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Datasheet for the decision of 2 February 2012

Case Number: T 0534/09 - 3.2.01

Application Number: 05014887.3

Publication Number: 1614578

IPC: B60K 31/04

Language of the proceedings: EN

Title of invention:
After market electronic cruise control

Applicant:
Lite-on Automotive Electronics (Europe) B.V.

Opponent:
-

Headword:
-

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 83

Keyword:
"Sufficiency of disclosure (yes)"
"Remittal to the first instance"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0534/09 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 2 February 2012

Appellant: (Applicant)
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Representative:
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Decision under appeal:
Decision of the Examining Division of the European Patent Office posted 22 September 2008 refusing European patent application No. 05014887.3 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: G. Pricolo
Members: H. Geuss
D. T. Keeling

Summary of Facts and Submissions

I. The appeal is directed against the decision posted 22 September 2008 refusing the European patent application No. 05014887.3.

II. The examining division held that the main request and the first and second auxiliary request did not meet the requirements of Article 83 EPC.

III. The appellant (applicant) requests that the decision under appeal be set aside and the patent granted on the basis of the main request, first auxiliary request or second auxiliary request of the underlying decision or on the basis of the third auxiliary request as filed with the grounds of appeal or to refer the case back to the department of first instance for a discussion of novelty and inventive step.

IV. Claim 1 according to the main request reads as follows:

An after market cruise speed control system for driving motors and engines at a desired constant speed, more particularly for vehicles, which comprises:

(a) a cruise speed control unit (10) to provide electronic control signals (11) for a desired speed given by an operation element (12) that is manipulated by an operator to a desired cruise speed;

(b) a power control equipment (20) of a propulsion motor (21), for example for supplying fuel to a combustion chamber of an internal combustion engine; and

(c) a mechanical accelerating transmitter to be operated by a driver, such as an accelerator pedal (30), providing an electric signal output (31), said output producing an output signal (32) in dependence upon the position of the mechanical accelerating transmitter and

(d) a motor management system (50) for processing output signals (32) of the signal output (31), and for electrically driving the power control equipment (20),

(e) further comprising an interface unit (40) that is inserted between the electric signal output (31) of the accelerating transmitter and the motor management system (50) for transmitting the control signal (11) of the cruise speed control unit (10) to the motor management system (50) in order to control the power control equipment (20), and

(f) the interface unit (40) is so equipped that it transmits the output signal (32) when the cruise control is in its switched off status and the control signal (11) or - if required - a combination signal of both signals to the motor management system (50) when the cruise control is in its switched on status.

V. In coming to its decision, the examining division considered that the application did not disclose "how the interface shall be carried out in order to provide a mixed signal". Furthermore, it considered that the application did not disclose sufficiently how the interface has to be carried out in order to know which "mode of signal" must be provided to the motor

management system (cf. decision of the examining division, page 7, point 8 and page 8, point 4).

VI. The appellant's submissions may be summarized as follows:

A "mode of signal" is not recited in any of the claims. Instead, the "mode of signal" is used in the description of a preferred embodiment which is not essential or necessary for the invention. In the description it is explained (see the paragraph bridging pages 7 and 8) that the interface unit 40 has to know which mode of signal must be transmitted to the motor management system 50. The interface unit learns which mode of signal is required from operation of the accelerator pedal module. The learning comprises a complete spectrum of all possible signal outcomes of the accelerator pedal that will be transmitted to the interface unit when the accelerator pedal is pressed.

The application also clearly discloses what is meant by mixed signal. On page 3, second paragraph of the application as filed, it is explained that the output signal of the interface unit 40 which is received by the motor management system 50 "is shaped in such a way that it provides the steering signal of the cruise control, or the accelerator pedal, or a combination of the two". These three options are explained in detail in the sentence bridging pages 6 and 7 of the application as filed. For a skilled person, it is obvious that in the switched-on state, either the signal from the cruise speed control 10 defines the speed of the vehicle, or, in case that the accelerator pedal 30 is pressed, a combination of the signal of the

cruise speed control 10 and the accelerator pedal position is in such a way, that by depressing the accelerator pedal with an activated cruise speed control, the car accelerates. This is a known feature on OEM cruise control equipped cars.

