Analysis on IPv6 Transition in 3GPP Networks

IETF#56, v6ops wg

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Scope & Goal

- Identify relevant transition scenarios
- Map relevant transition mechanisms to the scenarios
  - Identify relevant transition mechanisms
  - Perform “Gap Analysis” – i.e. identify missing transition tools
- Make analysis for usage of transition tools
- Document the results
  - Scenarios
  - Solutions
    - Gaps
    - Recommendations
- Discuss these in the WG
- Non-Goals
  - Specify new transition mechanisms
  - Propose changes 3GPP specs

People & Deliverables

- Authors of the 3GPP transition drafts
  - Margaret Wasserman (v6ops Chair)
  - Alain Durand
  - Jonne Soininen
  - Juha Wiljakka
  - Hesham Soliman
  - Karim El-Malki
  - Hugh Shieh
  - Niall Murphy
  - Paul Francis
- Deliverables
  - Scenarios Document
    - www.ietf.org/internet-drafts/draft-ietf-v6ops-3gpp-cases-02.txt
  - Analysis Document
    - www.ietf.org/internet-drafts/draft-ietf-v6ops-3gpp-analysis-02.txt

Happened since IETF#55

- Scenarios document (draft-ietf-v6ops-3gpp-cases-02.txt)
  - Two revisions with minor edits published.
  - v6ops wglc 17.02.-02.03., see the following slide.
- Analysis document (draft-ietf-v6ops-3gpp-analysis-02.txt)
  - Published as a wg document in December.
  - Two following revisions published in January and in March, the latest one with minor edits.

WGLC for the 3GPP Scenarios document

- Comments during the wglc (thanks for the comments!)
  - Some people (Bound, van der Pol, ...) supporting moving the document forward to the IESG.
  - Review by Pekka Savola: 2 minor comments & some editorial nits => Those will be updated in the next revision.
- Margaret Wasserman's mail on March 6th: The response to the last call for 3GPP (and Unmanaged) Scenarios is insufficient to justify advancing these documents to the IESG. More review comments are needed.
- Comments received after wglc (thanks!)
  - Francis Dupont: comment on PPP type of PDP context & a couple of editorial comments
  - (Editorial) comments from Chris Fischer
  - César Olvera: No additional comments, the doc is ready with the proposed corrections.
  - Comments from Alain Baudot and Suresh Satapati

⇒ Any other comments? Please send them to the list!

Comments on the 3GPP Analysis document

- No comments (so far...) on the latest revision -02
- Comments on revision -01:
  - Suresh Leroy: IMS scenario 1: destination IPv4 node is registered to a dual stack SIP proxy.
    => added the destination network dual stack
    SIP proxy case in revision -02
- Comments on revision -00
  - Summarized in this mail:
  - Taken into account in revision -01


summary_on_comments.txt

A brief summary on the 3GPP Analysis doc

- **GPRS Scenario 1 (Dual Stack UE)**
  - Wide variety of transition mechanisms can be used.
  - Dual stack in the UE.
  - Static/dynamic tunneling in the network.
  - Tunneling from the UE in the case GGSN does not support IPv6.
- **GPRS Scenario 2 (IPv6 UE connecting to IPv6 node through IPv4 nw)**
  - Static (dynamic) “IPv6 in IPv4” tunneling in the network.
- GPRS Scenario 3 (IPv4 UE connecting to IPv4 node through IPv6 nw)
  - Dynamic / static “IPv4 in IPv6” tunneling in the network.
- GPRS Scenario 4 (IPv6 UE connecting to IPv4 node)
  - ALG / protocol translation needed in the network.
- GPRS Scenario 5 (IPv4 UE connecting to IPv6 node)
  - ALG / protocol translation needed in the network.
- IMS Scenario 1 (UE connecting to a node in an IPv4 network through IMS)
  - "Interworking unit" consisting of SIP ALG for signaling traffic and a protocol translator for the user data.
  - Solution is for limited cases.
- IMS Scenario 2 (Two IPv6 IMS islands connected via IPv4 nw)
  - Static “IPv6 in IPv4” tunneling in the network.

