IEEE 802.16 Ad Hoc ITU-R Liaison Group Output During Session #35

The following text is proposed to be inserted in Preliminary Draft New Recommendation ITU-R F.[9B/BWA], "Radio interface standards for broadband wireless access systems in the fixed service operating below 66 GHz" (Annex 6 to ITU-R Document 9B/83):

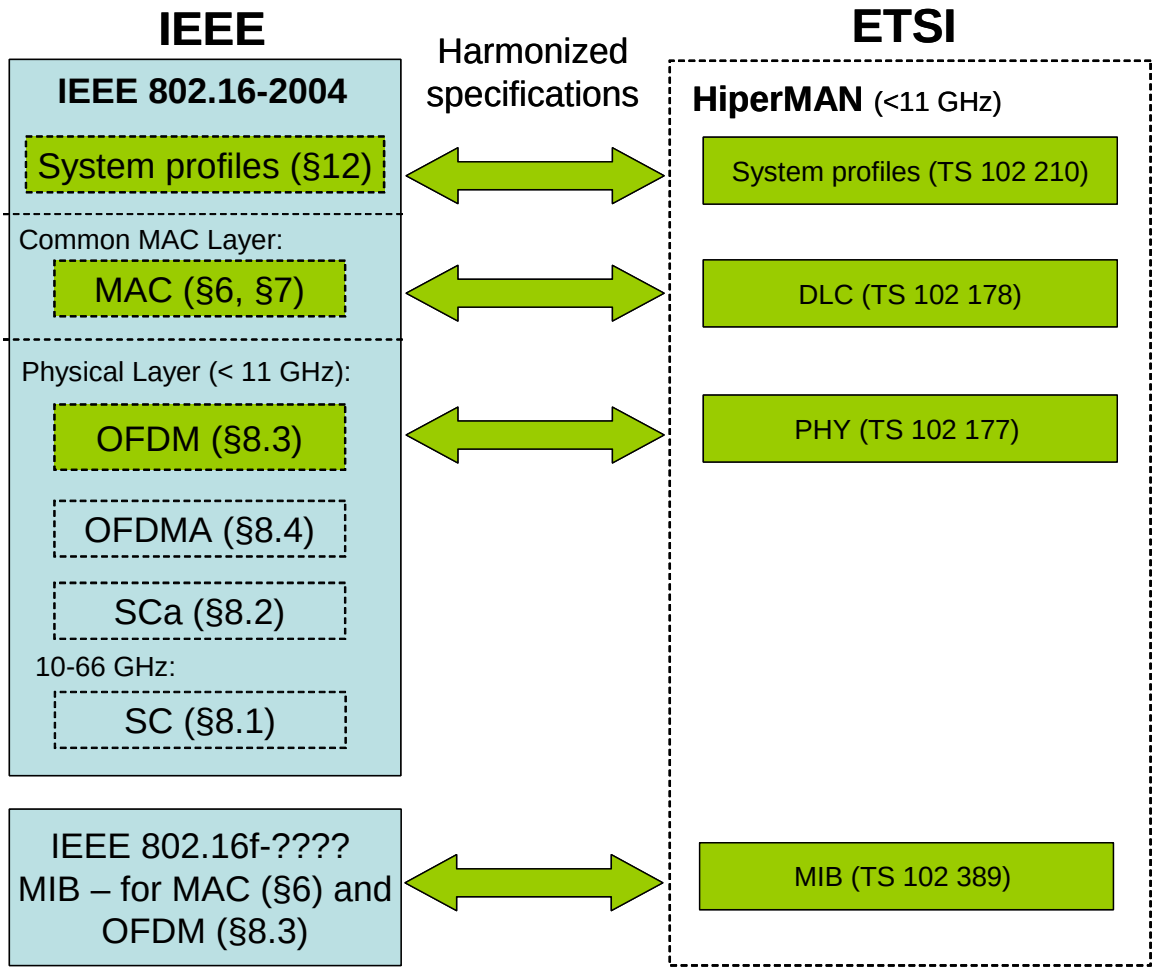

FIGURE 1

BWA Standards Harmonized for Interoperability for frequencies below 11 GHz

Figure 1 shows the harmonized interoperability specifications of the IEEE WirelessMAN and the ETSI HiperMAN standards, for bands below 11 GHz, which include specifications for the OFDM physical layer, MAC, security, and the system profiles.

