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Agiwal et al.

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(54) **APPARATUS AND METHOD FOR SIGNALING SYSTEM INFORMATION**

(56) **References Cited**

(71) Applicant: **Samsung Electronics Co., Ltd.**,
Suwon-si, Gyeonggi-do (KR)

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(73) Assignee: **Samsung Electronics Co., Ltd.**,
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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 94 days.

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Primary Examiner — Sithu Ko

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(74) *Attorney, Agent, or Firm* — Jefferson IP Law, LLP

(65) **Prior Publication Data**

(57) **ABSTRACT**

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The present disclosure relates to a communication method and system for converging a 5th-generation (5G) communication system for supporting higher data rates beyond a 4th-generation (4G) system with a technology for internet of things (IoT). The present disclosure may be applied to intelligent services based on the 5G communication technology and the IoT-related technology, such as smart home, smart building, smart city, smart car, connected car, health care, digital education, smart retail, security and safety services. A method for receiving system information (SI) by a user equipment (UE) in a wireless communication system is provided. The method includes receiving, from a base station (BS), first type SI associated with SI which is essential for communication with the BS, transmitting, to the BS, a physical random access channel (PRACH) preamble based on the first type SI, receiving, from the BS, a random access response (RAR) message, and receiving, from the BS, second type SI associated with at least one SI which the UE needs.

Related U.S. Application Data

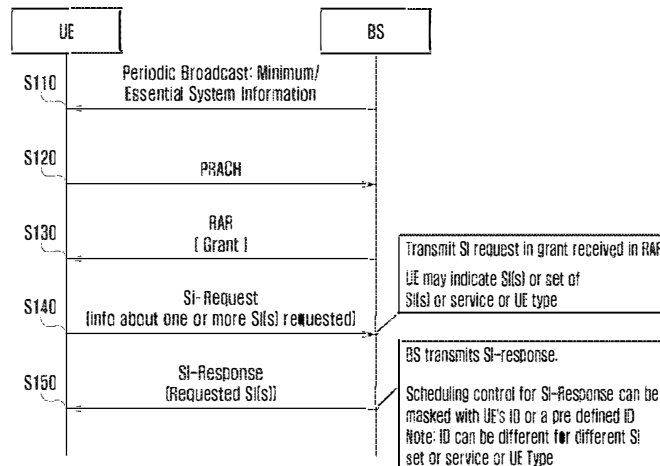
(60) Provisional application No. 62/301,016, filed on Feb. 29, 2016, provisional application No. 62/334,706, filed on May 11, 2016.

(51) **Int. Cl.**
H04L 12/18 (2006.01)
H04W 74/08 (2009.01)
(Continued)

(52) **U.S. Cl.**
CPC **H04W 74/0833** (2013.01); **H04W 4/06** (2013.01); **H04W 48/12** (2013.01);
(Continued)

(58) **Field of Classification Search**
None
See application file for complete search history.

14 Claims, 20 Drawing Sheets



- (51) **Int. Cl.**
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H04W 72/04 (2009.01)
H04W 72/14 (2009.01)
H04W 48/12 (2009.01)
H04W 74/00 (2009.01)

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- (52) **U.S. Cl.**
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 (2013.01); *H04W 74/006* (2013.01)

NEC: Further clarification of on-demand S-BCH 3GPP Draft; R2-063090; LTE BCH-on-Demand Clarification, 3rd Generation Partnership Project (3GPP), Mobile Competence Centre; 650, Route Des Lucioles; F-06921 Sophiaantipolis Cedex; France, vol. Ran WG2, No. Riga, Latvia; Nov. 1, 2006, Nov. 1, 2006, XP050132601. NEC: "LTE BCH-on-demand", 3GPP Draft; R2-062930; LTE BCH on Demand, 3rd Generation Partnership Project (3GPP), Mobile Competence Centre ; 650, Route Des Lucioles ; F-06921 Sophia-Antipolis Cedex; France, vol. Ran WG2, No. Seoul, Korea; Oct. 5, 2006, Oct. 5, 2006, XP050132448. Nortel: "System Information broadcast gating", 3GPP; Draft; R2-063137, 3rd Generation Partnership Project (3GPP), Mobilecompetence Centre ; 650, Route; Deslucioles ; F-06921 Sophia-Antipolis Cedex; France, vol. Ran WG2, No. Riga, Latvia; Nov. 1, 2006, Nov. 1, 2006, XP050132644.

