

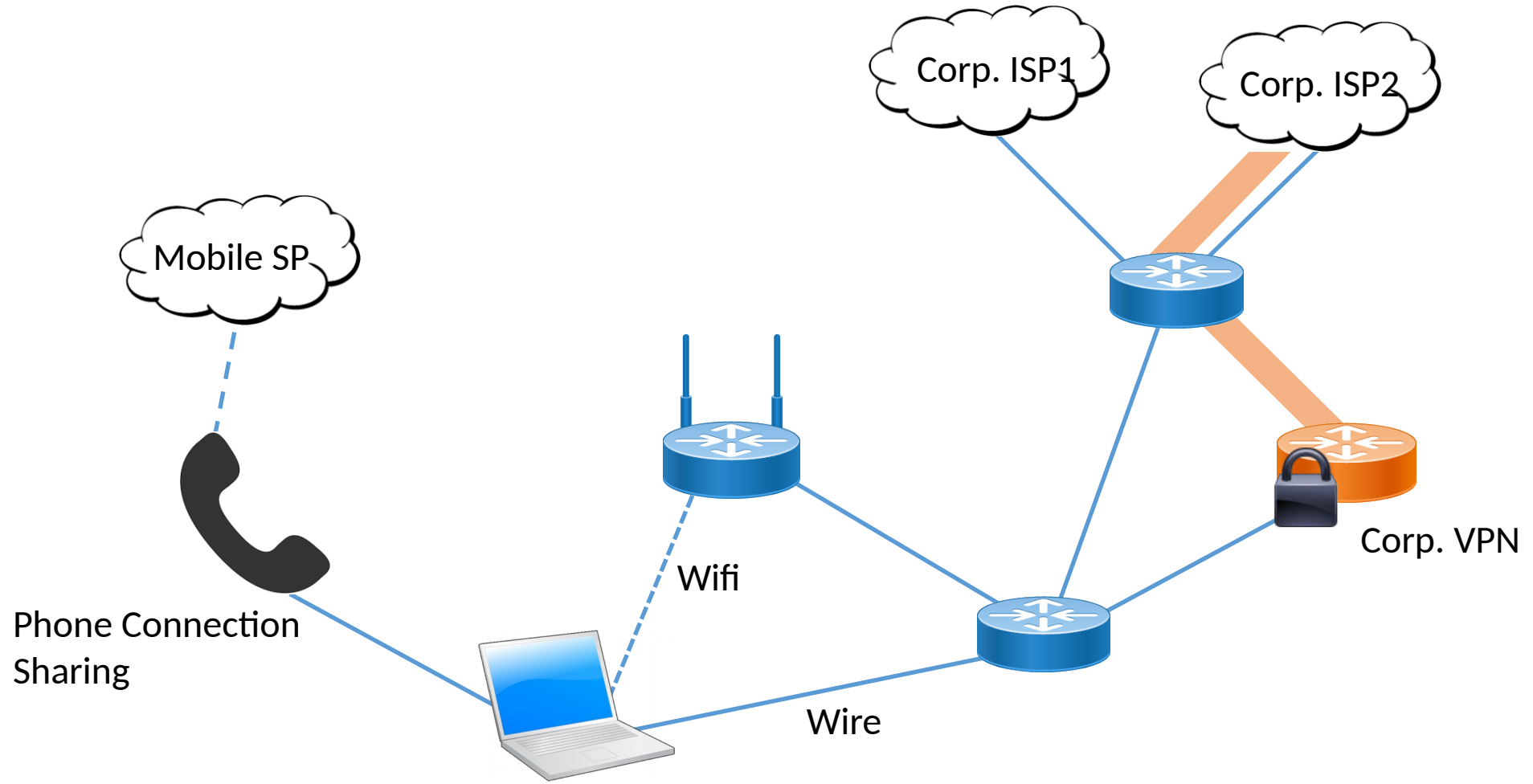
# Discovering Provisioning Domain Names and Data

