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Datasheet for the decision of 2 November 2018

Case Number: T 1619/15 - 3.4.02

Application Number: 05790599.4

Publication Number: 1806560

IPC: G01C19/00, G01C19/56, G01C21/16, G01C25/00, G01P9/04

Language of the proceedings: EN

Title of invention:
ANGULAR VELOCITY SENSOR UNIT AND ANGULAR VELOCITY SENSOR DIAGNOSING DEVICE

Applicant:
Conversant Intellectual Property Management, Inc.

Headword:

Relevant legal provisions:
EPC 1973 Art. 83

Keyword:
Sufficiency of disclosure - (no)

Decisions cited:

Catchword:

Europäisches Patentamt
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Case Number: T 1619/15 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 2 November 2018

Appellant: (Applicant)	Conversant Intellectual Property Management, Inc. 515 Legget Drive, Suite 704 Ottawa, ON K2K 3G4 (CA)
Representative:	Swindell & Pearson Limited 48 Friar Gate Derby DE1 1GY (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 26 March 2015 refusing European patent application No. 05790599.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	R. Bekkering
Members:	A. Hornung
	G. Decker

Summary of Facts and Submissions

I. The applicant appealed against the decision of the examining division refusing European patent application No. 05790599.4 on the basis of Article 83 EPC.

II. According to the statement setting out the grounds of appeal, the applicant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims filed with the letter of 12 December 2013.

As a precaution, the applicant requested oral proceedings.

III. In a communication annexed to a summons to oral proceedings, the board informed the applicant about its provisional and non-binding opinion according to which, *inter alia*, the invention was not sufficiently disclosed within the meaning of Article 83 EPC 1973.

IV. The board's opinion concerning lack of sufficiency of disclosure of the invention was worded as follows (see point **5** of the communication annexed to the summons):

"**5.** Sufficiency of disclosure

5.1 The board, concurring with the appealed decision, is of the provisional and non-binding opinion that the invention is not sufficiently disclosed within the meaning of Article 83 EPC 1973.

More precisely, the board is of the opinion that the application does not disclose how the first failure judging circuit (14) of claim 1 is configured to achieve the objective defined in claim 1, i.e. "to judge a failure of

the second angular velocity sensor (13) based on whether or not a detection value of an angular velocity about the Z-axis lies outside a tolerance range of a detection value of an angular velocity about the Z-axis by the first angular velocity sensor (12)".

The reason for the board's opinion is as follows (see also the reasons given in particular in paragraph 2.4 of the appealed decision):

The above-mentioned objective "to judge a failure of the second angular velocity sensor (13)" uses twice the expression "a detection value of an angular velocity about the Z-axis". While it is explicit in claim 1 that the second use of the expression "a detection value of an angular velocity about the Z-axis" refers to a detection value obtained by the first angular velocity sensor (12), it is unclear to which detection value refers the first use of said expression (Article 84 EPC 1973). In view of the overall disclosure of the application it seems to be appropriate to assume that the first use of said expression refers to a detection value obtained by the second angular velocity sensor (13). However, the exact kind of detection value provided by said second sensor remains obscure.

According to claim 1, the second sensor (13) has a shaft portion arranged obliquely to the X-axis and the Z-axis. The inclination angle of the shaft portion with respect to the X-axis, hence of the measuring axis of the second sensor (13), was referred to in the first-instance proceedings as being the angle α. The second sensor (13) provides a measurement Ω_{13} of the angular velocity of the movable body projected onto the measurement axis of the second sensor. Assuming the general situation of a movable body characterized by an arbitrary and unknown angular velocity Ω along an axis inclined by an arbitrary and unknown angle β

with respect to the X-axis, the signal Ω_{13} measured by the second angular velocity sensor (13) appears to equal $\Omega_{13} = \Omega * \cos(\beta-\alpha)$. In other words, a given signal Ω_{13}, measured by the second sensor (13), is not linked to a unique movement of the movable body defined by a unique couple of values Ω and β.

In view of the fact that a given signal Ω_{13} corresponds to an arbitrary movement (Ω, β) of the movable body, it is obscure how the second angular velocity sensor (13) can provide a detection value Ω_{13} of an angular velocity about the Z-axis being compared in a meaningful manner with the detection value Ω_{12} provided by the first sensor (12). No further information clarifying the functioning of the second sensor appears to be provided in the description as filed.

