

# *Exhibit B*

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**U.S. PATENT: 10,075,941**

**ISSUE DATE: September 11, 2018**

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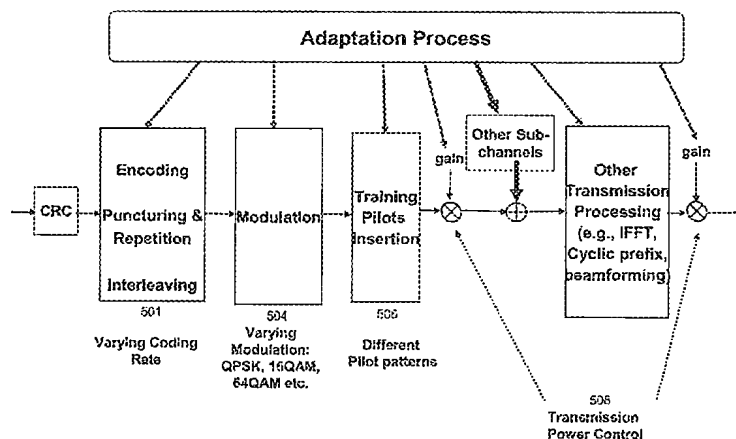
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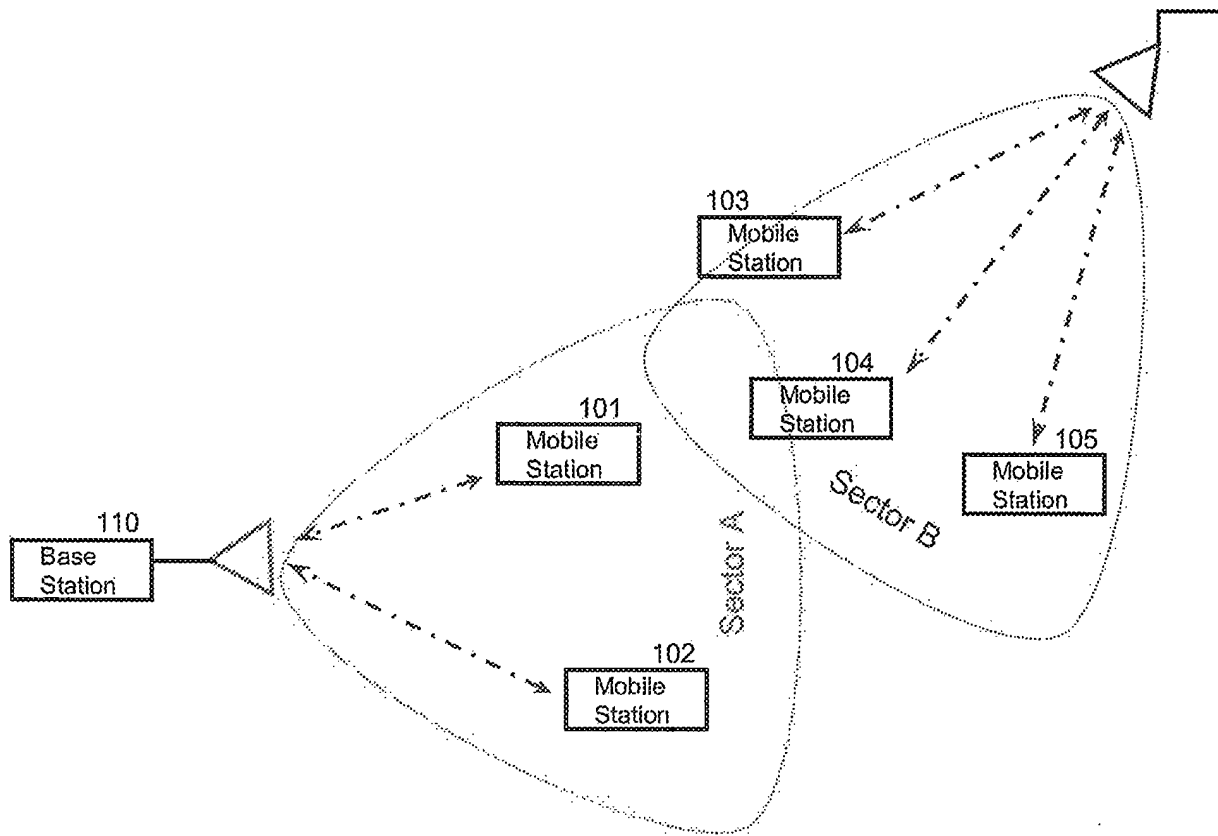
(12) **United States Patent**  
**Li et al.**(10) **Patent No.:** **US 10,075,941 B2**  
(45) **Date of Patent:** **Sep. 11, 2018**(54) **METHODS AND APPARATUS FOR  
MULTI-CARRIER COMMUNICATION  
SYSTEMS WITH ADAPTIVE  
TRANSMISSION AND FEEDBACK**(71) Applicant: **Neocific, Inc.**, Bellevue, WA (US)(72) Inventors: **Xiaodong Li**, Kirkland, WA (US);  
**Titus Lo**, Bellevue, WA (US); **Kemin  
Li**, Bellevue, WA (US); **Haiming  
Huang**, Bellevue, WA (US)(73) Assignee: **Neocific, Inc.**, Bellevue, WA (US)( \* ) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.(21) Appl. No.: **15/082,878**(22) Filed: **Mar. 28, 2016**(65) **Prior Publication Data**

