



# **IETF Hackathon - IPFIX On-Path Telemetry with SRv6**

**IETF 118  
4–5 November 2023  
Prague, Czech Republic**



# Hackathon Plan

- **Collect hop-by-hop delay of from SRv6 nodes using following I-D/RFCs:**
  - IPFIX IEs of SRv6 SRH ([draft-ietf-opsawg-ipfix-srv6-srh](#)): Implemented in IETF 117 hackathon
  - IPFIX IEs of On-Path Delay ([draft-opsawg-ipfix-on-path-telemetry](#))
  - IOAM Edge-to-Edge Option-Type ([RFC 9197](#))
- **Goal: delay collection with IPFIX in SRv6 network with Linux Router**
  - Implement IEs to [Fluvia Exporter](#), an IPFIX exporter with eBPF/XDP
  - Implement additional [Wireshark](#) dissectors

# What got done

- **Fluvia Exporter:**

- **COMPLETED:** Decode the IOAM Edge-to-Edge Option-Type timestamp with eBPF/XDP
  - [RFC 9197](#)
- **COMPLETED:** Export the on-path delay & SRv6 SRH information with IPFIX
  - [draft-ietf-opsawg-ipfix-on-path-telemetry-04](#)
  - Interoperability test was succeeded with **nfacct** and following Wireshark dissector

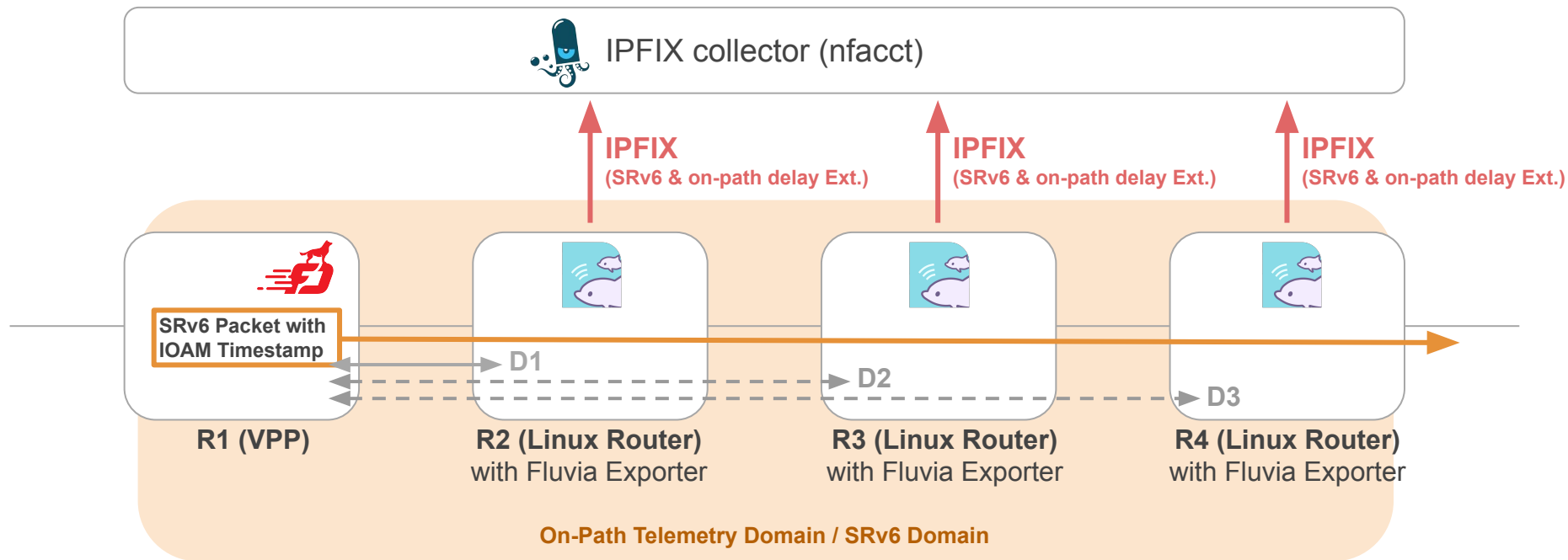
- **Wireshark:**

- **COMPLETED:** IPFIX IEs for on-path telemetry
  - [draft-ietf-opsawg-ipfix-on-path-telemetry-04](#)
- **TODO:** IOAM Edge-to-Edge Option-Type timestamp format
  - [RFC 9197](#)



