



# **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

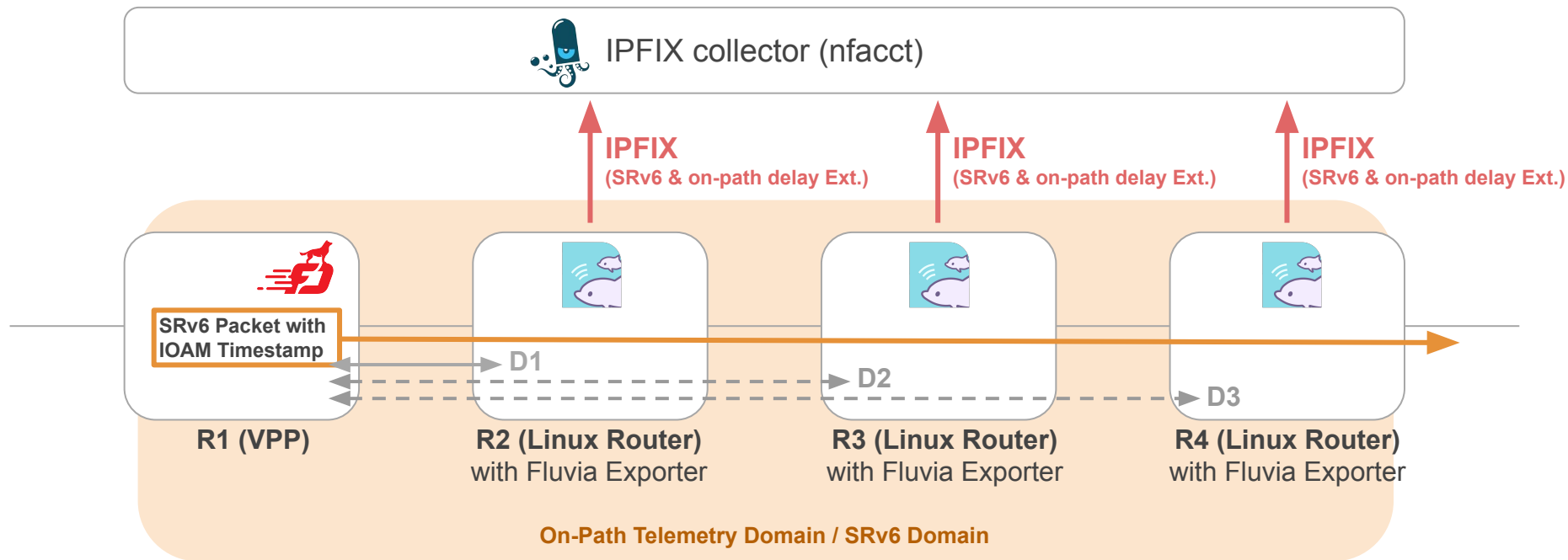
# What got done

- **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](#)