US 2017/0055245 A1 Feb. 23, 2017

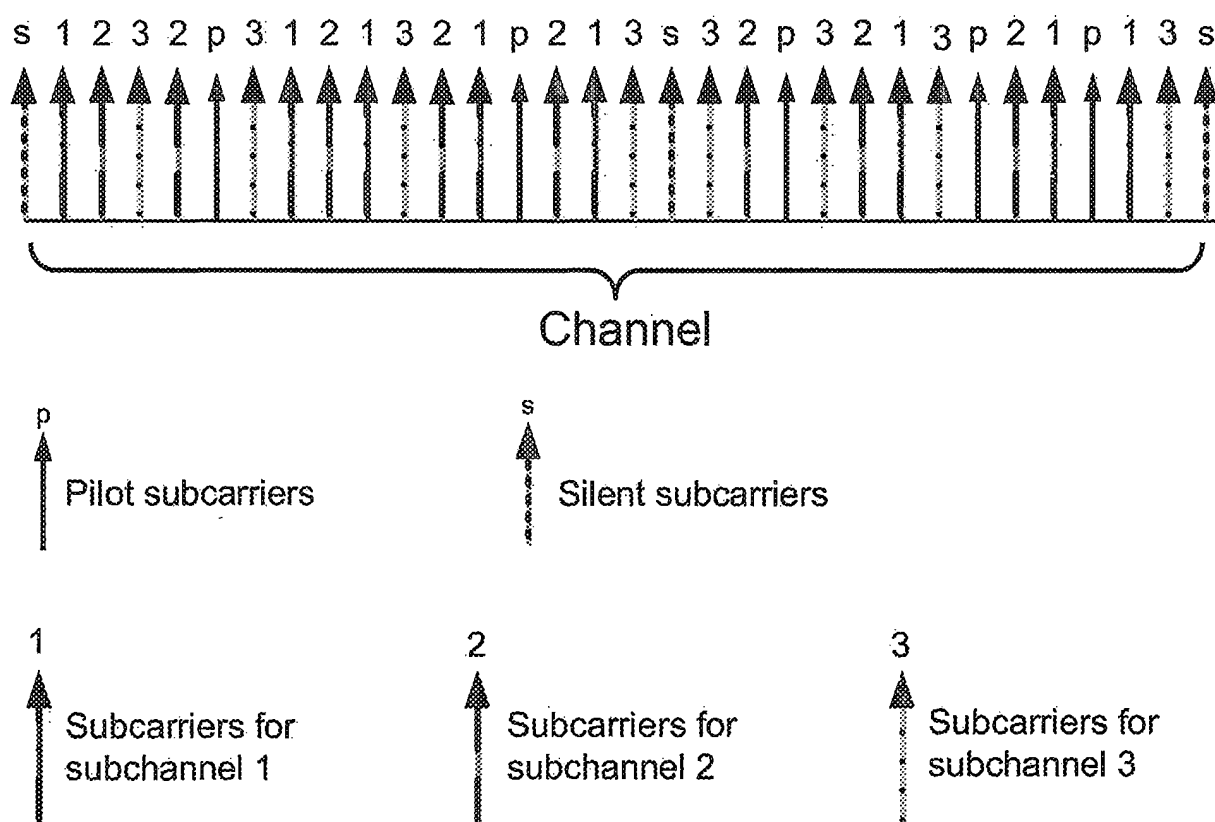
**Related U.S. Application Data**(63) Continuation of application No. 14/539,917, filed on  
Nov. 12, 2014, now Pat. No. 9,301,296, which is a  
continuation of application No. 13/246,677, filed on  
Sep. 27, 2011, now abandoned, which is a  
continuation of application No. 12/755,313, filed on  
Apr. 6, 2010, now Pat. No. 8,027,367, which is a  
continuation of application No. 10/583,529, filed as  
application No. PCT/US2005/004601 on Feb. 14,  
2005, now Pat. No. 7,693,032.(60) Provisional application No. 60/544,521, filed on Feb.  
13, 2004.(51) **Int. Cl.**  
**H04B 7/00** (2006.01)  
**H04W 72/04** (2009.01)  
**H04L 5/00** (2006.01)**H04L 27/26** (2006.01)  
**H04B 7/0413** (2017.01)  
**H04L 1/00** (2006.01)  
**H04W 52/26** (2009.01)(52) **U.S. Cl.**  
CPC ..... **H04W 72/0406** (2013.01); **H04B 7/0413**  
(2013.01); **H04L 1/0026** (2013.01); **H04L**  
**1/0029** (2013.01); **H04L 1/0068** (2013.01);  
**H04L 1/0073** (2013.01); **H04L 5/006**  
(2013.01); **H04L 5/0007** (2013.01); **H04L**  
