

Project	<b>IEEE 802.16 Broadband Wireless Access Working Group</b> < <a href="http://ieee802.org/16">http://ieee802.org/16</a> >	
Title	<b>Proposed SDD Text on a Generic Message Structure for Multi-carrier and Multi-RAT Advertisement</b>	
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Source(s)	Kamran Etemad, Vivek G Gupta, Shantidev Mohanty Intel Corporation	Kamran.etemad@intel.com
Re:	Discussion in TGM and in RG's related to Multi-Carrier, Inter-frequency and Inter-RAT Handover	
Abstract	Provides SDD text a generic approach to inter-carrier advertisement to be commonly defined and used for 16m Inter-carrier and inter-RAT operations such as Handover, load balancing and multicarrier operation.	
Purpose	For SDD discussion in the IEEE 802.16m.	
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## **Proposed SDD Text on a Generic Message Structure for Multi-carrier and Multi-RAT Advertisement**

Kamran Etemad, Vivek G Gupta, Shantidev Mohanty  
*Intel Corporation*

### **1 Background/Problem Statement:**

There are several proposed schemes and procedures defined in SDD which describe operation of 16m system across multiple 16m/16e RATs as well as across other RATs. These procedures include inter-frequency handover, load- balancing, multi carrier operation and inter-RAT handover.

- Inter-Frequency handover : This is handover across different frequencies of same RAT
- Load balancing: This is an operation conducted by operators to efficiently utilize their networks. This could lead to inter-frequency handover, inter-RAT handover or multi-carrier operation.
- Multi-carrier operation: This involves using different frequency bands by the same RAT.
- Inter-RAT handover: This involves handing over from one RAT to a different RAT.

All these operations require a BS to provide MS with some information about other RATs present in the neighborhood.

There is a need to define a holistic and consistent approach to provide such information in the standard.

While in many cases it is enough to send such information through broadcast messages, there may also be need to deliver them as unicast messages to MSs.

### **2 Text proposal**

*Add the following text into Section 11.7.2.5 of SDD:*

----- Text Start -----

The essential configuration information about different RATs may be transmitted by a BS as shown in figure below. Such messages may be structured as broadcast or unicast messages.

The SFH may include pointers to transmission of Alternative Carrier Configuration messages. The pointers should also indicate if the message contains multicarrier 16m configuration, alternative carrier configuration or both. This would ensure that single mode 16m devices are not required to receive information about other RAT's unnecessarily.

The configuration of different RATs may be defined in a variable length MAC management message. This message should include information such as:

- RAT Logical Index
- RAT Type: 16m, 16e only, 3GPP/3GPP2, DVB-H, etc.
- If 16m RAT: List of Configuration Parameters: Including Center Frequency, Band Width, Duplexing, FFT size, Frame Size, DL/UL ratio, etc.
- If other RAT : List of configuration Parameters

The configuration parameters should include all information needed for efficient scanning and if needed handing over/switching to such RATs with minimal signaling with the target RAT.

Once the logical RAT index is defined, that index is used to refer to that RAT in all subsequent messaging for different operations, such as multi-carrier allocations (aggregation or switching), handover as well as for inter-RAT scanning and handover.

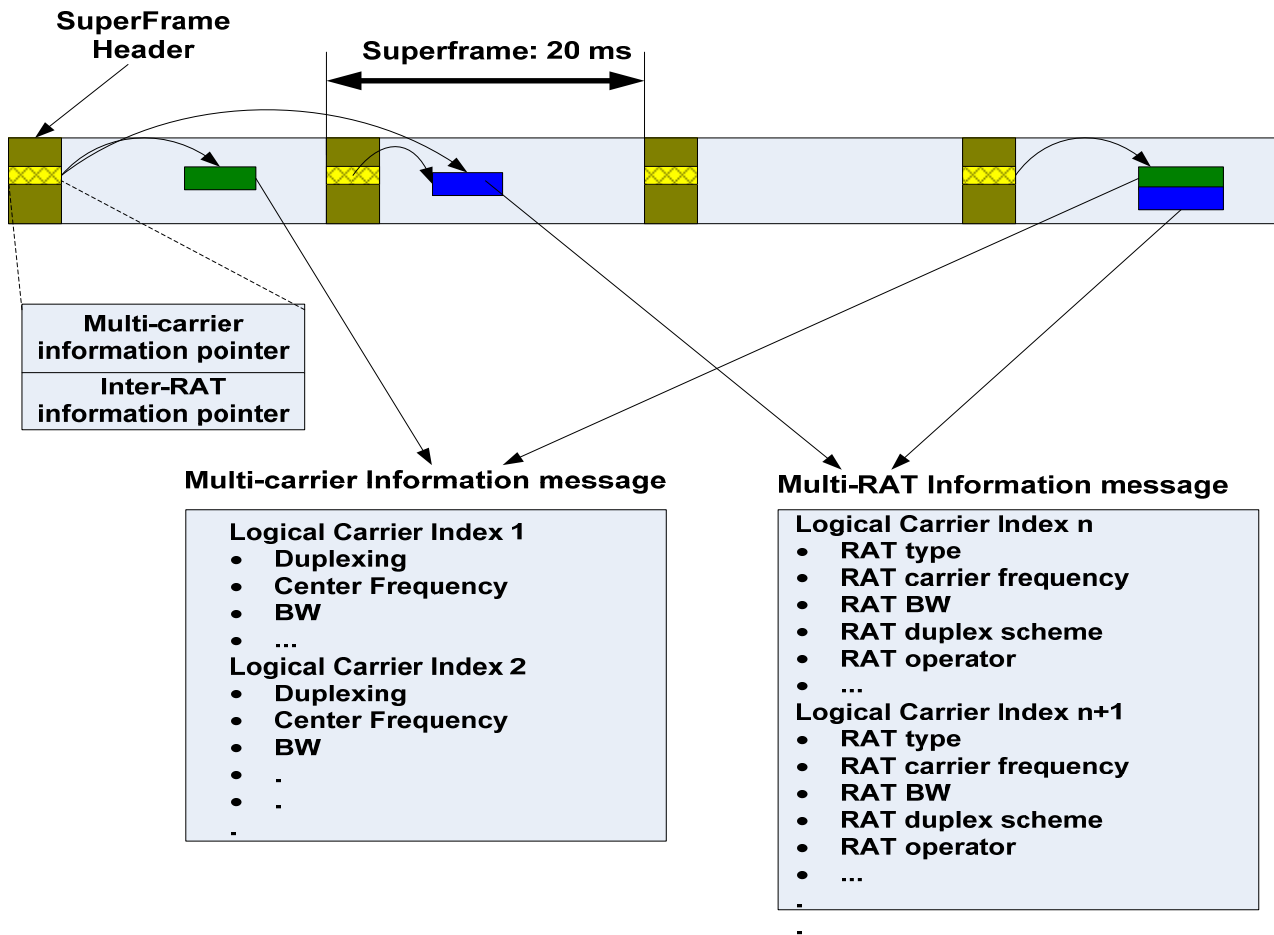


Figure xx Multi-carrier and Multi-RAT information transmission mechanism.

----- Text End -----