



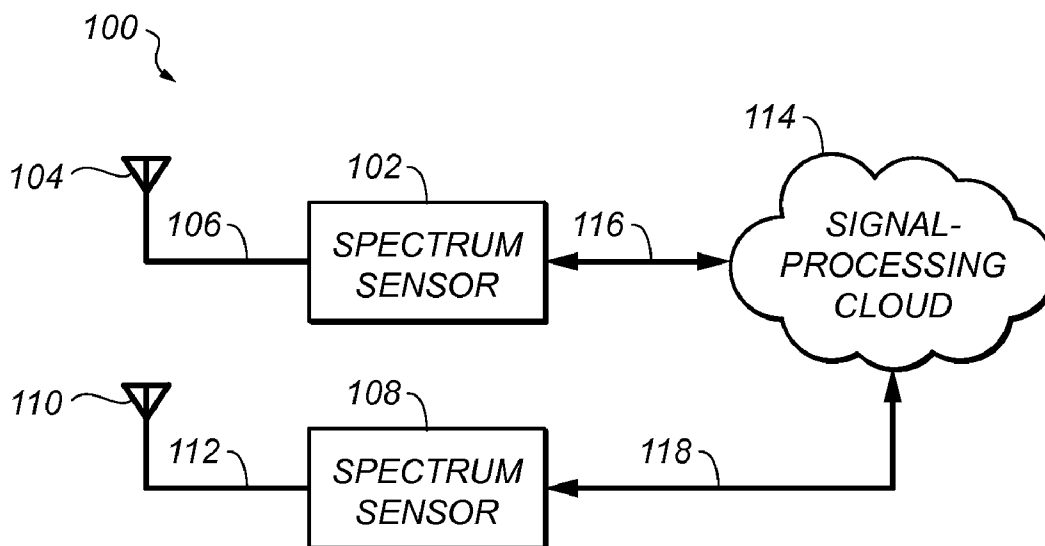
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Cooklev(10) **Pub. No.: US 2016/0037505 A1**(43) **Pub. Date: Feb. 4, 2016**(54) **DIGITAL RADIO SYSTEM**(71) Applicant: **Purdue Research Foundation**, West
Lafayette, IN (US)(72) Inventor: **Todor V. Cooklev**, Fort Wayne, IN (US)(21) Appl. No.: **14/815,639**(22) Filed: **Jul. 31, 2015****Related U.S. Application Data**(60) Provisional application No. 62/031,807, filed on Jul.
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(2013.01); **H04W 84/20** (2013.01)

(57)

ABSTRACT

A thin radio client can include a radio frequency (RF) subsystem having a transmitter and/or a receiver. An interface can transmit and receive packets. The interface can reconfigure the transmitter in response to a received transmitter-control packet, reconfigure the receiver in response to a received receiver-control packet, or transmit a context packet including both data of a state of the transmitter and data of a state of the receiver. A digital back end can include an interface to exchange packets with an RF device. At least some of the received packets can specify capabilities of the RF device or state of the RF device. The back end can determine a control packet based on received packet(s) and on a policy governing behavior of the RF device, and transmit the control packet to the RF device. A method of operating a distributed radio system is described.