**5/0046** (2013.01); **H04L 5/0048** (2013.01);  
**H04L 27/2608** (2013.01); **H04W 72/044**  
(2013.01); **H04L 1/0003** (2013.01); **H04L**  
**1/0009** (2013.01); **H04L 5/0091** (2013.01);  
**H04W 52/26** (2013.01)(58) **Field of Classification Search**  
CPC .. **H04W 72/044**; **H04B 7/0413**; **H04L 1/0026**;  
**H04L 1/0029**; **H04L 1/0068**; **H04L 5/006**;  
**H04L 5/0046**  
USPC ..... 370/310, 328, 349, 350, 431, 436, 458  
See application file for complete search history.(56) **References Cited****U.S. PATENT DOCUMENTS**7,436,757 B1 \* 10/2008 Wilson ..... **H04L 5/0058**  
370/203

\* cited by examiner

*Primary Examiner* — Dmitry H Levitan(74) *Attorney, Agent, or Firm* — Perkins Coie LLP(57) **ABSTRACT**An arrangement is disclosed where in a multi-carrier com-  
munication system, the modulation scheme, coding attri-  
butes, training pilots, and signal power may be adjusted to  
adapt to channel conditions in order to maximize the overall  
system capacity and spectral efficiency without wasting  
radio resources or compromising error probability perfor-  
mance, etc.**14 Claims, 8 Drawing Sheets**



**FIG. 1**



**FIG. 2**

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