

# Scenarios tunneling analysis - intro

## Scenarios tunneling analysis - Introduction

### □ First

- Check scenarios defined in the scenarios/analysis in more detail
- Try to tease out the subcases of the scenarios
  - .. to understand the real cases better.

### □ After that

- Look at the properties of the solutions compared to scenarios
- Find one or more (as few as possible) recommended mechanisms
  - Find consensus on the mechanism(s) today, or very soon
  - Reach consensus, be sent for PS before San Diego (hopefully)
- Publish the specs describing current implementations
  - Informational/Experimental through RFC-editor
  - With an applicability statement or IESG note
  - After consensus which mechanism(s) for PS

# Scenarios tunneling analysis 1/3

## Scenarios tunneling analysis 1/3

### □ 3GPP Networks

- Need v6-in-v4 tunneling when roaming to IPv4-only 3GPP network
- May need v6-in-v4 tunneling where the 3GPP operator has not yet deployed IPv6 PDP context support at all
  - But would support some IPv6 through a transition mechanism
- Support for no 3GPP support at all out of scope
  - If appropriate, Unmanaged transition mechanisms can be used

### □ Issues

- Is node-to-node direct tunneling required inside the network?
  - At least "nice to have"..

# Scenarios tunneling analysis 2/3

## Scenarios tunneling analysis 2/3

### □ Unmanaged networks

- The ISP doesn't support any IPv6, user must get IPv6 automatically
  - ▷ a) with little infrastructure, and without contracts, or signups
  - ▷ b) with a contract, signup, for higher security/manageability, etc. -- explicitly from another ISP or there
  - ▷ Long tunnels are bad and don't make much sense -- is b) a real scenario worth solving?
- The ISP wants to support IPv6, but AR/link/gateway can't do v6
  - ▷ 3 cases: tunneling from the gateway, separate v6 gateway, or the host(s)
  - ▷ Solution to b) would work here as well -- but not necessarily the other way around

### □ Issues

- NAT and dynamic IPv4 must always be supported
- Direct tunneling and low amount of infrastructure is required when there is no ISP support
- Is node-to-node direct tunneling inside the same ISP required?
  - ▷ it might "come free" by the use of 6to4/Teredo
  - ▷ note: this gets VERY difficult when NAT is in the path!

# Scenarios tunneling analysis 3/3

## Scenarios tunneling analysis 3/3

### □ ISP scenarios

- ISPs want to support unman/enterprise, nothing else

### □ Enterprise networks ?????

- Scenarios work not gives no help on this..
- The enterprise wants to deploy IPv6 using internal tunneling.
  - Does this need to be direct? "would be nice.."?

### □ Optional additional scenarios

- IP mobility (mainly 3GPP2) - node mobile, not stationary
  - requires that time required for roaming signalling is low
  - there may be a need for v4-in-v6 tunneling at least in some timeframe

# Solution Summary

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## Solution Summary

- [[ two tables ]]

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- Obtained by combining the matrices
  - Unman 1a) requires Teredo
  - Unman 1b) and 2) require STEP or TSP (ISATAP is out)
  - 3GPP 1) can be filled by STEP or ISATAP; no ISATAP if sec. req'd
  - 3GPP 2) can be filled by STEP or ISATAP
    - Only ISATAP if direct connectivity is a MUST requirement
  - Teredo and STEP the least common denominator
    - With Teredo + TSP coming a bit behind ?

# Questions

## Questions to the WG

- Does the proposal about Informational/Experimental publication make sense?
  - Describing current implementations
- Is the analysis going to the right direction?
- Unman 1a) requires Teredo.
  - Is there WG consensus for adopting that?
- Does WG feel that we have to find only one solution?
  - (Except for Unman 1a) if decided already)
  - Whether an existing one or a hybrid?
- If 1, can we choose between TSP, STEP and ISATAP?
  - Or should an optimal combination proposal be made?