draft-ietf-intarea-provisioning-domains-00

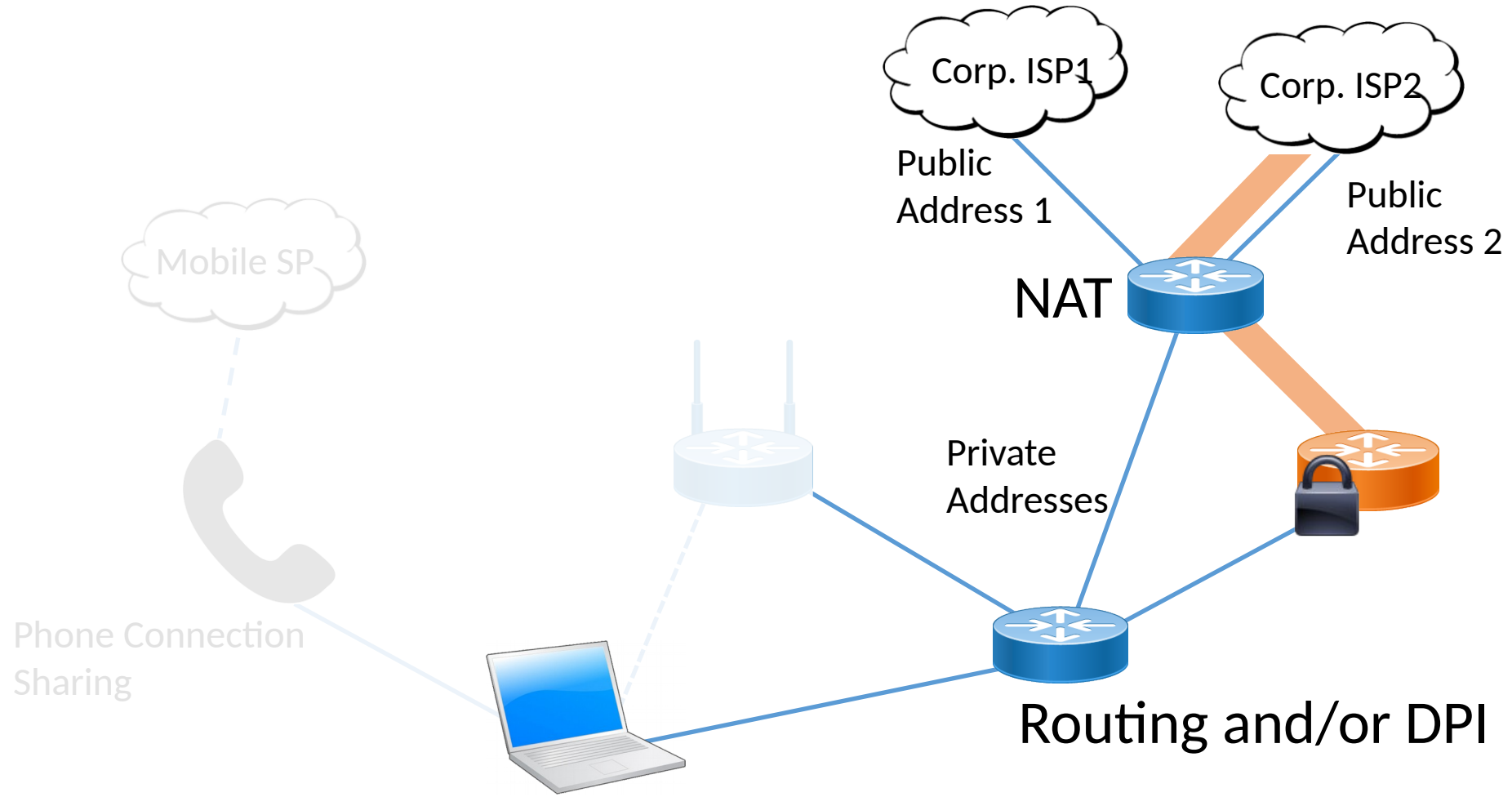
P. Pfister, **E. Vyncke**, T. Pauly, D. Schinazi, M. Keane

# Hosts and networks are multi-homed

Just a few examples...