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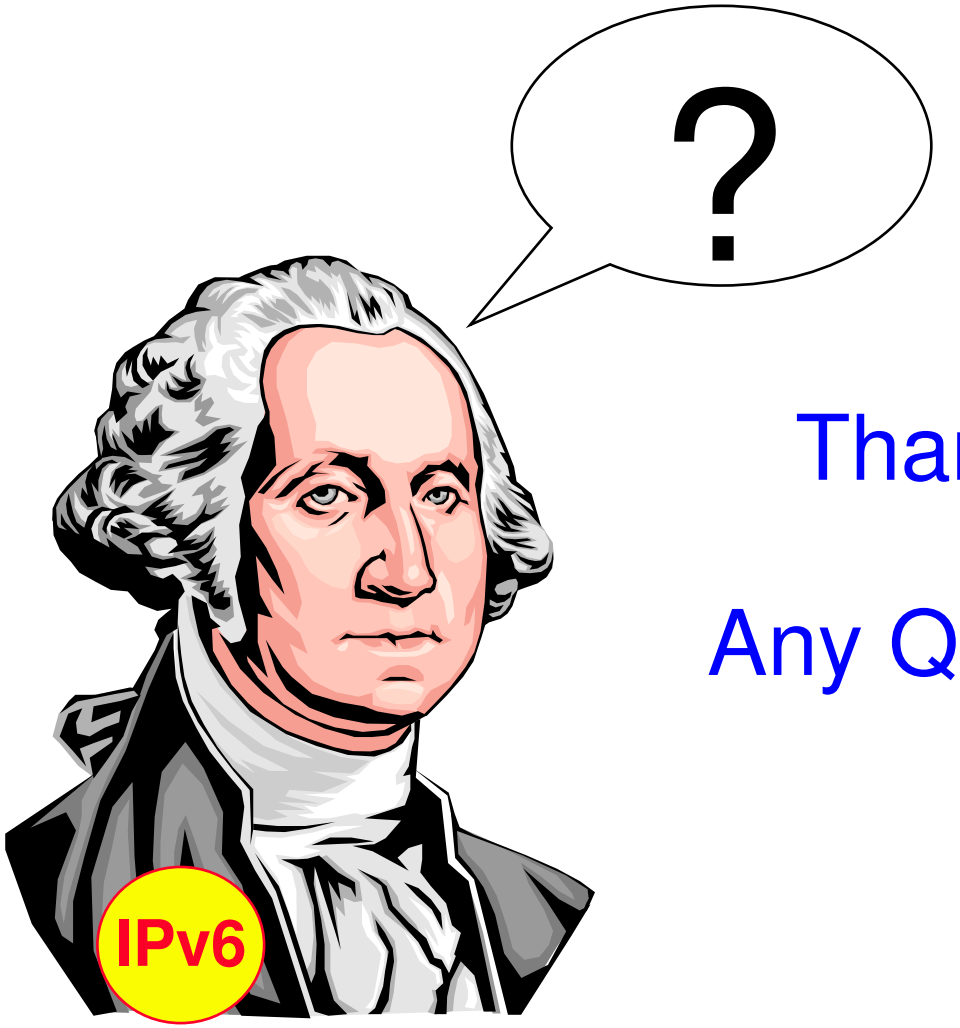
Way forward

- Scenarios document
  - Please send any comments on the document to the v6ops mailing list!
  - Forwarding the document to the IESG.
- Analysis document
  - Could the wg consider starting wglc for this document?



Thank You!

Any Questions?

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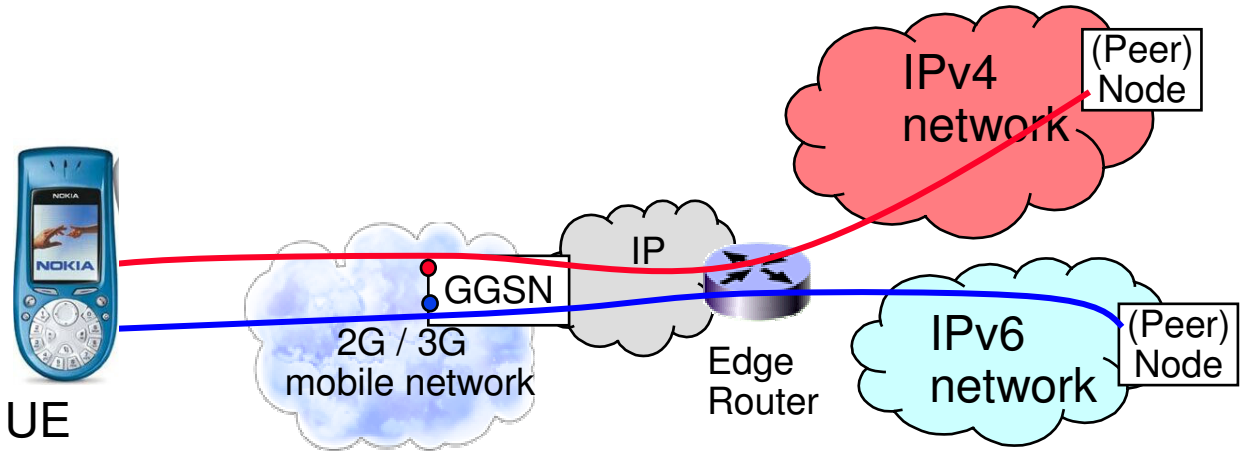
Extra slides

