HP-WAN Framework and Technical Considerations

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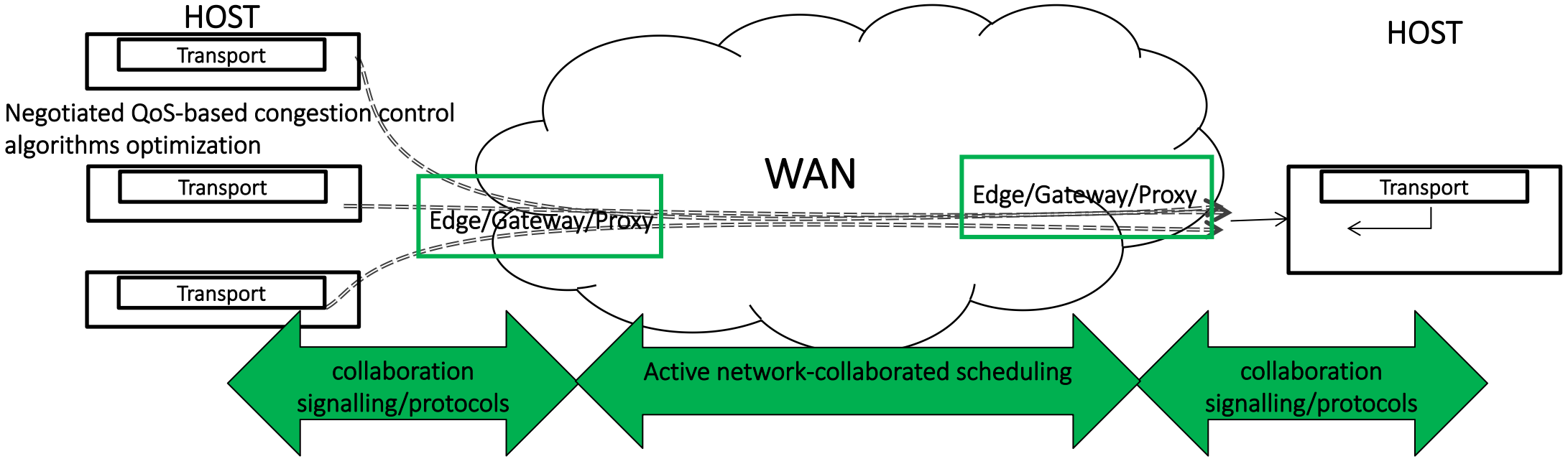
After the HP-WAN On-line Meeting

- **The technical requirements of HP-WANs may encompass:**
  - transport-related technologies such as proxy, flow control, QoS negotiation, congestion control, admission control and traffic scheduling.
  - routing-related technologies such as traffic engineering, resource scheduling,and load balancing.