# Multi-Homing, the legacy way...

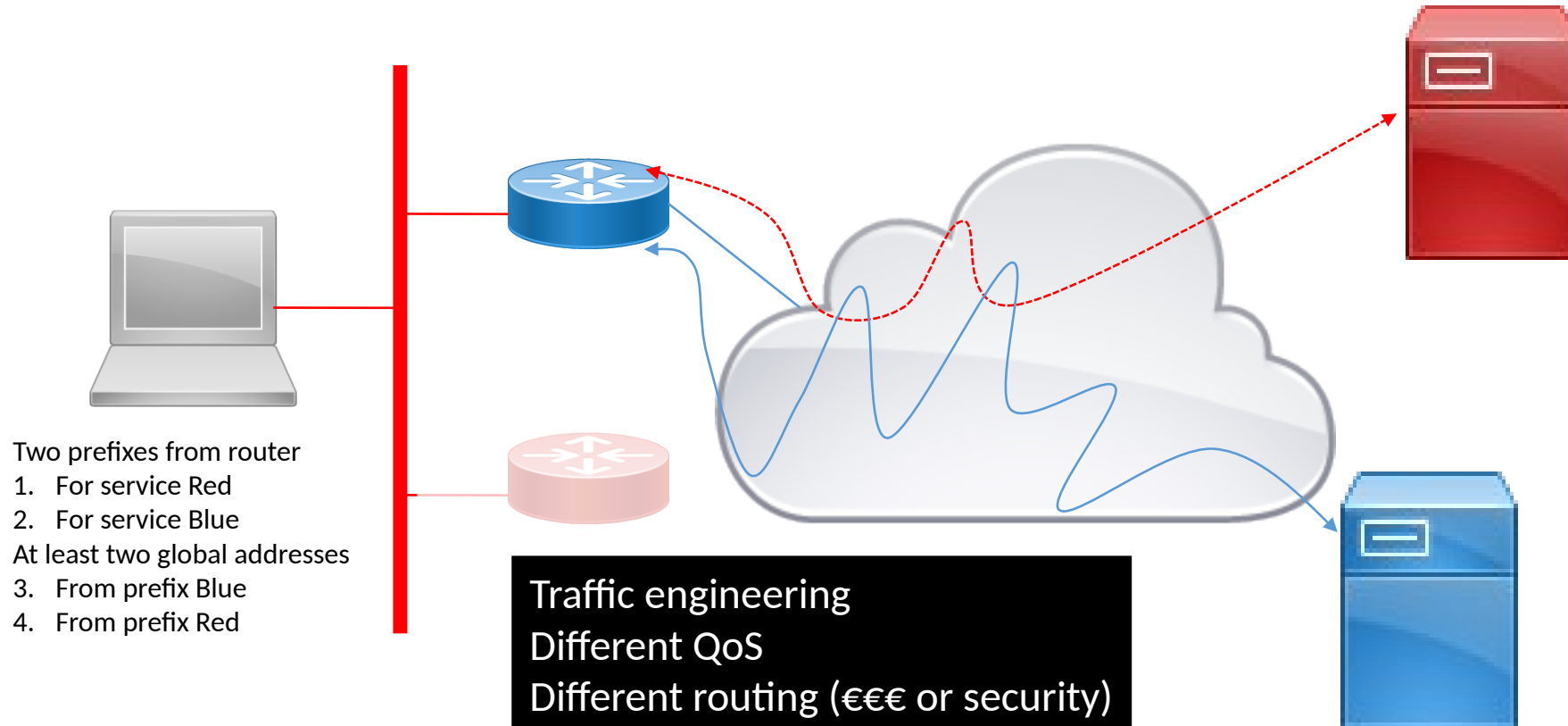


# Bundling IP address & DNS resolver

## Multihoming and CDNs

- Name lookups for resources stored on CDNs give different answers depending on the network connection
- Host on homenet may look up name using resolver from provider A, then connect to CDN using provider B
- This will generate support requests
- What to do?

# Service Selection



# The purpose of this draft is to:

## 1. Identify Provisioning Domains (PvDs).

*[RFC7556] Provisioning Domains (PvDs) are consistent sets of network properties that can be implicit, or advertised explicitly.*

Differentiate provisioning domains by using FQDN identifiers.

## 2. Give PvD Additional Information.

Name, characteristics, captive portal, etc...

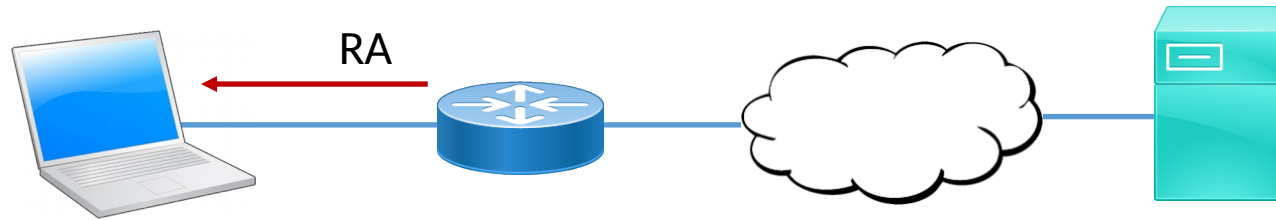


# Step 1b: Identifying PvD (Cont.)

- Information in a RA without PvD ID is linked to an implicit PvD (identified by interface & link-local address of router)
- Option in RA can change of PvD when they are received in a RA with a different PvD ID
- DHCPv6 information **MUST** be associated to a PvD ID received on the same interface from the same link-local address



# Step 2: Get the PvD Additional Data

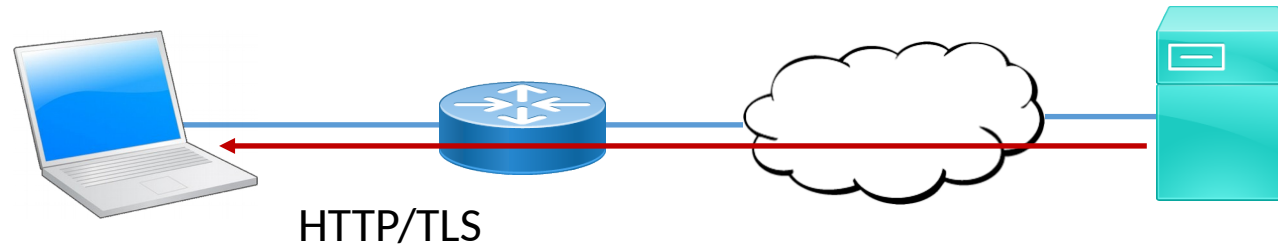


When the H bit is set:

