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| Text Proposal for Deployment Scenarios |
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Abstract

This document proposes additional text based on 802.1cf d0.4 for the deployment scenarios with focus on the home network services.

*Change the title of 6.9.1 and add a new subclause title as follows:*

### 6.9.1 Residential network ~~(Wi-Fi router)~~

### 6.9.1.1 Wi-Fi router

In the case of a residential access network, all the entities of the NRM including terminal belong to the same operational domain. Such deployment allows for a number of simplifications, mainly in the area of network security.

*Add a new subclause as follows:*

### 6.9.1.2 Home gateway

As a result of the spread of the broadband network, it has become common to interconnect devices in the home to build a home network. Figure 15 illustrates (a) the functional architecture for the home network as defined in ITU-T Y.2070 and TTC TR1053 and (b) its mapping to NRM. A home network is made up of home gateways (HGW) and a mix of devices that are different in the way they are installed, maintained, and connected to the network and the level of quality they require, such as home appliances, audio-video and other consumer electronics products, set-top boxes (STBs), sensors, smart meters, PCs, smartphones, tablets, and game consoles.

Home gateway is an always on, always connected device which acts as the central point connecting the devices on the home network to the applications on the wide area network, and monitors and provides data transport service within the home network as well as between the home network and the wide area network. The home gateway is IP based and it bridges the WAN and the home network. Hence home gateway integrates the functions of access router (AR) and access network (AN). Terminal (TE) can be mapped to the end devices inside the home.

* For a device with wired connection, it is usually connected to the home gateway directly. In this case, home gateway provides the full function of AN.
* For a wireless device, it is connected to the home gateway though an access point. Therefore the access point is NA and the home gateway resembles the functions of backhaul plus ANC in the comprehensive NRM.

In either case the home gateway provides the control functions of ANC, such as device provision, application execution, and resource information collection. For example, to meet the management requirement from NMS, the resource information collector in home gateway should be able to discover the newly connected devices, identify each of them and set their configurations, collect the internal status of each device and other home network resources, and the traffic status of the home network.

Figure 15 also shows the internal components of HGW and the reference points between entities when mapped to the NRM. The dotted box (HGW) represents the usual integration of AR, BH and NA in the deployment of e.g. DSL network. Note that the wireless device has a logical reference point R8 with ANC function in HGW, but the flow of control or management information may go through R1 and R5 physical links.



1. Functional Architecture for home network defined in ITU-T Y.2070 (flipped)



1. Functional architecture for home network mapping to the NRM

Figure 15: Functional architecture for home network and mapping to NRM

In the distributed type of architecture shown in Figure 15, the management functions are separately distributed to the home gateway inside the home and the management platform (PF) on the Internet. This architecture enables the applications to access the devices from the Internet. For example, some management applications such as energy management system monitor and control devices connected to the home network from outside the home through this architecture.

The management application is the application for use by network operators or service providers such as call centers and customer support centers. It provides a function to display the entire resource information for faults diagnosis and to set the specified properties for recovery operation from such faults.

Management platform is the NMS which has common functions providing the interface and the management for the home network applications, and the device management and the resource management for the home gateway and the devices.