Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 26 February 2026

Case Number: T 0299/24 - 3.5.05

Application Number: 21799112.4

Publication Number: 4042715

IPC: H04R1/46, H04R5/02

Language of the proceedings: EN

Title of invention:
Headrest provided with a system for two-way sound transmission by bone conduction

Applicant:
MFI Italy Engineering S.r.l.

Headword:
Bone-conduction transducers/MFI ITALY

Relevant legal provisions:
EPC Art. 56, 139
RPBA 2020 Art. 12(6)

Keywords:

Request for correction under R. 139 EPC - corrected main request (refused): no obvious error with obvious correction
Inventive step - corrected and former main request (no): routine design choice
Admittance of claim requests filed with the appeal - auxiliary requests 1 and 2 (no): should have been submitted earlier

Decisions cited:

G 0003/89, G 0011/91

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0

Case Number: T 0299/24 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 26 February 2026

Appellant: (Applicant)	MFI Italy Engineering S.r.l. Via Monte di Pietà 19 20121 Milano (IT)
Representative:	Baldi, Stefano Interpatent S.R.L. Via Caboto, 35 10129 Torino (IT)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 27 October 2023 refusing European patent application No. 21799112.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	K. Bengi-Akyürek
Members:	K. Peirs
	J. Hoppe

Summary of Facts and Submissions

I. The appeal lies from the decision of the examining division to refuse the present application. The examining division deemed the main request and the auxiliary request underlying the appealed decision not to be allowable under Articles 56 and 123(2) EPC respectively.

In the appealed decision, the examining division took into account the following prior-art documents:

D1: JP 2005-118248 A;
D2: JP 2004-83004 A;
D5: US 10,582,295 B1;
D6: CN 206042080 U.

II. Oral proceedings before the board were held on 26 February 2026.

The appellant's final requests are that the decision under appeal be set aside and that a patent be granted based on a "**corrected main request**", filed with letter of 16 December 2025, or as an auxiliary measure based on a "**former main request**", filed on 20 February 2024, or based on either of **auxiliary requests 1 and 2**, filed on 20 February 2024.

At the end of the oral proceedings, the board's decision was announced.

III. Claim 1 of the **former main request** reads as follows (board's feature labelling):

(a) "Headrest (10), in particular headrest for vehicle seats,
(b) comprising a bone conduction two-way sound transmission system (1), which in turn comprises at least one bone conduction loudspeaker (5) and at least one bone conduction microphone (7),
(c) characterized in that said at least one bone conduction speaker (5) and said at least one bone conduction microphone (7) are arranged on a same printed circuit board (3),
(d) said at least one bone conduction speaker (5) and said at least one bone conduction microphone (7) being arranged at different locations on said same printed circuit board (3) and
(e) at least one layer of sound absorbing material being provided between said at least one bone 10 conduction speaker (5) and said at least one bone conduction microphone (7)."

IV. Claim 1 of the **corrected main request** differs from claim 1 of the former main request in that the expression "*, in particular headrest*" used in feature (a) has been deleted.

V. Claim 1 of **auxiliary request 1** differs from claim 1 of the former main request in that feature (c) has been replaced by the following feature (board's feature labelling and mark-up, the latter reflecting amendments vis-à-vis feature (c)):

(f) "characterized in that said at least one bone conduction speaker (5) and said at least one bone conduction microphone (7) are ~~arranged~~ mounted on a same printed circuit board (3),".

VI. Claim 1 of **auxiliary request 2** differs from claim 1 of auxiliary request 1 in that it further comprises, at the end, the following feature (board's feature labelling):

(g) ", and in that said headrest comprises a main body (12) and a headrest portion (16), which is separated from said main body and is connected to said main body so as to be movable relative to it, and wherein said bone conduction two-way sound transmission system (1) is received in said headrest portion (16)".

