## SUMMARY

**[0004]** According to an aspect of the present specification, a system for non-invasive determination of target properties of a pressure vessel is provided. The system includes: a signal generator acoustically coupled to a fluid contained in the pressure vessel and disposed externally to the pressure vessel, the signal generator to emit acoustic signals into the pressure vessel; a plurality of sensors acoustically coupled to the fluid and disposed externally to the pressure vessel to detect the acoustic signals; a control device interconnected with the signal generator and the plurality of sensors, the control device configured to: control the signal generator to emit acoustic signals into the fluid; obtain sensor data from the plurality of sensors, the sensor data representing the acoustic signals as received by the plurality of sensors; compute, based on the detected signal data, the target properties of the pressure vessel; and output an indication of the target properties.

**[0005]** According to another aspect of the present specification, a non-invasive method for determining target properties of a pressure vessel is provided. The method includes: controlling a signal generator to emit acoustic signals into a fluid contained in the pressure vessel from externally to the pressure vessel; obtaining sensor data representing the acoustic signals as transmitted through the fluid, the sensor data obtained externally to the pressure vessel; computing, based on the sensor data, the target properties of the pressure vessel; and outputting an indication of the target properties.

## BRIEF DESCRIPTION OF DRAWINGS