In-situ Flow Information Telemetry (iFIT) Framework

draft-song-opsawg-ifit-framework-00

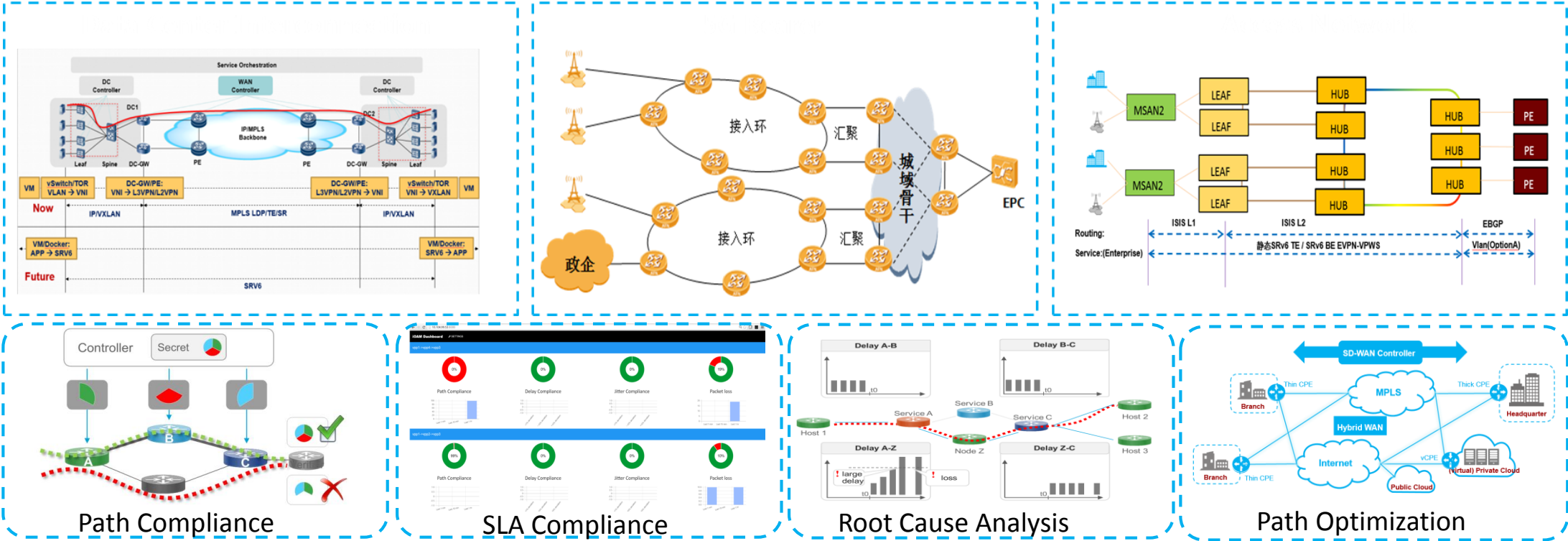Haoyu Song

Zhenbin Li