It is to be noted that the arguments above are based on the assumption that the movement of the body is limited to an angular movement along Z and X axes only. Claim 1 is actually not accordingly limited. When considering a movement of the body over the whole scope of the claim, i.e. including the possibility of a Y-component of the angular velocity, the issue that the signal provided by the second sensor (13) provides no useful information for judging a failure of the second sensor (13) appears to be exacerbated.

5.2 The arguments provided by the applicant in the grounds of appeal do not appear to be convincing.

Since signal Ω_{13} depends inter alia on the angle β, formulas 1 and 2, referred to on pages 2 and 3 of the applicant's grounds of appeal, seem to be incorrect in the sense that the parameters Ω_Z and Ω_X used in these formulas do not represent the real Z-axis (yaw) and X-axis (roll) components of the body's movement. Formula 3 of the grounds of appeal,

i.e. $\Omega_{12} = \Omega_Z$ appears to be correct. However, parameter Ω_Z referred to in formula 3 designates a different component of movement than the parameter Ω_Z referred to in formulas 1 and 2. Therefore, formulas 4 and 5, including the applicant's conclusion that the application was sufficiently disclosed, do not seem to be correct either."

V. In response to the summons to oral proceedings, the applicant informed the board with its letter dated 8 October 2018 that it decided not to attend or be represented at the oral proceedings. The applicant did not file any comments concerning the board's preliminary opinion as annexed to the summons.

VI. Following the applicant's letter of 8 October 2018, the oral proceedings were cancelled.

VII. Independent claim 1 according to the main request reads as follows:

"An angular velocity sensor diagnosing device (20) to be mounted in a movable body (11) being an airplane, automobile, robot, ship or vehicle, comprising:

an angular velocity sensor unit (10) including two angular velocity sensors (12, 13) each having an oscillator (17) having a shaft portion (15) and an oscillatory portion (16), wherein:

a first angular velocity sensor (12) which is one of the two angular velocity sensors (12, 13) is arranged such that the shaft portion (15) thereof is parallel to a Z-axis of the movable body (11) and a second angular velocity sensor (13) which is one of the two angular velocity sensors (12, 13) is arranged such that the shaft portion (15) thereof is oblique both to an X-axis of the movable body (11) and the Z-axis of

three orthogonal axes; wherein the X-axis defines a forward direction of the movable body (11), and the Z-axis defines an upward direction of the movable body (11);

a first failure judging circuit (14) configured to judge a failure of the second angular velocity sensor (13) based on whether or not a detection value of an angular velocity about the Z-axis lies outside a tolerance range of a detection value of an angular velocity about the Z-axis by the first angular velocity sensor (12), and

a second failure judging circuit (19) configured to judge a failure of the first angular velocity sensor (12) by comparison with an angular velocity calculated by a sensor, mounted in the movable body (11), which is capable of deriving the angular velocity from a speed of the movable body (11), a steering angle of the movable body (11) and acceleration of the movable body (11);

wherein the comparison is performed by means of a comparator (22) which receives the angular velocity calculated by the sensor which is mounted in the movable body (11)."

Reasons for the Decision

1. In its letter dated 8 October 2018 the applicant stated "... *the applicant wishes to avoid further expenditure on this case and, as a cost saving measure, ... has decided not to attend or be represented at the oral proceedings*". This statement is considered equivalent to a withdrawal of the request for oral proceedings (see Case Law of the Boards of Appeal, 8th edition 2016, section III.C.2.3.1 and further references cited there). Consequently, the oral proceedings were cancelled and an immediate decision on the file as it stood was taken.

2. In the communication annexed to the summons to oral proceedings (see point IV. above), the board expressed its preliminary opinion, along with the underlying reasons, that the patent application did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art and that the applicant's arguments in favour of sufficiency of disclosure, filed with the grounds of appeal, were not convincing. The applicant did neither rebut the board's provisional opinion, nor submit any new requests aiming at overcoming the objections. The board sees no reason to deviate from its preliminary opinion, which therefore becomes final.

It follows that the invention is not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 83 EPC 1973).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Kiehl R. Bekkering

Decision electronically authenticated