

Mobility Management & Capability Negotiation (MMCN)

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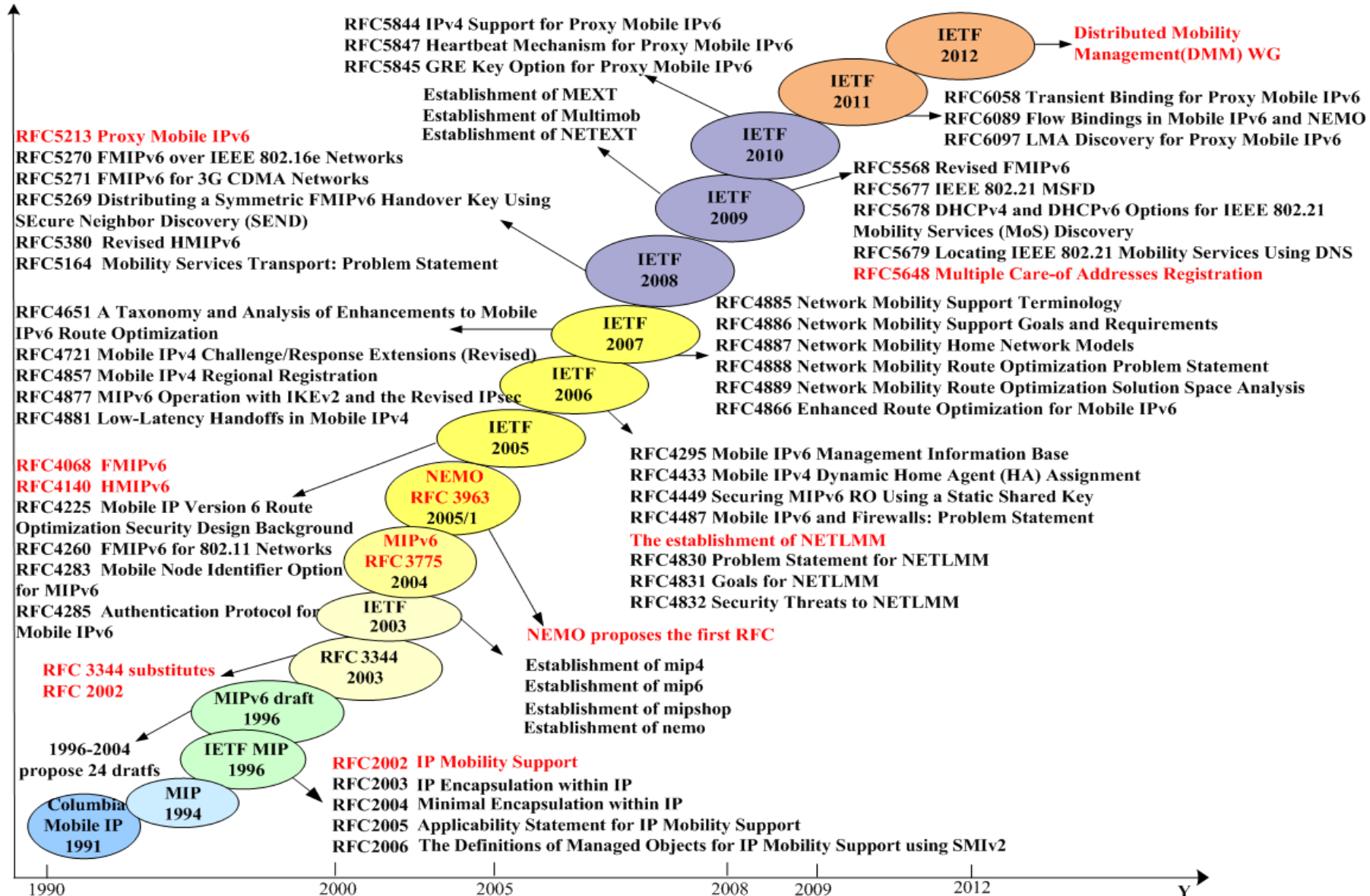
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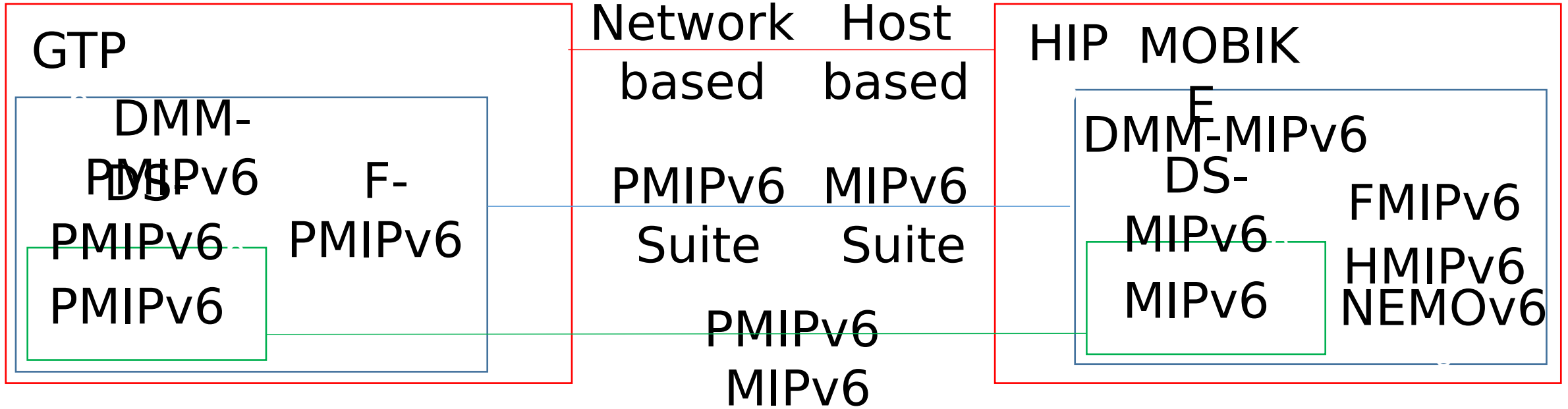
IP mobility management related RFCs and WGs~



