

Distributed Mobility Management (DMM) WG

DMM Work Item:
Forwarding Path & Signaling Management
(FPSM)

draft-ietf-dmm-fpc-cpdp-01.txt

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Outline

- ❑ Functional Architecture
- ❑ Current Status
- ❑ Current Analysis – Impact of operational aspects
- ❑ Related Work – Synergies with other SDOs
- ❑ Next steps

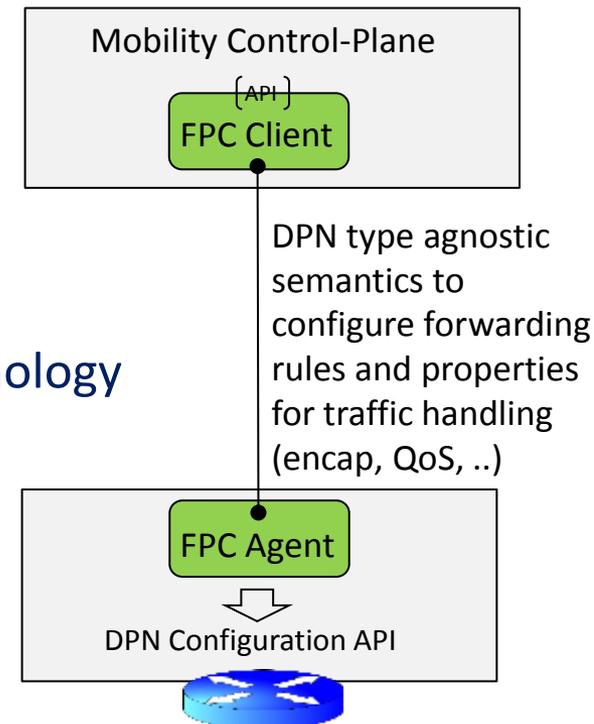
Functional Architecture

❑ Client Function – Associated with Mobility Control-Plane

- ❑ Mobility Control-Plane utilizes Client function to configure Data-Plane nodes (DPN) to serve as mobile Data-Plane (mobility anchor, mobile access gateway, ..)
- ❑ Client uses messages, attributes and the operation as per this specification to communicate with Agent
- ❑ Client can connect to multiple Agents

❑ Agent Function

- ❑ Agent can be installed on Router, Switch or Network Controller
- ❑ Applies common protocol semantics to DPN-technology specific configuration API
- ❑ Agent can connect to multiple Clients



Current Status

Mature information

- Functional Architecture
- Information model
 - Messages, identifiers, attributes
- Protocol operation
 - Dependency of deployment and impact to spec currently being analyzed
- Experimental Yang Data Model in the appendix
- Traffic descriptors
 - Destination IP (prefix)
 - Source IP (prefix)
 - Traffic Selector
- Forwarding policies
 - Encapsulation (IPIP, GRE, GTP-U)
 - IP address and port re-write
 - QoS (QoS class index, DSCP marking, (A)MBR, GBR)
 - Next Hop IP address

Current Status

Needs more discussion/details

- ❑ Event scheduling / monitoring / reporting
 - ❑ Context: Failures, chargeable events
- ❑ Query
 - ❑ Context: Request update Data-Plane state

FPC Concept Discussions At a Glance

Discussion Point	Discussion	
Deployment Model	FPC Agent is in Centralized controller	FPC Agent is in Distributed DPN
Principle	Be Declarative	Be Imperative

Current analysis – Impact of operational aspects

❑ How much DPN awareness and control should remain on the Mobility Control Function?

