
HIP extensions for object to object communications
<draft-lee-hip-object-00.txt>

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Object to object communications

□ New capabilities of future network

- Extension of networking functionalities to all objects
 - Ubiquitous networking

□ Object to object communications

- Many different kinds of devices connecting to the network
- New concept of end points
 - not always humans but may be objects such as devices/machines, and then expanding to small objects and parts of objects

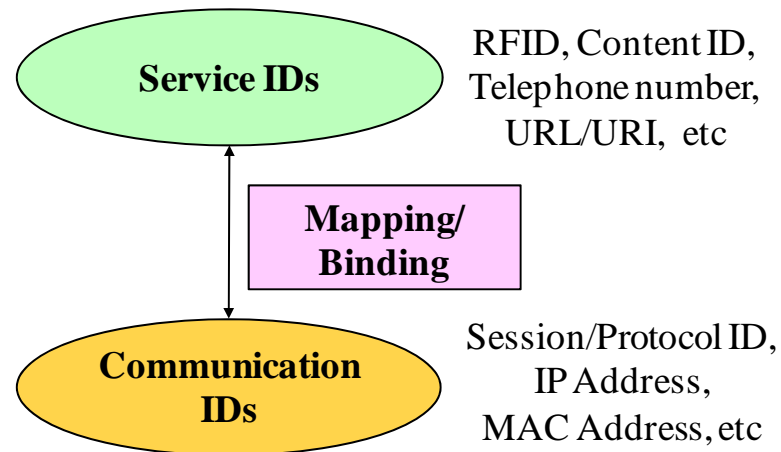
□ Problem statement

- There is no consideration for new type of objects (contents, RFID tags, sensors, etc) as end points
 - The concept of host should be extended to support all of objects

Requirement and objectives

□ Requirement

- **Mapping/binding** for naming and addressing



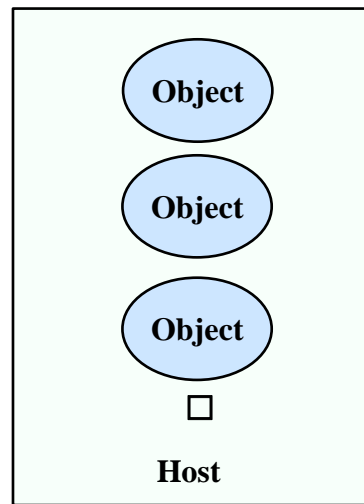
□ Objectives for protocol development

- Protection of object (including right management)
- **Connecting to anything** using object identification
- Service and location discovery

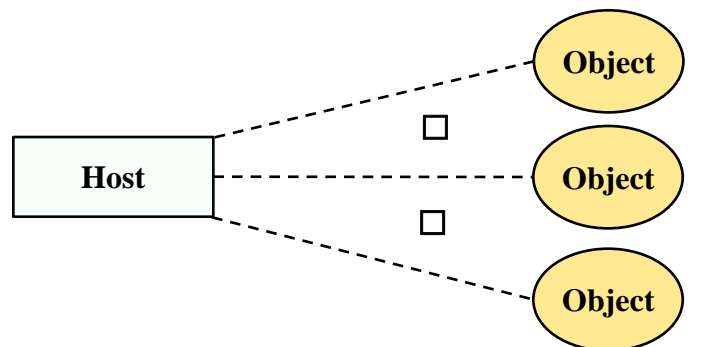
HIP architecture for object to object comm. – 1

□ Mapping relationships between host and object(s)

- Host = object (one to one mapping)
 - Most of information devices such as PC, etc (telephone number)
- Host ≠ object(s) (one to many mapping)
 - Content server, RFID tags/Reader, etc (content ID, RFID code, etc)



