NGFI RMIX traffic profile

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IEEE 1914 WG
NGFI
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Purpose

- For the generic RoE enabled switch located in an NGFI network, a standard classification of the traffic profile is required to define the throughput performance of the networking node.

- A standard classification greatly helps device manufacturers to design for specific node performance and customers to verify the claimed networking node/network performance.

- Follow the example of IMIX (Internet Mix) as described in IETF RFC 6985 and the well-known "Simple IMIX" profile, which have had a great success in other deployment scenarios.

- Define a standard **NGFI RMIX profile** classification guideline as a part of the IEEE P1914.1 specification, which is targeted to NGFI networks transporting a **combination** of "**radio traffic**" and "**Internet traffic**".

Assumptions for the initial profile

- Radio traffic is fixed size packet CBR transfers.

- "Backhaul class" and C&M traffic also exists in the switch, which are generally variable packet size -> IMIX part of the profile.

- Radio payload sizes taken as 256, 384, 512 and 1024 octets.

- Maximum encapsulation of 90 octet to be supported:
  - Current L2 and future L2.5 and L3 encapsulation overhead.

- For IMIX use one of the the well-known profiles:
  - The "simple profile" defined as 64:7 + 570:4 + 1518:1 octet packets.

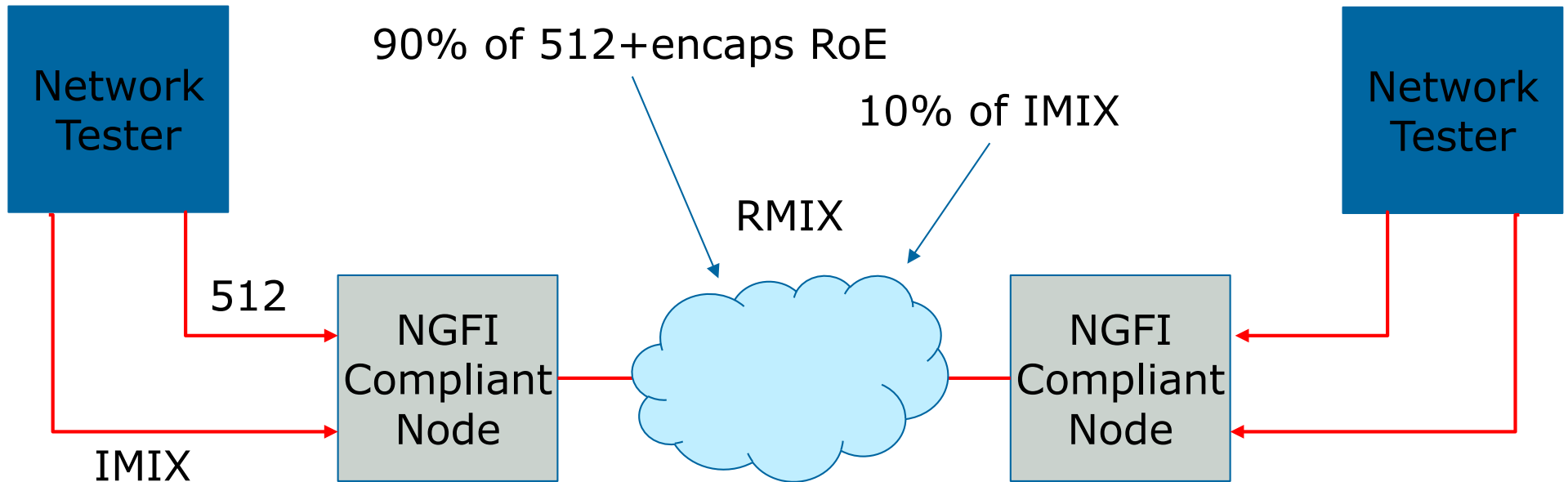- **RMIX = Radio Traffic + IMIX**

NGFI RMIX profile proposal

Variable	Data Set
Radio Traffic Load	90%
Radio Packet Sizes	{256, 384, 512, or 1024} payload octets
IMIX Load	10%
IMIX Packet Sizes	{64:7, 570:4, 1518:1} octet packets distribution

- Radio packet sizes proposed are the payload only.
- E.g. 256 octet packet, with minimum L2 header is 18 octet encapsulation + 8 octet RoE header + 256 octet payload + 20 octet IPG (includes preamble).

- The IMIX profile packet distribution through a node/over a link is 7x64, then 4x570 and then 1x1518 octet packets + 20 octet IPG per packet..

Example use of the NGFI RMIX profile

- Assume 512 octet radio traffic payload.

- Network & nodes able to cope with RMIX traffic profile.

- Latency/synchronization requirements tested and has to be met when RMIX profile is used in a testing set up/real deployment.

90% of 512+encaps RoE

10% of IMIX

RMIX

Network Tester

Network Tester

512

NGFI Compliant Node

NGFI Compliant Node

IMIX

Next steps

- Approve the initial simple NGFI RMIX profile to be included into the IEEE P1914.1 specification:
    - Can be informative..

- **Keep it simple!** Can be evolved/refined later but start with a very simple and straight forward profile.

- Motion for a base line..

Motion #____

- Agree to add an **RMIX profile** Annex to the IEEE P1914.1 standard using as a basis the content specified in tf1_1701_korhonen_rmix_1.pdf side 6.

- Mover: _____

- Seconder: _____

- Yes: ____ No: ____ Abstain: ____ (technical motion needs >= 2/3)