Distributed Mobility Management:: Deployment Models (Work Team#4 – Update)

Sri Gundavelli (Presenter)

Contributors: Seil Jeon, Vic Liu and Others

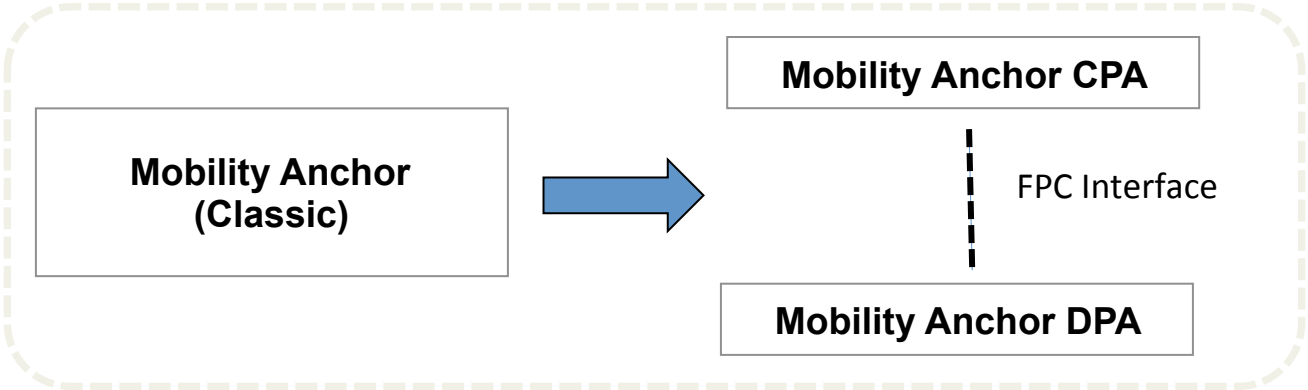
Current WT#4 - Status

The WT4 team had offline calls and discussions on the WT#4 work items.

- Publication of the I-D on DMM Architecture and Deployment models. This document defines the functions in the DMM architecture, role of each function and interfaces between functions. It also identifies the relation to other work items and identifies the deployment models. The initial -00 version is published this week and requires some discussions and reviews.
- There is interest for working on Virtual CPE architectures. The initial proposal was covered in draft-fu-dmm-vcpe-models-00. Based on offline discussions some of the authors have published a new draft (draft-pularikkal-virtual-cpe) that has some detailed considerations on Virtual CPE architectures.
- There were discussion on exposing DMM anchor attributes for dynamic selection. Additional work is needed.

DMM Architectural Principles and Goals

- Separation of control and data Plane
- Aggregation of control plane for elastic scaling
- Distribution of the data plane for efficient network usage
- Elimination of mobility state from the data plane
- Dynamic selection of control and data plane nodes
- Enabling the MN with network and gateway properties
- Relocation of anchor functions



DMM Functions

- Home Control Plane Anchor (H-CPA)
- Home Data Plane Anchor (H-DPA)
- Access Control Plane Node (A-CPN)
- Access Data Plane Node (A-DPN)
- Mobility Controller (MC)
- Routing Controller (RC)