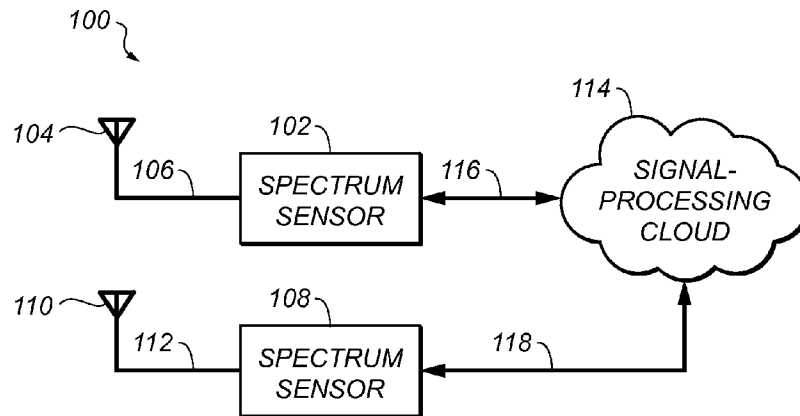


FIG. 1

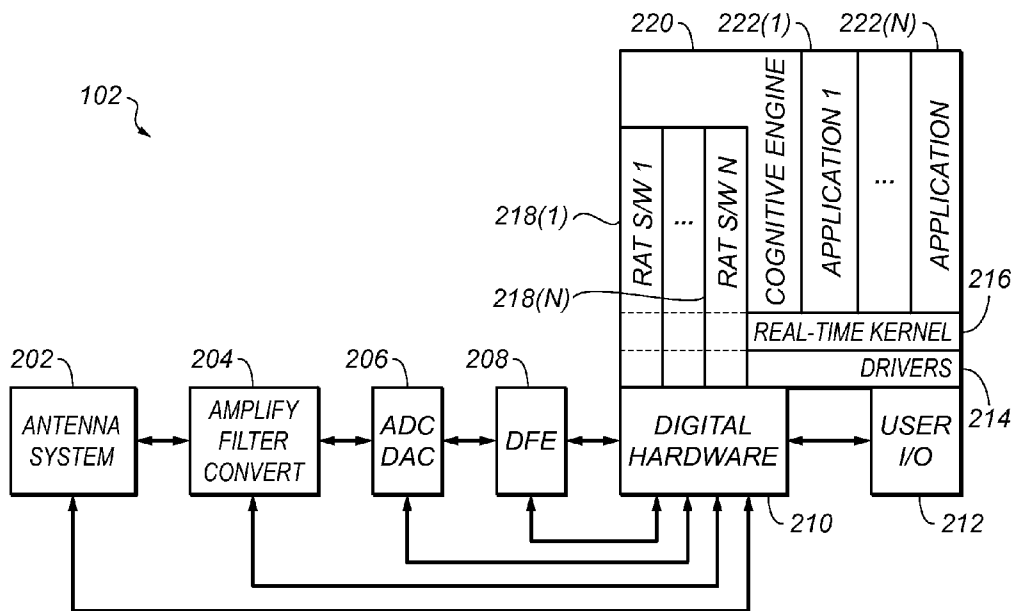
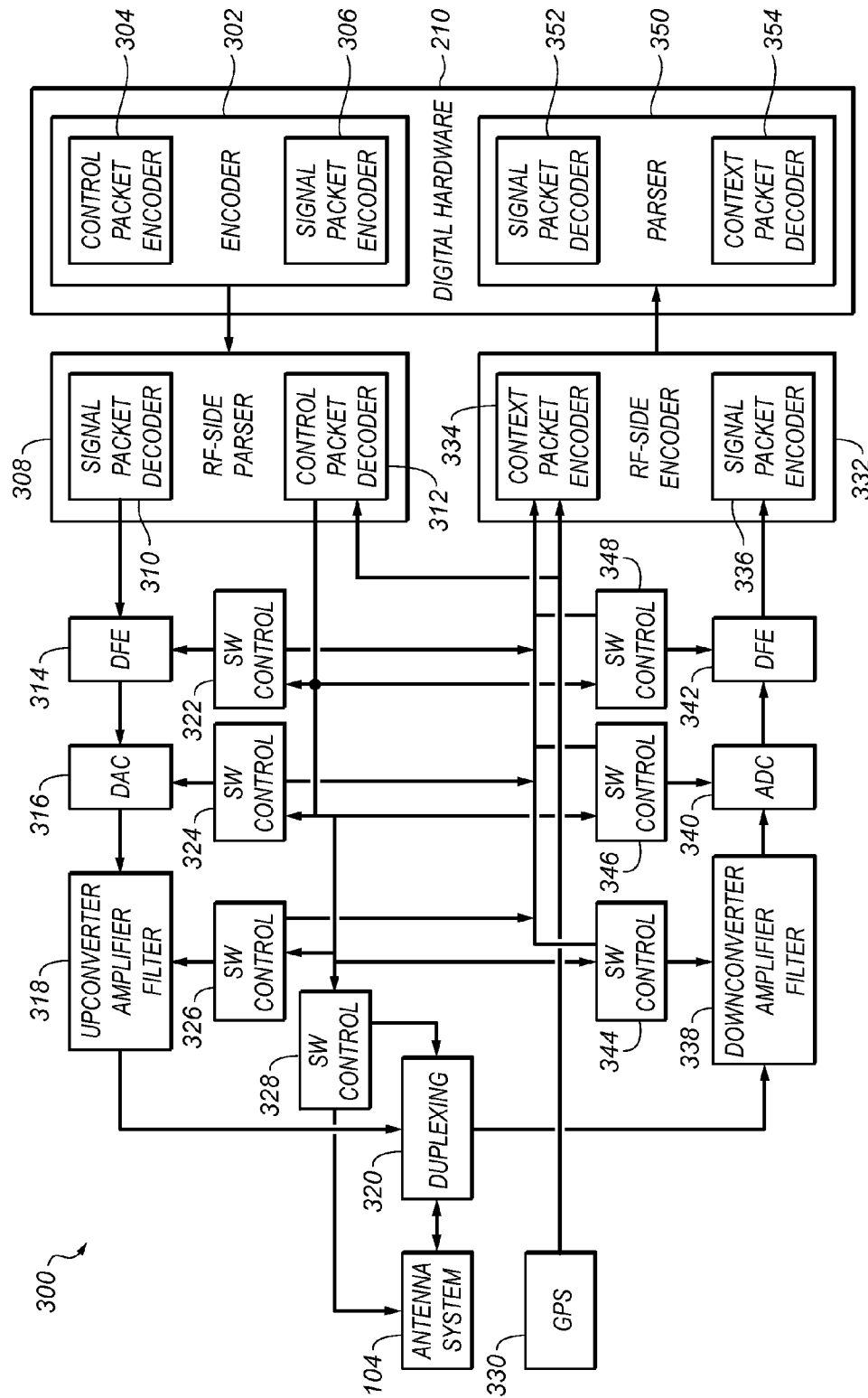


