Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	Procedure in community Entry of new BS
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Source(s)	Wu Xuyong, Jim Carlo Huawei Huawei Industrial Base, Bantian, Longgang, Shenzhen 518129 P.R.C Voice: +86-755-28972324 Fax: +86-755-28975523 wuxuyong@huawei.com, j.carlo@ieee.com
Re:	80216h-06_011：Working Group Review: P802.16h Working Document (2006-04-07)
Abstract	Procedure in community Entry of new BS
Purpose	Comment on 15.2.1.3 Procedure in community Entry of new BS
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15.2.1.3 Community Entry of new BS

[Change the following section as indicate:]

(1) *Initialization stage*

In initialization stage the ~~LE~~ BSs may avoid the co-channel or adjacent channel interference by scanning the available frequencies. But this method cannot avoid the *hidden* ~~LE BS~~ neighbor system problem, i.e. the BS that cannot be heard directly but may have overlapping service coverage. Thus, with the knowledge of coexistence neighbor topology the ~~LE~~ IBS~~s~~ can detect the *hidden* ~~LE BSs~~ neighbor systems and can, therefore, avoid the possible interferences from ~~coexisting coexistence~~ neighbors.

Alternatively, if the country/region database is not valid in this phase, the initializing BS will use the initialization coexistence ~~time slot~~ signaling interval (ICSI) to broadcast its ~~IP address~~ contact information to its coverage using its maximum power. In this way, the SSs in the reachable zone of the new BS's interference will receive the signaling~~message~~ and forward the ~~address~~ contact information to its serving BS. And after the neighbor BSs get the address via the SSs' reports, they will contact with their new coming neighbor via IP network and updating the database on both side. Thus, in ad-hoc fashion, it will ~~avoid~~ solve the hidden neighbor ~~BS issue~~ problem by the SSs in the neighbor ~~network~~ system. Therefore, using the information that the IBS has got from its neighbor, IBS can get the information of the relative collaborative systems in potential community.~~.~~

If the ~~LE~~ IBS finds that there is no "free" channel exist, the ~~coexistence neighbor topology~~ information in the ~~share~~ distributed database ~~provides the information of~~ can be used to figure out with whom it should negotiate with. ~~LE~~ IBS may decide whether a "free" frequency can be allocated for itself by channel reallocation within community, If IBS can figure out optimized channel distribution in the community, which made every member in the community could occupy a exclusive channel, IBS ~~should~~ can contact the BSs in the community which need to reallocate the channel ~~in the new distribution~~ and negotiate, after ~~admitted~~ confirmed by ~~each~~ every candidate BS, IBS will vacate a exclusive channel for its system. After that it should send a CP message to the candidate BS to indicate the ~~switch time and the target channel~~ succeeding, all the candidate BS should then ~~follow the indication and switch to the target~~ continue operation on the new channel ~~synchronously~~. Otherwise, if IBS can't get a "free" frequency after the effort of ~~whatever~~ reallocation ~~executed~~, ~~that means~~ the IBS should ~~have to~~ try to share a frequency with ~~one or~~ some of its neighbors.

Similar to the channel allocation, the IBS will then first try to find a vacant sub-frame in the potential channels using the information inside the distributed database, when failed IBS will then try to vacate an exclusive existing sub-channel by sub-frame distribution optimization if supported. If a exclusive existing sub-channel is not available, IBS will then try to negotiate with the systems inside the community to create a new sub frame. While all these attempt failed, the IBS will not be able to get any interference free resource in its interference situation. These procedures are described in **Error! Reference source not found.** Figure h22.

(2) *Operating stage*

In the operating stage, the ~~LE~~ BS has SSs associated with it, however, until ~~even~~ the operating system parameters are determined. ~~has decided~~, the co-channel or adjacent channel interference from LE BSs of different network may still occur ~~have a chance to happen~~ due to the detection of interference from primary user~~,~~. ~~c~~Channel switching of coexistence neighbor ~~BS~~ systems or the entry of new coexistence neighbor BS might make~~s~~ the community so crowded that there is no enough channels. If the LE BS finds that there is no "free" channel at that moment, synchronous channel switching maybe executed, or the coexistence neighbor topology provides the guidelines of with whom it should negotiate to share the channel. ***[detailed procedures are to be defined]***

Error! Reference source not found. **Error! Reference source not found.** shows the initialization procedures for the 802.16 LE BSs. Note that the procedures that BS tries to create a Master slot or channel switching are also applicable for

operating stage. The detailed negotiation and update procedures are described in section **Error! Reference source not found.**and **Error! Reference source not found.**.