DMM Service Primitives

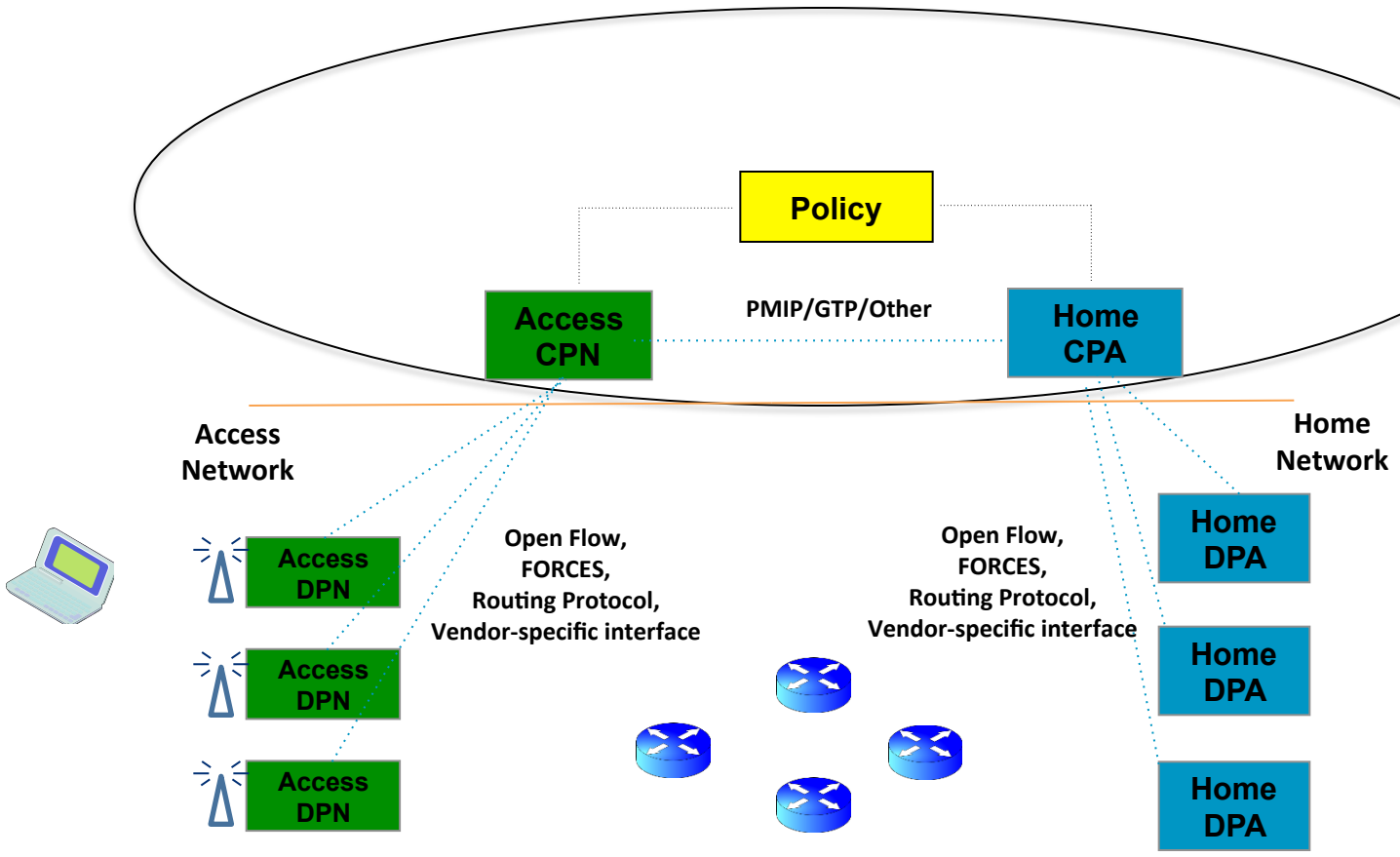
Service Primitive	H-CPA	H-DPA	A-CPN	A-DPN	MC	RC
IP Address Management	X				X	
IP Anchoring		X				
Mobile Node Detection			X	X		
Routing / Forwarding		X		X		
Tunneling		X		X		
QoS Enforcement		X		X		
FPC Client	X		X		X	
FPC Agent		X		X		X
NSF Classifier		X		X		

Mapping of DMM Functions

Function	IETF (PMIPv6)	IETF (MIPv6)	IPSec	3GPP	Broadband
Home-CPA	LMA-CPA	HA-CPA	IKE-CPA	PGW-CPA GGSN-CPA	BNG-CPA
Home-DPA	LMA-DPA	HA-DPA	IKE-DPA	PGW-DPA GGSN-DPA	BNG-DPA
Access-CPN	MAG-CPN	-		SGW-CPN SGSN-CPN	RG-CPN
Access-DPN	MAG-DPN	-		SGW-DPN SGSN-DPN	RG-DPN