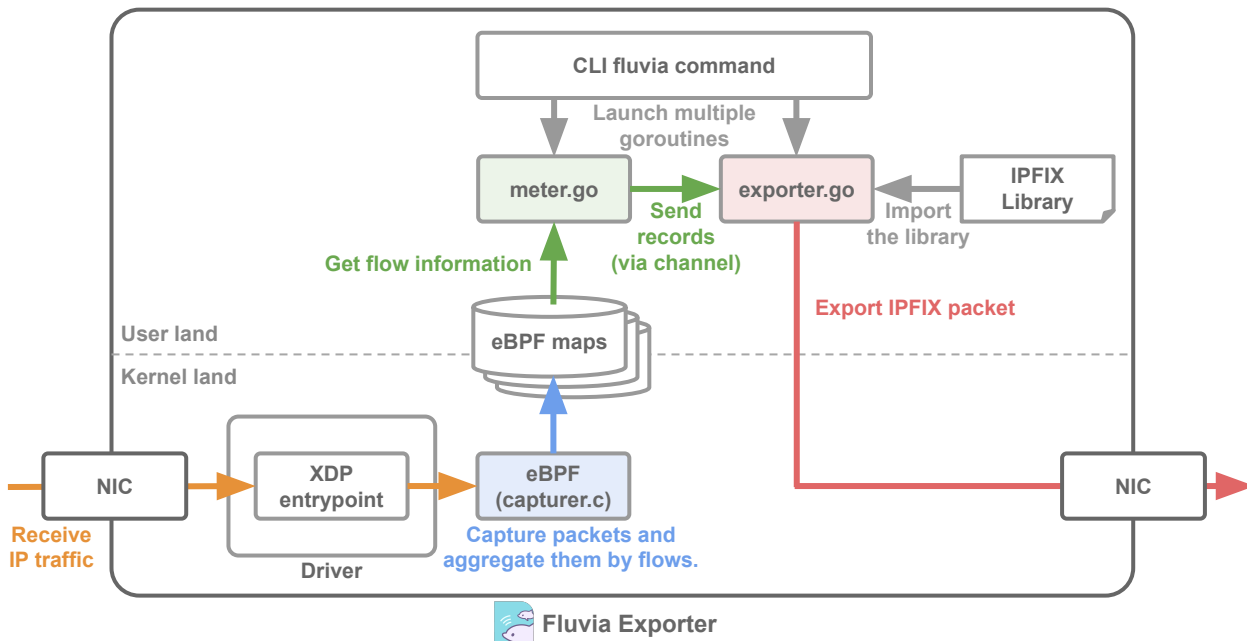
# Fluvia Exporter

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



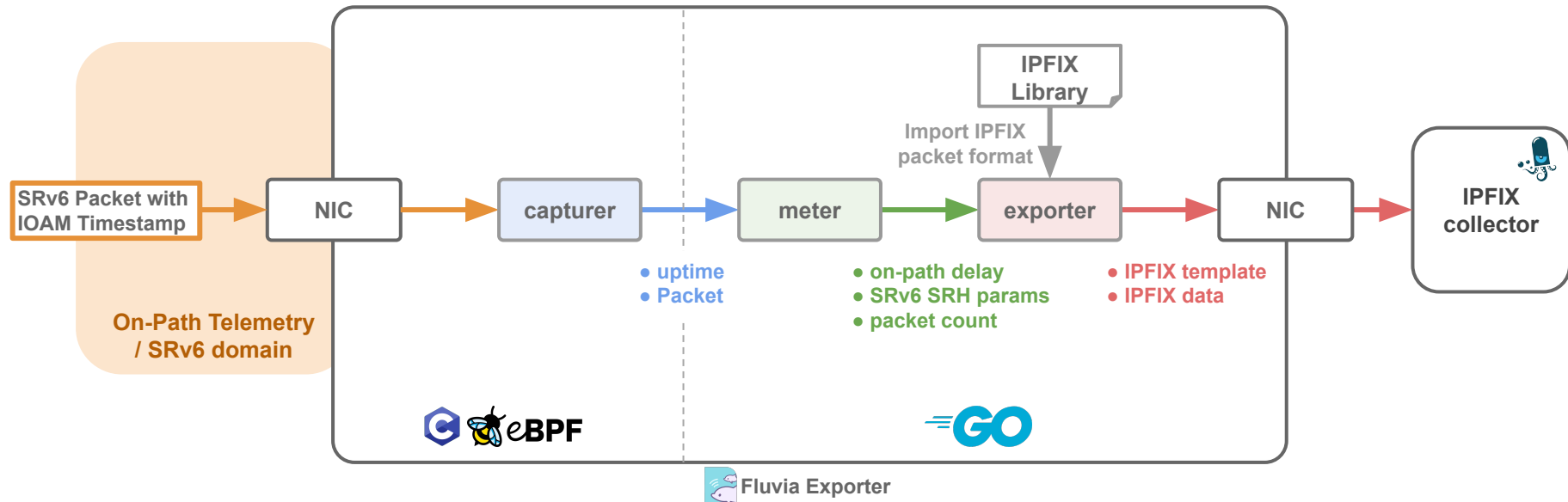
# Fluvia Exporter Architecture

- 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, and 集計処理を実施
- **exporter**: generate IPFIX packet, and send to a collector



## Wrap-up / Our Code

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

## Members

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