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(54) **MAPPING SYSTEM FOR THE INTEGRATION AND GRAPHICAL DISPLAY OF PIPELINE INFORMATION THAT ENABLES AUTOMATED PIPELINE SURVEILLANCE**

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(52) **U.S. Cl.** **382/103**; 348/144
(58) **Field of Search** ..... 382/100, 106, 382/109, 113, 141, 218, 284, 294, 103, 152, 181, 190, 202, 260, 291, 303, 307; 73/865.8, 592; 348/82, 84, 144; 356/51, 139.01, 397, 247; 378/58, 59; 405/174, 184; 250/330, 334; 701/213; 345/113; 396/9; 244/158 R, 159

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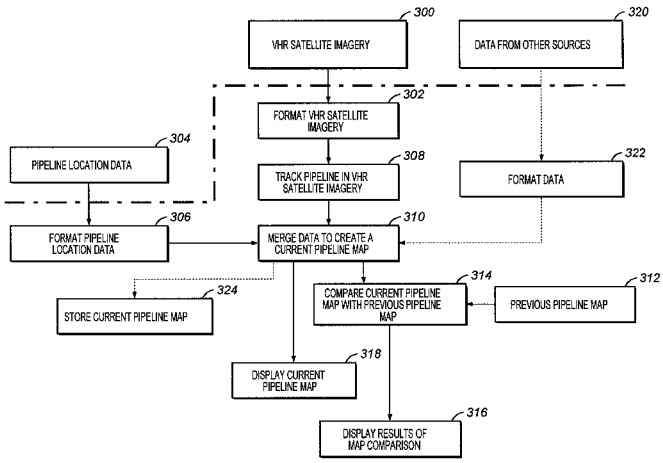
(57) **ABSTRACT**

Pipeline data and satellite data are used to provide surveillance for a pipeline. The satellite data is integrated with the pipeline data to produce a current pipeline map. The current pipeline map is then compared with a previous pipeline map to determine whether the route of the pipeline or a surrounding environment of the pipeline has changed. The satellite data includes very high resolution (VHR) satellite imagery and the pipeline data includes location data that is a series of global positioning system (GPS) coordinates.

24 Claims, 4 Drawing Sheets