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Divan et al.

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(54) **SYSTEMS AND METHODS FOR EDGE OF NETWORK VOLTAGE CONTROL OF A POWER GRID**

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This patent is subject to a terminal disclaimer.

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G05B 15/02	(2006.01)

(52) **U.S. Cl.**

CPC . ***H02J 3/16*** (2013.01); ***G05B 15/02*** (2013.01); *Y04S 10/22* (2013.01)

(58) **Field of Classification Search**

None

See application file for complete search history.

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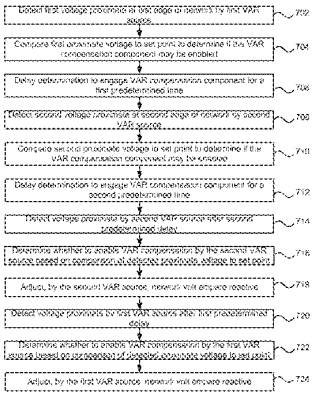
(57) **ABSTRACT**

Systems and methods for an edge of network voltage control of a power grid are described. In some embodiments, a system comprises a distribution power network, a plurality of loads, and a plurality of shunt-connected, switch-controlled VAR sources. The loads may be at or near an edge of the distribution power network. Each of the loads may receive power from the distribution power network. The plurality of shunt-connected, switch-controlled VAR sources may be located at the edge or near the edge of the distribution power network where they may each detect a proximate voltage. Further, each of the VAR sources may comprise a processor and a VAR compensation component. The processor may be configured to enable the VAR source to determine whether to enable the VAR compensation component based on the proximate voltage and to adjust network volt-ampere reactive by controlling a switch to enable the VAR compensation component.

16 Claims, 25 Drawing Sheets



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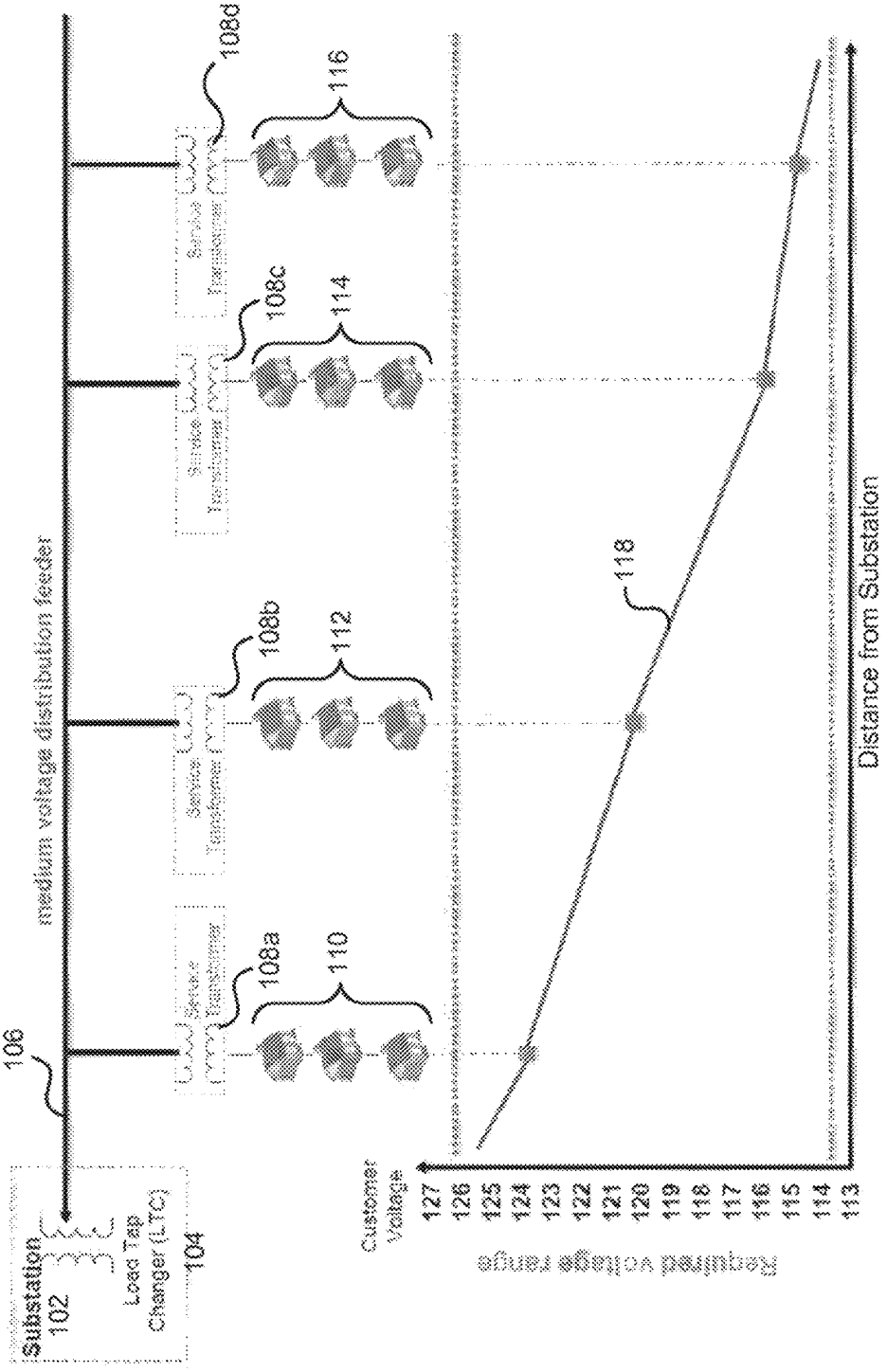

