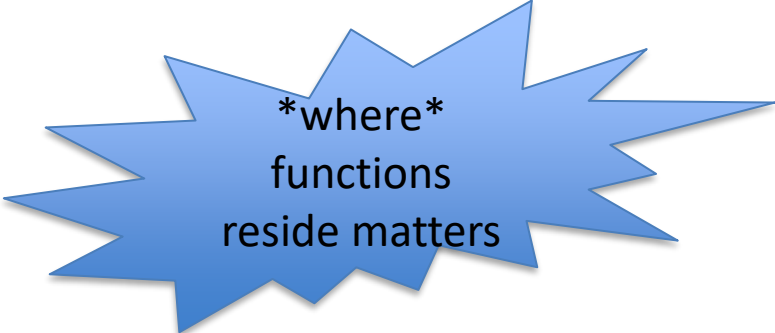


What is
new in the
protocol



where
functions
reside matters

Special Features & Open Discussion: “Test Protocol for One-way IP Capacity Measurement”

[draft-morton-ippm-capacity-metric-protocol-02](#)

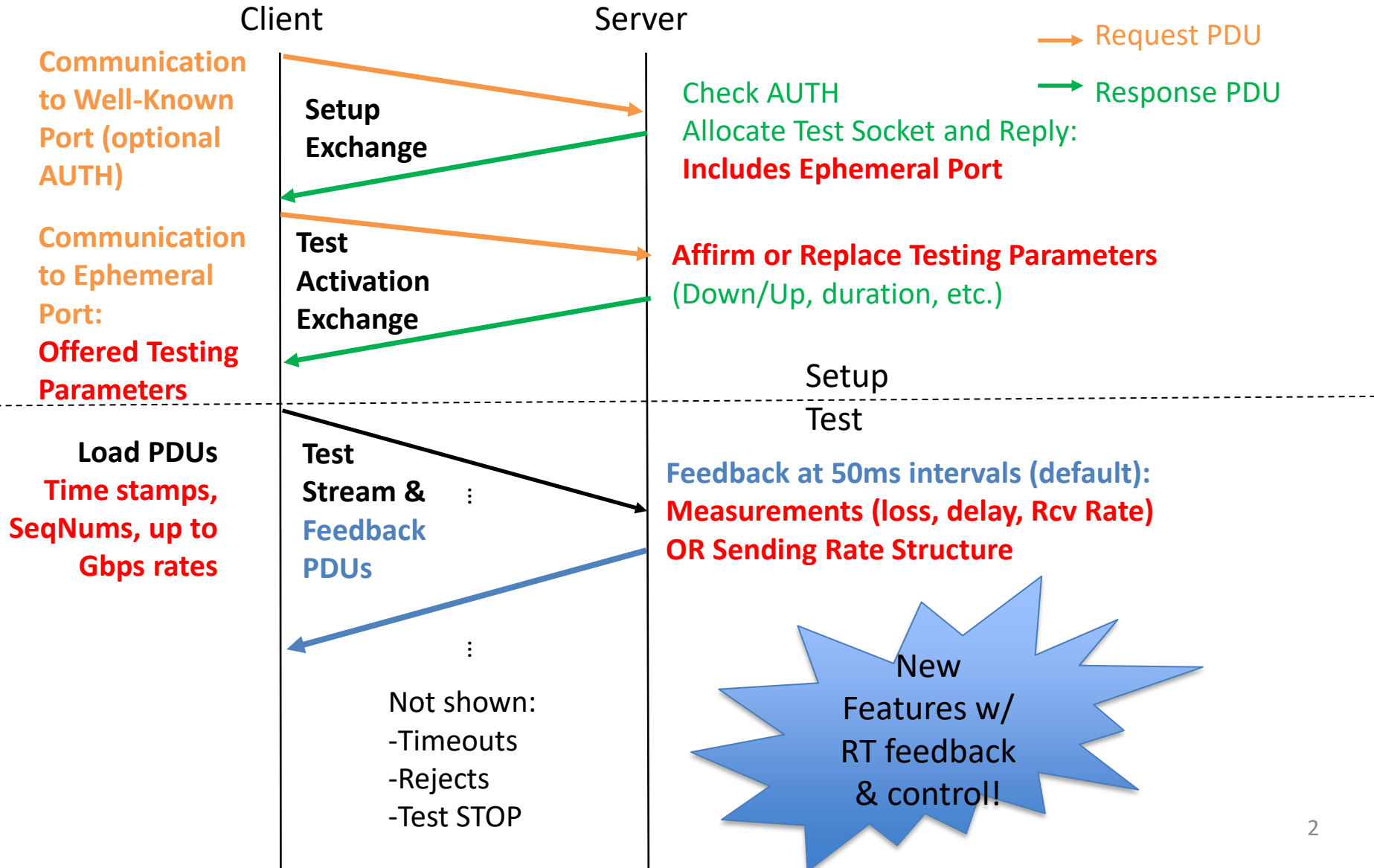
L. Ciavattone, A. Morton



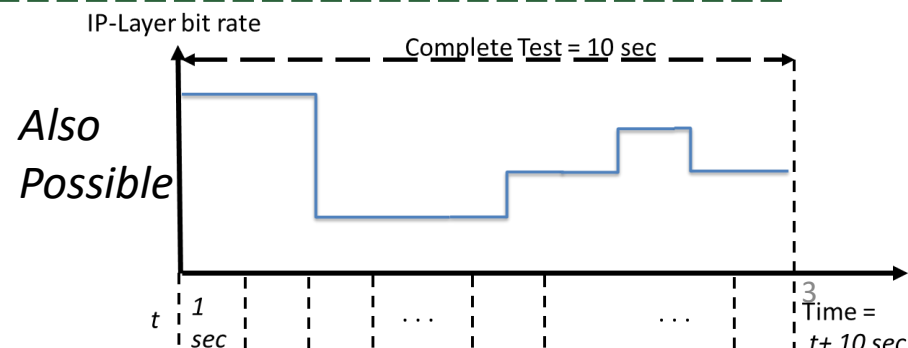
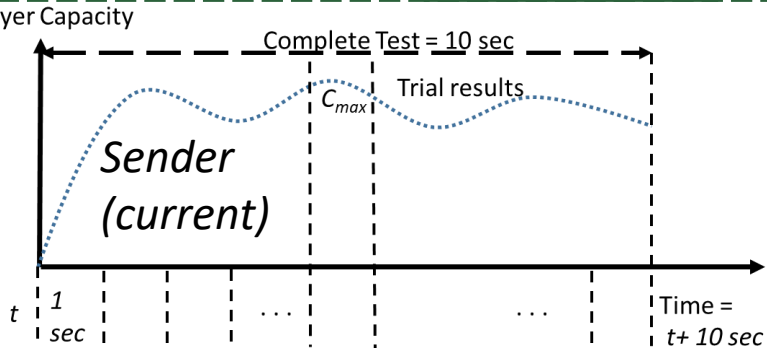
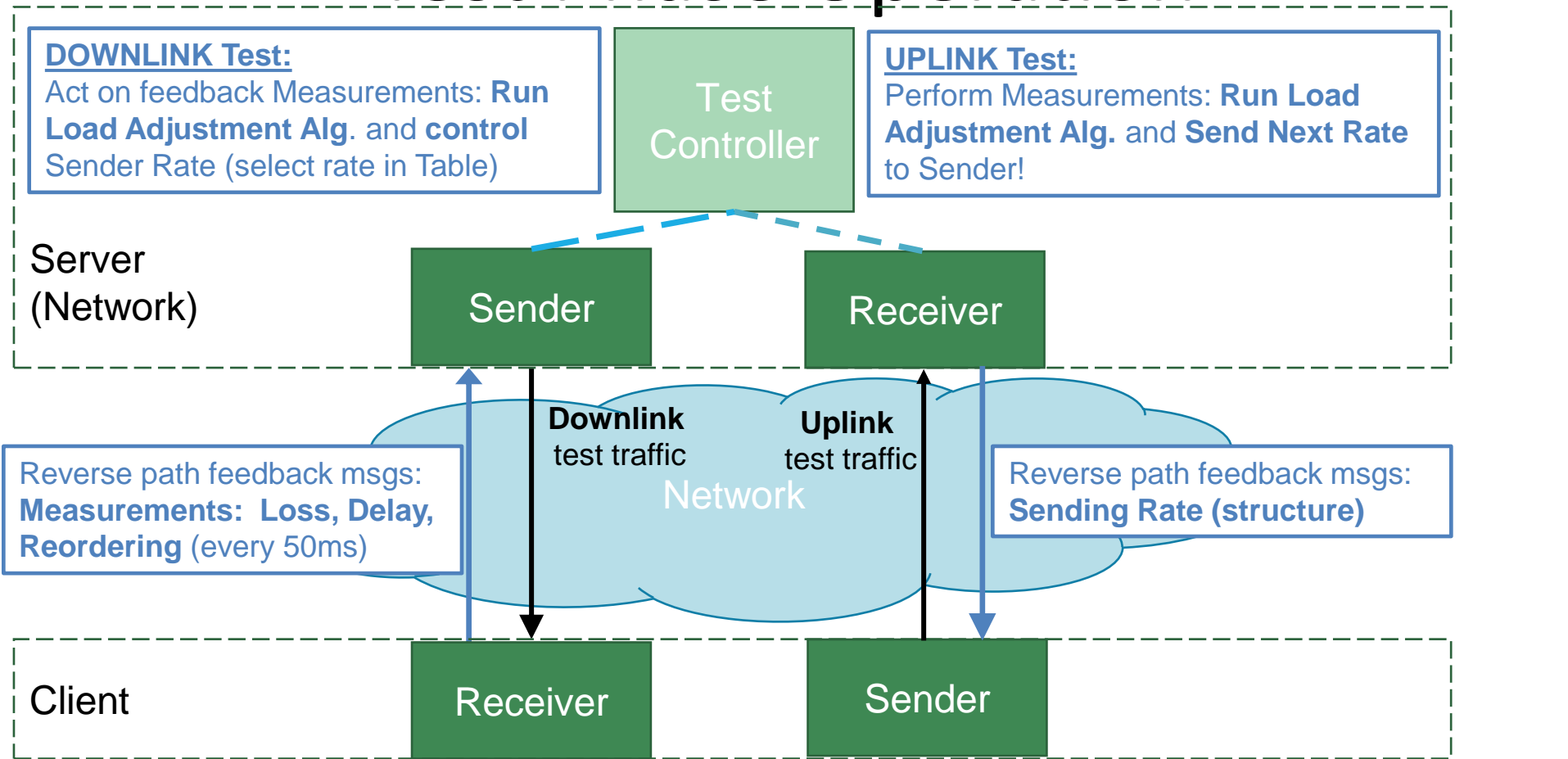
Thanks to
Reviewers!
Can, Lincoln,
Rüdiger,
Greg