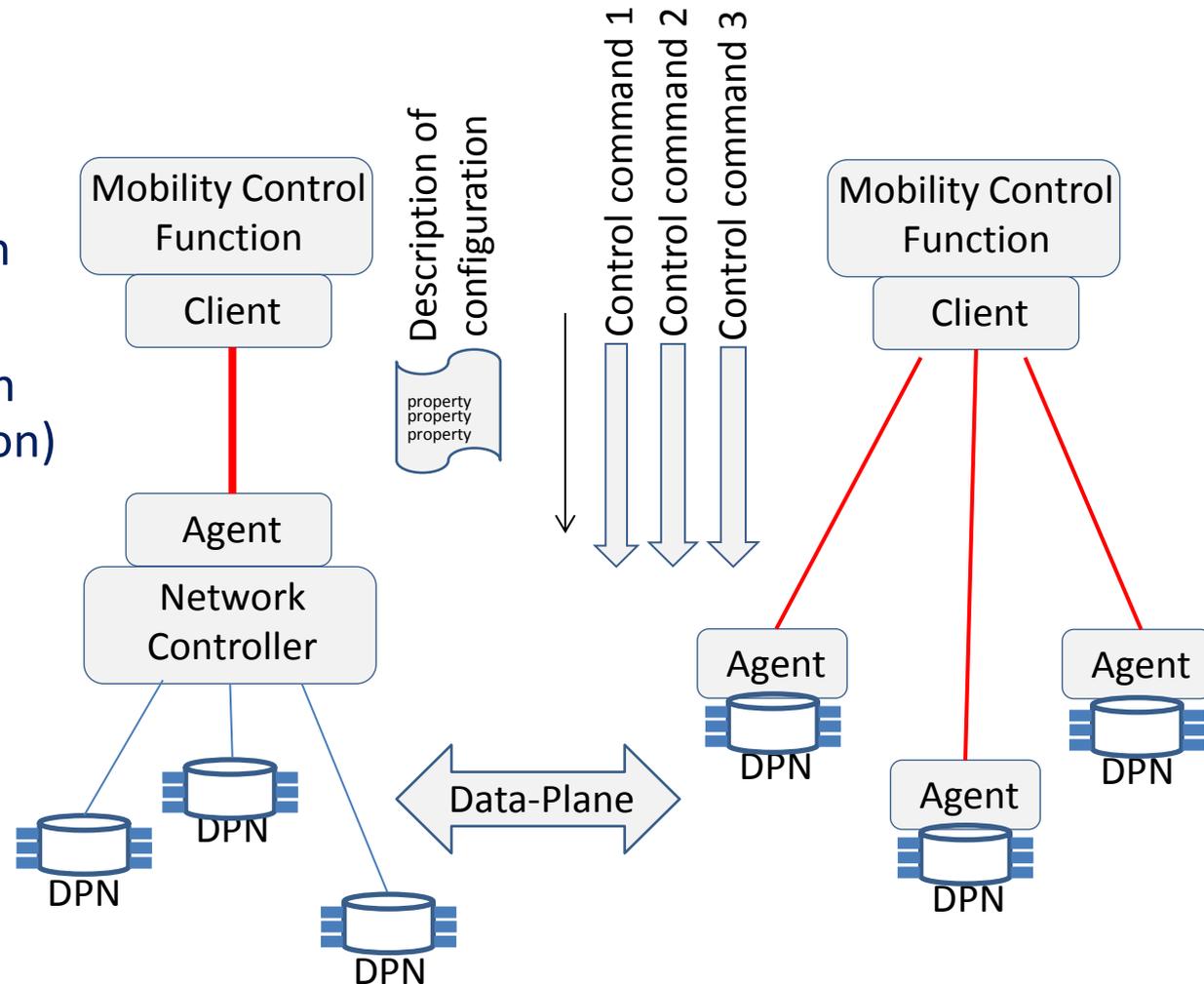
- ❑ DPN Selection
- ❑ DPN interfaces
- ❑ DPN routing table
- ❑ DPN configuration

❑ Interface selection (tunnel termination)

❑ Traffic description

❑ Mobility Control vs. DPN Control

❑ FPC protocol load



Feedback to the current draft

- ❑ Lots of valuable comments and input received from Laurent and Lyle
 - ❑ Carrier ID format
 - ❑ Data-Plane filters
 - ❑ Packet relocation
 - ❑ Attributes for 3GPP standards conformance

- ❑ Will be revisited and reflected in the update accordingly

Related work

Synergies with other SDOs

- ❑ 3GPP Study on Control-/Data-Plane separation

- ❑ ONF Mobile Wireless Group
 - ❑ Apply SDN to EPC gateway decomposition
 - ❑ SDN Controller Northbound interface can utilize IETF FPC specification

Next Steps

- Conclude analysis about standards dependency on deployment/implementation
- Converge on how the analysis results must be covered in the standard
- Decide at which level operational aspects remain in the standard
- Update draft-ietf-dmm-fpc-cpdp