

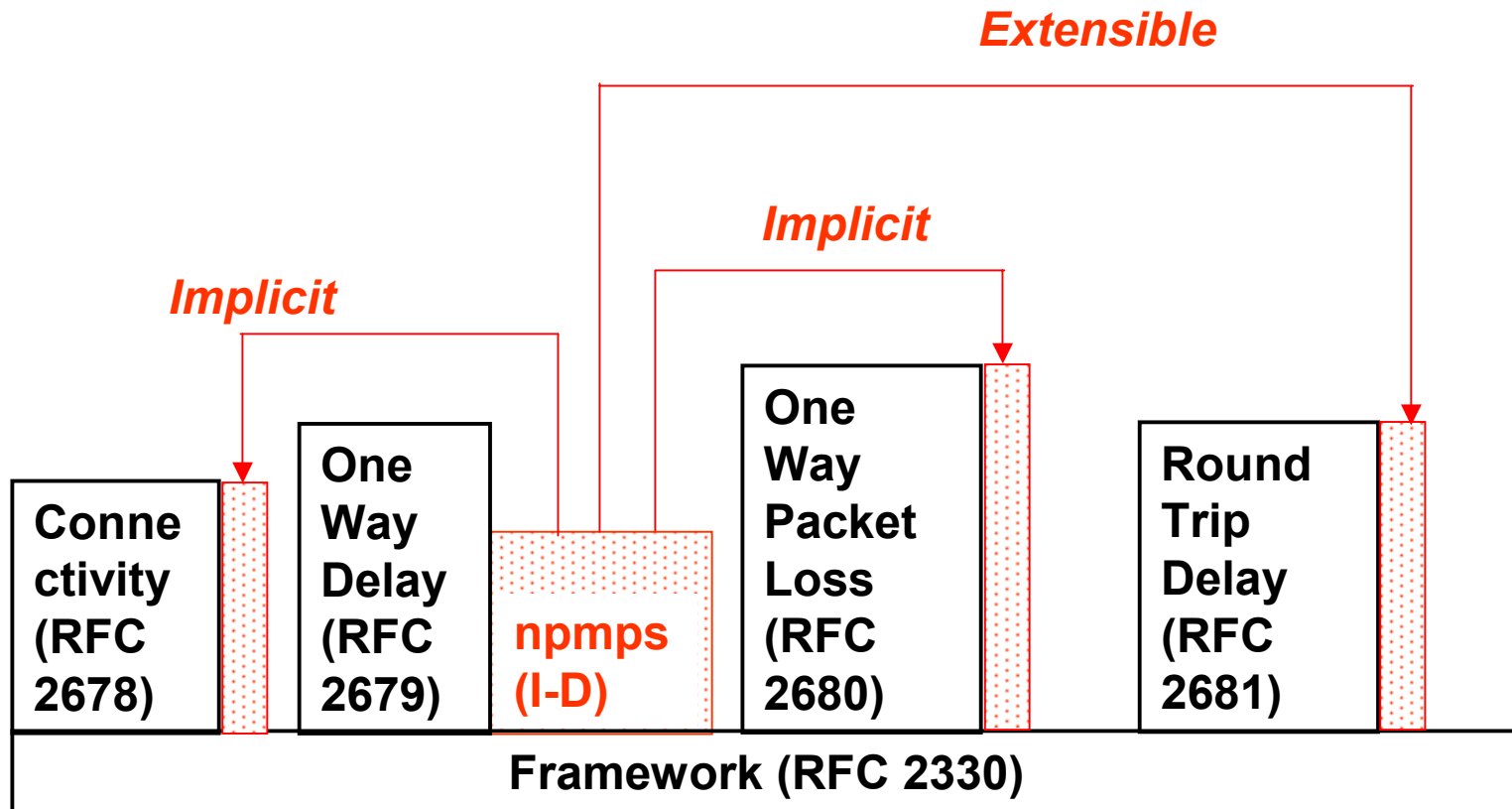
Network Performance Measurement for Periodic Streams (npmps)

`<draft-ietf-ippm-npmps-00.txt>`
-01 and
-02

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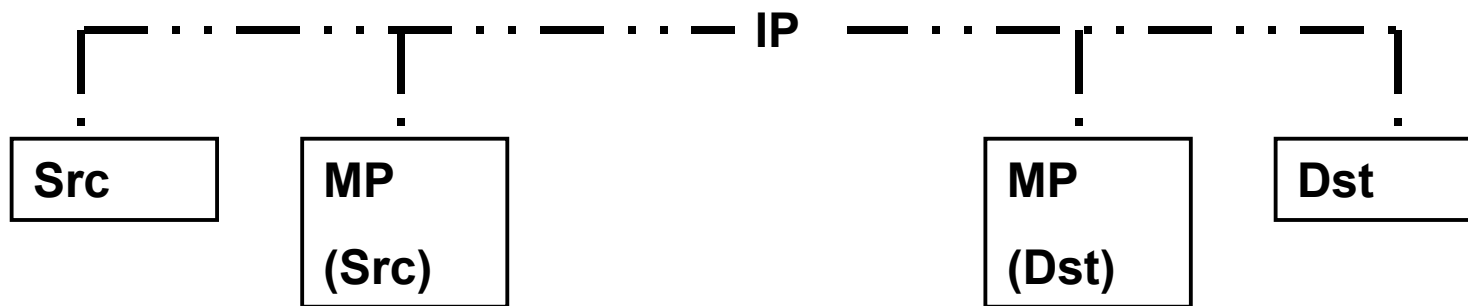
IPPM Domain Mapping for npmps



