# Selected IPv6 topics in cellular:
# *MIF, Prefix Delegation, NAT64*

**Workshop on TCP+VoIP, congestion control, new web developments, and selected IPv6 topics in cellular**
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# Multiple interface issues

Arise when a host is truly connected to multiple accesses simultaneously

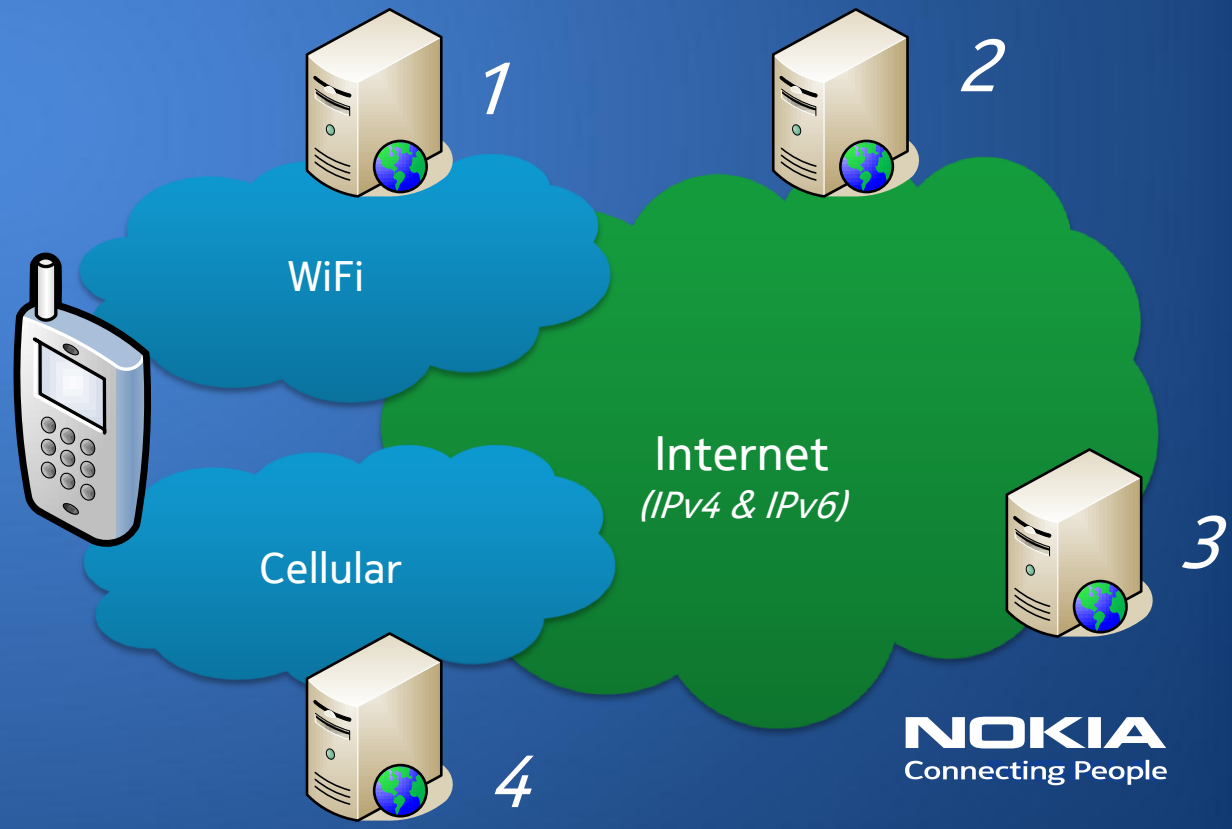
Our focus was AFTER network selections have been made (e.g. with ANDSF)

RFC 6418 lists these problems, some are:

- How to select DNS server in split-DNS case
- How to select optimal interface for a destination
- How to select right addresses
- How to control via APIs

MIF is working on solutions:

- DNS selection to be RFC soon
- DHCPv6 rule distribution facing headwind
- API / Happy Eyeballs not followed really..