Scenarios

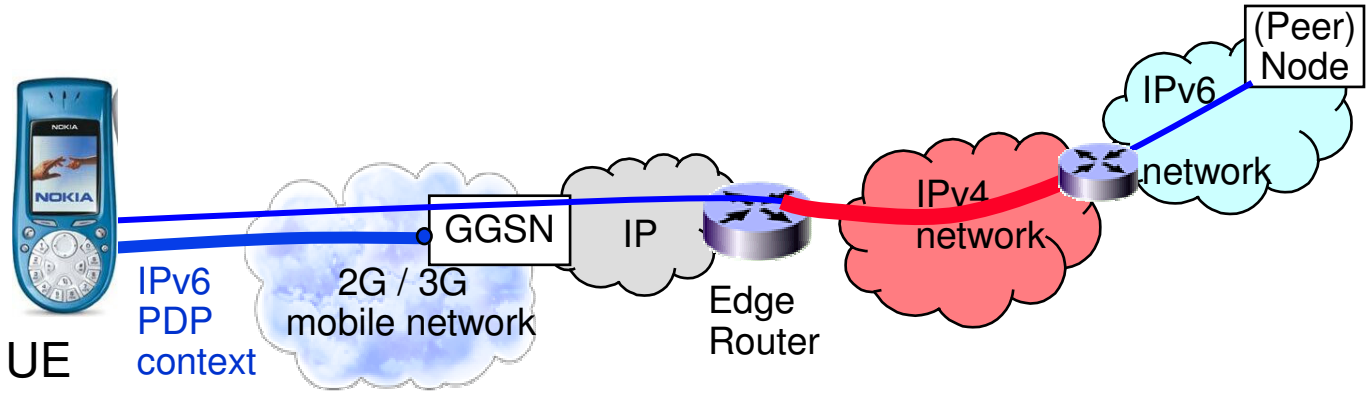
1. GPRS Scenarios
    1. Dual Stack UE connecting to IPv4 and IPv6 nodes
    2. IPv6 UE connecting to an IPv6 node through an IPv4 network
    3. IPv4 UE connecting to an IPv4 node through an IPv6 network
    4. IPv6 UE connecting to an IPv4 node
    5. IPv4 UE connecting to an IPv6 node
2. Transition scenarios with IMS
    1. UE connecting to a node in an IPv4 network through IMS
    2. Two IPv6 IMS islands connected via an IPv4 network