**GET <https://<pvd-id>/.well-known/pvd>**

**Using network configuration** (source address, default route, DNS, etc...) associated with the received PvD.

# Step 2: Get the Pvd Additional Data



When the H bit is set:

**GET https://<pvd-id>/.well-known/pvd**

**Using network configuration** (source address, default route, DNS, etc...) associated with the received Pvd.

# Step 2: Get the PvD Additional Data

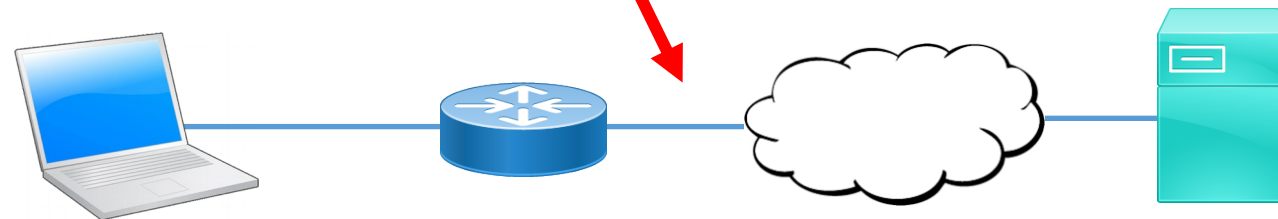
```
{
  "name": "Foo Wireless",
  "expires": "2017-07-23T06:00:00Z",
  "prefixes" : ["2001:db8:1::/48", "2001:db8:4::/48"],
  "localizedName": "Foo-Hôtel à Paris Wifi",
  "dnsZones": ["example.com", "sub.example.com"];
  "characteristics": {
    "maxThroughput": { "down":200000, "up": 50000 },
    "minLatency": { "down": 0.1, "up": 1 }
  }
}
```

Some other examples (see also <https://smart.mpvd.io/.well-known/pvd>) :

```
noInternet : true,
metered : true,
captivePortalURL : "https://captive.org/foo.html"
```

# Step 2b: Additional Data Describing the Network

- Cost of the network access
- Performance of the first uplink (ADSL, FTTH, ...)
- Captive portal
- Walled garden
- ...



# Implementation status

Linux - <https://github.com/IPv6-mPvD>

- pvdd: A Daemon to manage PvD IDs and Additional Data
- Linux Kernel patch for RA processing
- iproute tool patch to display PvD IDs
- Wireshark dissector
- RADVD and ODHCPD sending PvD ID

Implemented in on commercial vendor router

# neat

A New, Evolutive API and Transport-Layer Architecture for the Internet: <https://www.neat-project.org/>

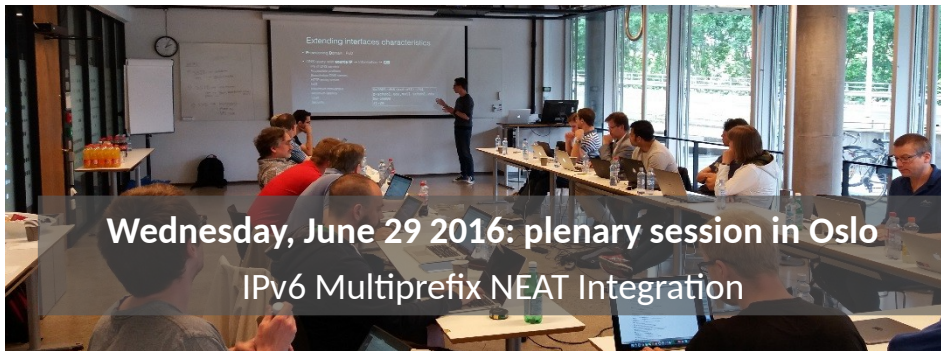
European H-2020 project











10 partners (Cisco, Mozilla, EMC, Celerway...)

**Provisioning Domain** (information about a prefix) via DNS [draft-stenberg-mif-mpvd-dns-00](#) (old)

Integration to NEAT code: <https://github.com/NEAT-project/neat/pull/80>

→ Asking the user to choose with relevant criteria and simple UI



<b>LTE (ORANGE)</b>			
	 2 mn	\$ 0.5 GB \$0	 3%
<b>VPN OVER LTE (ORANGE)</b>			
	 6 mn	\$ 0.5 GB \$0	 4%
<b>Wi-Fi (OSLO HOSTEL Wi-Fi)</b>			
	 11 mn		 1%