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(54) **METHODS AND SYSTEMS FOR DETECTION IN AN INDUSTRIAL INTERNET OF THINGS DATA COLLECTION ENVIRONMENT WITH FREQUENCY BAND ADJUSTMENTS FOR DIAGNOSING OIL AND GAS PRODUCTION EQUIPMENT**

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See application file for complete search history.

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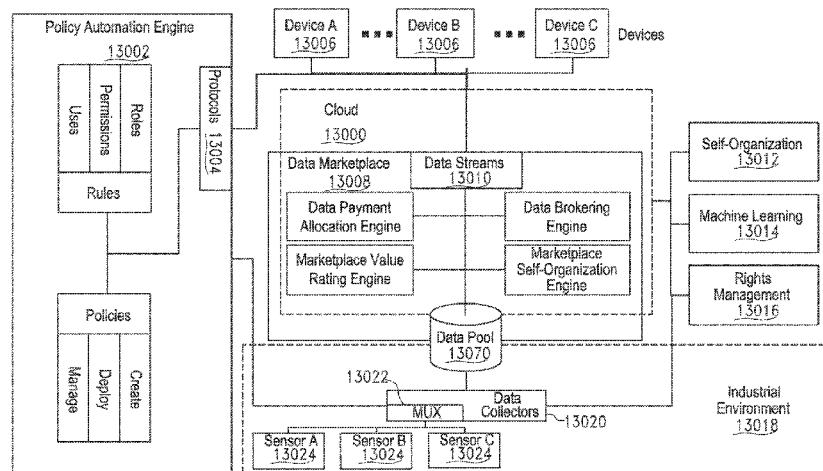
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(57) **ABSTRACT**

Methods and systems for a monitoring system for data collection in an industrial environment including a data collector communicatively coupled to a plurality of input channels connected to data collection points operatively coupled to at least one of an oil production component or gas production component; a data storage structured to store a plurality of diagnostic frequency band ranges for the at least one of an oil production component or gas production component; a data acquisition circuit structured to interpret

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a plurality of detection values from the plurality of input channels; and a data analysis circuit structured to analyze the plurality of detection values to determine measured frequency band data and compare the measured frequency band data to the plurality of diagnostic frequency band ranges, and to diagnose an operational parameter of the least one of an oil production component or gas production component in response to the comparison.

18 Claims, 238 Drawing Sheets

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