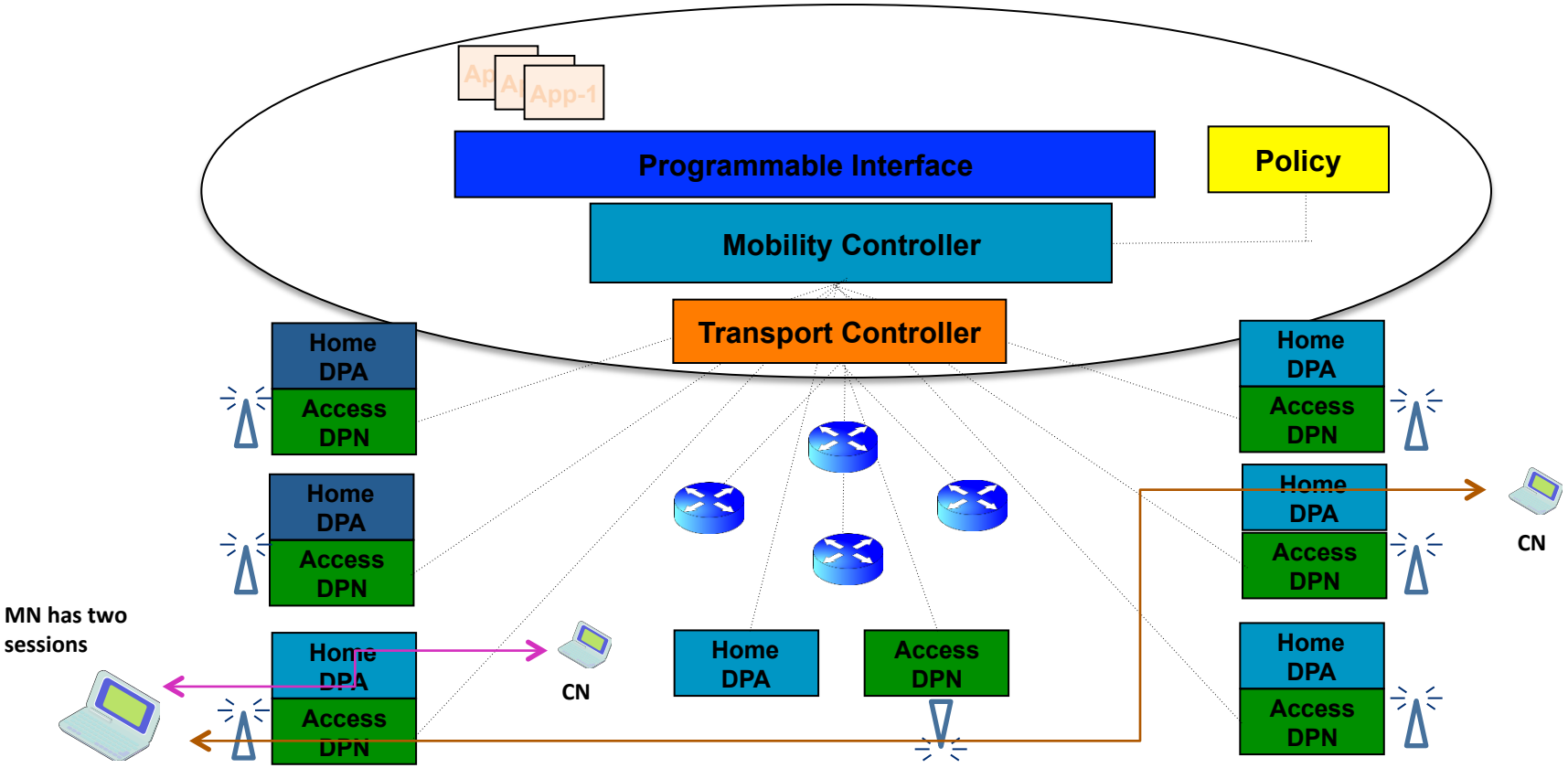
Split CP/DP In Access and Home

- Split Control and Data Plane; Simplified data-plane with no mobility state;