FIG. 1a

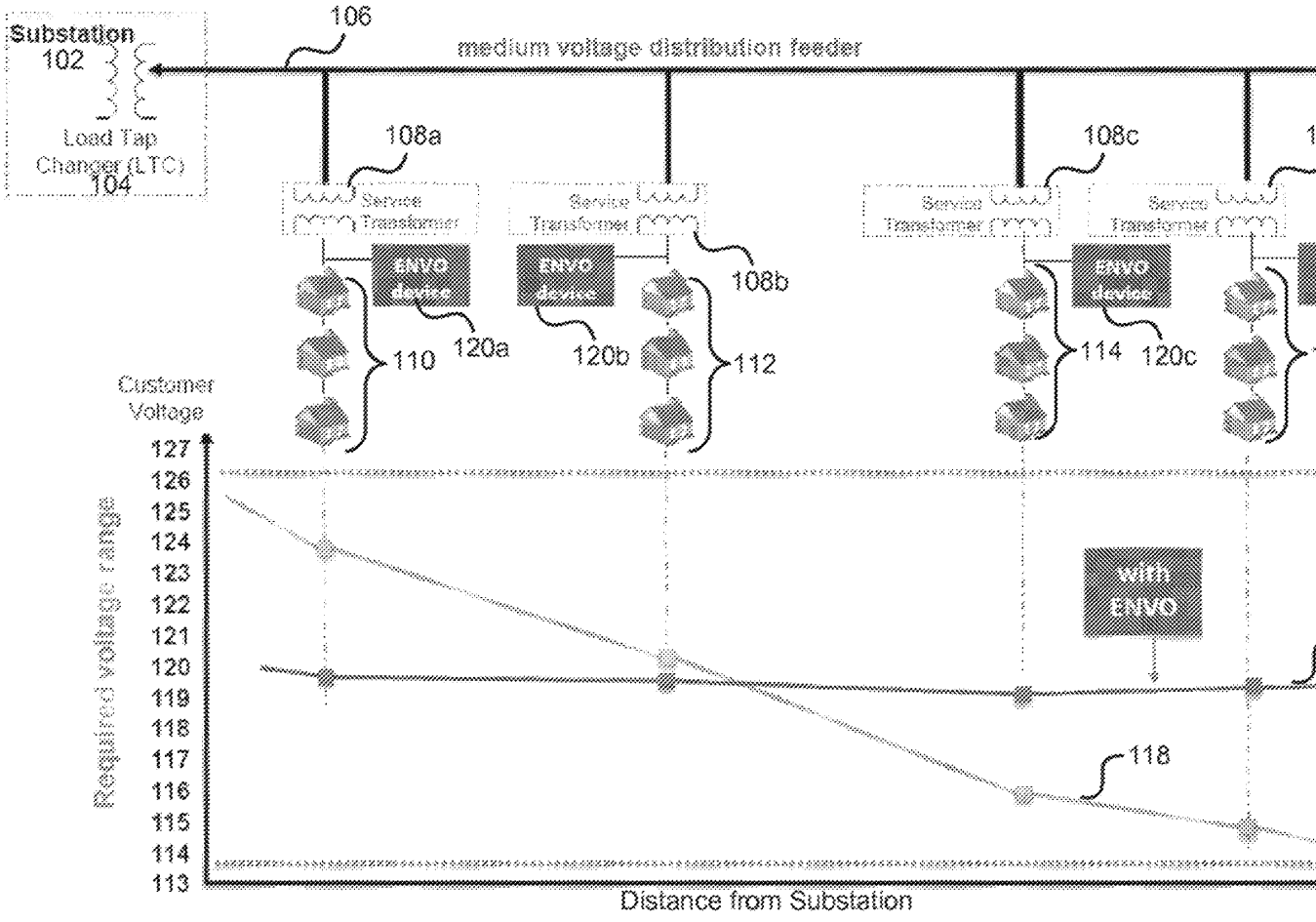

FIG. 1b

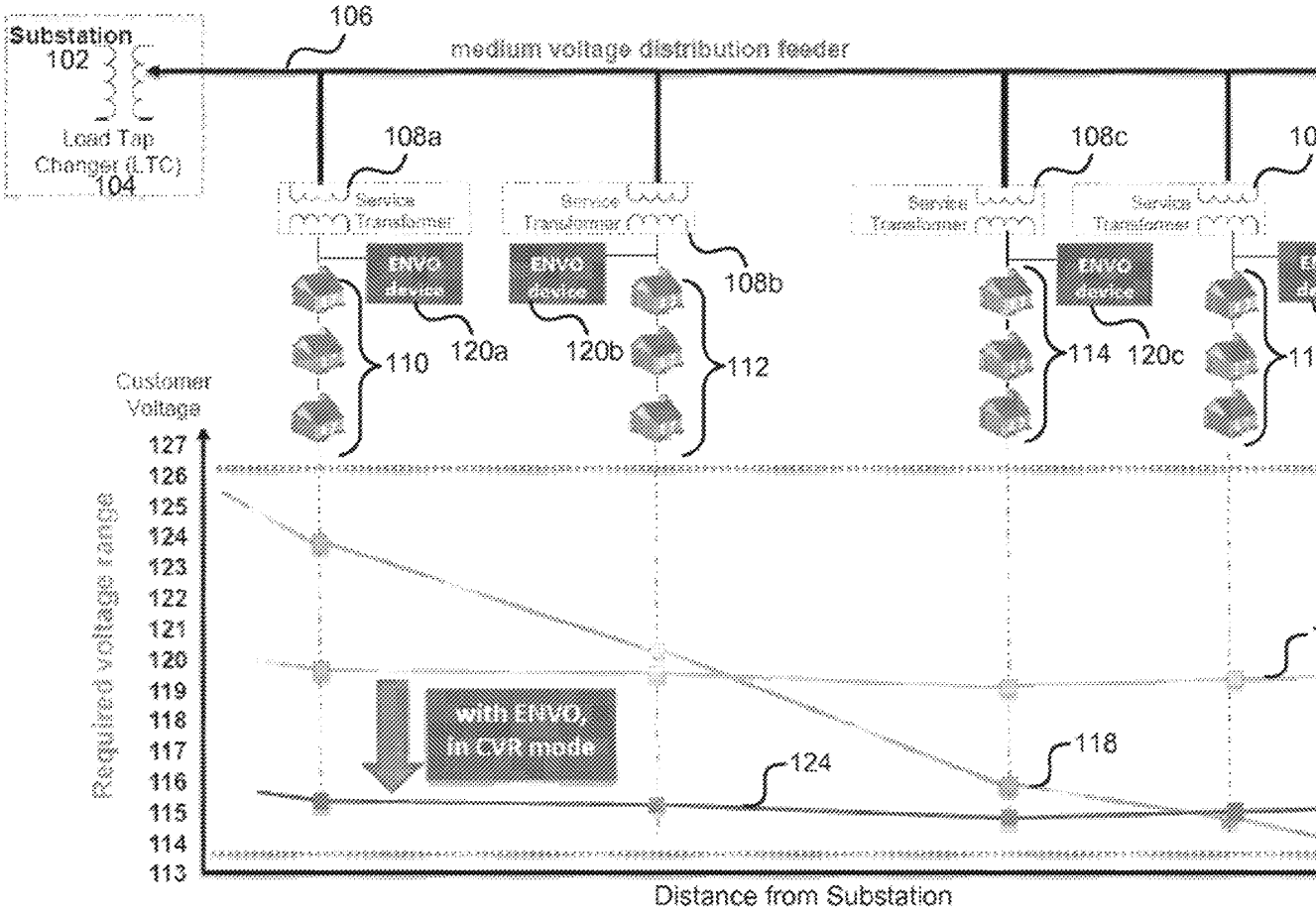

FIG. 1c

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