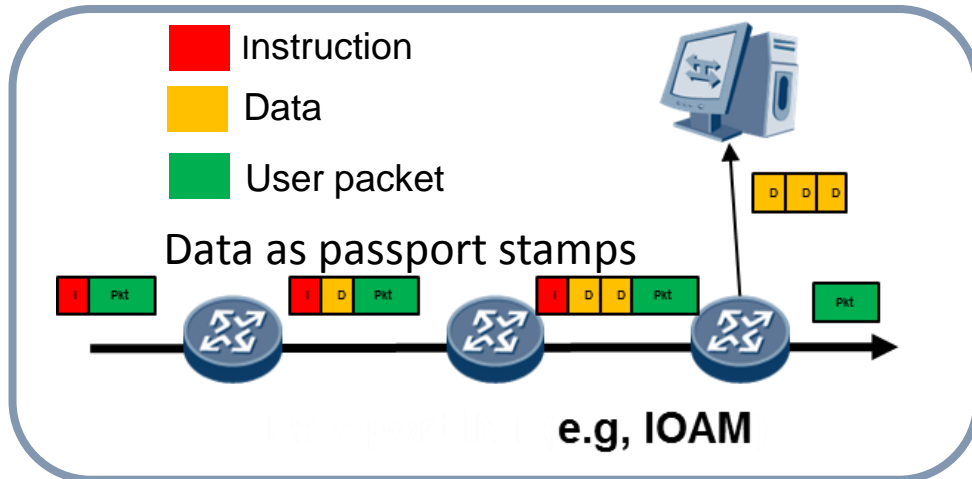Tianran Zhou

Zhenqiang Li

Data Plane Telemetry Requirements
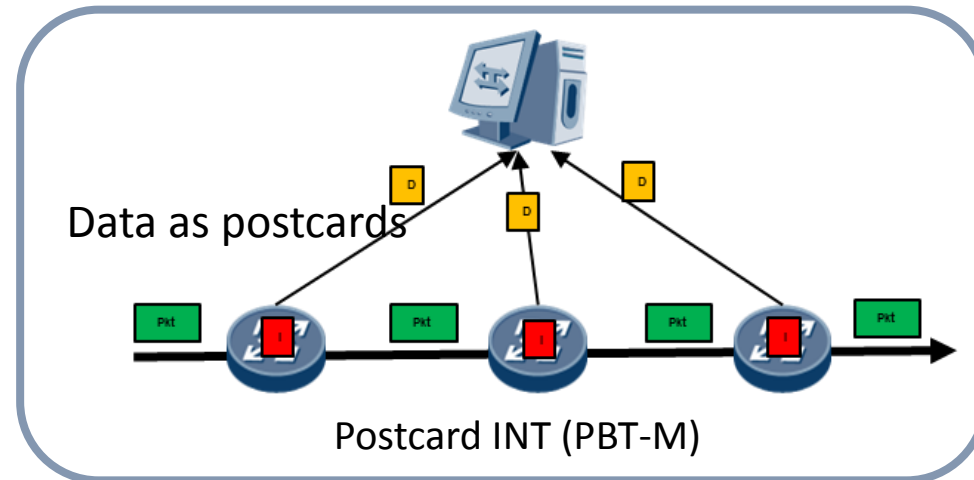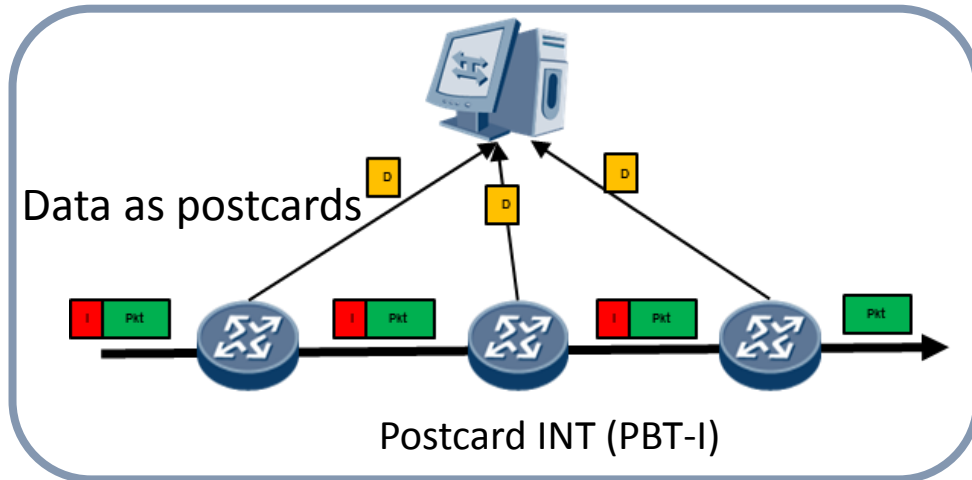

