Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**Transmit Power Control Submission to IEEE 802.16 TG4**	
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Source(s)	John Sydor Communications Research Centre 3701 Carling Avenue Ottawa, Ontario,Canada	Voice:1-613-998-2388 Fax:1-613-990-8369 mailto:john.sydor@crc.ca
Re:	This is a response to a IEEE 802.16.4 Task Group session 12 assignment.	
Abstract	This document proposes new Transmit Power Control text for the strawman.	
Purpose	This document forms a response to the requirement of updating the TG4 MAC strawman document.	
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Transmit Power Control

Here is the proposal to send Power Control information as part of the UL-MAP message only when it is necessary.

When I need a change for a certain connection (CID) in the Additional Set or Power Control Informations, I use Expansion IE (UIUC Code=15) as follows:

4 bits	4 bits	4 bits	4 bits
Connection Identifier			
UIUC=15	Additional Set		Power Control

I replace 'Offset' field because is already specified in the regular IE and the expanded IE is only required to provide Additional Set parameters change or Power Control adjustments.
This is just a proposal and it cannot be fully consistent without precise specifications of PHY parameters. The size of the fields 'Additional Set' and 'Power Control' are arbitrary, but at first sight could be satisfactory.
This kind of IE shall be sent only when is needed.

Note: The Insertion of Power Control field come in response to team concerns about a faster Power Control mechanism than the one provided by periodic Ranging protocol.
As presented in the Strawman proposal (John Sydor) there were suggested a range of 18 steps:
"For operation in the 5725-5825 MHz band the power control will be set in the following steps in terms of EIRP spectral density (dBm/MHz):
23 20 17 14 11 8 5 2 -1 -4 -7 -10 -13 -16 -19 -22 -25 -28
For operation in the 5250-5350 MHz band the power control will be set in the following steps in terms of EIRP spectral density (dBm/MHz):
17 14 11 8 5 2 -1 -4 -7 -10 -13 -16 -19 -22 -25 -28 -31 -34 "
I think the proposal can be accommodated on 16 values, modifying a little bit the granularity.
That gives BS the opportunity to do Power Control adjustments without the requirement to use Periodic Ranging more often.

In case of power control adjustment for a certain CID ,BS shall incorporate in UL-MAP message two different IE's designated to the same SS (in case of GPT mode), a regular one pointing active Burst Type (Dynamic Set) by designated UIUC ,Offset

and a second Expanded IE (UIUC=15) that contains Power Control adjustments and Additional Set of parameters.