



US 20230231636A1

(19) **United States**

(12) **Patent Application Publication**
Balasubramanian et al.

(10) **Pub. No.: US 2023/0231636 A1**

(43) **Pub. Date: Jul. 20, 2023**

(54) **METHOD AND APPARATUS FOR
NEIGHBOR INTERFERENCE
MANAGEMENT IN A SELF-ORGANIZING
NEIGHBORHOOD**

Publication Classification

(51) **Int. Cl.**
H04B 17/336 (2006.01)
H04W 16/14 (2006.01)

(71) Applicant: **Celona, Inc.**, Campbell, CA (US)

(52) **U.S. Cl.**
CPC **H04B 17/336** (2015.01); **H04W 16/14**
(2013.01)

(72) Inventors: **Srinivasan Balasubramanian**, San
Diego, CA (US); **Sourav**
Bandyopadhyay, Campbell, CA (US);
Shashideep Nuggehalli, Campbell, CA
(US)

(57) **ABSTRACT**

Various embodiments of a method and apparatus for power management initiated from a Citizens Band radio Service Device (CBSD) are disclosed. In addition, methods and apparatus for extending concepts related to Self Organizing Networks (SONs) to support Self Organizing Neighborhoods (SONgs) are also disclosed. Still further, various embodiments are disclosed here that allow for managing frequency/channel/BW (bandwidth) allocation, power allocation on each channel and Physical Cell ID (PCI) selection.

(21) Appl. No.: **18/153,748**

(22) Filed: **Jan. 12, 2023**

Related U.S. Application Data

(60) Provisional application No. 63/298,939, filed on Jan. 12, 2022.

STEP 401

Request from CBSD / DP

STEP 403

SAS determines if it needs to check with the
neighborhood CBSDs

STEP 405

SAS sends an enquiry to neighborhood CBSDs, if
required

STEP 407

SAS receives responses from neighborhood CBSDs

STEP 409

SAS commands the neighborhood CBSDs to adjust
power levels