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| **Radiocommunication Study Groups** |  |
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| PRoposal for a new question on Fixed point-to-Point wireless system used in packet-based network | |
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# **1 Background**

Nowadays as the wireless bandwidth need is increasing largely, the wireless access technology has evolved from 2G to 3G/4G which can provide much higher speed data access. As the packet service increases with much faster speed compared to voice service, Ethernet interface has become the dominating interface for base stations. Accordingly, as an important technology for mobile backhaul, microwave system is also evolving from the traditional TDM-based system to packet-based system. The Recommendation ITU-R F.750 has only defined the architectures and functional aspects of fixed point-to-point systems in SDH-based networks; now it’s time to start the new work for fixed point-to-point systems in packet-based network.

Figure 1

Packet microwave use case



A use case is shown in figure 1. The shift from TDM to Ethernet at cell sites brings multiple Ethernet ports at a cell site or any other access nodes where microwave is used for mobile backhaul. Subsequently, the microwave system should support packet switching, QoS process, packet based OAM and protection switching mechanism, etc. As a result, the new microwave system will be quite different from TDM microwave system. It should be able to interwork well with PTN/Router/Switch equipment.

# 2 Discussion

In order to guide the design, manufacture and deployment of fixed point-to-point wireless system in packet-based network, it is valuable to describe the following contents:

• Architectures and functional aspects of fixed point-to-point wireless systems in packet-based network. This part may include.

• Layering network;

• Network node interfaces (NNI);

• Function blocks;

• Operation, administration and maintenance (OAM) functions;

• Protection switching function;

• Timing synchronization, including clock synchronization and time synchronization;

• Adaptive modulation functions;

• Interworking with packet switching systems such as routers, switches or PTN equipment;

• Etc.

• Transmission characteristics and performance requirements of fixed point-to-point wireless system in packet-based network. This part may include:

• Transport capacity;

• Timing and synchronization performance;

• Protection switching performance;

• Error performance;

• Availability requirement;

# **3 Proposal**

It is proposed to start a new question for fixed point-to-point wireless system in packet-based network.

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