A Dichotomy of MMCN protocols

- **Host-initiated** protocols:
 - Defining the mobility management protocols that require the active involvement of mobile end devices in order to accomplish the mobility management.
- **Network-based** protocols:
 - Indicating the mobility management protocols that require the non or minimal -involvement of mobile end devices in order to accomplish the mobility management.

Categories



- PMIPv6: the network-based mobility management protocol specified by RFC5213
- PMIPv6 Suite Protocols: extensions based on PMIPv6
- Network-based mobility management protocols: L3 mobility management protocols which have no functional requirements on the mobile node

- MIPv6: the host-based mobility management protocol specified by RFC6275
- MIPv6 Suite Protocols: extensions based on MIPv6
- Host-based mobility management protocols: L3 mobility management protocols which have functional

Possible Cases

Host		Scenarios								Network				
Network based	PMIPv6 suit	PMIPv6	X								Y	PMIPv6	PMIPv6 suit	Network based
		DS-PMIPv6								DS-PMIPv6				
		F-PMIPv6								F-PMIPv6				
		DMM-PMIPv6								DMM-PMIPv6				
	Others	GTP								GTP		Others		
Host based	MIPv6 suit	MIPv6									MIPv6	MIPv6 suit	Host based	
		DS-MIPv6								DS-MIPv6				
		FMIPv6								FMIPv6				
		HMIPv6								HMIPv6				
		DMM-MIPv6								DMM-MIPv6				
		NEMOv6								NEMOv6				
	Others	HIP, MOBIKE								HIP, MOBIKE	Others			

Which protocol will be used?

Principles

- Priority 1: Follow network ability
 - Priority 2: Follow host preference
 - Priority 3: Support the functional extensions
 - Priority 4: Support the performance enhancements
 - *In default: network based scheme if it can be supported*
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- If the host prefers host-based protocols, a negotiation is executed to handover from network-based protocol to host-based protocol.
 - After initial attachment, a profile will be generated in the management store to record the selected or preferred protocol of this host.
 - When the handover happens, the network will check the selected or preferred protocol. But the network also needs to notify the host if the selected protocol cannot be supported herein.

Case Example

Host

Network

- Network based, Network based
 - PMIPv6 Suite, PMIPv6 Suite
 - PMIPv6, PMIPv6-----PMIPv6
 - PMIPv6, Extensions-PMIPv6-----Extensions-PMIPv6 if no MN involvement, otherwise PMIPv6
 - Extensions-PMIPv6, PMIPv6-----PMIPv6
 - Extensions-PMIPv6, Extensions-PMIPv6-----Extensions-PMIPv6 if same, otherwise PMIPv6
 - PMIPv6 Suite, Other-N
 - PMIPv6, Other-N-----Other-N if no MN involvement, otherwise failure
 - Extensions-PMIPv6, Other-N-----Other-N if no MN involvement, otherwise failure
 - Other-N, PMIPv6 Suite
 - Other-N, PMIPv6-----PMIPv6
 - Other-N, Extensions-PMIPv6-----Extensions-PMIPv6 if no MN involvement, otherwise PMIPv6
 - Other-N, Other-N
 - Other-N if same, otherwise follow network ability

Solutions

GeneRic Autonomic Signaling Protocol (GRASP)

Abstract

This document specifies the GeneRic Autonomic Signaling Protocol (GRASP), which enables autonomic nodes and Autonomic Service Agents to dynamically discover peers, to synchronize state with each other, and to negotiate parameter settings with each other. GRASP depends on an external security environment that is described elsewhere. The technical objectives and parameters for specific application scenarios are to be described in separate documents. Appendices briefly discuss requirements for the protocol and existing protocols with comparable features.

- Mobility capability notification and protocol negotiation
 - Access a new network
 - Handover to another network
 - ...
- Parameter setting for optimized mobility management