# Global IPv4 across IPv6-only Networks

## IPv4 "Residual deployment" (4rd)

draft-despres-softwire-4rd-00

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# Problem Statement

1. Use an **IPv6-only routing** network
2. Maintain across it **IPv4 Connectivity**
   - ***Full addresses*** for some sites
   - ***Shared addresses*** for most
3. **Upgradable Customer Equipment** (Host or CPE)
4. **Desirable properties**
   - Ease of operation
   - Scalability

→ 1 & 2 reverse of 6rd - 3 & 4 same as 6rd

# ISPs "intending to adopt" 4rd

- BBIX, Internet Multifeed, JPIX, IIJ-II

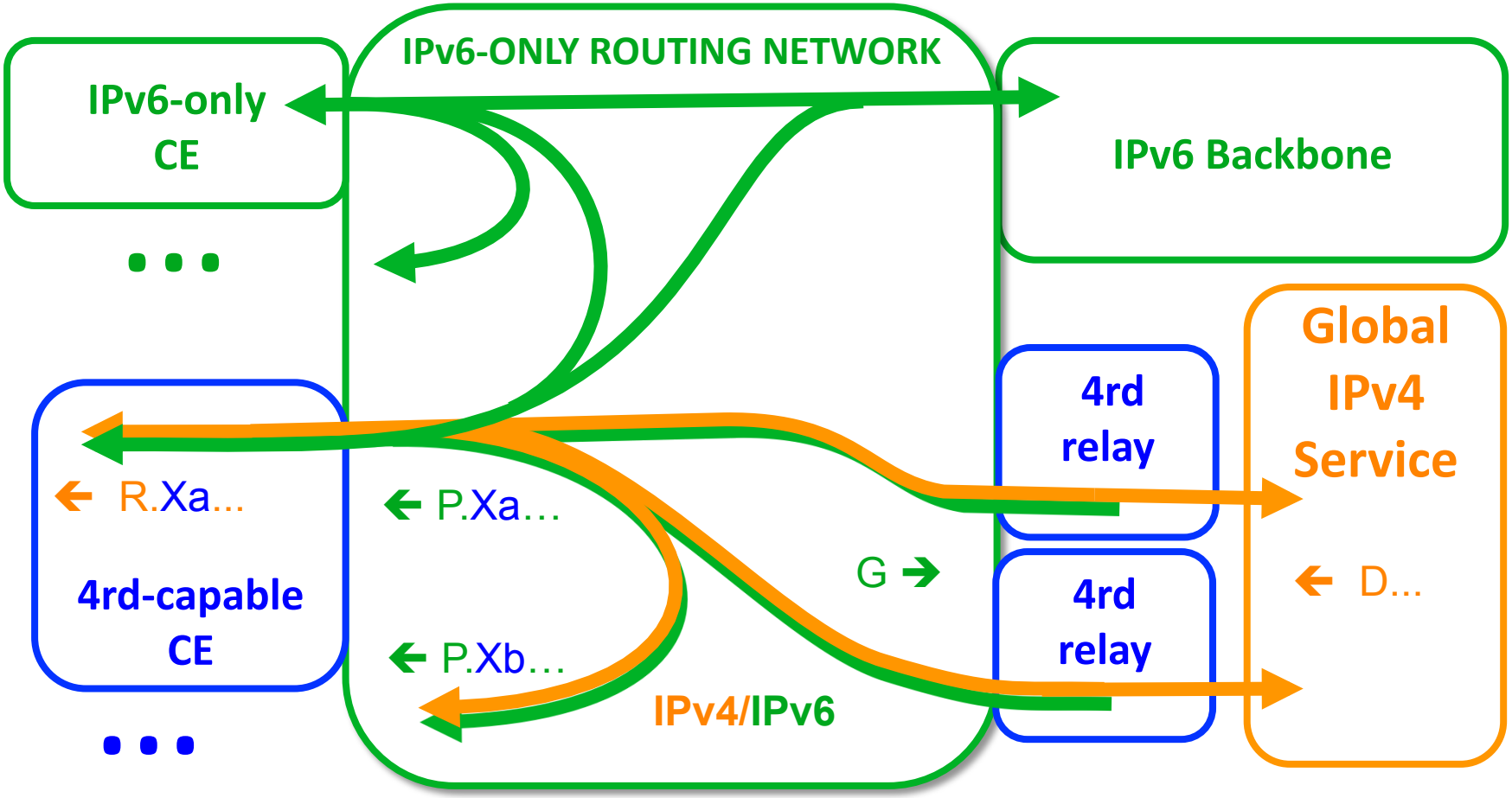
  e-mails from Satoru Matsushima:

www.ietf.org/mail-archive/web/v4tov6transition/current/msg00157.html

www.ietf.org/mail-archive/web/v4tov6transition/current/msg00269.html

- Expressed Motivations (vs. DS-lite)
  - IPv4 address sharing at optimized cost
  - Automatic configurations
  - Optimized routing paths