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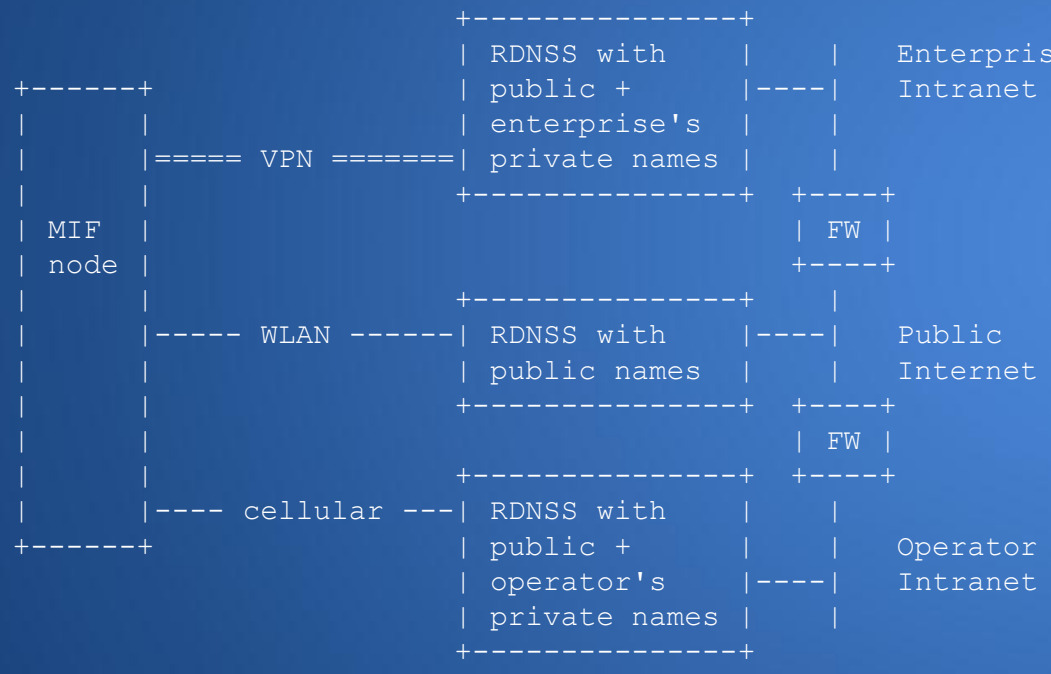
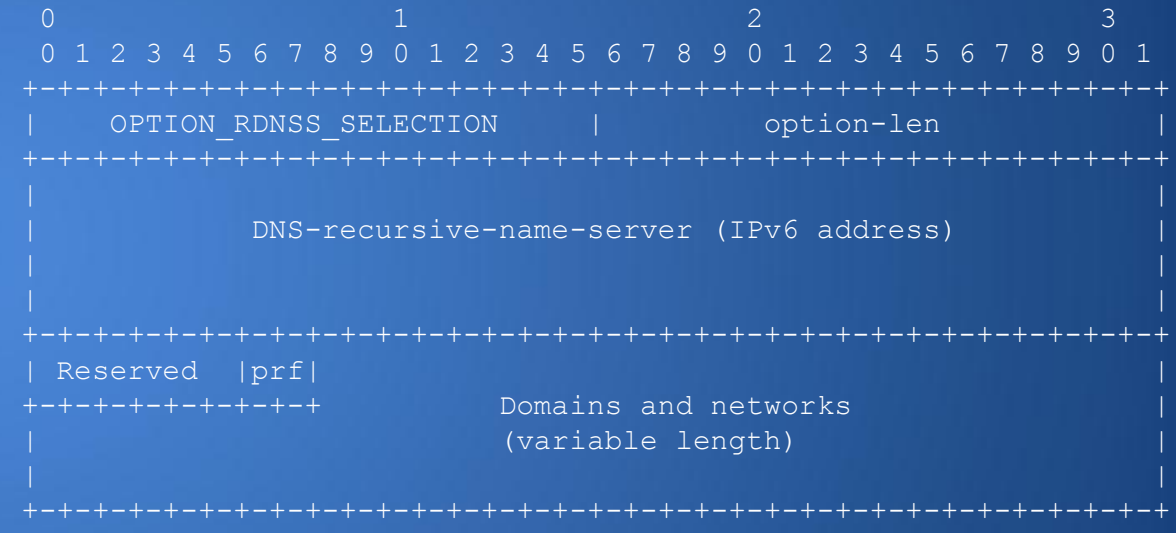
# Improved Recursive DNS Server Selection