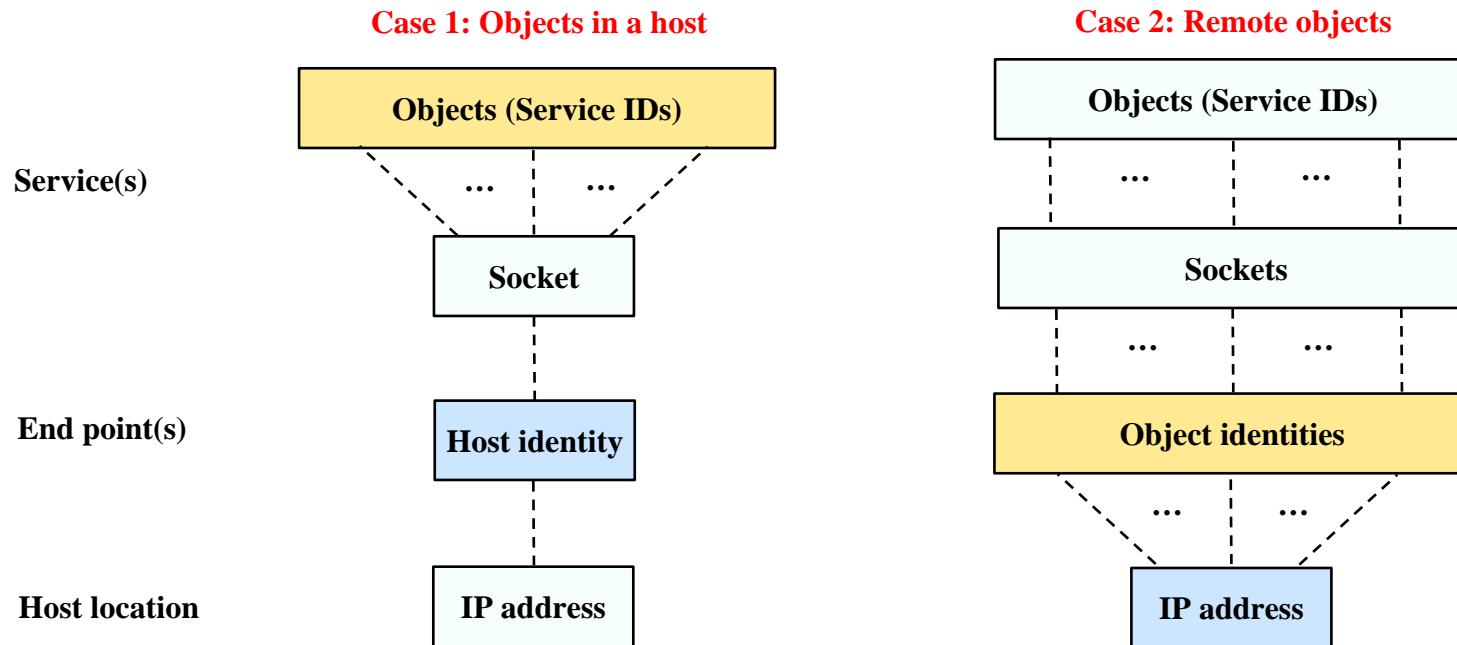
Host including objects



Host with remote objects

HIP architecture for object to object comm. – 2

□ Extension of stack architecture for one-to-many mapping



HIP extensions – 1

□ Case #1 (objects in a host)

- Mapping information between Host identity (HI) and Object identities (OIs)
- HI + OI(s)
 - TLV

