

# Inband Flow Learning Framework

draft-hwy-opsawg-ifl-framework-00

Liuyan HAN ☐ **Minxue WANG**

**China Mobile**

Fan Yang

**Huawei**

**Presenter: Minxue WANG**

113<sup>th</sup> IETF – Online

# Objective of This Contribution

---

- Network telemetry provides the network visibility to the state and behavior of a network, which is crucial for network operation and network load supervision.
- From operator's perspective, it is important to monitor live traffic, including the delay and packet loss etc.
- Previously we have presented problem statements of inband flow telemetry deployment on 112<sup>th</sup> IETF.
- This draft we are going to propose a framework of an inband and flow based flow information learning mechanism (Inband Flow Learning ,IFL).

# Framework of Inband Flow Learning

---

- The framework of Inband Flow Learning (IFL) includes three components of Service Discovery, Inband Flow Information Telemetry Deployment and Inband Flow Information Telemetry Adjustment shown below.

## Inband Flow Learning Framework

### Service Discovery

- Flow characteristic acquisition

- Configuration trigger
- Live traffic sampling

### Telemetry Deployment

- Telemetry type
- Telemetry policy
- Telemetry instance

- Controller deploy
- Device deploy

### Telemetry Adjustment

- Telemetry Aging

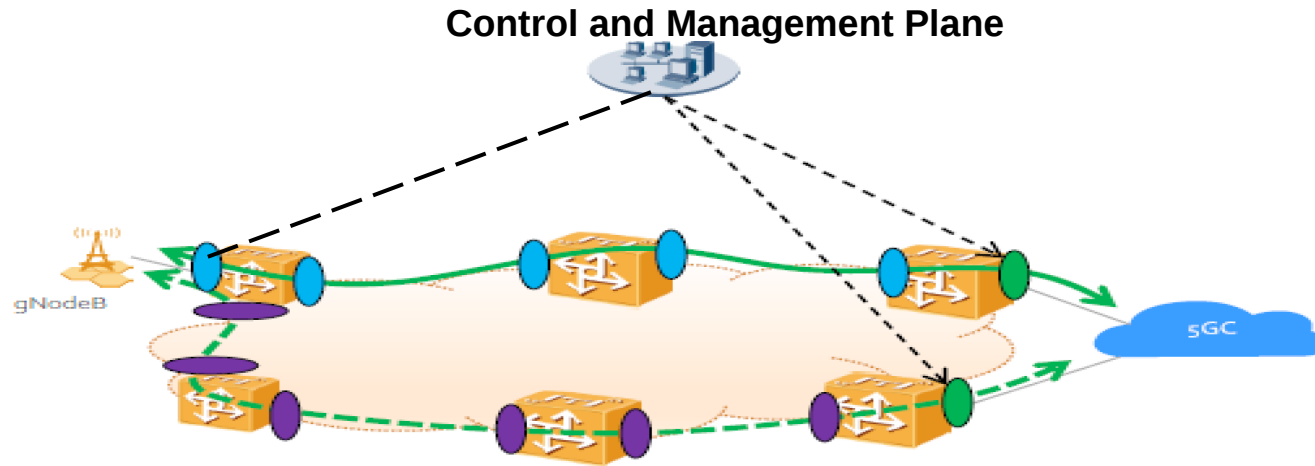
- Data plane trigger
- Controller plane trigger

# Service Discovery

---

- Service discovery is a process of sampling to the service flow which is being transmitted in network in order to further determine which flow should be monitored.
- The characteristics of service flow :IP source address, IP destination address, TCP/UDP port number, VRF, incoming/outgoing interface on network node, etc.
- To target of service discovery is to obtain the flow characteristics.
  - **Configuration triggers:** based on database of planned service flow information stored on the controller and obtained from network operations, such as a table of services between base station and core network equipment.
  - **Device triggers:** live traffic sampling. It relies on the capability of forwarding plane of network node.

# Telemetry Deployment



## Telemetry type

End-to-End (E2E)  
Hop-by-Hop (HbH)

## Telemetry Policy

To determine which flow  
should be monitored.  
IP\Port etc.

## Telemetry Deployment

Controller deploy  
Device deploy

# Telemetry Adjustment

---

- **Route convergence**
  - service flow may switch to other forwarding nodes. To monitor the same flow information, new telemetry instance is required to add on the new transit or egress node.
- **Aging**
  - Regarding the IFITI running on the fault path, or there is no flow that meets the policy, the aging of IFITI should be supported in order to recycle the network resources. IFITI should be deleted once it becomes stale.
- Can be controlled by the central controller or network node.

# Next Step

---

- Update the draft according to WG feedbacks.
- Welcome comments or contributions to this work!

---

Thank You

wangminxue@chinamobile.com