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FIG. 1

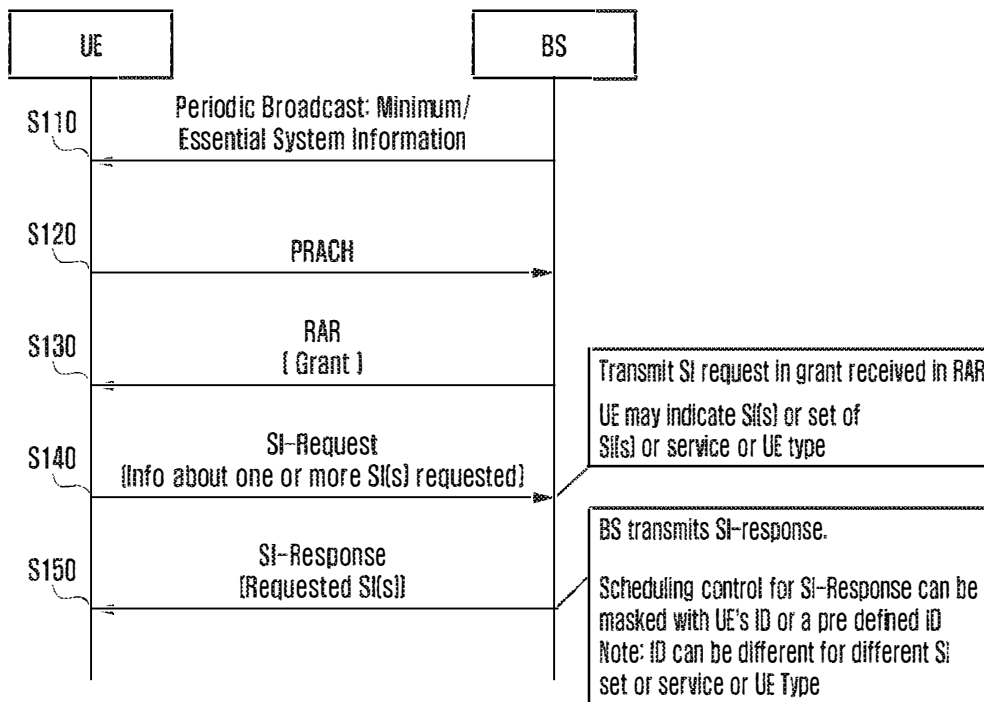


FIG. 2