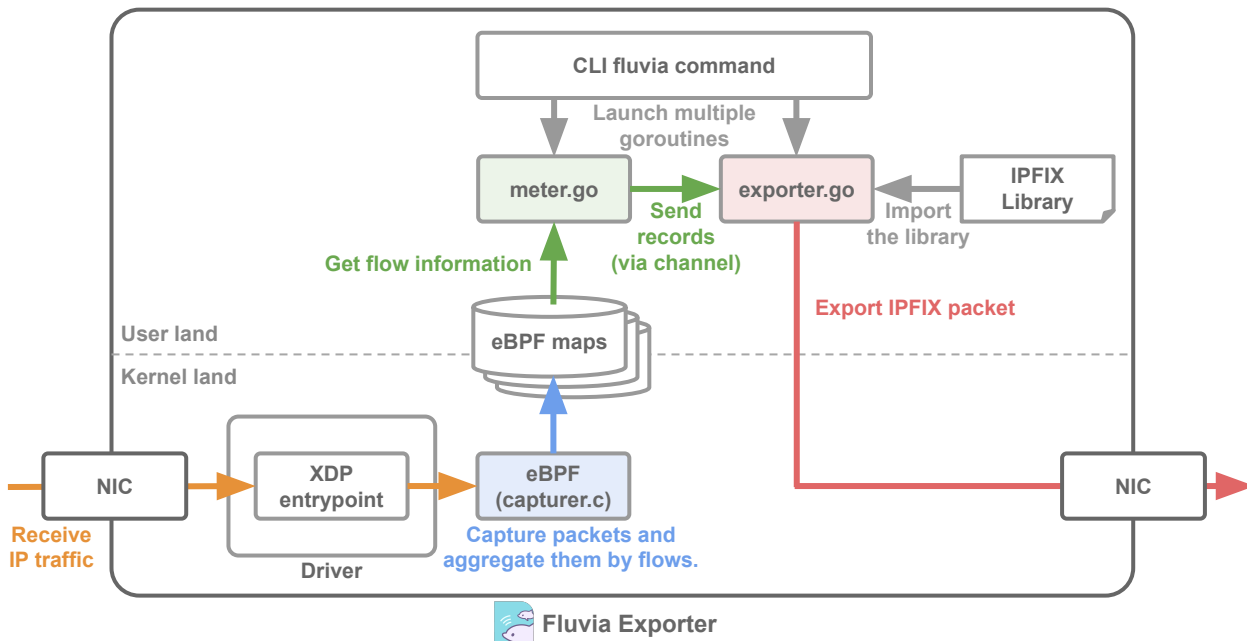
# Fluvia Exporter

<https://github.com/nttcom/fluvia>



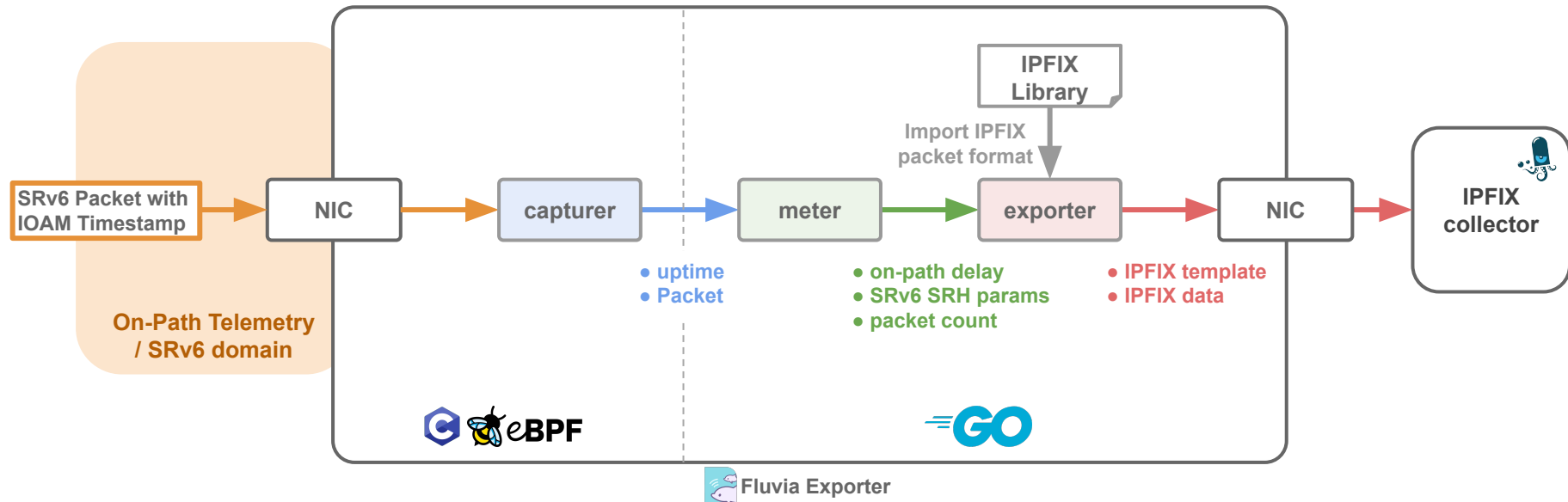
# Fluvia Exporter Architecture

- eBPF/XDP based Linux IPFIX exporter
- comprises 3 components (capturer, meter, exporter)