Protocol: Setup and Test Phases

draft-morton-ippm-capacity-metric-protocol-02



Test Phase Operation



Topics in -02 and beyond

- More Motivation for new protocol

>

1. UDP transport is used for all setup, test activation, and control messages, and for results feedback (not TCP), simplifying operations.
2. TWAMP [RFC5357] and STAMP [RFC8762] use the philosophy that one host is a Session-Reflector, sending test packets every time they receive a test packet. This protocol supports a one-way test with periodic status messages returned to the sender. These messages are also a basis for on-path Round-trip delay measurements, which are a key input to the load adjustment search algorithm.
3. OWAMP [RFC4656] supports one-way testing with results Fetch at the end of the test session. This protocol supports a one-way test and requires periodic status messages returned to the sender to support the load adjustment search algorithm.
4. The security features of OWAMP [RFC4656] and TWAMP [RFC5357] have been described as "unusual", to the point that IESG approved their use while also asking that these methods not be used again. Further, the common OWAMP [RFC4656] and TWAMP [RFC5357] approach to security is over 15 years old at this time.

>

Topics for -02 and beyond

>

Note: the -02 update of this draft will be the last that describes version 8 of the protocol in the running code. Future updates of the draft will correspond to protocol version 9 and higher versions.

>

• Errors during Setup

>

@@@ To Do: How do we communicate multiple errors when the server sends the Setup Response? Is an error hierarchy possible, where Bad Protocol Version means that none of the other aspects (higher error numbers) were checked?

>

• Options for Payload during Activation

>

@@@ To Do: Add Options for UDP payload content (beyond the Test PDU), such as all zeroes, all ones, alternating one and zero, and pseudo-random.

>

• Interface Measurements: Diagnostic & Hybrid

>

@@@ To Do: like interface byte counters from a client at a residential gateway, would change the Status Feedback PDU UNLESS only reported at CLIENT! Interface byte counters seem useful for specific circumstances, such as when the client application has access to an interface that sees all traffic to/from a service subscriber's location. IN RUNNING CODE!

Next Steps:

- @IETF-111 We talked about Security Features
- Authors welcome proposals, revisions to Security modes of operation, etc.
- Today, We talked about new (unique?) features of the protocol proposal.
- This protocol could do more than measure Capacity – take a look!
- With WG Adoption, we could get an early SEC-DIR Review and solve that aspect.

BACKUP

Alternate Forms of Rate Programming

