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- (71) **Applicant:** REARDEN, LLC [US/US]; 355 Bryant Street, Suite 110, San Francisco, CA 94107 (US).
- (72) **Inventors:** FORENZA, Antonio; 355 Bryant Street, Suite 110, San Francisco, CA 94107 (US). PERLMAN, Stephen, G.; 355 Bryant Street, Suite 110, San Francisco, 94107 (US).
- (74) **Agents:** VINCENT, Lester, J. et al.; Blakely, Sokoloff, Taylor & Zafman LLP, 1279 Oakmead Parkway, Sunnyvale, CA 94085 (US).

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(54) **Title:** SYSTEMS AND METHODS FOR EXPLOITING INTER-CELL MULTIPLEXING GAIN IN WIRELESS CELLULAR SYSTEMS VIA DISTRIBUTED INPUT DISTRIBUTED OUTPUT TECHNOLOGY

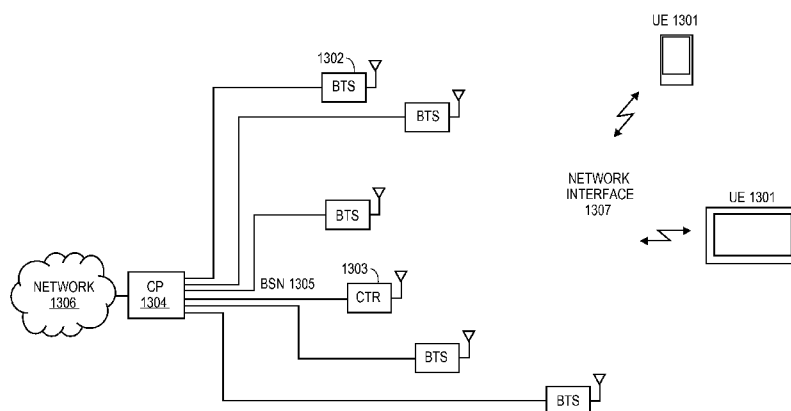


FIG. 13

(57) **Abstract:** A multiple antenna system (MAS) with multiuser (MU) transmissions ("MU-MAS") exploiting inter-cell multiplexing gain via spatial processing to increase capacity in wireless communications networks. In the last three decades, the wireless cellular market has experienced increasing number of subscribers worldwide as well as demand for better services shifting from voice to web-browsing and real-time HD video streaming. This increasing demand for services that requires higher data rate, lower latency and improved reliability has driven a radical evolution of wireless technologies through different standards.