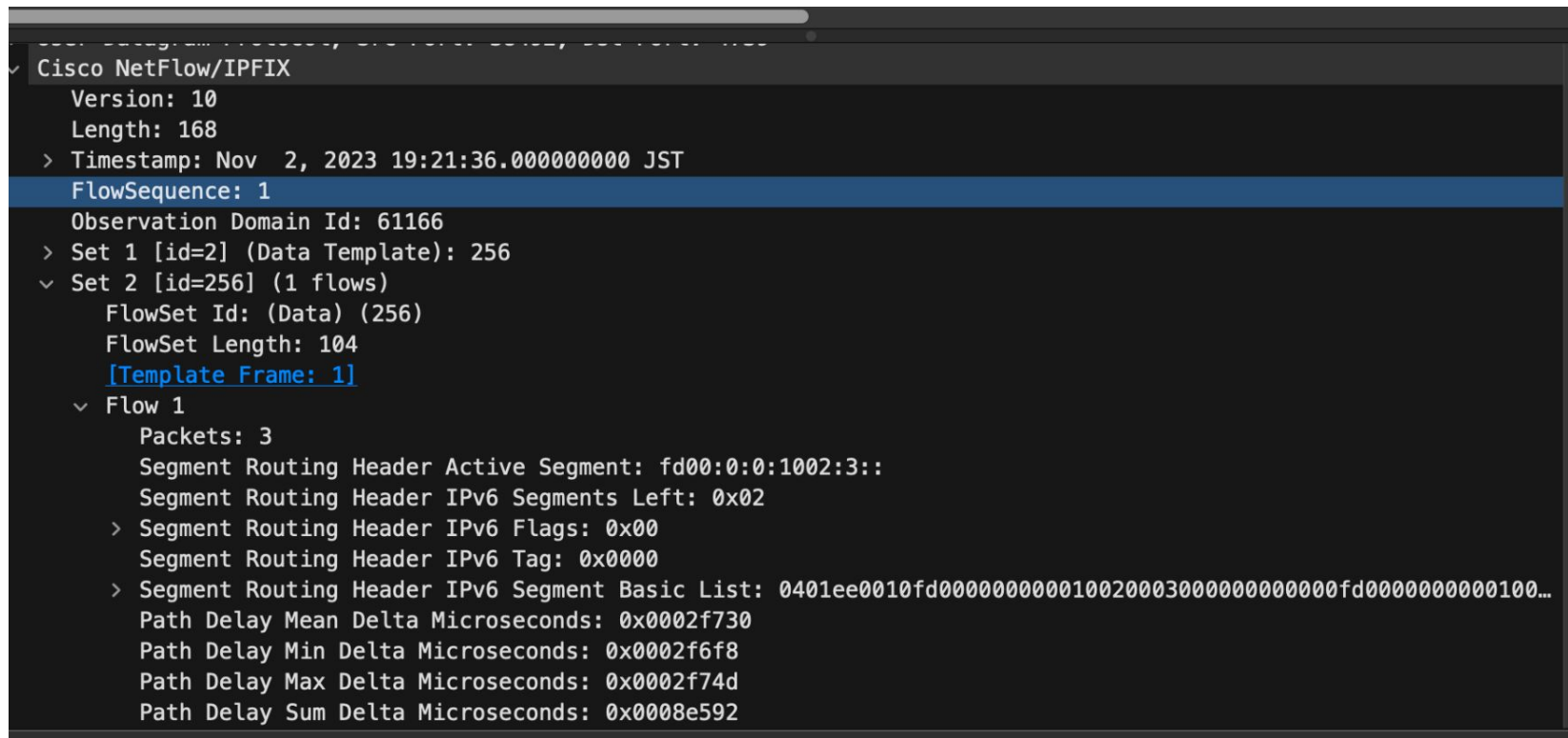


# On-Path Telemetry Pipeline

- **capturer**: collect IOAM timestamp and timestamp of when the packet was arrived
- **meter**: calculate the delay from each timestamp, parse the SRv6 SRH
- **exporter**: generate IPFIX packet, and send to a collector



# WireShark Dissector



## Wrap-up / Our Code

- Fluvia Exporter: <https://github.com/nttcom/fluvia/pull/21>
  - <https://github.com/Yuya9786/fluvia/tree/feature/rebased-ioam6-timestamp>

## Members

- Wataru Mishima, NTT Com, w.mishima@ntt.com
- Yuta Fukagawa, NTT Com, y.fukagawa@ntt.com
- Yuya Tajima, NTT Com, yuya.tajima@ntt.com
- Motoki Takenaka, NTT Com, m.takenaka@ntt.com