The particular type of mixing, be it adding of voltages etc., is not required to be explicitly disclosed in the application.

Reasons for the Decision

1. The application meets the requirements of Article 83 EPC 1973.

1.1 According to Article 83 the European Patent application shall disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

1.2 When assessing sufficiency of disclosure, the common general knowledge of the skilled person must be taken into account. Hence, the skilled person may use his common general knowledge to supplement the information contained in the application, see e.g. T 206/83.

1.2.1 The application as originally filed discloses an after market cruise control having no need to integrate a servo motor for engaging an accelerator, such as an accelerator pedal, for controlling the desired speed, since an interface gives the electronic signal of the cruise control, or of the accelerator pedal, or a combination of the two, to the electronic motor management which drives the power control equipment of the motor, whereby the interface unit is located between the accelerator pedal having an electronic output signal and the electronic motor management (cf. page 3, lines 6 to 15; page 7, lines 7 to 9).

1.2.2 It is generally known to a skilled person that common cruise control systems, when activated, offer the possibility for the driver to override the speed set with the cruise control by pressing the accelerator pedal. In this case the speed of the vehicle becomes

higher than the set speed, and vehicle speed is controlled by the driver instead of the cruise control system. If the accelerator pedal is released the vehicle falls back to the speed value programmed in the cruise control system.

It is further generally known that the activation of the brake pedal may lead to a switch-off of the cruise control system so that full control of the vehicle speed is given back to the driver. This well-known characteristic of common cruise control systems is also mentioned in the application in connection with the description of safety functions, cf. page 8, lines 23 et seq.

1.2.3 Having regard to this common general knowledge of a person skilled in vehicle technology, it is clear what is meant by a **mixed signal**, even though this has not been explained explicitly in the application documents; in particular it is clear how a mixed signal could be composed and how the interface should function to achieve such a mixed signal.

The application states that a mixed signal is a combination of the signal of the cruise control unit (10, signal 11) for controlling the motor to keep a programmed speed and of the signal (32) coming from the accelerator pedal module (31, cf. page 3, lines 12 and 13; page 7, lines 2 to 9).

With the general technical background as discussed under 1.2.2 (above) it is evident what happens in case both signals are present and how the interface shapes the mixed signal that it transmits to the motor

management system. For example, if during operation of the cruise control the driver presses the accelerator pedal, then the interface unit will output a signal which combines the signals of the cruise control and of the accelerator to achieve a speed which is higher than that set by the cruise control. Furthermore, the interface unit might interrupt such acceleration if a safety function for preventing over-speeding is activated, as described on page 8, last paragraph, of the application as filed.

In the Board's view there is no difficulty for a skilled person to combine the signals (11, 32) coming from the cruise control (10) and from the accelerator (30) to achieve these and other functionalities, such as the further safety functionalities disclosed at the end of page 8 of the application as filed. In particular it is not necessary to disclose rules or algorithms which may depend on a specific functionality which is – as such - not relevant for the invention. For the Board it is clear that *mixed signal* implies that the signals from the accelerator pedal module and the cruise control unit will be recognized and processed in order to control the power control equipment of the motor. In this context, the specific manner of combining the signals, e.g. whether they are summed up or if the interface chooses always the greater signal, is irrelevant. Both – and other – possibilities would be devised by a skilled person without the exercise of any inventive skills in order to put in practice the disclosed mixed signal.

1.2.4 The expressions *"combination of the two"* on page 3, line 13 and *"combination signal of both signals"* in the

wording of claim 1 clearly have a meaning which is identical to that of the "mixed signal" mentioned in the first paragraph of page 7 of the application's description and discussed hereinabove. Thus, despite the formal inconsistency caused by the use of different terms in the description, there is no difficulty for a skilled person to put in practice feature f) of claim 1 relating to "a combination signal of both signals".