# 4rd Overview

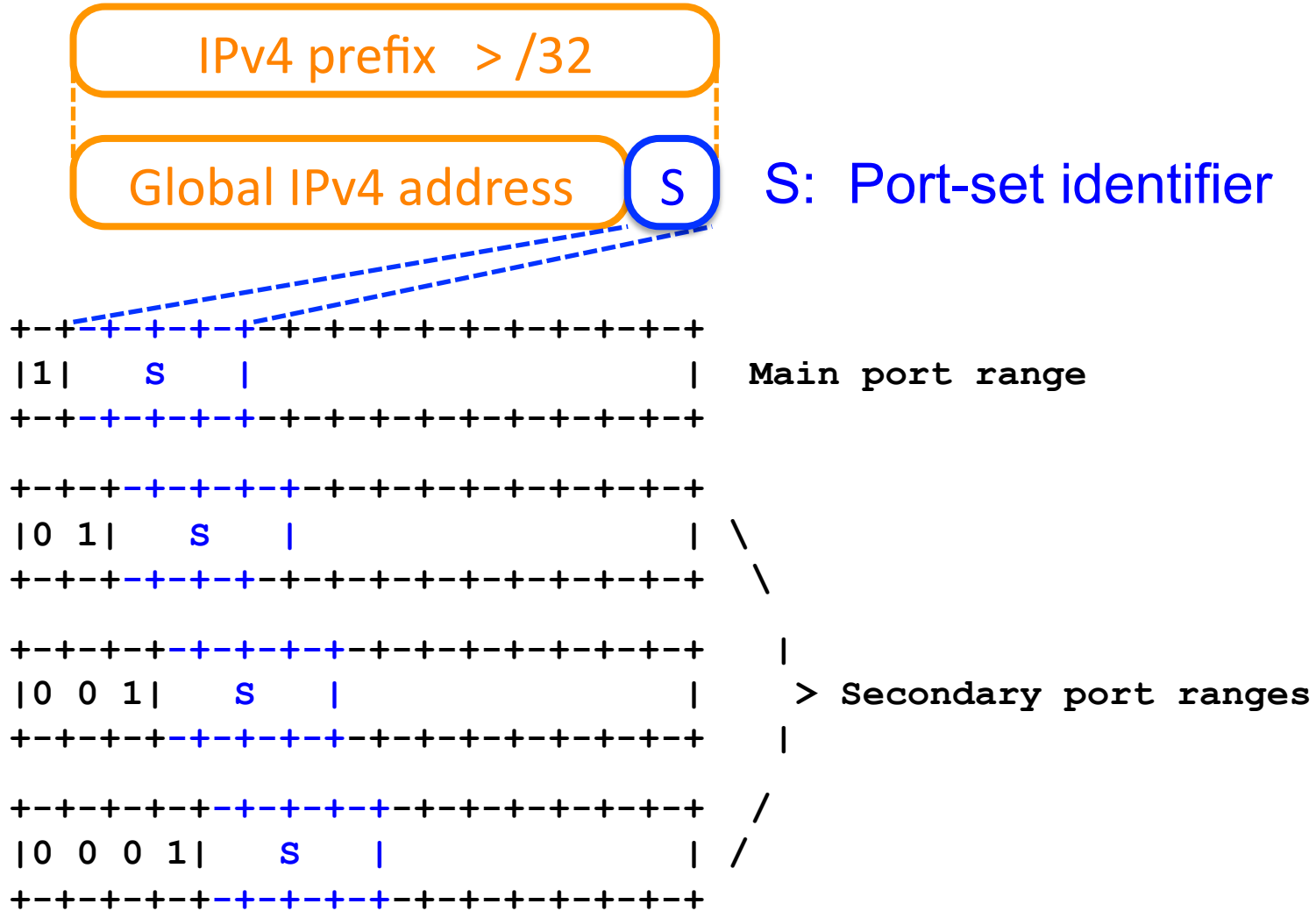



Stateless Address Mapping rule from G: {D, P, x}

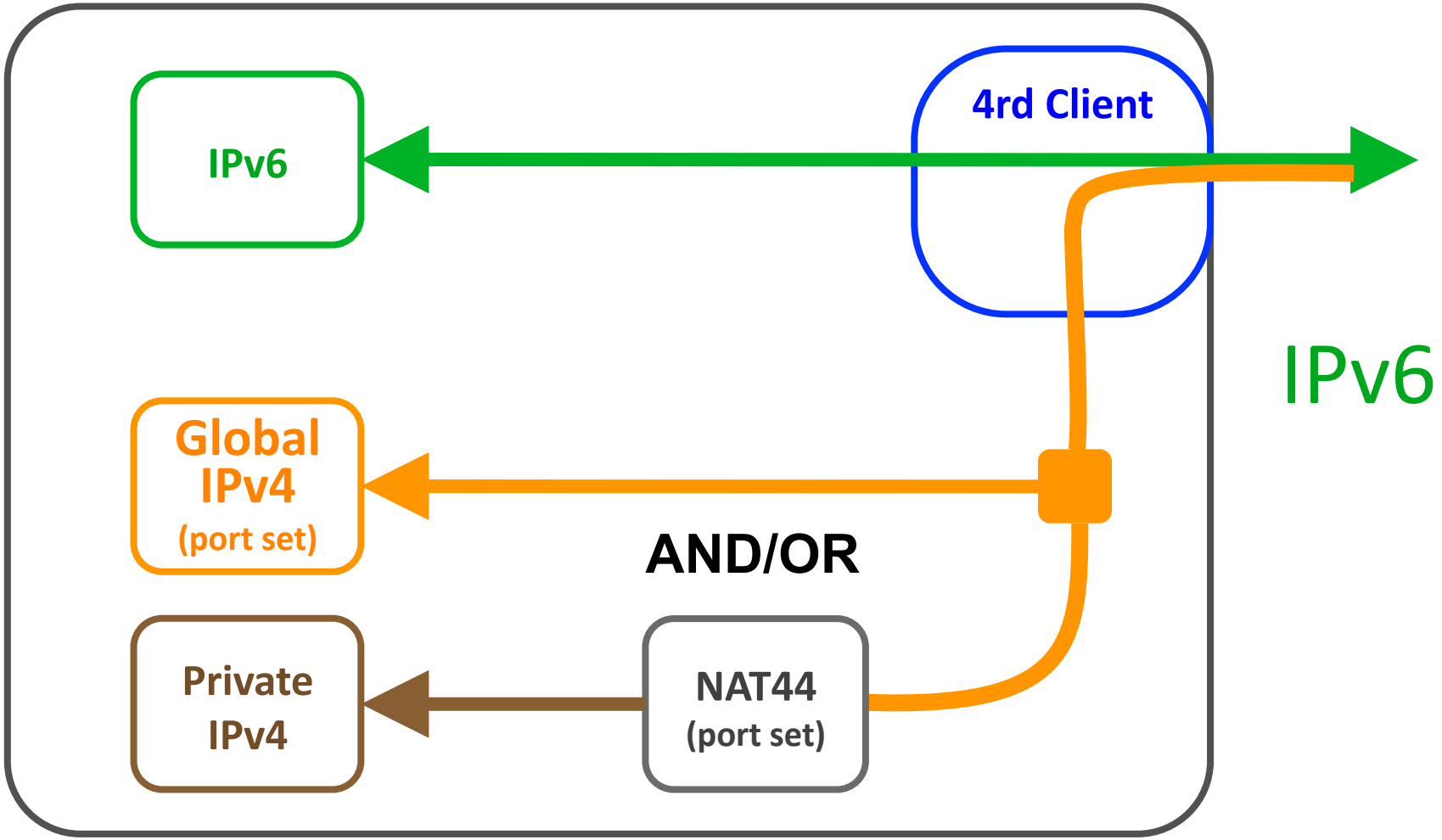
# Longer than /32 customer prefixes (IPv4r)

1. Use bits beyond /32 to algorithmically identify an exclusive port set
2. Fairness
   - Don't assign to anyone privileged ports 0-4095
   - Assign the same numbers of ports to all that have the same prefix length
3. Exhaustiveness
   - Assign all ports other than 0-4095

# Port-Set derivation from Port-Set Identifiers



# Example of CE internal architecture



# **Conclusion:**
# How can IETF provide an agreed specification?

- To encourage IPv6-only network deployments
- Without unnecessary delay