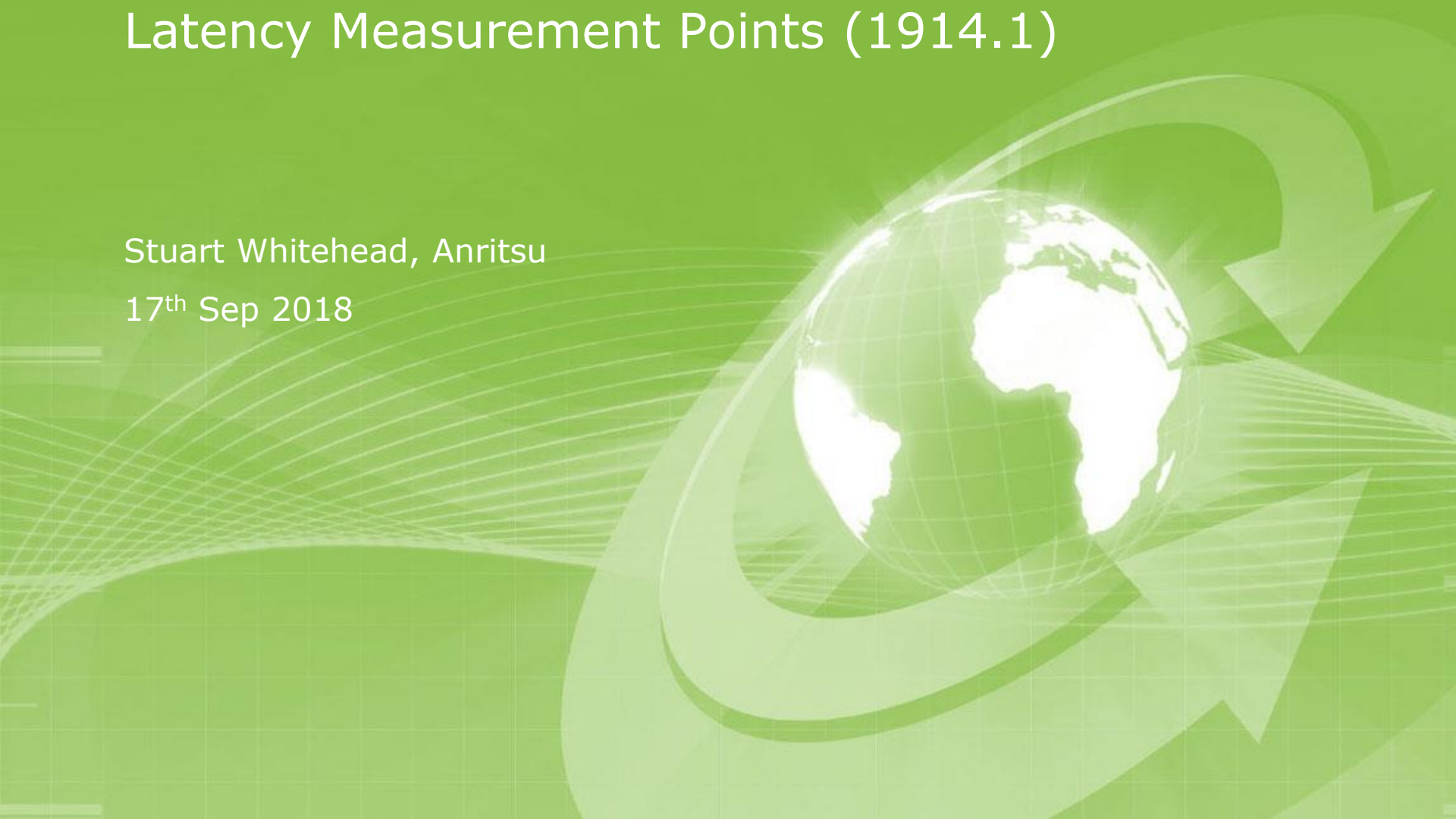


Latency Measurement Points (1914.1)

Stuart Whitehead, Anritsu
17th Sep 2018



Compliance with IEEE Standards Policies and Procedures

Subclause 5.2.1 of the *IEEE-SA Standards Board Bylaws* states, "While participating in IEEE standards development activities, all participants...shall act in accordance with all applicable laws (nation-based and international), the IEEE Code of Ethics, and with IEEE Standards policies and procedures."