1.3 With respect to the functionality of the "**mode of signal**" and its definition, the description of the application on page 7, last paragraph states that the interface unit 40 manages the signals coming from the cruise control unit 10 and the accelerator pedal unit 31 in a way that different power demands on the motor (e.g. going uphill and downhill at a constant speed) are considered (cf. page 7, lines 21 and 22). The interface unit provides a signal to the motor management system 50 dependent on the signal of the cruise control unit 10 (cf. page 7, lines 18 to 21).

1.3.1 The skilled person knows that - in particular in after market systems - it has to be made sure that the interface unit "understands", i.e. is compatible with, the signal of a specific vehicle's accelerator and furthermore that the interface is able to provide the corresponding signal which is compatible with the specific motor management system of the vehicle in question (i.e. the specific vehicle to retrofit with a cruise control).

Moreover, the skilled person knows that these signals may vary depending on the type of vehicle, in terms of voltage levels, relation between the change of input

level and corresponding output level, digital or analogue transmission, bit rate, etc. Consequently, it is also obvious that the interface has to "know" what kind of signal (the so called *mode of signal*) is suitable to control the motor management system, i.e. what kind of signal has to be transmitted to increase power to go uphill, for example (cf. page 7, lines 23 and 24).

1.3.2 In this context the description on page 7, lines 24 et seq. depicts in a clear manner how the cruise control as a retrofit part should be designed to be used in vehicles coming from different manufactures, *scilicet* to “maintain the universality, the present invention has advantageously proved that the interface unit (40) learns independently which mode is required and sends the necessary signal. In that case, it is possible that the output signal (32) coming from the signal output (31) is "known" by the interface unit (40)".

Furthermore, the skilled person understands from the passage on page 7, lines 28 et seq. which explains that "a short learning phase is required to learn a rule, and a complete spectrum of all possible signal-outcomes will be transmitted to the interface unit (40) when the accelerator is pressed" that the interface itself is able to "read" and to analyse the signal output from the accelerator pedal module 31. The output of the accelerator pedal module 31 is the *mode of signal* that the motor management system expects. In this way, the retrofit interface "learns" from the accelerator pedal module, during use thereof, the specific characteristics of the signal outputted by the

accelerator pedal module such that it can reproduce them for providing a correct signal to the motor management system.

An alternative to this procedure which is explained on page 8, lines 8 et seq. foresees that the vehicle specific connector type is recognized by the interface unit, whereby "all information will be known by the interface unit".

Accordingly, the skilled person would have no difficulties in designing an interface unit providing a suitable "mode of signal" to be transmitted to the motor management system in order to control the power control equipment.

1.4 It remains to be mentioned that the fact that signal 11 is denoted in the application both as a control signal (see page 10 and claim 1) and as **a switch signal** (see e.g. page 7, lines 3-6) does not result in an insufficiency of disclosure within the terms of Article 83 EPC, because it is clear, irrespective of its denomination, that signal 11 must be a signal suited for controlling the power control equipment. In fact, under specific circumstances, signal 11 might well be a switch (or a switched) signal.

2. Having regard to the above, the reasons given by the examining division for the refusal of the application on the ground that the requirements of Article 83 EPC are not met, do not convince the Board. The appellant's request for grant of a patent on the basis of the main request requires, however, further examination in particular on the question of whether the claims define

patentable subject matter in the sense of Article 52(1) EPC with regard to the prior art. Consequently, the decision under appeal must be set aside and, in view of the above consideration, the Board finds it appropriate to exercise its power under Article 111(1) EPC and to remit the case to the department of first instance for further prosecution.

Request for oral proceedings

3. Since the decision under appeal is to be set aside and the appellant has requested oral proceedings only in the event that neither the main nor one of its auxiliary requests, including referring the case back to the examining division for a discussion of novelty and inventive step, were allowed by the Board, there is no need to hold oral proceedings at this stage of the procedure. It is however noted that the present decision is only binding for the examining division in respect of Article 83 EPC 1973 and in so far as the facts are the same (Article 111(2) EPC). Thus the present decision cannot have the effect of limiting the extent of examination by the examining division to the sole issues of novelty and inventive step.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The case is remitted to the first instance for further prosecution.

The Registrar: The Chairman:

A. Vottner G. Pricolo