

# **Rate Measurement Test Protocol Problem Statement**

Al Morton March 2014

draft-ietf-ippm-rate-problem-05

# Scope

- Access Rate Measurement on Production Networks
  - Rates at edge  $\ll$  core, likely bottleneck
  - Asymmetrical ingress and egress rates
  - Largest scale at edge: low complexity needed in device at user end
  - Tester has control of sender/receiver

# Scope (contd.)

- Access Rate Measurement on Production Networks
  - Active measurements (IPPM charter)
  - Both In-Service and Out-of-Service
    - Includes service commissioning activity
- Non-Goals
  - No protocol solution in this draft
  - No Exact methods of meas (but categories discussed)

# Revisions (05)

- Comments: Thanks Barry Constantine
- Example for “Opportunistic In-Service”
  - (traffic is low/none outside normal business hours)
- Clarified a few requirements
  - 3 roles, but REPORTER may be combined with SENDER
  - Optional ability to gen traffic w/ VLAN tags

# Conclusion + Next Steps

- Are we done?
  - Fairly continuous comments in 2013
  - Working LMAP before it was named...
- Additional Comments?
  - Need to close on problem statement to get to the real work (test control protocols)
- draft-morton-ippm-twamp-rate-05
- draft-morton-ippm-twamp-tcp-00

# backup

# TCP testing (new req S4)

- Capability to Control an Open-Loop TCP test (MBM)
  - Sender: Generate packet streams at controlled rates & packet spacings
  - Continue sending (open-loop)
  - Receiver performs normally, with large enough window to enable Sender behavior
- Capability to Control a “normal” BTC measurement
  - Examined in **draft-morton-ippm-twamp-tcp-00**
  - Two Modes: Initiator and Listener
  - Mixed Security Mode is compatible (na in OWAMP)
  - New Request-TW-Session Command
  - Select Congestion Control from a list? (e.g., AIMD<sup>7</sup>)

# draft-ietf-ippm-lmap-path-00

Internet-Draft

IMAP Reference Path

July 2013



```
Subsc. -- Private -- Private -- Access -- Intra IP -- GRA -- Transit
device      Net #1      Net #2      Demarc.      Access      GW      GRA GW
mp000                               mp100      mp150      mp190      mp200
```

```
... Transit -- GRA -- Service -- Private -- Private -- Destination
GRA GW      GW      Demarc.      Net #n      Net #n+1      Host
mpX90      mp890      mp800                               mp900
```

GRA = Globally Routable Address, GW = Gateway

# Summary of Specs

- Minimize test traffic when necessary
- Possible assessment of background
- Architecture MAY be either 1 or 2 way
- SHALL support packet ensemble tests
  - 1 of 4 categories, others are OPTIONAL
- Variable (asymmetrical) payload and ensemble lengths among streams MUST be communicated

# Motivation

- Many possible Rate Measurement Scenarios – Narrow the scope
- Access-Rate Measurement
  - Has Continued Industry Attention
  - Many different approaches
  - Need to avoid mistakes: No comparison of Apples & Oranges
  - Topic of this draft and discussion