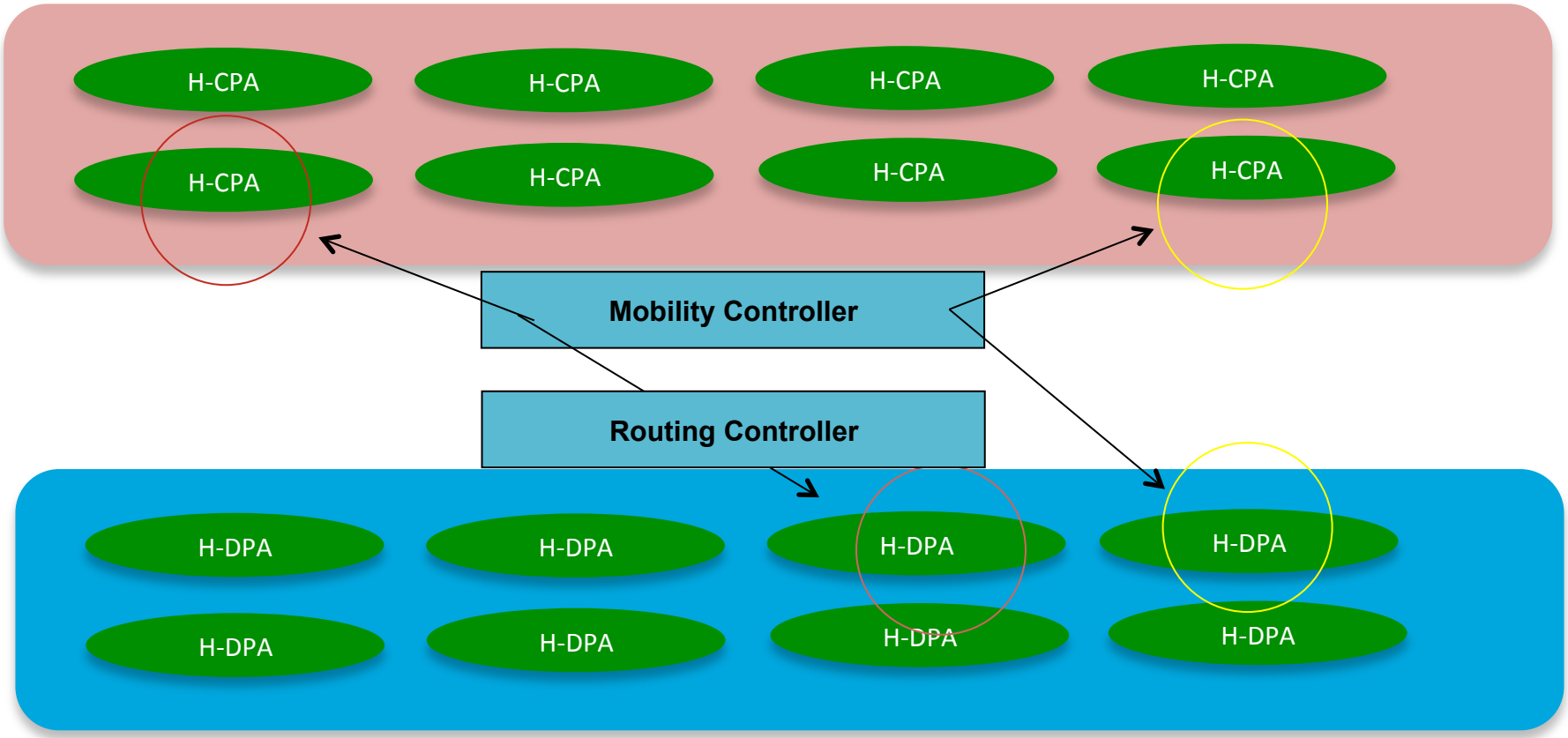
Converged Control Plane

- The control plane functions for the access and home are converged into a single function.



Dynamic Anchor Selection

- On a session basis, the mobility controller can select a H-CPA and H-DPA and will host a mobile control and data plane sessions.



Conclusions & Next steps

- Request for more reviews and feedback from community
- Request for adoption call after the reviews