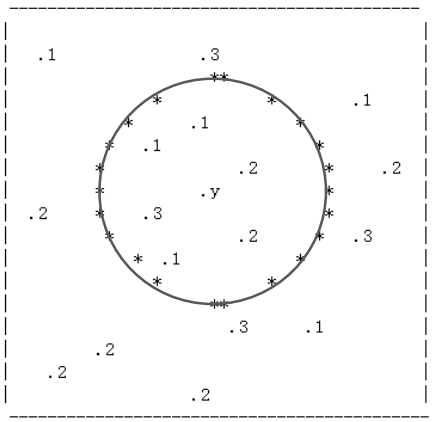
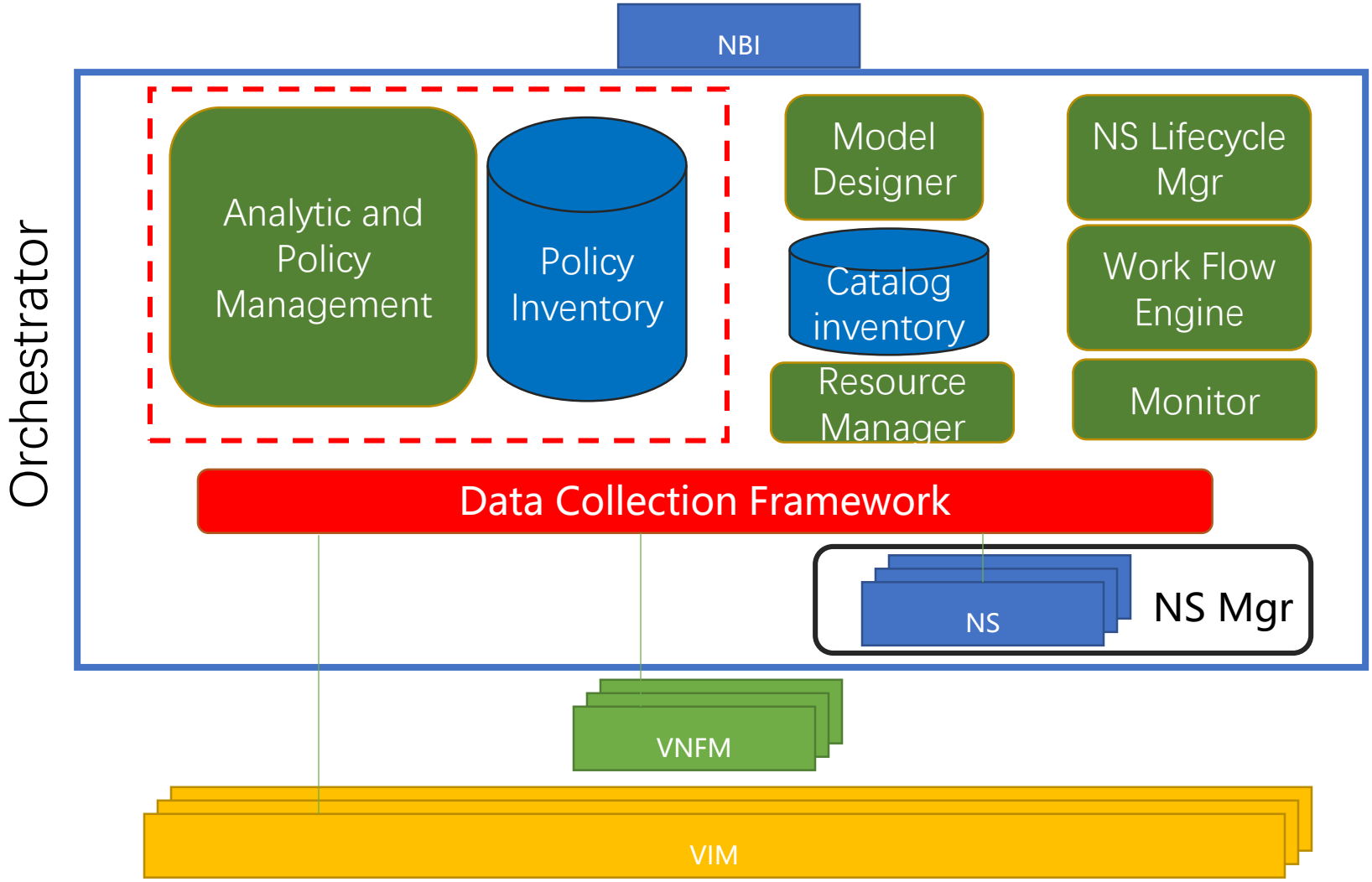


Figure of KNN algorithm

- **The Non-Real-Time Analytic Model - Future work**

Analytic framework in NFV orchestrator



Next Step

- Keep working on:
  - Parameter inventory of Monitoring data
  - Policy generation and selection
  - More real-time model and non-real time model

- Welcome for more reviews and comments

Thank you!

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