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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MICRO MOTION, INC.

Petitioner

v.

INVENSYS SYSTEMS, INC.

Patent Owner

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Case IPR 2014-00393

U.S. Patent No. 7,571,062

Issue Date: August 4, 2009

Title: DIGITAL FLOWMETER

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**PATENT OWNER MOTION FOR OBSERVATIONS**

## I. INTRODUCTION

As authorized by the Board in its Order of August 4, 2014, IPR 2014-00393, Paper No. 17, Patent Owner submits the following Observations on Exhibit 2027 (the transcript for the cross-examination testimony of Dr. Michael D. Sidman dated November 11, 2014). This cross-examination was taken in connection with IPR2014-00170 after Micro Motion submitted the Supplemental Declaration of Dr. Michael D. Sidman as Exhibit 1154 in IPR2014-00170. In view of the fact that the identical declaration (including the caption for IPR2014-00170) was submitted by Micro Motion and relied on in its Reply (Paper 32) in this *inter partes* review as Ex. 1068, Patent Owner believes it is authorized to file this Motion For Observations, and requests consideration of the same.

## II. OBSERVATIONS

In Exhibit 2027 at 24:10-25:4, Dr. Sidman admitted that the statement in Romano (Ex. 1006) at 18:46-49 that the analog drive circuit of Figs. 2 and 4 of Romano “produces a drive signal that is in phase with the sum of the left and right velocity sensor waveforms” is *not* true with respect to all Coriolis flow meters. This admission is relevant because it contradicts the assertion in paragraph 5 of Dr. Sidman’s Supplemental Declaration (Ex. 1068) that Romano discloses that the drive signal *must* be synchronized to the oscillation of the flow tube in a Coriolis

flow meter, and the assertion in that same paragraph that the Romano's digital drive embodiment also must "use the left and right sensor signals to produce an in-phase drive signal." This testimony therefore undermines Dr. Sidman's assertion that Romano's digital drive embodiment (the only embodiment relied on in his first declaration and the Petition) anticipates claim 1 because, without a disclosure in Romano that the right velocity sensor signal is used to generate the drive signal, there is no basis for Dr. Sidman's assertion that phase adjustment applied to the right velocity sensor signal in the digital drive embodiment would propagate through to the drive signal.

In Exhibit 2027 at 110:17-25, Dr. Sidman admitted that he didn't know whether it was necessary to use both the left and right velocity sensor signals to generate a drive signal in order to have a commercially acceptable Coriolis flow meter. This testimony is relevant because it further undermines any implication in paragraph 5 of Dr. Sidman's Supplemental Declaration (Ex. 1068) that one of skill in the art would understand that Romano's digital drive embodiment necessarily uses both the left and right channel sensor signals to produce an in-phase drive signal.

In Exhibit 2027 at 91:12-95:23, Dr. Sidman admitted that it would be possible that Romano's digital drive embodiment could begin generating a drive

signal that was initially out of phase with the motion of the Coriolis meter flow tube by as much as the maximum phase difference of 180 degrees, and that in response to this drive signal the Coriolis meter flow tube would, after a transition period, vibrate at the same phase as the drive signal. This admission is relevant because it contradicts the implied assertion in paragraph 5 of Dr. Sidman's Supplemental Declaration (an assertion not found in the Petition or in Dr. Sidman's original declaration) that Romano's digital drive embodiment must adjust the phase of the drive signal to synchronize it to the oscillation of the flow tube to compensate for any delay in any component connected between the sensor and the driver. Dr. Sidman's admission is further relevant because it also makes clear that Romano's digital drive embodiment could, once the resonant frequency is determined using a discrete Fourier transform (DFT), begin generating a drive signal precisely as described at 24:32-60 of Romano without making any phase adjustment to synchronize the drive signal to the oscillation of the flow tube, contrary to the assertion in paragraph 5 of Dr. Sidman's Supplemental Declaration.

In Exhibit 2027 at 33:7-15, Dr. Sidman admitted that the analog drive circuit of Figs. 2 and 4 of Romano does not adjust the phase of the drive signal. This admission is relevant because, if one of skill in the art were to interpret Romano's digital drive embodiment to use the "same scheme" as Romano's analog drive

embodiment as asserted in paragraph 4 of Dr. Sidman's Supplemental Declaration (Ex. 1068), such a person could conclude that Romano's digital drive embodiment also does not adjust the phase of the drive signal and therefore does not anticipate claim 1 of the '062 patent.

In Exhibit 2027 at 46:20-47:2; 48:23-49:19 and 51:5-66:20, Dr. Sidman admitted that: (1) it was his position that Romano disclosed that the microprocessor 330 adds the left and right velocity sensor signals to generate the drive signal; (2) that Romano describes the software executed by the microprocessor 330 in Figs. 6-13; and (3) that he could not find any disclosure in Figs. 6-13, or in the corresponding detailed description of those figures in the specification from 26:52 through 41:45, of the microprocessor 330 adding the left and right velocity sensor signals to generate the drive signal. This admission is significant because it directly contradicts Dr. Sidman's assertion in paragraph 5 of Ex. 1068 that Romano discloses that Romano's digital drive embodiment combines the left and right velocity sensor signals to generate the drive signal, and therefore undermines Dr. Sidman's assertion that Romano's digital drive embodiment anticipates claim 1 of the '062 patent.

In Exhibit 2027 at 70:11-71:16, Dr. Sidman admitted that the DFT routine 700 described in Romano at 30:47-32:13 is the software routine executed by the

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