

Quasi-Random Ranging Code and Ranging Sub-channel Selection in OFDMA System

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KiHo Chung, JungMin Ro, DaeEop Kang

Samsung Electronics Co.
21th Fl, IT Center,
416, Maetan-3dong, Paldal-gu,
Suwon-si, Gyeonggi-do, **Korea**

Voice: +82-31-279-5097

Fax: +82-31-279-5130

E-mail: khchung@samsung.com
dave@samsung.com
clairero@samsung.com

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Purpose: This proposal should be used for the Ranging design.

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KiHo Chung

Samsung Electronics. Co.

Quasi-random Selection of Ranging Code

- We Proposed the Quasi-random ranging code and sub-channel selection procedure for the avoidance of the collision of the ranging signals.

Ranging Code Index = {Connection ID} modulo {The number of allocated Ranging Codes}

Ranging Sub-channel Index = {Connection ID} modulo {The number of available Ranging sub-channel}

- Connection ID is Unique within one cell and is handled by AP.

Ranging Index

The number of Allocated Ranging Code : N

The number of Available Ranging Sub-channel: M

Ranging Code Index	Ranging Code (RC)	Ranging Sub-channel Index	Ranging Sub-channel (RS)
0	RC_1	0	RS_1
1	RC_2	1	RS_2
2	RC_3	2	RS_3
:	:	:	:
N-1	RC_N	M-1	RS_M

Note: Ranging Code(RC) and Ranging Sub-channel(RS) may be enumerated ascending order (or any other rule).

Summary

- ❑ AP can manage the number of Ranging code and sub-channel depend on the number of users on Bandwidth Request Ranging status
 - ❑ No impact to Message Fields
 - ❑ Reduce the delay of back-off cause of collision
 - ❑ Support the higher contention resolution
- ➔ The performance of the bandwidth request ranging procedure shall be enhanced.