The contributor acknowledges and accepts that this contribution is subject to

- The IEEE Standards copyright policy as stated in the *IEEE-SA Standards Board Bylaws*, section 7, <http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#7>, and the *IEEE-SA Standards Board Operations Manual*, section 6.1, <http://standards.ieee.org/develop/policies/opman/sect6.html>
- The IEEE Standards patent policy as stated in the *IEEE-SA Standards Board Bylaws*, section 6, <http://standards.ieee.org/guides/bylaws/sect6-7.html#6>, and the *IEEE-SA Standards Board Operations Manual*, section 6.3, <http://standards.ieee.org/develop/policies/opman/sect6.html>

IEEE 1914
Next Generation Fronthaul Interfaces
Jinri Huang, HuangJinri@ChinaMobile.com

Latency Measurement Points

Date: 2018-09-17

Author(s):

Name	Affiliation	Phone [optional]	Email [optional]
Stuart Whitehead	Anritsu		Stuart.Whitehead@Anritsu.com

Latency Measurement Points

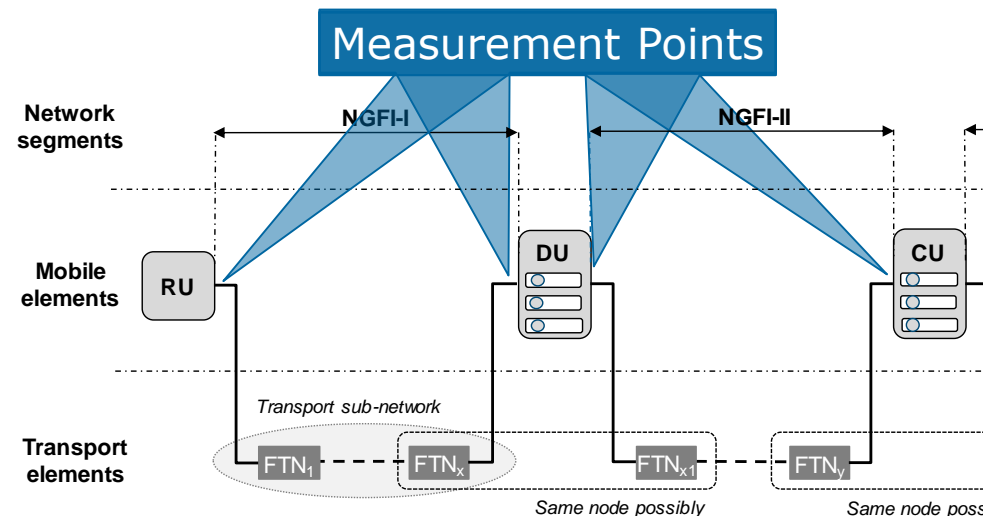
Background

- Discussions in earlier meetings highlighted the requirement to address the follow areas,
 - What are the measurement points of the network
 - What is the measurement point of the frame

Latency Measurement Points

Measure across the different NGFI segments I & II

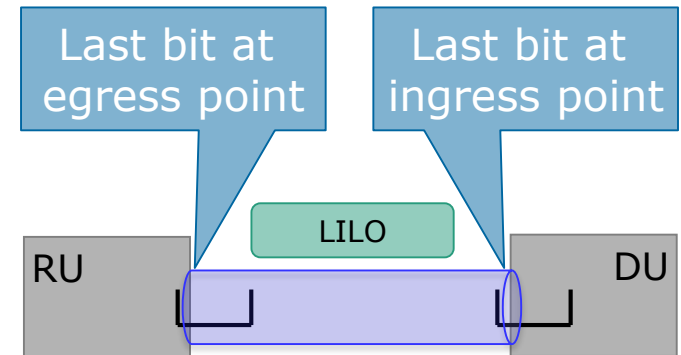
- NGFI-I, RU (egress/ingress) \leftrightarrow DU (ingress/egress)
- NGFI-II, DU (egress/ingress) \leftrightarrow CU (ingress/egress)
 - Not across the DU
- Reference points are the mobile element locations not the transport elements