GPRS scenarios 1 and 2

1. Dual stack UE connecting to IPv4 and IPv6 nodes



2. IPv6 UE connecting to IPv6 node through an IPv4 network



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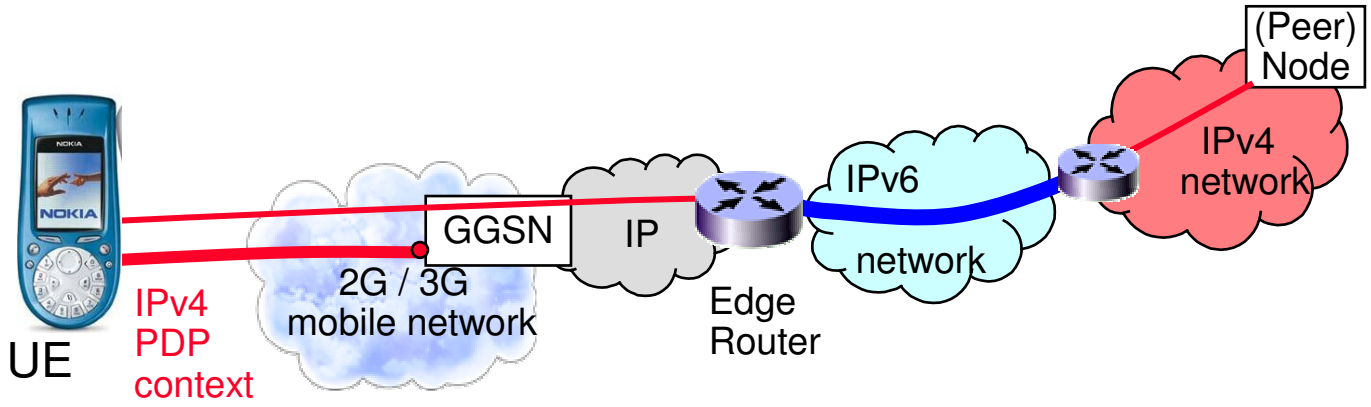
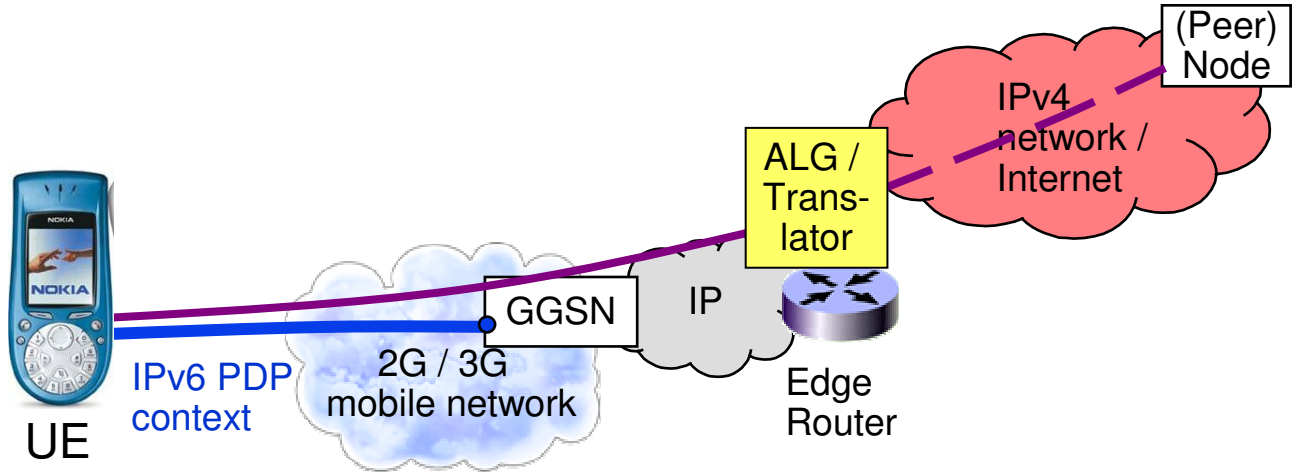
GPRS scenarios 3 and 4