Reasons for the Decision

1. *Technical background*

1.1 The present application relates to a headrest, particularly for vehicle seats, that is equipped with a bone-conduction two-way sound-transmission system.

1.2 The problem that the application aims to solve is to provide a bone-conduction system that combines a simple and reliable structure with high acoustic performance. In particular, the application seeks to ensure a stable, optimal contact and an alignment between the transducers (i.e. the microphones and loudspeakers) and the user's head during use, whilst reducing manufacturing and assembly complexity.

1.3 The proposed solution involves arranging at least one bone-conduction speaker and at least one bone-conduction microphone at different locations on the same printed circuit board (PCB). To mitigate the acoustic feedback (referred to during the appeal

proceedings as "Larsen effect") inherently caused by placing both a vibration-generating speaker and a vibration-sensitive microphone on a shared structural substrate, at least one layer of "sound-absorbing material" (such as plastic) is provided between them.

1.4 Figure 2 (reproduced below) is the most illustrative figure for understanding the present invention. It depicts the sound-transmission system (1) comprising a printed circuit board, PCB (3), which may be flexible and which serves as a common mounting substrate. The bone-conduction speaker (5) and microphone (7) are arranged on this PCB, fixing their relative positions. Furthermore, the system can integrate additional electronic components onto the same PCB (3), such as a pressure sensor (9), a proximity sensor (11), a control unit (13) and actuators (15). In operation, the control unit (13) can receive measurement data from the sensors (9, 11) and send control signals to the actuators (15) to actively modify the position of the sound-transmission system (1), thereby maintaining optimal physical contact with the user's head.

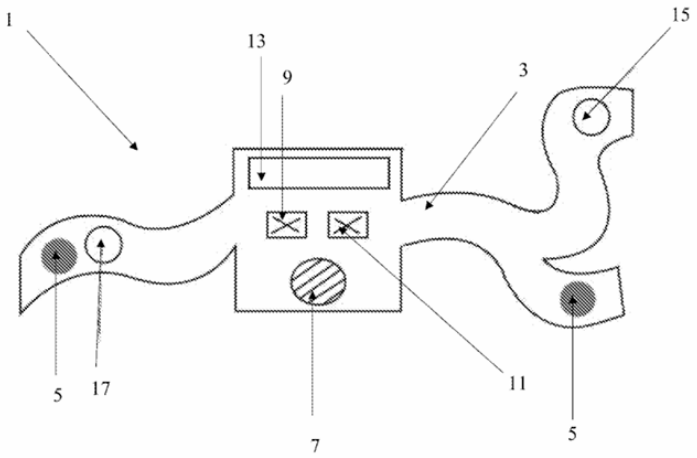

Fig. 2

2. *Corrected main request: request under Rule 139 EPC*

2.1 With its written reply to the board's communication under Article 15(1) RPBA, the applicant filed a **corrected main request**, replacing the phrase "*in particular headrest for vehicle seats*" in claim 1 with the wording "*headrest for vehicle seats*" (cf. point IV above). It framed this submission as a correction of an error under Rule 139 EPC.

2.2 The appellant argued that the filing of the broader "former main request" with the statement of grounds of appeal was simply a mistake. It submitted that neither the notice of appeal nor the statement of grounds of appeal referenced any replacement of the claim set or any amended claim wording. Furthermore, the appellant pointed out that the name of the attached file in EPO Form 1038 explicitly recited "*claims as currently pending*". Consequently, the appellant argued that it should have been undoubtedly clear that the intention was to file the main request that had been discussed before the examining division during the oral proceedings.

2.3 The board does not find these arguments convincing. Under Rule 139, second sentence, EPC, if a request for correction concerns the claims, the "*correction must be obvious in the sense that it is immediately evident that nothing else would have been intended than what is offered as the correction*". According to the established jurisprudence of the Boards of Appeal (see **G 3/89**, Reasons 5 and 6; **G 11/91**, Reasons 6), a two-step approach applies in this regard. It must first be established that it is obvious that an *error* is in fact present in the document filed with the EPO, the incorrect information having to be objectively

recognisable by the skilled reader using their common general knowledge. Secondly, the *correction* of the error must be obvious.