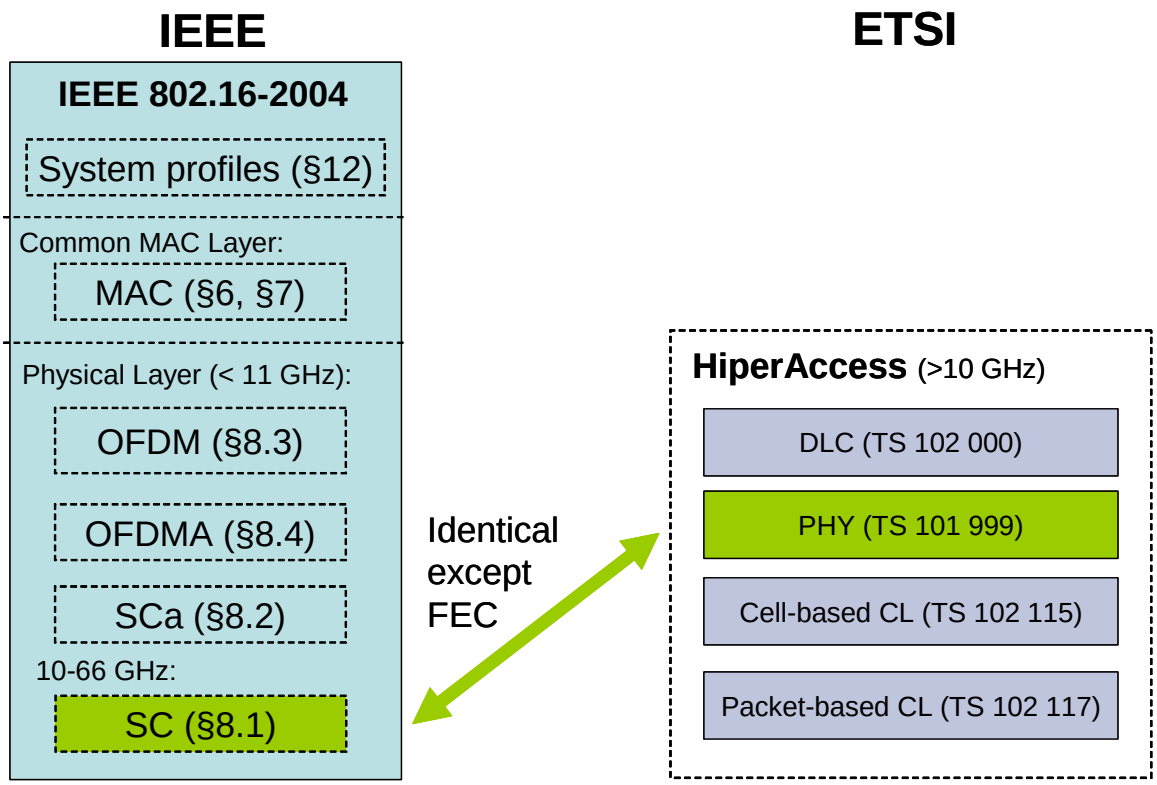

FIGURE 2

BWA Standards common elements for frequencies above 11 GHz

Figure 2 shows the similarities between the IEEE WirelessMAN and ETSI HiperACCESS standards for frequencies above 10 GHz. The specifications for systems above 10 GHz are different in HiperACCESS and WirelessMAN.

The system profiles are sets of features to be used in typical implementation cases. Since the standards contain options to fulfill the needs in multiple environments, the first step towards ensuring interoperability is the definition of common system profiles. An exception is HiperAccess where system profiles are not needed since the Base Station has full control about the use of optional features on a per terminal basis.

Features specified in the standard as optional may be listed in a profile as “required” or “conditionally required”. Profiles do not change “mandatory” status if specified in the standard itself. Optional features shall be implemented as specified in the standard.

The next steps towards ensuring interoperability are conformance testing and interoperability testing.

- Conformance testing is the act of determining to what extent a single implementation conforms to the individual requirements of its base standard.

- Interoperability testing is the act of determining if end-to-end functionality between (at least) two communicating systems is as required by those base systems' standards.

The conformance testing specifications for WirelessMAN, HiperMAN and HiperACCESS are defined according to ISO/IEC 9646 “Information Technology – Open Systems Interconnection – Conformance testing methodology and framework."

Figure 3 shows the relation between base and test specifications for HiperMAN and IEEE 802.16 WirelessMAN. The HiperMAN test specifications are applicable to both the HiperMAN DLC and WirelessMAN MAC standards.

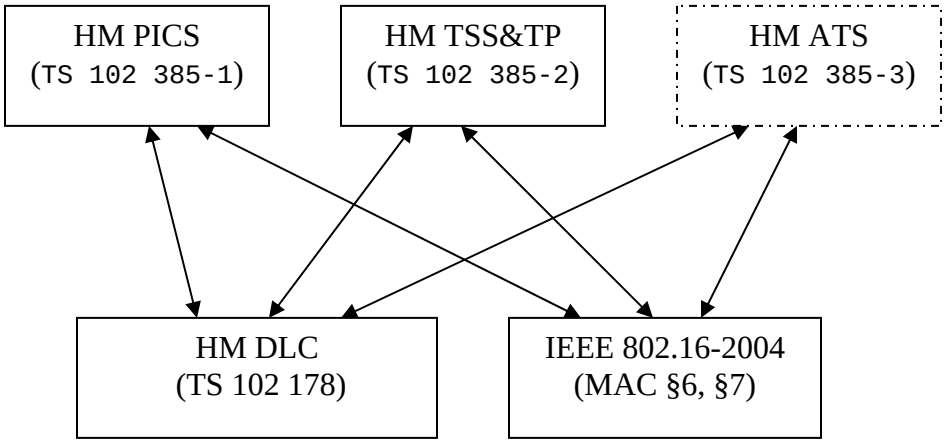

FIGURE 3

Harmonization of IEEE 802.16/ETSI HiperMAN Standards and Test Specifications

The testing specifications for systems above 10 GHz are different for WirelessMAN and HiperACCESS.