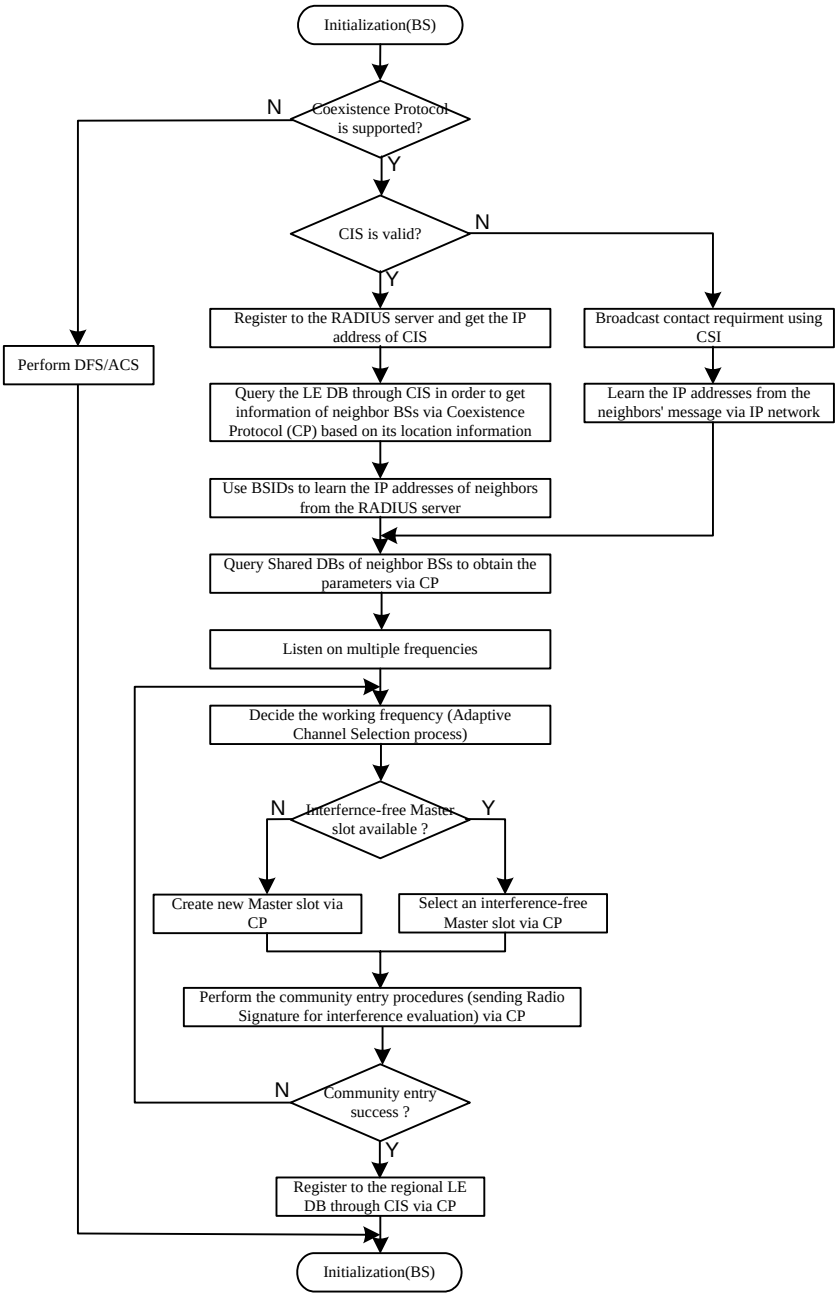
