

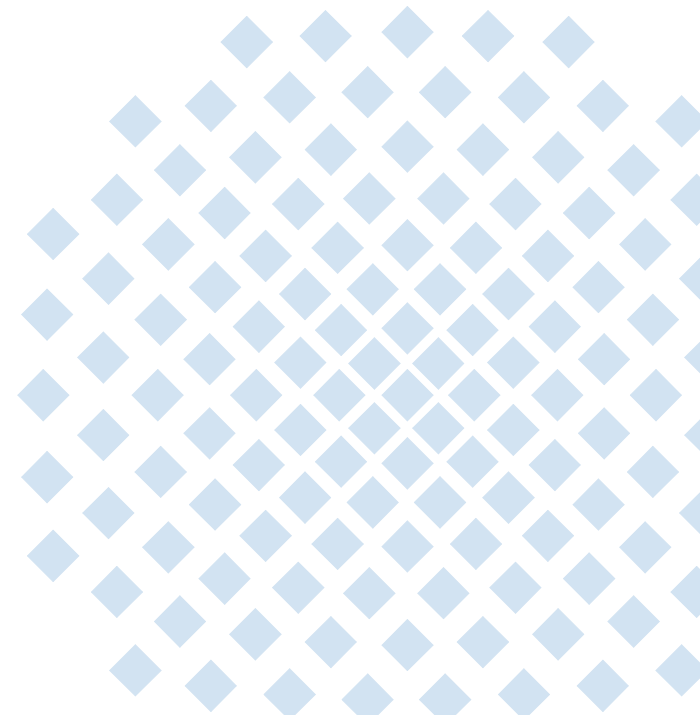
# Problem Statement and Requirements for a More Accurate ECN Feedback

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tcpm – 88. IETF Vancouver – Nov 4, 2013

draft-ietf-tcpm-accecn-reqs-04

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# Reviews and Updates

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## Changes from -03 to -04

- Discussion on ECN Nonce
  - Use Cases [new section]
    - Examples from introduction copied
    - Introductory text on ConEx and DCTCP
    - Added: Using CE for checking integrity
  - Requirements [see next slides]
    - Extended: Accuracy, Integrity, and complexity
    - Added: Backward and forward compatibility
  - Editorial changes...
- Thanks to Bob Briscoe and Michael Welzl!
- More Reviews are welcome! Or WGCL?

## Open Issue: Naming

Proposals: full, complete, more detailed, more accurate, fine-grained...

# Requirements

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- **Resilience** (delayed ACK by two or more packets and ACK loss)
- **Timeliness** (feedback within one RTT)
- **Integrity** (misbehaving receiver or network node)
  - Should assure the integrity of the feedback at least as well as the ECN Nonce
  - But no requirement that the ECN Nonce mechanism must be employed to achieve this
- **Accuracy** (more than one congestion notification per RTT)
  - Should preserve the order at which any ECN signal
  - Should be able to reconstruct the occurrence of any of the four code points (CE, ECT(0), ECT(1), Not-ECT)
    - TODO: Make wording more explicit to require at least ECT(1) feedback
- **Complexity** (minimum state information)

The receiver should not take assumptions about the mechanism that was used to set the marking nor about any interpretation or reaction to the congestion signal
- **Overhead** (no additional segments and overhead in each segment minimal)
- **Backward and forward compatibility** (negotiation and fallback to classic ECN)
  - Should aim to be able to traverse most existing middleboxes
  - Should be used as the default feedback mechanism