

# Control-/Data-Plane separation in DMM utilizing SDN technology

## Deployment options

draft-giust-dmm-cpdp-deployment-00.txt

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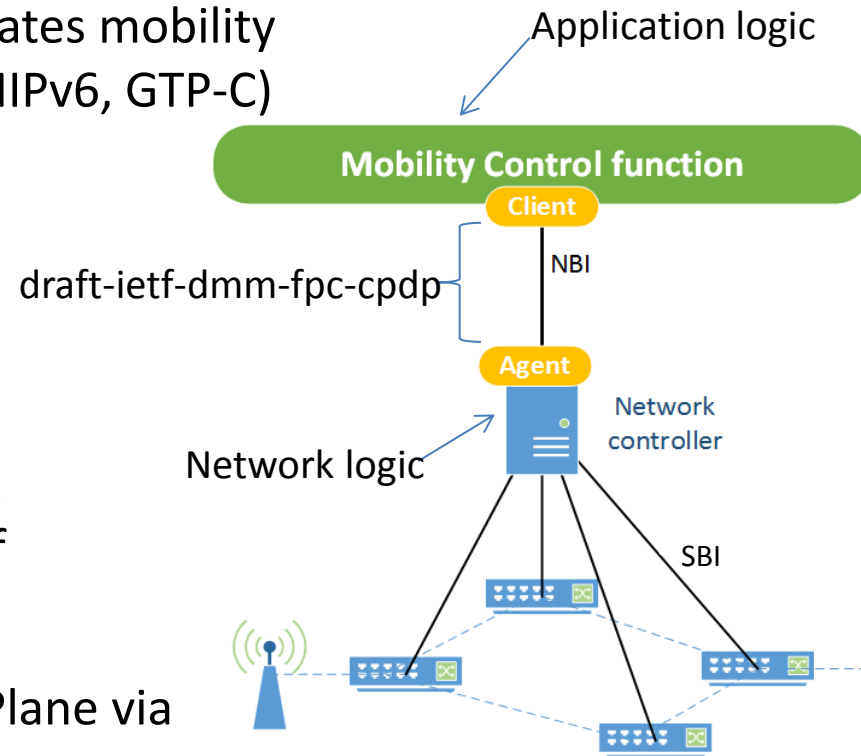
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# Motivation of this draft

- Contribute to the DMM deployment work
- Depict and discuss different deployment options for DMM C-/D-Plane separation with SDN Controller (Network Controller)
- Support the specification of the DMM Control-/Data-Plane separation protocol (draft-ietf-dmm-fpc-cpdp)

# Base architecture

- Mobility Control-Plane function -- Operates mobility management protocols (e.g. MIPv6, PMIPv6, GTP-C)
- Mobility Control-Plane function connects to Network Controller via Northbound Interface (NBI)
  - Abstraction of Data-Plane details
- Network Controller centralizes network control (routing, switching) functions of the distributed Data-Plane
- Network Controller interfaces to Data-Plane via Southbound Interface (SBI)
- Data plane nodes perform traffic encapsulation, enforcement of forwarding and QoS policies, traffic monitoring, ..