2.4 The appellant failed to convince the board that an error was objectively recognisable to begin with. A review of the appellant's substantive argumentation in the statement of grounds of appeal reveals that its entire defence revolves around the following technical points:

- The examining division's misinterpretation of document D1 regarding the placement of the "sound-absorbing material".

- The technical implications of the "Larsen effect" and the conventional solutions to physically separate the bone-conduction microphone and speaker as much as possible.

- The non-obviousness of mounting both the microphone and the speaker on a "*same printed circuit board*".

2.5 Crucially, nowhere in the statement of grounds of appeal does the appellant base any argument on the headrest being exclusively limited to a "*headrest for vehicle seats*". The appellant neither stated that claim 1 was restricted to overcome a specific objection, nor did it rely on the specific vehicle-seat environment to establish an inventive step. Because the appellant's technical arguments apply perfectly and seamlessly to the broader claim wording ("*in particular headrest for vehicle seats*") that was actually filed, the skilled reader reviewing the statement of grounds of appeal alongside the claims would find a coherent, self-consistent appeal case. There is thus no logical

disconnect that would alert the skilled reader to a mistake.

2.6 Furthermore, the phrase "*claims as currently pending*" used in EPO Form 1038 (and on page 18 of the statement of grounds of appeal) acts merely as a generic title that however fails to alert anyone to an accidental file swap, in particular in view of the explicitly recited wording of claim 1 on page 3 of the statement of grounds of appeal including the expression "*in particular headrest*" which the appellant presented as the main request that had been maintained throughout the examination proceedings (cf. statement of grounds of appeal, page 4: "*In this reply [to the examining division's communication of 19 September 2022], the amended claims as previously filed was maintained*"). Thus, to even suspect an error, the skilled reader would have to step outside the four corners of the statement of grounds of appeal, compare the attached claims with the claim sets refused by the examining division and notice the discrepancy. Even then, the discrepancy does not inherently present itself as a clerical mistake. Instead, it cannot be excluded that it was intended to be an unannounced amendment representing a broadening of the subject-matter, exactly as it was perceived by the board in its preliminary opinion. Moreover, it is not uncommon for an applicant to amend its claim requests in appeal proceedings, e.g. by attaching a new claim set to the statement of grounds of appeal. As a result, the appellant's filing in this regard was not clear and could be plausibly understood as an *intentional* act.

2.7 Thus, as the presence of an error is not immediately evident here, the stringent requirements for a correction under Rule 139 EPC remain unmet. As a

consequence, the board has refused the appellant's request for correction under Rule 139 EPC.

3. *Corrected main request: claim 1 - inventive step*

3.1 Since the request for correction under Rule 139 EPC has been refused, the "corrected" main request constitutes an "amendment" of the appellant's appeal case.

3.2 However, leaving the question of admittance aside, the board considers the "corrected main request" not to comply with Article 56 EPC. In this regard, the board endorses the examining division's assessment of inventive step set out in Reasons 10 of the appealed decision, for the following reasons.

3.3 Disclosure of D1 and distinguishing features

3.3.1 The appellant contested the examining division's assessment set out in Reasons 10.2 of the appealed decision that **feature (e)** — a "layer of sound-absorbing material" provided between the bone-conduction speaker and microphone — is disclosed by material 9 shown in Figure 4 and referred to in paragraph [0016] of document D1.

3.3.2 In that context, the appellant argued that document D1 physically separated the microphone and the speaker into entirely different portions of the headrest (i.e. portions "2a" and "2b" in Figure 4 of D1) to avoid acoustic feedback. It contended that these portions were moveable with respect to each other, making them incompatible with an arrangement on the same PCB lying in the same plane, contrary to the claimed subject-matter. Consequently, the appellant argued that D1 only disclosed the use of "sound-absorbing material"

between two moveable *headrest portions*, not directly between the *microphone* and the *speaker* on a common substrate.

