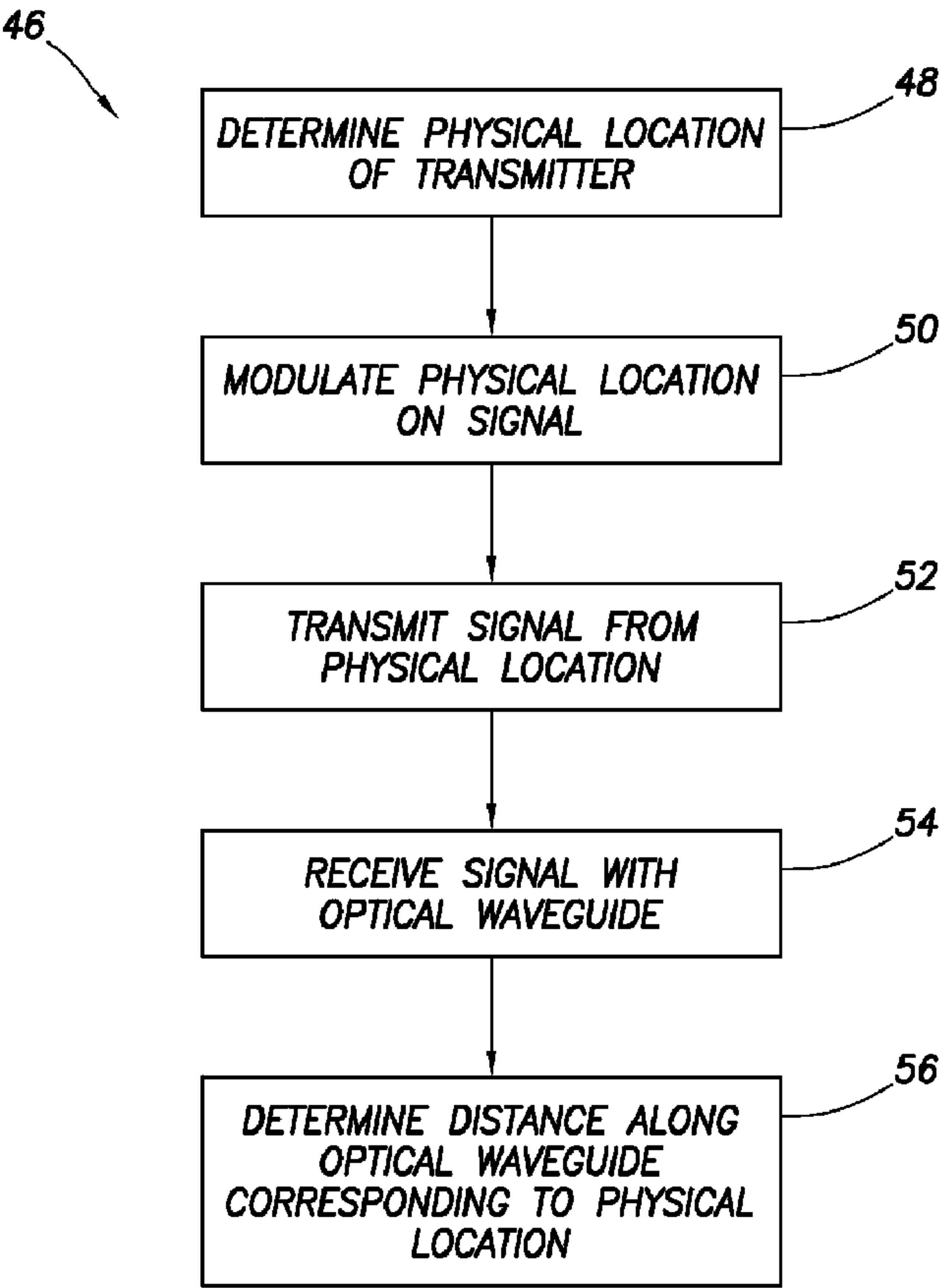




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(54) **Titre :** GEOLOCALISATION DE POSITIONS LE LONG DE GUIDES D'ONDES OPTIQUES
(54) **Title:** GEO-LOCATING POSITIONS ALONG OPTICAL WAVEGUIDES



(57) **Abrégé/Abstract:**
A method of correlating physical locations with respective positions along an optical waveguide can include transmitting to the waveguide a signal including an indication of the transmitting location, and the waveguide receiving the signal. A system for

(57) Abrégé(suite)/Abstract(continued):

correlating a physical location with a position along an optical waveguide can include a transmitter which transmits to the optical waveguide a signal including an indication of the transmitter location, and a computer which correlates the location to the position, based on the signal as received by the waveguide. A method of determining a position along an optical waveguide at which a signal is transmitted can include modulating on the signal an indication of a transmission location, and transmitting the signal to the waveguide, thereby causing vibration of the waveguide.