npmps: The Reason

- **One Way Delay (RFC 2679) recommends Poisson distribution of sending times.**
- **Many applications (voice, video, multimedia) have very regular sending times (dubbed “periodic streams”).**
- **Other characteristics besides delay (packet loss, out of sequence, duplicate, corruption) may affect certain applications.**

npmps: The Set-up



MP: Measurement point. A non-host MP may be useful for independence of testing or where conducting measurements ON THE HOST would change the performance of Src and/or Dst

npmps: The More Complex Metric

- A key difference from RFC 2679 (more text to be added to npmps) is that a “singleton”* may only provide some parameters of interest; a “sample”* would provide more (out of sequence, duplicate, spurious,etc.)
- **-01: Text added to address the above issue.**

npmps: The Future

- Iterate on this document
 - Discussion of “singleton”; more on “sample”. DONE
 - Discussion of “sample of samples”; use of Poisson interval between samples. DONE
 - Determine applicability of “jitter” in the context of this metric DONE
- *-02 issued by Internet-Drafts server on 13 July*
 - *Mostly cosmetic changes*
- Prepare for *“last call”* for standards track *following* IETF #48.

npmps: The Argument

- **Backup slides on the metric parameters are included.**
- **Questions/comments/”flames”?**

BACKUP

IETF #47
March 27-31, 2000

Update for IETF #48
July 31 - August 4, 2000

npmps: The Global Metric Parameters

- + Src, the IP address of a host**
- + Dst, the IP address of a host**
- + T₀, a time**
- + T_f, a time, greater than T₀**
- + periodic packet interval incT, a time duration**
- + packet size p(j), the number of bytes in each packet of Type-P of size j**
- + T_{cons}, a time interval**
- + dT_{loss}, a time interval (optional)**

npmps: The MP (Src) Metric Parameters

- + Tstamp(Src)[i], for each packet [i], the time of the packet as measured at MP(Src)**
- + PktID [i], for each packet [i], an identification number for the the packet sent from Src to Dst**
- + PktSiTy [i], for each packet [i], the packet size and/or type. Some applications may use packets of different size, either because of application requirements or in response to IP performance experienced.**

npmps: The MP(Dst) Metric Parameters

- + Tstamp(Dst)[i], for each packet [i], the time of the packet as measured at MP(Dst)**
- + PktID [i], for each packet [i], an identification number for the the packet received at Dst from Src. This identification number may be corrupted.**
- + PktSiTy [i], for each packet [i], the packet size and/or type. Some applications may use packets of different size, either because of application requirements or in response to IP performance experienced.**
- + PktStatus [i], for each packet [i], the status of the packet received. Possible status includes: OK, packet header corrupt, packet payload corrupt, spurious, duplicate**

npmps: The Combined Metric Parameters (1 of 3)

- + Tstamp(Src)[i], for each packet [i], the time of the packet as measured at MP(Src). This entry may be blank or noted as N/A for spurious packets received at MP(Dst)**
- + Tstamp(Dst)[i], for each packet [i], the time of the packet as measured at MP(Dst). This entry may be blank or noted as N/A for packets not received at MP(Dst), received with corrupt packet headers, or for duplicate packets received at MP(Dst).**
- + PktID [i], for each packet [i], an identification number for the the packet received. This identification number may be corrupted for certain packets received at MP (Dst).**
- + PktSiTy [i], for each packet [i], the packet size and/or type.**

npmps: The Combined Metric Parameters (2 of 3)

- + PktStatus [i], for each packet [i], the status of the packet received. Possible status includes: OK, packet header corrupt, packet payload corrupt, spurious, duplicate, out of sequence.**
- + Delay [i], for each packet [i], the time interval $Tstamp(Dst)[i] - Tstamp(Src)[i]$. For the following conditions, it will not be possible to be able to compute delay:
 - Spurious: There will be no $Tstamp(Src)[i]$ time**
 - Not received: There will be no $Tstamp(Dst)[i]$**
 - Corrupt packet header: There will be no $Tstamp(Dst)[i]$**
 - Duplicate: Only the first non-corrupt copy of the packet received at Dst should have Delay [i] computed.****

npmps: The Combined Metric Parameters (3 of 3)

- + $DJit[i]$, for each packet $[i]$ except the first one: momentary delay variation, i.e., the time interval $Tstamp(Dst)[i] - Tstamp(Dst)[i-1] - (Tstamp(Src)[i] - Tstamp(Src)[i-1])$.
Applicability of jitter: delay must be calculable for both packets i and $i+1$ according to the definition above.

NOTE: The co-authors do NOT agree on the utility of this last parameter.

-01: Changed to Successive Delay Variation (prevents confusion with clock jitter) and made optional.