Latency Measurement Points

Frame Reference point for measurement

- Last In Last Out (LILO)
 - LI = Last bit of the Frame at the ingress point of an element
 - LO = Last bit of the Frame at the egress point of an element
- LILO isn't affect by the frame size
 - Network required to transport multiple frame sizes, testing based on a size isn't relative
 - Proposed frame mix tests using multiple frame sizes



Proposed text

Add a sentence at the end of section “8.2 NGFI transport classes”

- 1. Measurement of the latency across NGFI sections is completed at the egress or ingress of the RU, DU or CU using the Last In Last Out (LILO) method, for full details refer to Annex L.*

Add Annex L

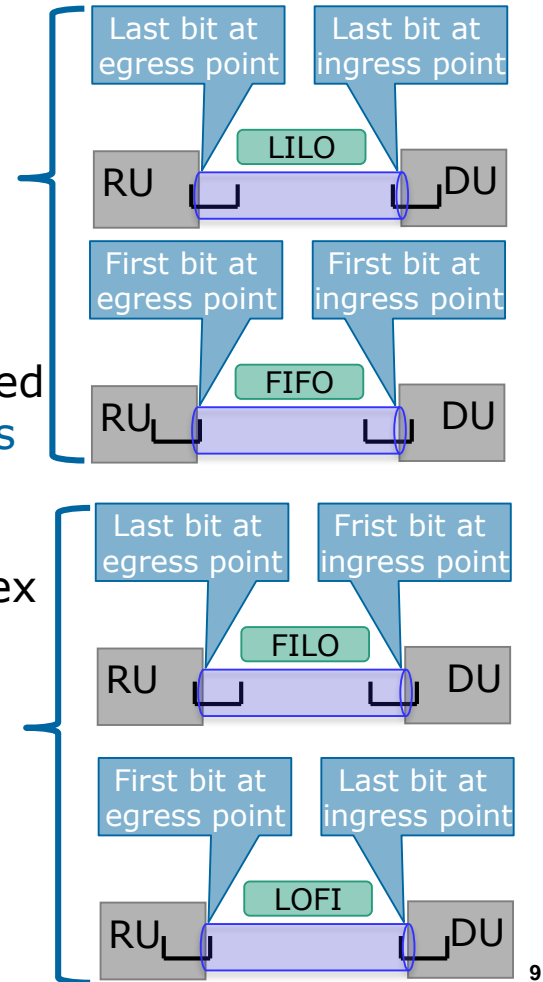
- Current Annex L is the “Bibliography” to be renamed to Annex M
- Describes different network measurement points and frame reference points
 - Full text can be accessed at the Sep 2018 meeting material [site](#) or directly here [Latency-section-for-1914-1.pdf](#)

Appendix

Latency Measurement Points

Frame Reference point for measurement

- LILO and FIFO are not affected by frame size
 - Good for network testing
 - From 802.1CM
 - The end-to-end one-way latency is measured from the **arrival of the last bit at the ingress edge port of the bridged network to the transmission of the last bit by the egress edge port of the bridged network** (see Annex L.3 of IEEE Std 802.1Q-2018)
- FILO and LOFI are affected by frame size
 - Good for testing the network element buffer



Thank you, questions

Motion #_

- Add the sentence at point 1 on Slide 7 to the end of section 8.2 NGFI transport classes, with editor discretion to adjust as required.
- Mover: Stuart Whitehead
- Seconder:
- Yes: No: Abstain: (technical motion needs $\geq 2/3$)

Motion , chair did not vote

Motion #_

- Add the Annex L as per slide 7, with editor discretion to adjust as required.
- Mover: Stuart Whitehead
- Seconder:
- Yes: No: Abstain: (technical motion needs $\geq 2/3$)

Motion , chair did not vote