3. IPv4 UE connecting to IPv4 node through an IPv6 network



4. IPv6 UE connecting to an IPv4 node



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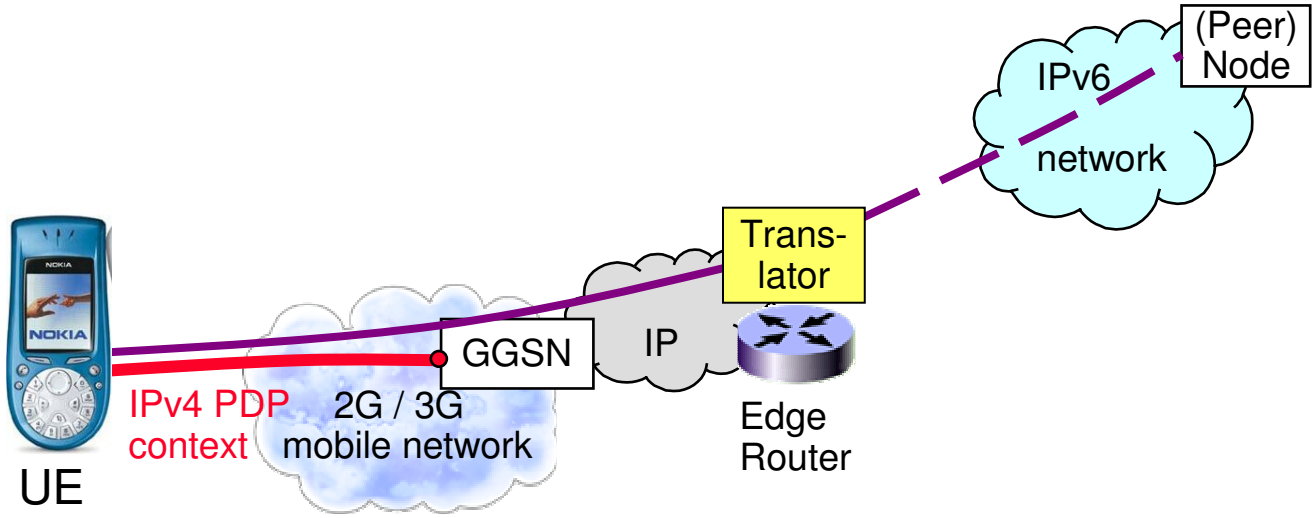
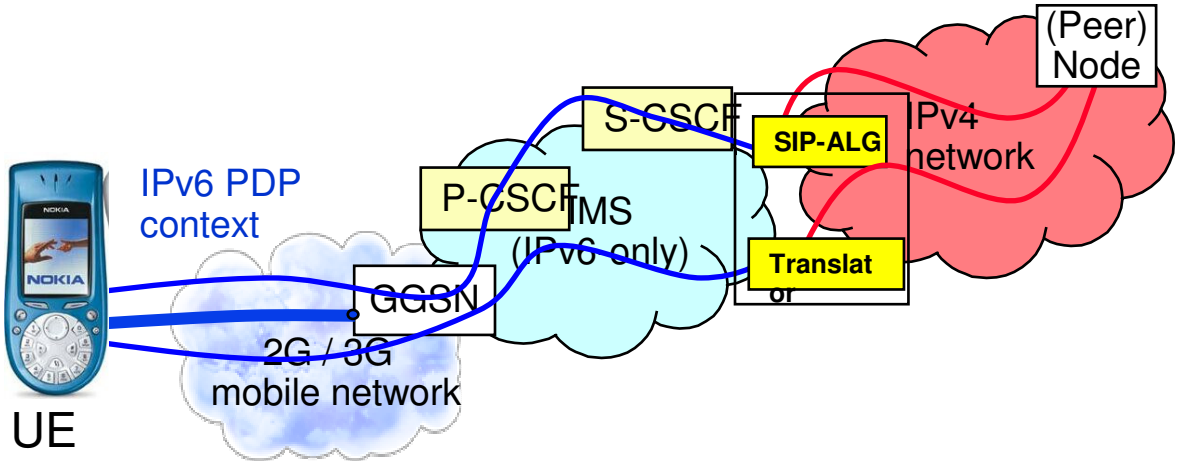
GPRS scenario 5

5. IPv4 UE connecting to an IPv6 node

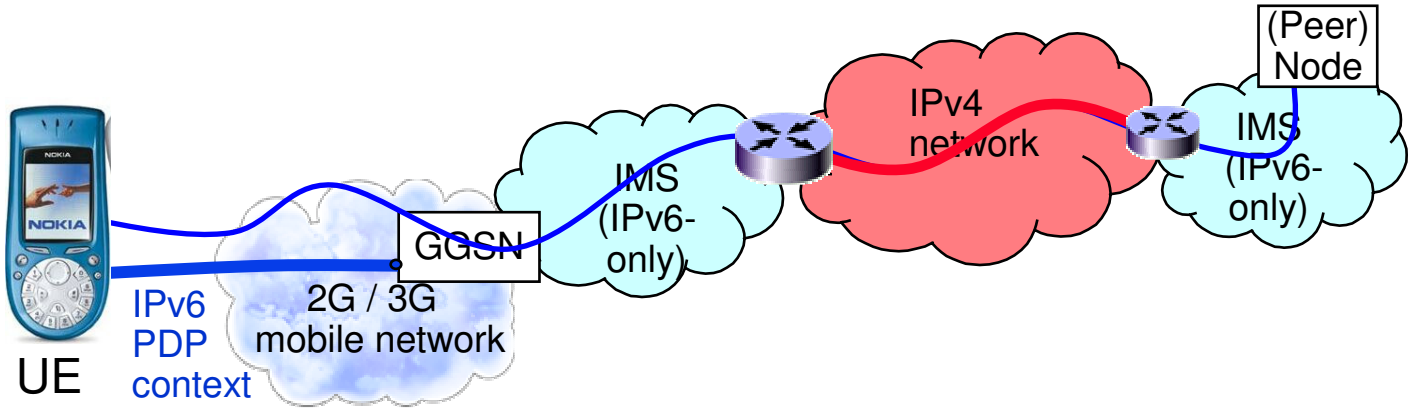


IMS scenarios 1 and 2

1. UE connecting to a node in an IPv4 network through IMS



2. Two IMS islands connected via an IPv4 network



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