FIG. 2



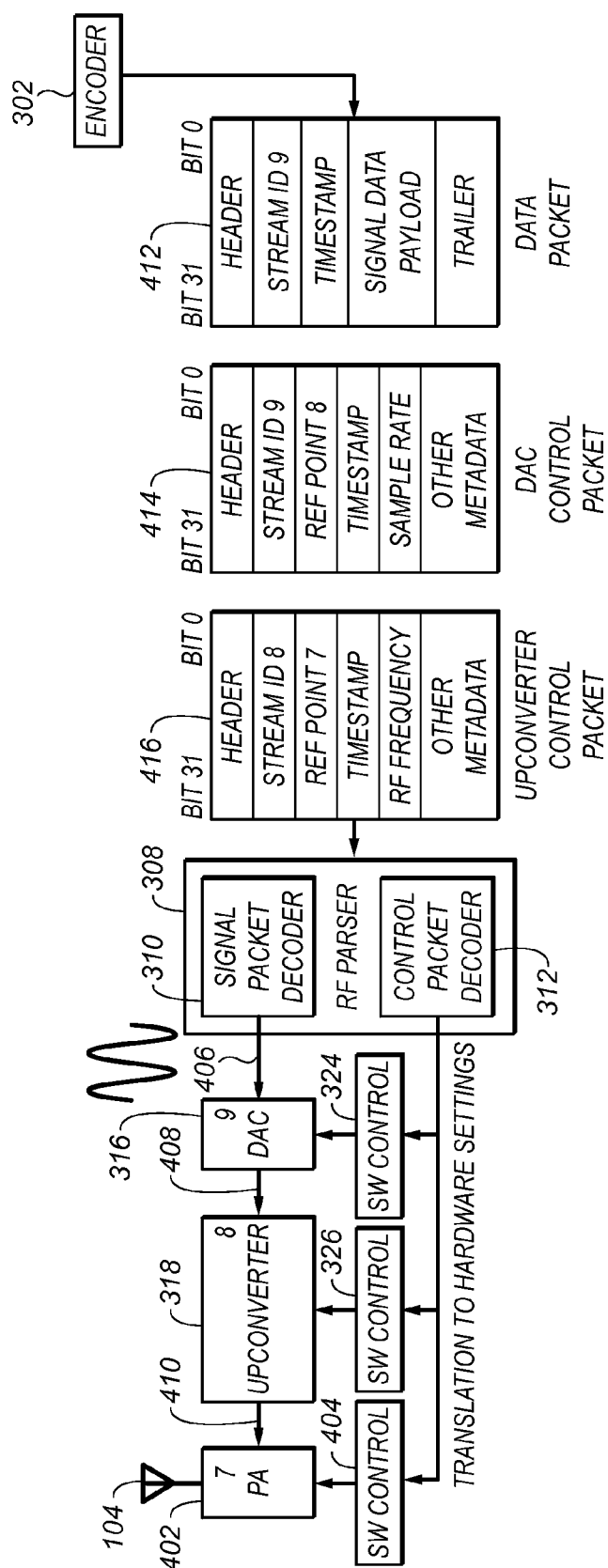


FIG. 4

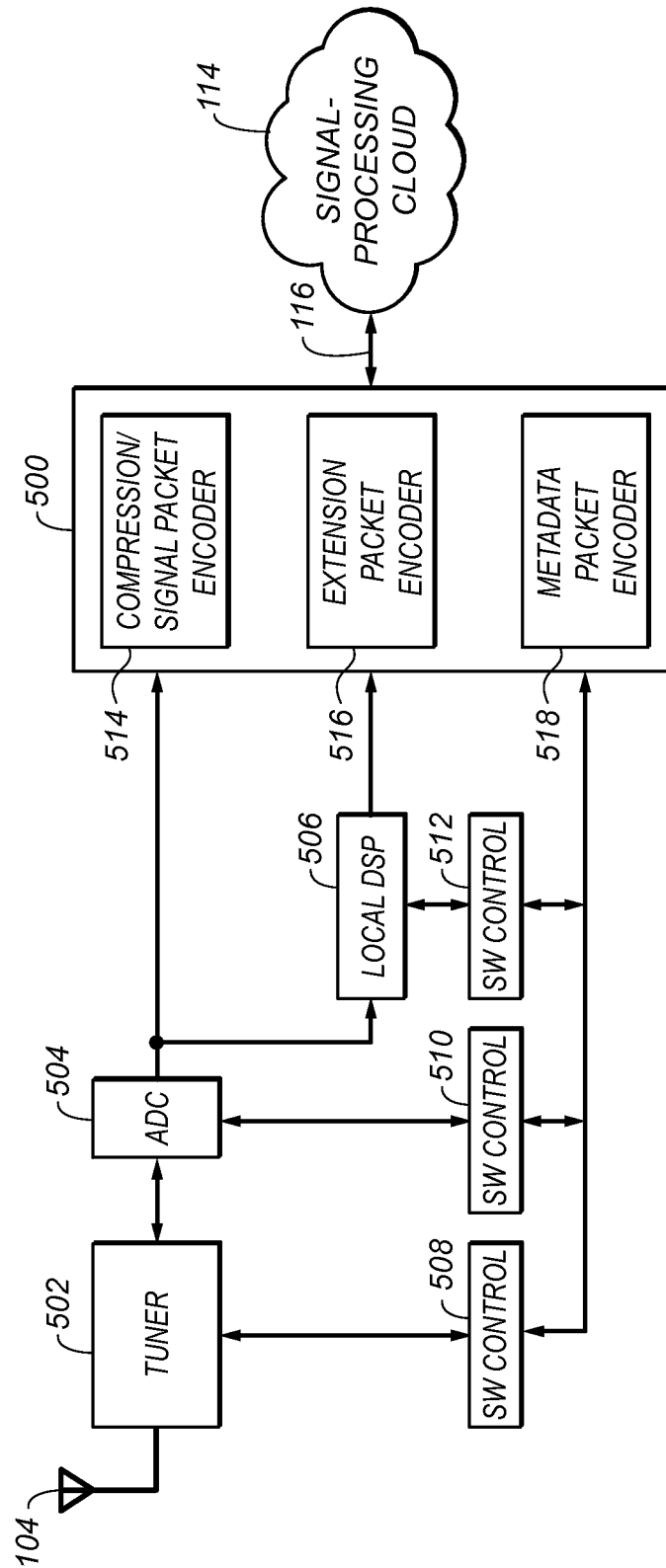


FIG. 5

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