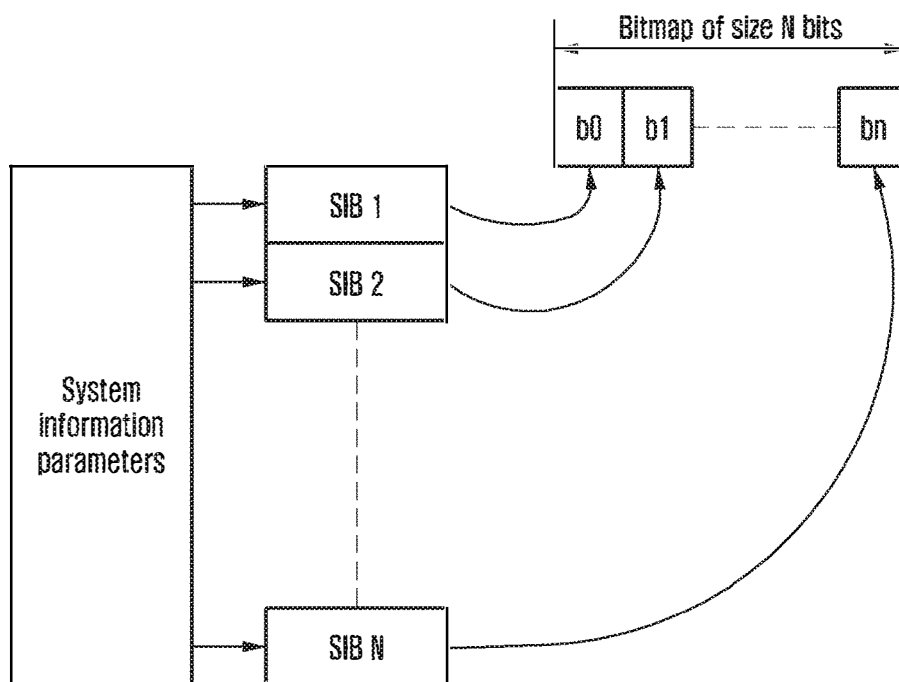
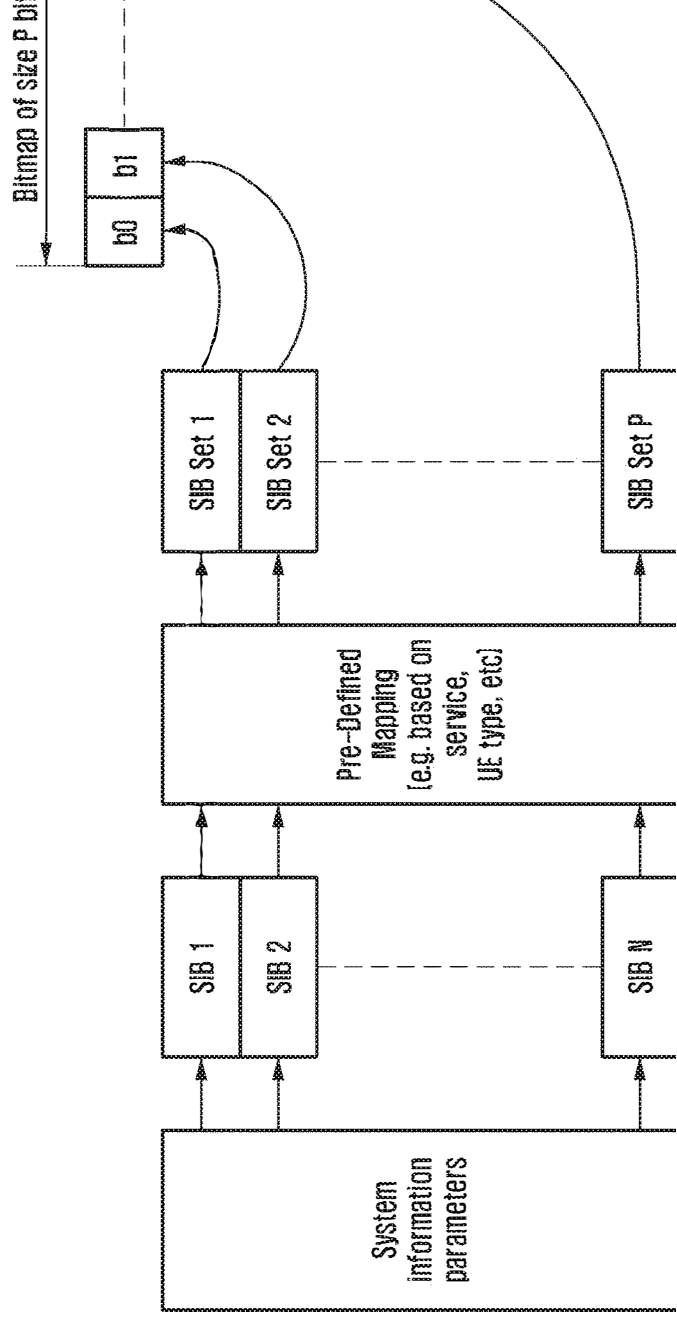


FIG. 3



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