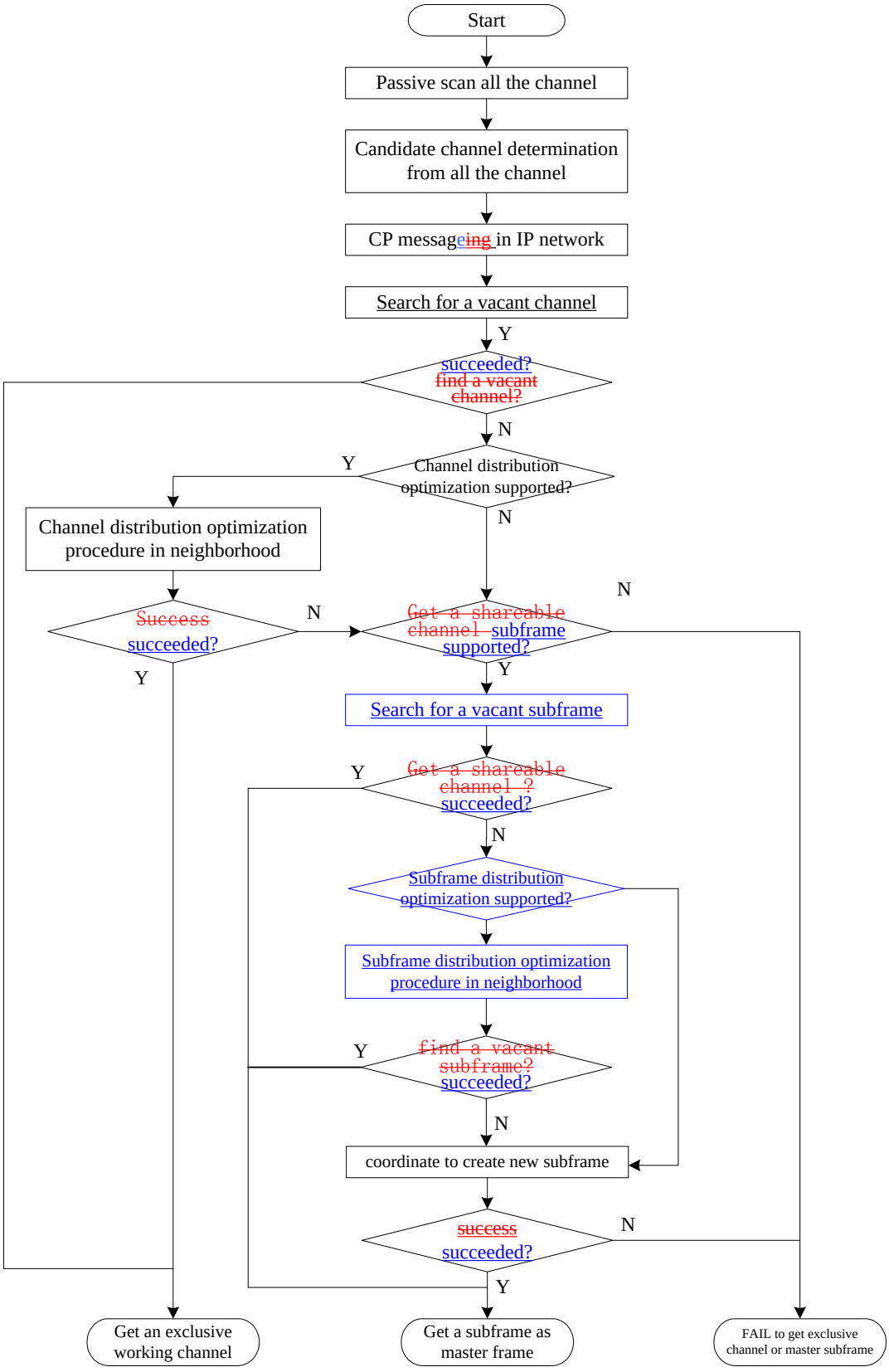