Path Compliance

SLA Compliance

Root Cause Analysis

Path Optimization

Data Plane Telemetry Techniques

Instruction
Data
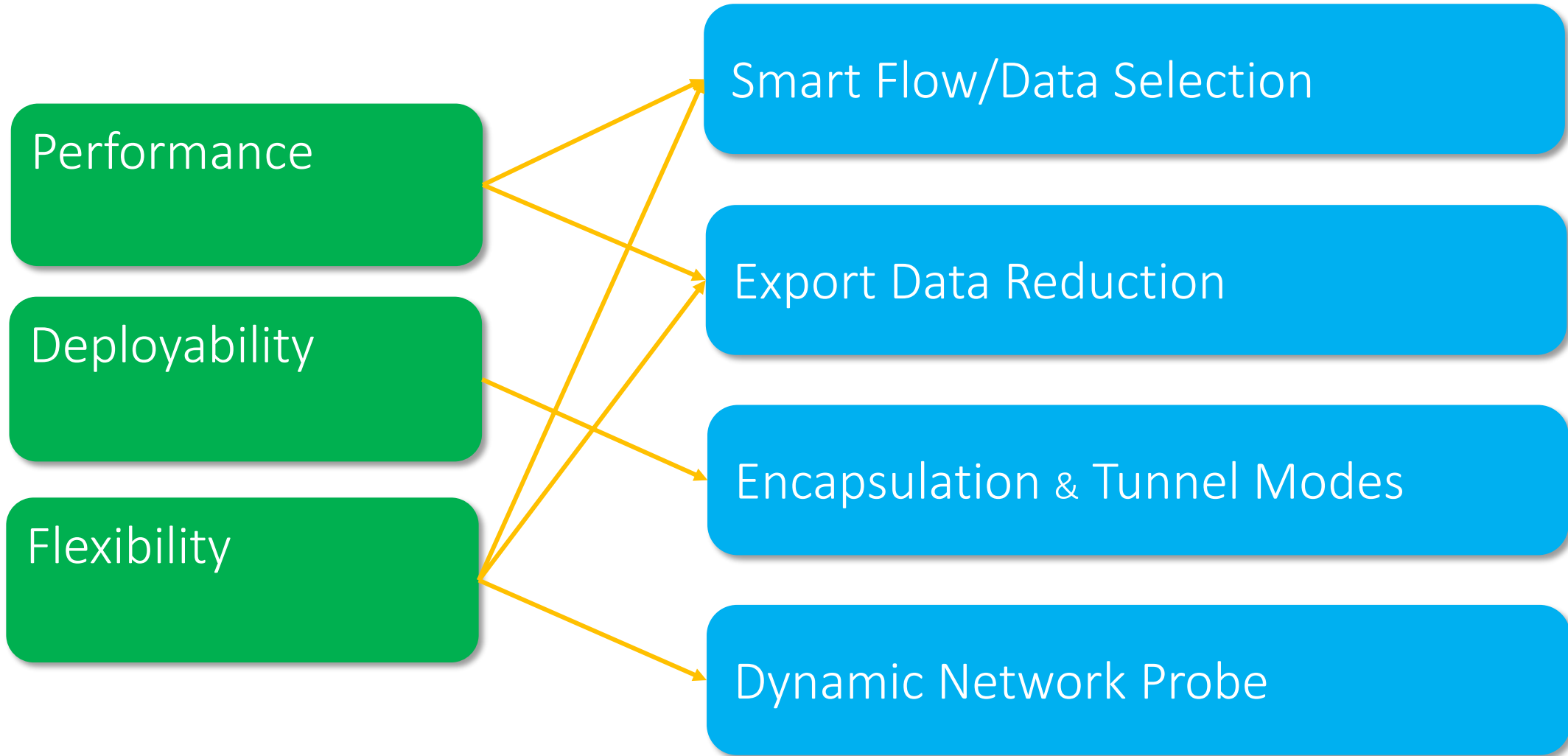User packet

Data as passport stamps

e.g, IOAM

Tradeoffs

- **Performance Impact**
  - Observer Effect
- **Encapsulation and Overhead**
  - Scalability
- **Security**
- **Configuration and correlation**

Data as postcards

Postcard INT (PBT-I)

Data as postcards

Postcard INT (PBT-M)

3

Challenges for Deployment in Carrier Networks

- Performance
  - Forwarding impact due to packet processing
  - Bandwidth and server overload due to exported data
- Limited data flexibility and extensibility
- Deployment issues
  - Encapsulation
  - Tunnel

iFIT Solution Framework

Performance

Deployability

Flexibility

Smart Flow/Data Selection

Export Data Reduction

Encapsulation & Tunnel Modes

Dynamic Network Probe

Discussion & Next Steps

- Collect feedbacks

  - What other challenges for carrier network data plane telemetry?

  - What other suggestions to make the framework more complete?

- Demonstrate prototype in carrier networks based on the framework

- Future work

  - Data consumption

  - Cross domain operation