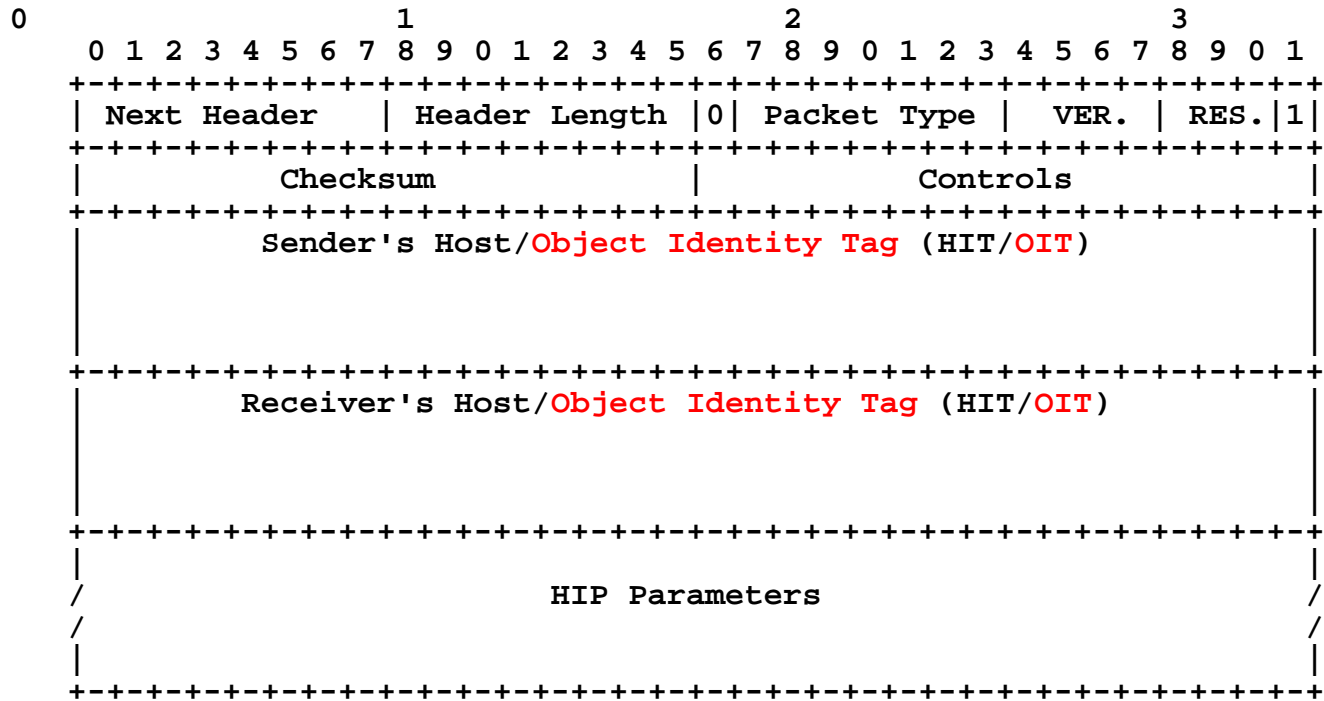
□ Case #2 (remote objects)

- Mapping information between IP address and Object identities
- OI
 - OI typically identifies a services and can also identify end points
 - Object Identity Tag (OIT)

HIP extensions – 2

□ Packet format

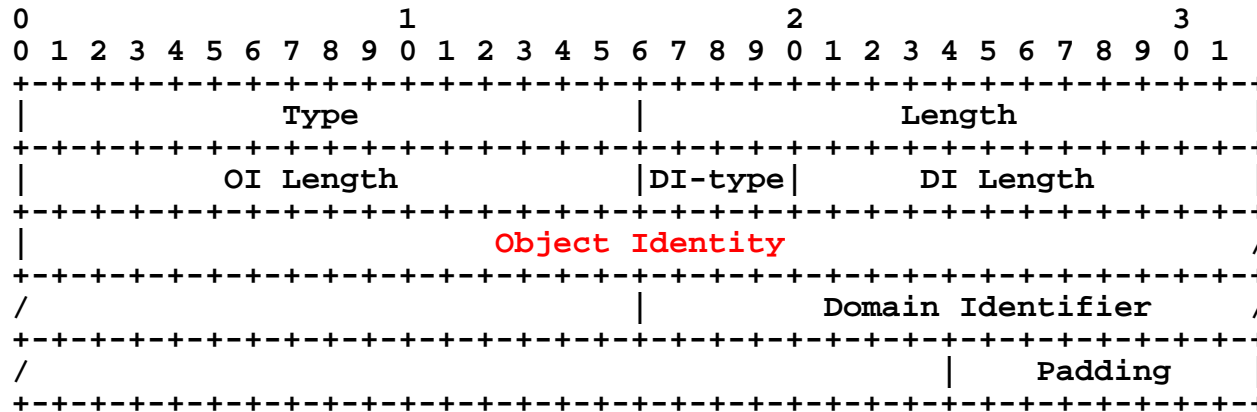
- HIP header (include OIT(object identity tag))



HIP extensions – 3

□ Packet format

- New TLV: object_ID
 - Newly defined from HOST_ID of existing HIP
 - The Object Identity is generated from Service IDs defined for specific applications/services



Conclusion and future work

□ Proposal

- Include as the topic of HIP RG

□ I-D update

- Feedback and update of discussion results
- Detailed considerations for HIP extensions
- Collaboration with other HIP related experts