

IPv6 mapping for non-IP protocols

draft-rizzo-6lo-6legacy-02

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Re-introducing the Draft: Motivation

- **IPv6 is a powerful enabler for IoT**
- **Large number of legacy technologies non-IP enabled**
 - Typically connect to the Internet via «gateways»
- **Why on the Internet?**
 - Interoperate with traditional computing infrastructure
 - To ease management, to enable new services (Smart homes, smart building, etc.)

Example: Home Appliances Direct Control

A number of households, with appliances connected via various protocols (ex, ZigBee, KNX, Wifi), served by a same utility company

- IPv6 technologies: Direct control. No need for gateways.
- Non-IP technologies: gateways interpret commands and take actions

Control commands should be in a «common language» as if there were no gateways in the middle

- Address each device as if IPv6 enabled
- **Scalability**

Enabling IPv6 stateless autoconfiguration for legacy devices

Make legacy devices appear as directly addressable, by
assigning their own IPv6 address

Gateway cares about «translation» at L3 and above

We propose a mapping scheme between legacy protocols
and IPv6 which minimizes protocol aliasing and conflicts

- No standard mapping defined for links without IEEE EUI-64 Identifiers
- RFC 4291 (App. A) leaves several issues open
- **Coverage: legacy protocols with node identifiers**

Changes wrt v 00 (01)

- **Informational – no standard**
- **Added a motivation section with some examples**
- **Adapted the mapping to account for a larger number of legacy protocols (how many?)**
- **Added a section on security issues**

The new proposed mapping: Format of the host part

Tech. ID MSB (6 bits)	U/L "0" (1 bit)	Tech. ID LSB (5 bit)	Reserved (4 bits)	Tech. Mapping MSB (8 bits)	EUI-64 "0x0000" (16 bits)	Tech. Mapping LSBs (24 bits)
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- **A Technology ID Code** for identification of the legacy protocol (11 bits, was 6)
- **U/L bit:** to 0 to avoid conflicts with EUI-64 mapped addresses
- **A Reserved field (4 bits, was 8):** for the identification of different interfaces for a same technology, avoiding intra protocol aliasing
- **Technology mapping:** hash of the interface identifier
- **EUI-64 field:** to "0x0000" to avoid conflicts with EUI-64 interface identifiers