## Soon RFC 6731

## Supports both DHCPv6 and DHCPv4




Referenced already from ” IPv6 Multihoming without Network Address Translation”, *draft-ietf-v6ops-ipv6-multihoming-without-ipv6nat-04*



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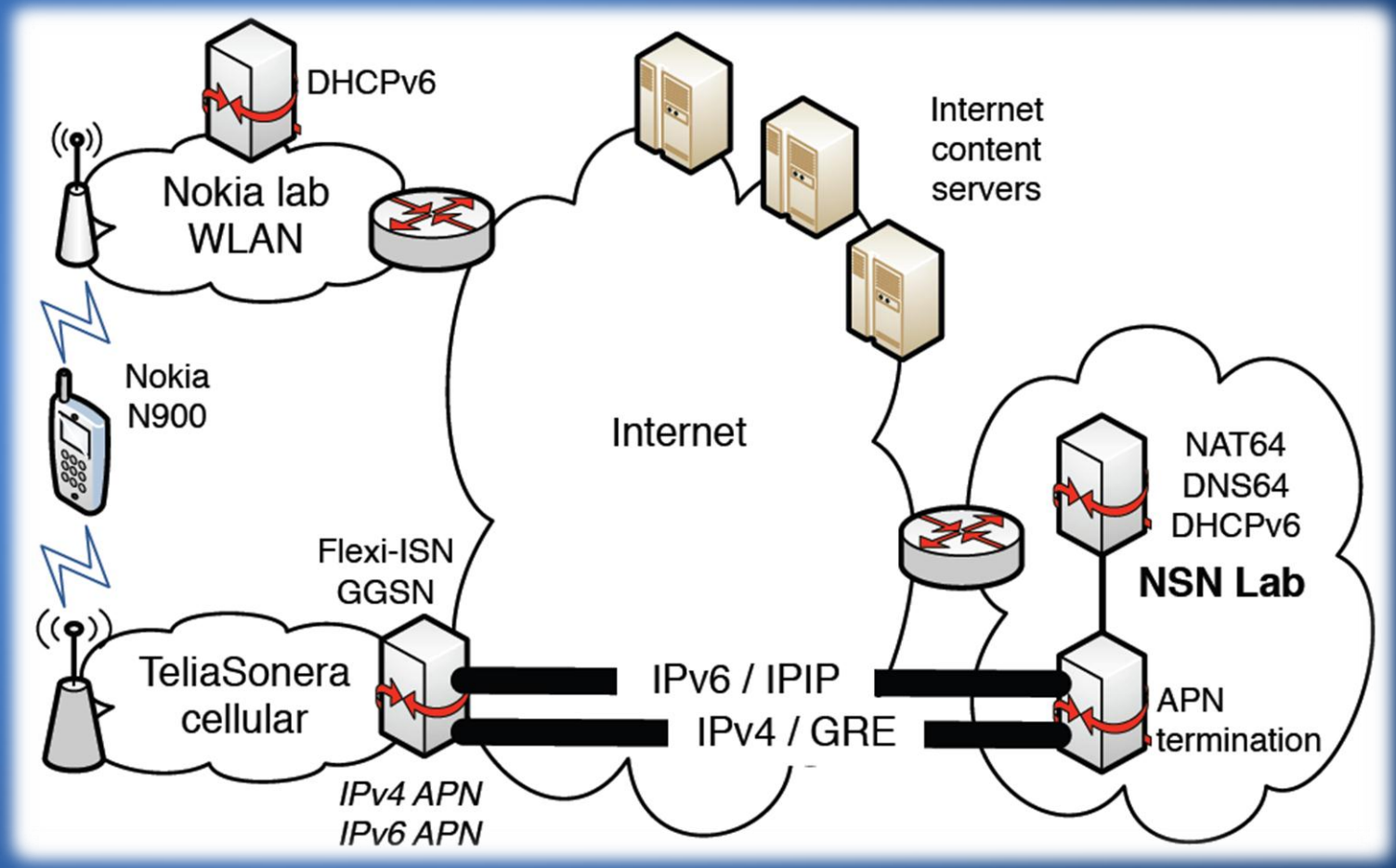
# IPv6 traffic offloading using DHCPv6

