

# ConEx Concepts and Use Cases

## draft-ietf-conex-concepts-uses-02

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IETF-81 ConEx  
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# Overview

- Lest we Forget: Top Level Goal
- Status
- Changes to draft since Mar-11
- Mailing List Reaction/Contribution
- Deployment Arrangements
- Next steps

# Lest we Forget: Top Level Goal

- Leave reader with one take-away message
  - what ConEx is good for
- and understanding of why
  
- wg chose traffic management
  - LEDBAT & QoS use-cases are consequences
  - other use-cases must not confuse main message

# Status

- late
  - chartered to submit to IESG Mar 11
  - draft-02 posted 11 Jul
- new editing team
  - Bob Briscoe & Rich Woundy
- f2f hand-over meetings (where possible)
  - keep the body, change the first impression
- new structure & new text pasted to list & bashed
  - through June/Jul

# Changes to draft since Mar-11

- Structural Changes
- Abstract & Intro
- Concepts, incl. Non-Goals & Misconceptions
- Other Use-cases
- Deployment Arrangements (discussed later)

# Structural Changes

- Introduced Traffic Mgmt in Intro (see next slide)
- Definitions → Concepts (incl. formal definitions)
- Added “Non-Goals & Misconceptions” under Concepts\*
- Use-cases
  - 3 main use-cases reframed as one (traffic mgmt) with 2 consequences
  - Statistical Multiplexing over Differing Timescales → Concepts
  - “Other Use-Cases” section created for brief mentions of others
  - “Accounting for Congestion” → Other/interconnection
- Self-congestion, moved from Intro → Potential Issues
- Information Security → Security Considerations

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\* plan to move again

# Current Structure

1. Introduction
2. Concepts
3. Traffic Management
4. Exposing Congestion
5. ConEx Use-Cases
6. Deployment Arrangements
7. Potential Issues or Non-Issues
8. Security Considerations

# Abstract & Intro

- Doc as entry-point to ConEx documentation

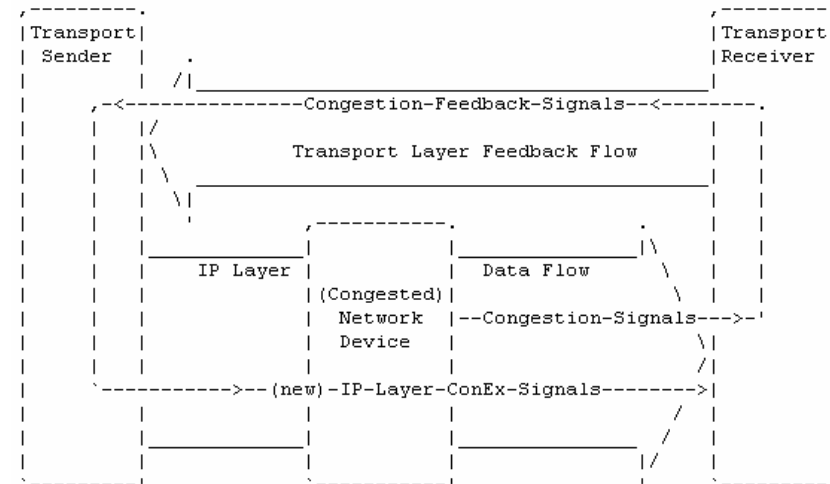


Figure 1: Where the ConEx Protocol Fits in the Internet Architecture

- Focused to reflect traffic mgmt story in body
- Deferred definition of congestion →§2
- Deferred overprovisioning argument →§2
- Avoided justifying Traffic Mgmt, just “it exists”

