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Title	**A Method to Optimize SCN messages**
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Re:	IEEE 802.16Rev2/D2, Letter Ballot 26a Technical Comments
Abstract	Proposal to use bitmap indexes in MOB_SCN-REQ/RSP/REP messages to identify BSs
Purpose	Adopt proposed text changes for IEEE 802.16Rev2/D2 revision
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A Method to Optimize SCN messages

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Explanation

This contribution proposes to use bitmap indexes in MOB_SCN-REQ/RSP/REP messages to identify BSs as described in S80216maint-08_067

Proposed Text Changes

Modify sections 6.3.2.3.44, 6.3.2.3.45, 6.3.2.3.46 as follows:

6.3.2.3.44 MOB_SCN-REQ (scanning interval allocation request) message

Table 144—MOB_SCN-REQ message format

Syntax	Size (bit)
MOB_SCN-REQ_Message_format() {	—
Management Message Type = 54	8
Scan duration	8
Interleaving interval	8
Scan Iteration	8
N_Recommended_BS_Index	8
If(N_Recommended_BS_Index != 0){	—
Configuration change count for MOB_NBR-ADV	8
}	—
If(N_Recommended_BS_Index == 0xFF){	—
Req_Seq_Num	1
Nbr_Bitmap_Index	Up to the Number BSs in MOB_NBR-ADV
For(each '1' in Nbr_Bitmap_Index)	—
Scanning type	3
}	—
} else {	—
For(j = 0; j < N_Recommended_BS_Index; j++){	—
Neighbor_BS_Index	8
Req_Seq_Num ~~Reserved~~	1
Scanning type	3
}	—
}	—
N_Recommended_BS_Full	8
For(j = 0; j < N_Recommended_BS_Full; j++){	—
Recommended BS ID	48
Req_Seq_Num ~~Reserved~~	1
Scanning type	3
}	—
Padding	variable
TLV encoded information	variable
}	—

Req_Seq_Num	1 bit sequence number for this message. Toggles after each transmission of this message
Nbr_Bitmap_Index	Bitmap index of BS into MOB_NBR-ADV message

6.3.2.3.45 MOB_SCN-RSP (scanning interval allocation response) message

Table 145—MOB_SCN-RSP message format

Syntax	Size (bit)
MOB_SCN-RSP_Message_format() {	
Management Message Type = 55	
Scan duration	
Report mode	
Reserved	3~~6~~
Rsp_Seq_Num	1
Use_Nbr_Bitmap_Index	1
Use_Req_Bitmap_Index	1
Report period	
Report metric	
if (Scan Duration != 0) {	
Start frame	
Interleaving interval	
Scan iteration	
If(Use_Nbr_Bitmap_Index == 1){	
Configuration change count for MOB_NBR-ADV	
Nbr_Bitmap_Index	Up to the Number BSs in MOB_NBR-ADV
For(each '1' in Nbr_Bitmap_Index)	
Scanning type	
If (Scanning type == 0b010) OR (Scanning type == 0b011) {	
Rendezvous time	
CDMA_code	
Transmission_opportunity offset	
}	
}	
} else {	
N_Recommended_BS_Index	
If(N_Recommended_BS_Index != 0){	
Configuration change count for MOB_NBR-ADV	
}	
For(j = 0; j < N_Recommended_BS_Index; j++){	
Neighbor_BS_Index	
Reserved	
Scanning type	
If (Scanning type == 0b010) OR (Scanning type == 0b011) {	
Rendezvous time	
CDMA_code	
Transmission_opportunity offset	
}	
}	
}	
If(Use_Req_Bitmap_Index== 1){	
Req_Seq_Num	1
Req_Bitmap_Index	Up to the Number BSs in MOB_SCN-REQ
For(each '1' in Req_Bitmap_Index)	
Scanning type	
If (Scanning type == 0b010) OR (Scanning type == 0b011) {	

Rendezvous time	
CDMA_code	
Transmission_opportunity offset	
}	
}	
}	
N_Recommended_BS_Full	
For(j = 0; j < N_Recommended_BS_Full; j++){	
[…] No change	
}	
Padding	
}	
TLV encoded information	
}	