Our implementation →

DHCPv6 servers providing rules in WLAN and cellular

DHCPv6 served both routes and DNS server selection rules

Modified N900 used (with ISC's DHCPv6 client & BIND, some scripts and utilities)



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# IPv6 Prefix Delegation

Started by thinking about stateless prefix delegation – that went nowhere

Ended on DHCPv6 Prefix Delegation Exclude Option RFC 6603
..excludes a prefix out of a delegated prefix

Enables aggregation of the bearer's /64 prefix and
the delegated prefix into a single aggregared prefix

Successfully contributed to 3GPP!

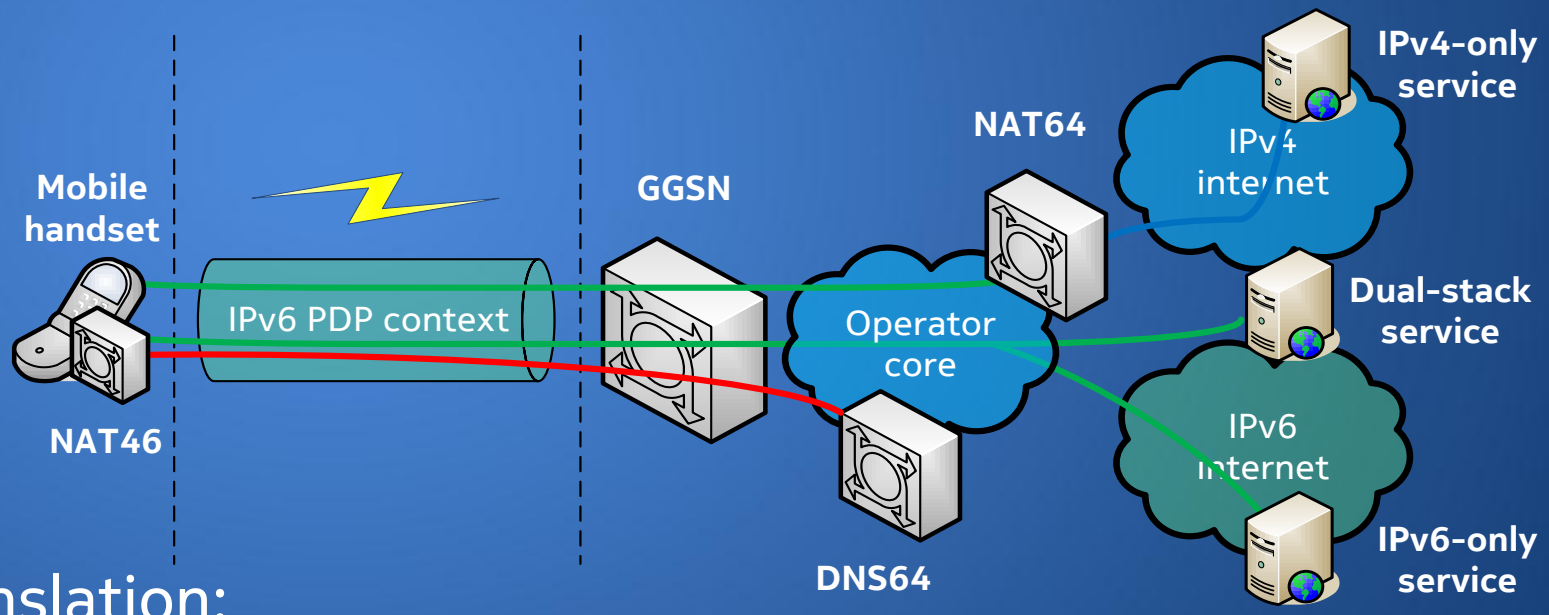
# NAT64 discovery and learning NAT64 prefix

NAT64s are becoming reality – also in 3GPP networks

Hosts may want to choose whether to use interface with NAT64, or one without

NAT64 has to be discovered

Once discovered, as ”side-product”, the learned prefix can be used in local IPv6 address synthesis!
-> already used in double translation:
*draft-ietf-v6ops-464xlat*



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# NAT64 discovery and learning NAT64 prefix


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# Thank you