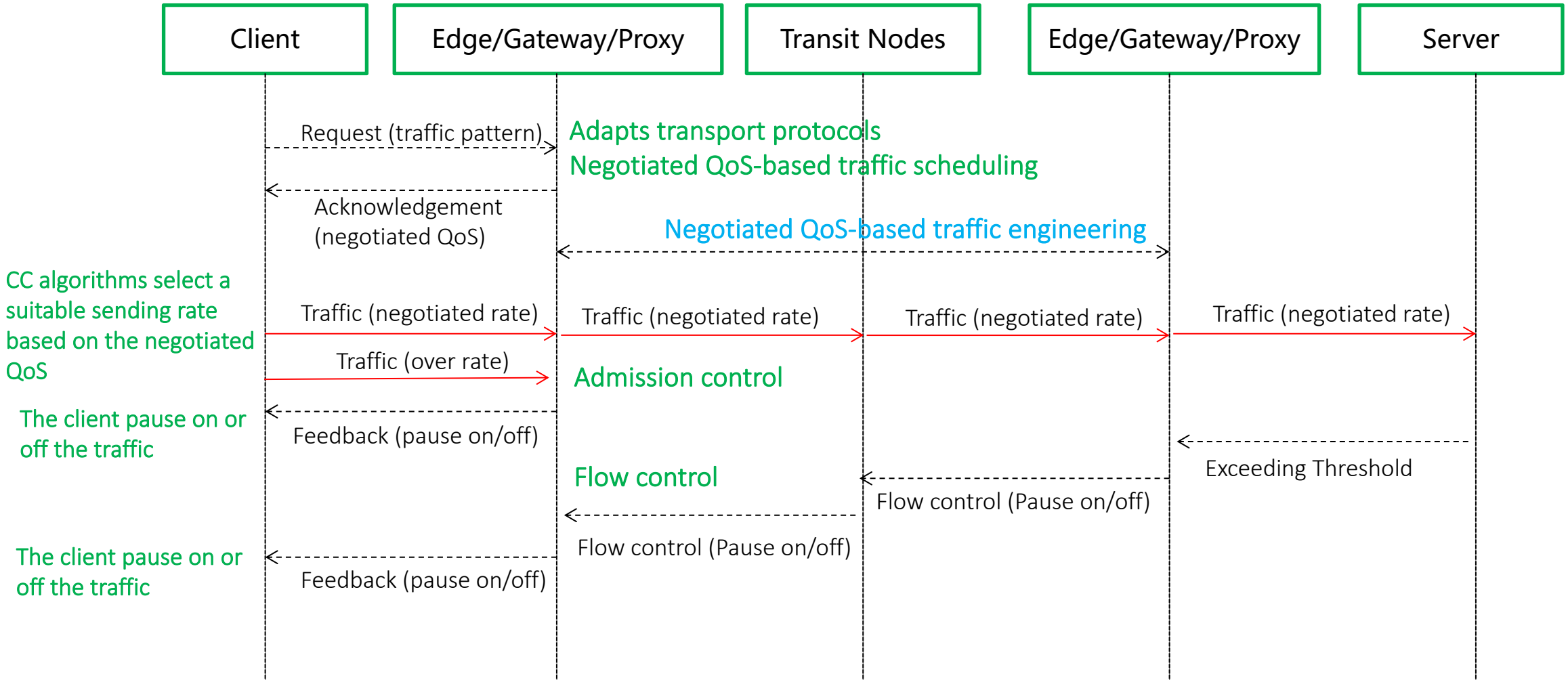
- **Submit a new framework I-D (draft-xhy-hpwan-framework-00)**
  - defines a framework for a protocol or signaling to enable the host-and-network collaboration for high-speed data transmission
  - facilitates the functionalities of the edge/gateway/proxy to transform transport protocols and collaborate with the host to perform QoS negotiation, such as flow control, admission control and traffic scheduling.

Framework for HP-WAN

- **The functionalities between Client/Server and Edge/Gateway/Proxy including:**
  - Host-network collaboration signalling or protocol
    - *Proxy /Negotiate QoS-based Traffic Scheduling/Admission Control/Flow Control*
  - Active network-collaborated scheduling
    - *Negotiate QoS-based Traffic Engineering/Resource scheduling/allocation*
  - Negotiated QoS-based congestion control algorithms



Workflow and Functions for HP-WAN



Solutions Consideration for HP-WAN

- **The possible solutions regarding to Client/Server and Edge/Gateway/Proxy:**
  - Host-network collaboration signalling or protocol
    - new or existing?
    - request, acknowledgement and feedback message
  - Proxy
    - adapts the different transport protocols
    - perform the aggregation or the fragmentation
  - Negotiated QoS-based Traffic Scheduling
    - traffic classification based on job or service type
    - admission and traffic control based on negotiated QoS and rate
    - flow control to mitigate network congestion
  - Negotiated QoS-based Traffic Engineering
    - dynamic resource scheduling (reservation and allocation) based on the quota of each job
    - traffic management to ensure the negotiated QoS and rate
  - Congestion control algorithms optimization
    - adjust the sending rate based on the QoS acknowledgement from network
    - pause off/on traffic rapidly when receiving the fast feedback from the edge/gateway node nearing the client
  - Others?

Next Steps

- Detailed technical solutions within the scope of WIT area.
- **Discussions on the mailing list** are always welcome.

- **Thanks !**
- **Comments and suggestions are welcome.**