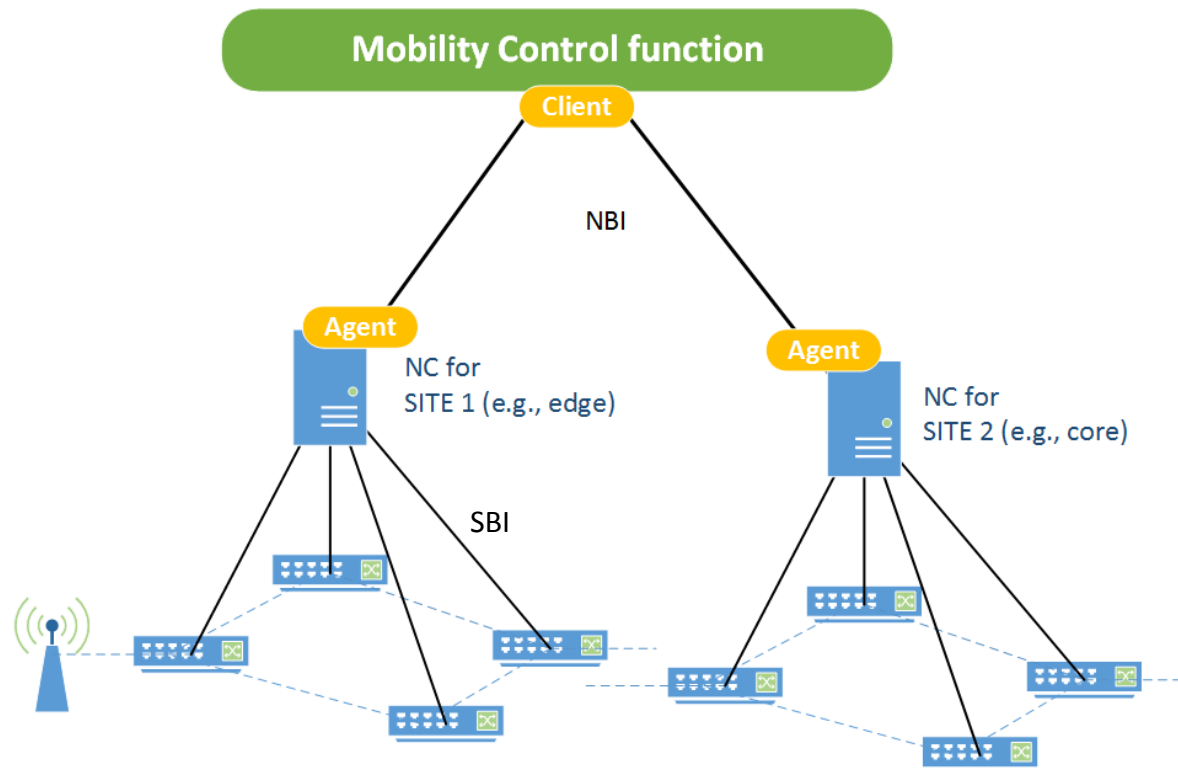


# Deployment considerations

- A single Network Controller (NC) may not be suitable to cover a geographically large area
  - Latency between NC and Data-Plane!
- Multiple NCs may be involved in Data-Plane configuration for a single mobility management transaction
- Different interaction models should be considered
  - NC interaction via mobility Control-Plane functions
  - Direct interaction between NCs

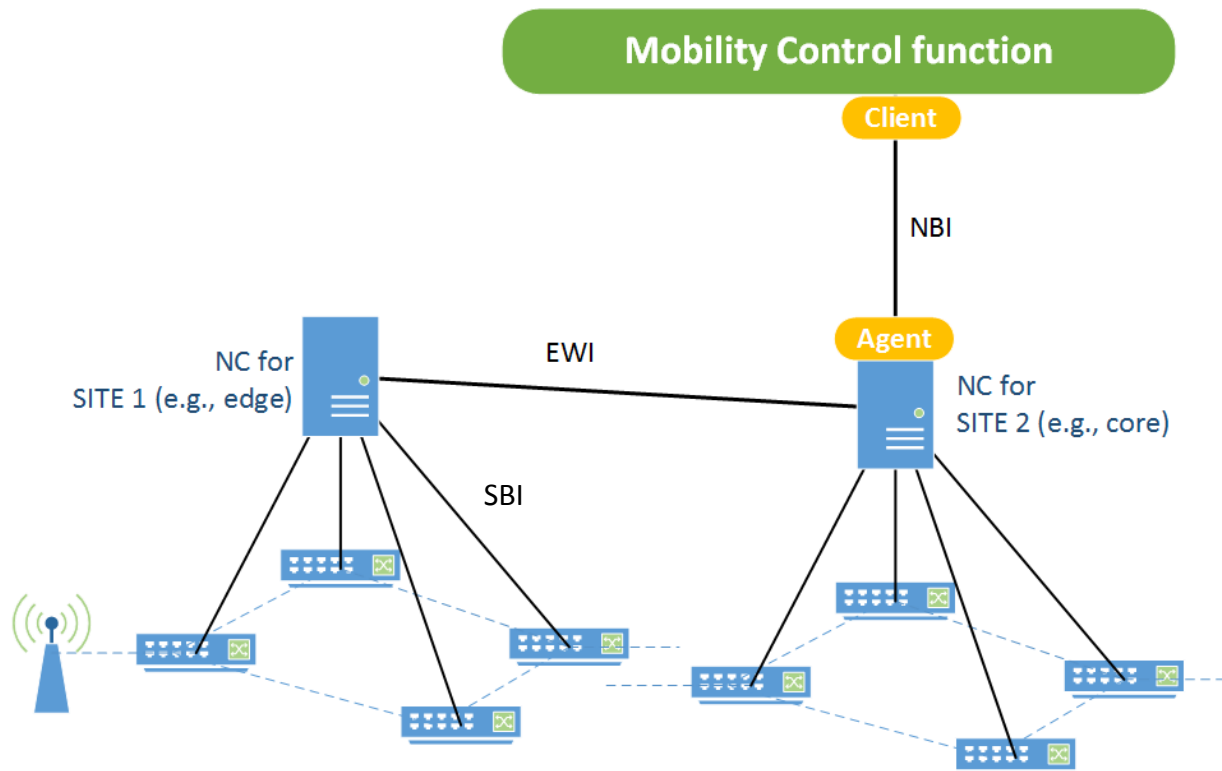
# Deployment Scenario 1

- Single mobility control function interacting with multiple NCs
  - One NC per site (e.g. access, core)
  - Sites orchestration made on Mobility Control function level



# Deployment Scenario 2

- Single mobility control entity interacts with a single NC
  - East-west interface to propagate instructions between NCs
  - Mobility Control-Plane function configures Data-Plane on different sites through single Client-Agent interface



# Deployment Scenario 3

- Multiple mobility control entities, one per each site
  - Orchestration of different sites on Mobility Control function level

