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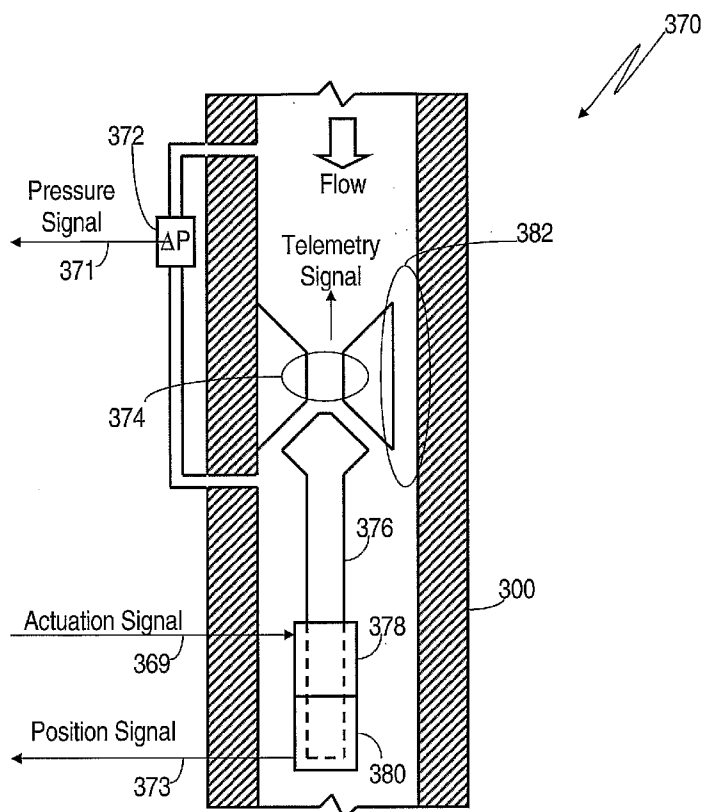
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FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,
RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,
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[Continued on next page]

(54) Title: METHODS AND SYSTEMS FOR TRANSMITTING AND RECEIVING A DISCRETE MULTI-TONE MODULATED SIGNAL IN A FLUID



(57) Abstract: Methods and systems for transmitting and receiving discrete multi-tone (DMT) modulated signals in a fluid is shown in Figure 3E. An input signal is applied to an actuator (380) which produces an actuation signal for mud pulser (376) to create pressure differences in a fluid. The pressure difference represents input data which are represented by modulating the fluid. The modulation is performed by a plurality of evenly spaced frequency bins.



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INTERNATIONAL SEARCH REPORT

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IPC: G01V 3/00(2006.01)

USPC: 340/855.3

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 340/855.3, 856.3; 367/85; 370/464

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,880,634 A (GARDNER et al) 19 April 2005	
A	US 6,657,551 A (HUCKABA et al) 02 December 2003	



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T"
"A" document defining the general state of the art which is not considered to be of particular relevance	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
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Continuation of B. FIELDS SEARCHED Item 3:

EAST

search terms: DMT, discrete multi-tone, fluid, wellbore, transmit, bin, frequency