Figure h21—Initialization procedures — BS


Start
Passive scan all the channel
Candidate channel determination from all the channel
CP messageing in IP network
Search for a vacant channel
Y
succeeded? find a vacant channel?
N
Y
Channel distribution optimization supported?
N
Channel distribution optimization procedure in neighborhood
N
Success succeeded?
N
Get a sharcable channel subframe supported?
Y
Y
Search for a vacant subframe
Y
Get a sharcable channel ? succeeded?
N
Subframe distribution optimization supported?
Subframe distribution optimization procedure in neighborhood
Y
find a vacant subframe? succeeded?
N
coordinate to create new subframe
success succeeded?
N
Y
Get an exclusive working channel
Get a subframe as master frame
FAIL to get exclusive channel or master subframe

1

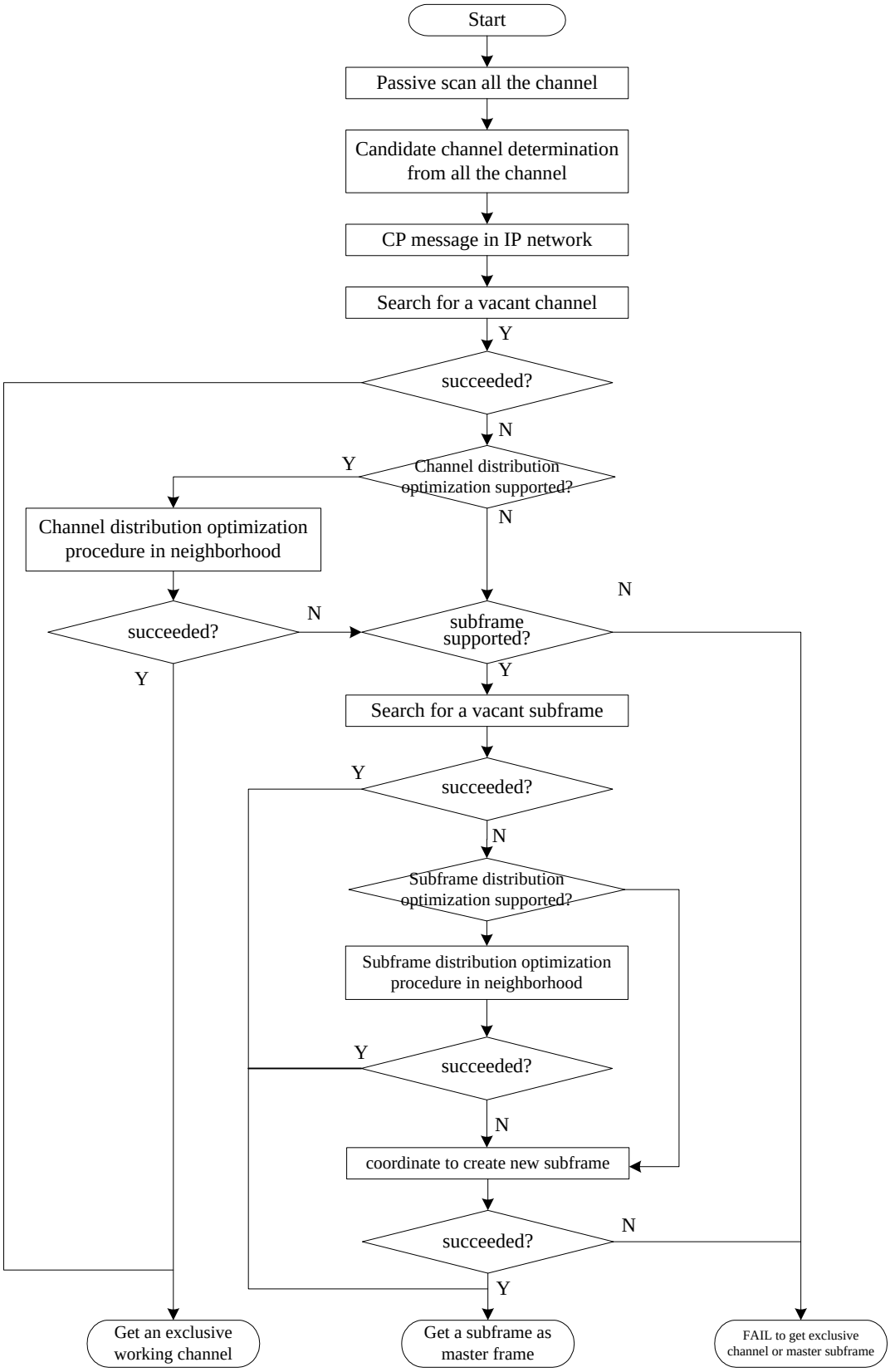


Figure h22—Initialization procedures - BS radio resource allocation