

# IPv6 mapping to non-IP protocols draft-rizzo-6lo-6legacy-00

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# There is no standard for assigning IPv6 addresses to legacy technologies

- Many devices cannot be addressed (directly) via IP
  - E.G.: Some building automation technologies, RFID, etc.
  - Use of gateways which breaks the end-to-end principle of IoT
  - Loss of transparency
- To address them directly, a mechanism for providing an IPv6 address is required
  - Accessible via a proxy which operates the translation bw IPv6 and legacy protocol
- There is no standard way of assigning such address

# Issues addressed with the proposed mapping

- Legacy Protocol Identification
  - E.g. proxies for two or more legacy networks
- Inter-Protocol Aliasing
  - Diff. technologies, same interface identifier
- Conflicts with EUI-64 mapped addresses
- Intra-Protocol Aliasing
  - For legacy technologies with small addressing space

# Other requirements for the mapping

- **Consistency:** A host should get the same IPv6 address every time it connects from a same legacy network
  - (assuming that the configuration of all the other devices in that network remains un changed)
- **Local Uniqueness:** the host part of the IPv6 address should be unique for all devices with the same network part.
- **Uniqueness** within the whole Internet

# The proposed mapping: Format of the host part

Tech. ID (6 bits)	U/L "0" (1 bit)	I/G "0" (1 bit)	Reserved (8 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
- U/L bit: to 0 to avoid conflicts with EUI-64 mapped addresses
- I/G bit: to 0 (unused)
- A Reserved field: could be used in the future for the identification of different interfaces for a same technology (in the same subnetwork), avoiding intra protocol aliasing
- Tech. mapping: direct mapping (hashing) of the interface identifier
- EUI-64 field: to "0x0000" to avoid conflicts with EUI-64 interface identifiers

# Example- RFID

- EPC: 01.23F3D00.8666A3.000000A05
- Tech Id: 1
- We apply a hash (CRC-32) to the EIC, getting 0xA93AFFA0
- The resulting host part is

Tech. ID (6 bits) 0x04	U/L "0" (1 bit) 0	I/G "0" (1 bit) 0	Reserved (8 bits) 0x00	Mapping MSB (8 bits) 0xA9	EUI-64 "0x0000" (16 bits) 0x0000	Mapping LSBs (24 bits) 0x3AFFA0
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**Questions?**  
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