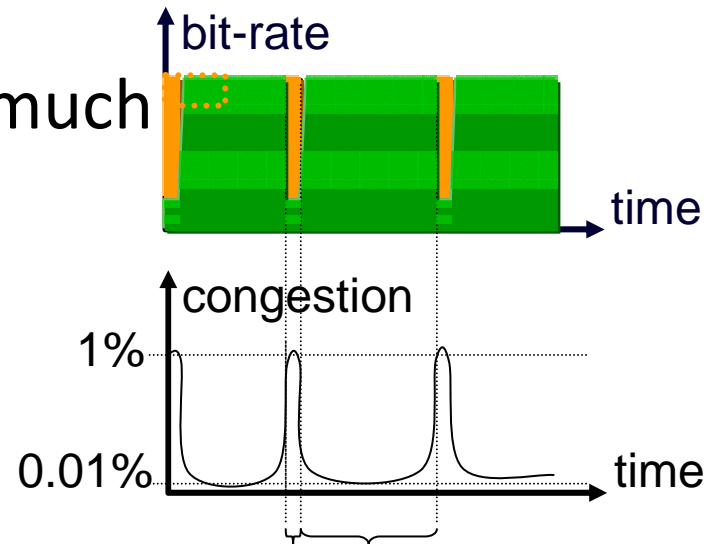


# Concepts

- Concepts
  - preceded definitions with explanatory text on main concepts (next slide)
  - congestion definition now consistent with abstract-mech
- Added Non-Goals & Misconceptions
  1. not fine-grained congestion control by operator
  2. enforcing per-flow fairness considered harmful
  3. not substituting for capacity planning
  4. not eliminating all congestion
  - not included: utilisation vs congestion

# Main Concepts

- accountability
  - too little capacity meets too much
  - congestion
    - a property of the link or path
  - congestion-volume
    - a property of the traffic
    - per user, per network



- user's contribution to congestion



# Use-cases

- 3 main use-cases reframed as one: traffic management
  - with 2 consequential use-cases:
    - incentivises LEDBAT
    - informs intra-class QoS
- Statistical Multiplexing over Differing Timescales
  - a property of ConEx used in the other use-cases
    - belongs under Concepts
  - introduced a little in Intro & under Traffic mgmt
    - still need a brief explanation of this under Concepts too
- “Other Use-Cases” section created to contain
  - Preventing congestion collapse
  - Inform Inter-Operator Contracts
  - Inform Capacity Provisioning

# Mailing List response/contribution

- Full reviews: Nandita, Alissa, Mikael
- Substantial continuous reviews
  - Michael M, John L, Toby, Phil, Georgios, Dave McD
- Re-rewrite of Intro
  - and diagram bashing
- Mechanism
  - tradeoff: concrete explanation vs prejudging decisions
- Terminology
  - freedom ⇄ blame ⇄
  - transport sender/receiver
  - traffic management
- Structuring main use-cases as sequential
- Non-Goals nearer end
  - advert in “Concepts”
- Improved structure...

# Proposed Structure

1. Introduction
2. Concepts
  1. Definitions
3. Core Use Case: Informing Congestion Management
  1. History
  2. Existing Approaches
  3. Drawbacks of Existing Approaches
  4. Use Case Description
4. Other Use Cases
  1. Creating Incentives for Scavenger Transports
  2. Supporting Intra-Class Quality of Service
  3. Preventing Congestion Collapse
  4. Informing Inter-Operator Contracts
  5. Informing Capacity Provisioning
5. Deployment Arrangements (see next slide)
6. Commercial Secrecy as a Potential Deployment Barrier
7. Non-Goals
8. Security Considerations, [...etc]

## Current Structure (-06)

1. Introduction
2. Concepts
  1. Definitions
3. Traffic Management
4. Exposing Congestion
5. ConEx Use-Cases
  1. Inform the Operator's Traffic Management
  2. Consequence: Incentivise Scavenger Transports
  3. Consequence: User-Controlled Intra-Class QoS
  4. Other Use-Cases
6. Deployment Arrangements
7. Potential Issues or Non-Issues
8. Security Considerations, [...etc]

- Alissa Cooper becomes doc editor (prize for proposing this :)
- outstanding issue:
  - introduce downstream congestion & ECN early (§2) or late (e.g. §4.4)?

# Deployment Arrangements

- Recall top level goal
  - one take-away message on what ConEx is good for and understanding of why...  
...and believable initial deployment
- in Prague we promised to add this
- made an attempt, but it won't work, it can't work
  - deployment is about mechanism components
  - a huge lump to add to a doc that was avoiding mechanism
- alternative proposal, 3 informational drafts:
  1. ConEx Concepts and Use-Cases
  2. ConEx Abstract Mechanism
  3. ConEx Single Network Deployment Scenarios
    - #2 is prerequisite for #3
    - brief section in #1 summarising and pointing to #3

# Next Steps

- wordsmith Concepts
- transplant out deployment arrangements
  - leave a signpost to it in a dedicated small section
- wordsmith use-cases
  
- modus operandi
  - one section at a time to mailing list
  
- aim for WGLC around Nov 11?