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(54) Title: GEO-LOCATING POSITIONS ALONG OPTICAL WAVEGUIDES

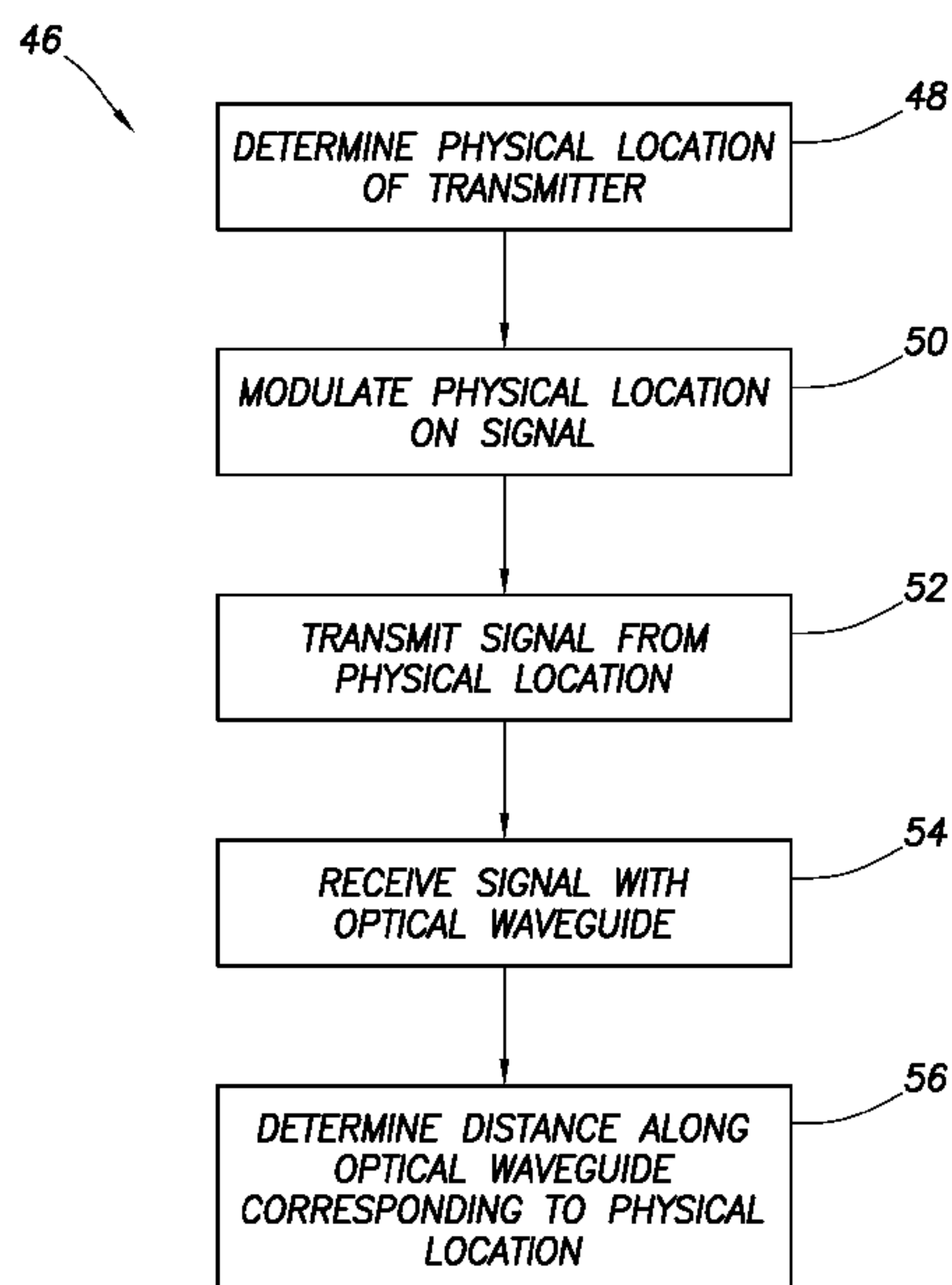


FIG. 4

(57) Abstract: A method of correlating physical locations with respective positions along an optical waveguide can include transmitting to the waveguide a signal including an indication of the transmitting location, and the waveguide receiving the signal. A system for correlating a physical location with a position along an optical waveguide can include a transmitter which transmits to the optical waveguide a signal including an indication of the transmitter location, and a computer which correlates the location to the position, based on the signal as received by the waveguide. A method of determining a position along an optical waveguide at which a signal is transmitted can include modulating on the signal an indication of a transmission location, and transmitting the signal to the waveguide, thereby causing vibration of the waveguide.

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— *as to applicant's entitlement to apply for and be granted
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GEO-LOCATING POSITIONS ALONG OPTICAL WAVEGUIDES

TECHNICAL FIELD

10 This disclosure relates generally to equipment utilized and operations performed in conjunction with optical sensors and, in an example described below, more particularly provides for geo-locating positions along optical waveguides.

15

BACKGROUND

 An optical waveguide can be used for sensing one or more parameters (such as, temperature, pressure, vibration, chemistry, pH, etc.) as distributed along the waveguide.

20 However, it can be difficult to correlate a distance or position along the waveguide with a physical location of the sensed property.

 Therefore, it will be appreciated that improvements are continually needed in the art of sensing parameters with

25 optical waveguides. These improvements can be useful whether or not a property is sensed as distributed along the waveguide, or the property is sensed at one or more discreet positions along the waveguide.

- 2b -

Fiber optic sensing using distributed (or quasi-distributed) multiplexed sensors has been employed for monitoring a variety of physical structures, including power cables, pipelines, bridges, dams, liquefied natural
5 gas plants, chemical plants, mine shafts and oil wells, for example. Parameters such as temperature, pressure, deformation, vibration, acoustics, pH, chemical concentration and others have been measured using