Req_Seq_Num	1 bit sequence number for the corresponding MOB_SCN-REQ message
Rsp_Seq_Num	1 bit sequence number for this message. Toggles after each transmission of this message
Use_Nbr_Bitmap_Index	1 bit indicate if the bitmap index for MOB_NBR-ADV is used.
Use_Req_Bitmap_Index	1 bit indicate if the bitmap index for MOB_SCN-REQ is used.
Nbr_Bitmap_Index	Bitmap index of BS into MOB_NBR-ADV message
Req_Bitmap_Index	Bitmap index of BS into MOB_SCN-REQ message

6.3.2.3.46 MOB_SCN-REP (scanning result report) message

[…]

Syntax	Size (bit)
MOB_SCN-REP_Message_format() {	-
Management Message Type = 60	8
Report Mode	1
N_current_BSs	3
Use_Nbr_Bitmap_Index	1
Use_Rsp_Bitmap_Index	1
Reserved	24
Report metric	8
For (j = 0; j < N_current_BSs; j++) {	
Temp BSID	4
Reserved	4
If (Report metric[Bit 0] == 1)	-
BS CINR mean	8
If (Report metric[Bit 1] == 1)	-
BS RSSI mean	8
If ((Report metric[Bit 2] == 1) and (TempBSID != anchor))	-
Relative delay	8
If ((Report metric[Bit 3] == 1) and ((TempBSID == anchor BS) or (TempBSID == serving BS)))	-
BS RTD	8
}	-
If(Use_Nbr_Bitmap_Index == 1){	
Configuration change count for MOB_NBR-ADV	8
Nbr_Bitmap_Index	Up to the Number BSs in MOB_NBR-ADV
For(each '1' in Nbr_Bitmap_Index){	
If(Report metric[Bit 0] == 1)	-
BS CINR mean	8
If(Report metric[Bit 1] == 1)	-
BS RSSI mean	8
If(Report metric[Bit 2] == 1)	-
Relative delay	8
}	
}else {	-
N_Neighbor_BS_Index	8
If (N_ Neighbor_BS_Index != 0){	-
Configuration change count for MOB_NBR-ADV	8
}	-
For(j = 0; j < N_Neighbor_BS_Index; j++) {	-
Neighbor_BS_Index	8
If(Report metric[Bit 0] == 1)	-
BS CINR mean	8
If(Report metric[Bit 1] == 1)	-
BS RSSI mean	8
If(Report metric[Bit 2] == 1)	-
Relative delay	8
}	-
}	-
N_ Neighbor_BS_Full	8
For(j = 0; j < N_Neighbor_BS_Full; j++) {	-
Neighbor BSID	48
If(Report metric[Bit 0] == 1)	-
BS CINR mean	8
If(Report metric[Bit 1] == 1)	-
BS RSSI mean	8

If(Report metric[Bit 2] == 1)	-
Relative delay	8
}	-
If(Use_Rsp_Bitmap_Index == 1){	
Rsp_Seq_Num	1
Rsp_Bitmap_Index	Up to the Number BSs in MOB_SCN-RSP
For(each '1' in Rsp_Bitmap_Index){	
If(Report metric[Bit 0] == 1)	-
BS CINR mean	8
If(Report metric[Bit 1] == 1)	-
BS RSSI mean	8
If(Report metric[Bit 2] == 1)	-
Relative delay	8
}	-
}	-
TLV encoded information	variable
}	-

Rsp_Seq_Num	1 bit sequence number for the corresponding MOB_SCN-RSP message
Use_Nbr_Bitmap_Index	1 bit indicate if the bitmap index for MOB_NBR-ADV is used.
Use_Rsp_Bitmap_Index	1 bit indicate if the bitmap index for MOB_SCN-RSP is used.
Nbr_Bitmap_Index	Bitmap index of BS into MOB_NBR-ADV message
Rsp_Bitmap_Index	Bitmap index of BS into MOB_SCN-RSP message