The conformance test specifications for IEEE 802.16-2004 Wireless MAN are in the following IEEE standards:

IEEE Standard 802.16/Conformance01-2003
IEEE Standard for Conformance to IEEE 802.16 - Part 1: Protocol Implementation Conformance Statements for 10-66 GHz WirelessMAN-SC Air Interface

IEEE Standard 802.16/Conformance02-2003
IEEE Standard for Conformance to IEEE 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66 GHz WirelessMAN-SC

IEEE Standard 802.16/Conformance03-2004
IEEE Standard for Conformance to IEEE 802.16 - Part 3: Radio Conformance Tests (RCT) for 10-66 GHz WirelessMAN-SC Air Interface 10-66 GHz WirelessMAN-SC Air Interface

Figure 4 shows the relation between base and test specifications for HiperACCESS.

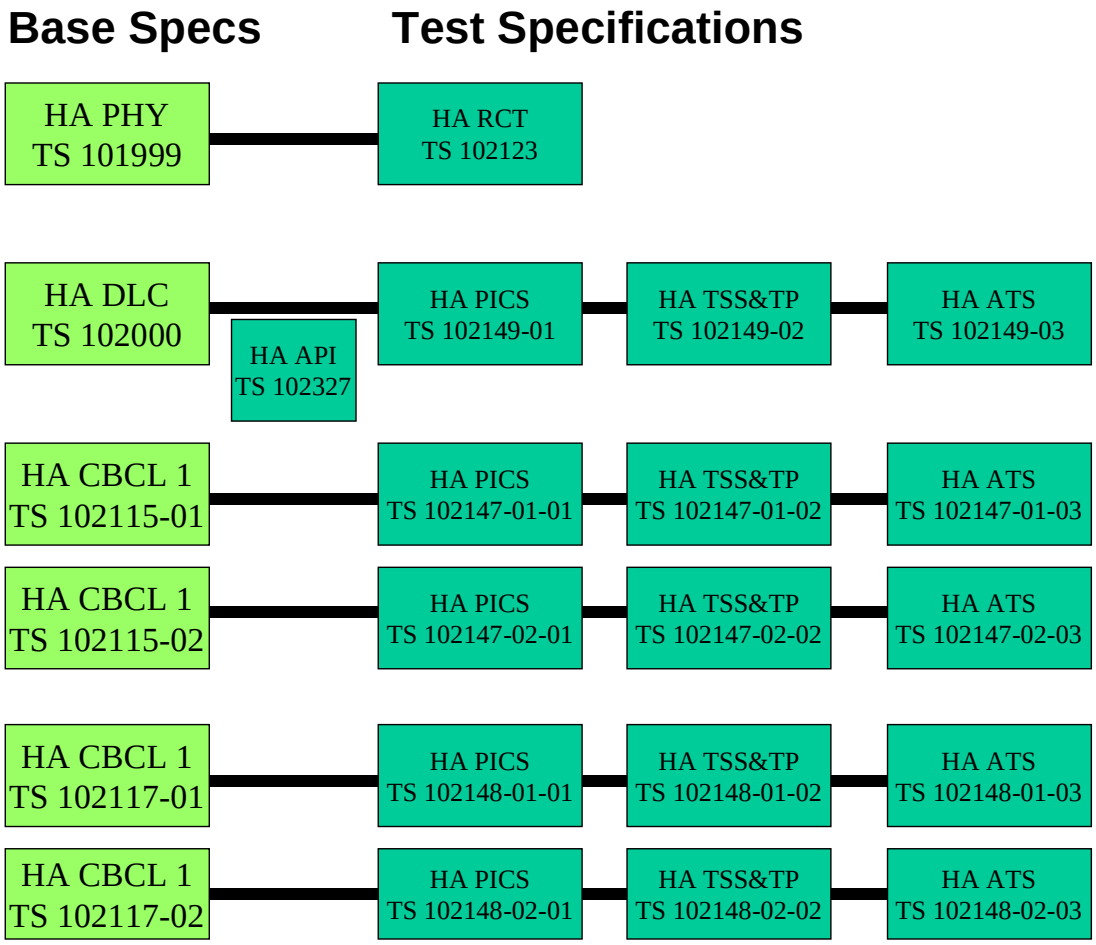

FIGURE 4

BRAN HiperAccess Standards and Test Specifications