3.3.3 The board does not find this argument convincing. As acknowledged by the appellant during the oral proceedings before the board, there is no disclosure in D1 indicating that the "headrest portions 2a and 2b" are indeed moveable with respect to each other. Quite the opposite, the board finds that the skilled reader of the disclosure of D1 would immediately recognise that the respective speaker and microphone are movable with respect to the *user's head* (as depicted in Figure 2 for instance) but not with respect to *each other*. Moreover, given that the speaker and the microphone are part of the same headrest structure, they are acoustically linked and prone to acoustic feedback, even if housed in separate portions (i.e. in portions "2a" and "2b"). In addition, the system of document D1 explicitly employs a damping material (9) to prevent this feedback between the two components (see the references in this regard mentioned in Reasons 10.2 of the appealed decision, namely Figure 4 and paragraph [0016] of D1).

3.3.4 Therefore and in agreement with the appealed decision, the distinguishing features of claim 1 over D1 reside solely in the arrangement of the speaker and the microphone at different locations on the same PCB (i.e. **features (c) and (d)**).

3.4 Objective technical problem

The examining division considered the objective technical problem to be "*how to facilitate the arrangement of the bone conduction transducers in the*

headrest" (cf. Reasons 10.2 of the appealed decision). The appellant contested this formulation and proposed two alternatives.

3.4.1 First, referring to paragraph [0027] of the application as filed, the appellant formulated the problem as "*how to reduce the time and costs for manufacturing a headrest which incorporates a bone-conduction two-way sound transmission system, while maintaining good performances of the sound system itself once hosted in the headrest*" (cf. also Reasons 10.4.1 of the appealed decision).

The board is not convinced. None of the claimed features actually relates to reducing time or costs, nor do they inherently guarantee acoustic performance. On the contrary, claim 1 is broad enough to encompass complex embodiments involving *multiple* loudspeakers, microphones and sound-absorbing layers located on a single PCB. Such configurations would likely increase manufacturing complexity and tuning requirements, potentially raising costs and exacerbating acoustic feedback, rather than reducing costs or reliably maintaining performance.

3.4.2 Second, referring to paragraph [0028] of the application as filed, the appellant proposed an alternative problem, namely "*how to guarantee that the transducers are arranged and maintained at the same, optimal position relative to the user's head*". The appellant argued that, to achieve a good signal-to-noise ratio, strict requirements dictated a stable contact and the avoidance of unintended vibrations (such as those caused by hair or friction). It contended that foam bodies, as used in documents **D1** and **D2**, failed to ensure a correct alignment. In

contrast, mounting the components on a fixed PCB as in the claimed headrest would securely maintain their relative positions and contact areas.

This argument must also fail because none of these alleged advantages are in fact reflected in the wording of claim 1. This claim does not specify the placement of the speaker and the microphone relative to the user, nor does it define any parameters ensuring the quality of the transmission to or from the user's skull or any optimal alignment. It merely requires the transducers to be on the same PCB. Crucially, claim 1 does not require a *rigid* PCB; it may encompass a *flexible* PCB (as explicitly stated in dependent claim 2 and paragraph [0035] of the description), which would be subject to the same mechanical disadvantages as the appellant alleged regarding the prior-art configurations. Furthermore, it would be readily apparent to the skilled reader of D1 that the transducers used in the system of D1 must also be adequately fixed within the headrest to exert pressure on the user's skull, rather than simply vibrating the surrounding foam. Merely arranging components on a shared PCB as expressed in features (c) and (d), without further defining the structural parameters, does not inherently solve an alignment or positioning problem.

3.4.3 The board therefore sees no reason to deviate from the objective technical problem as formulated by the examining division.

3.5 Obviousness

3.5.1 The examining division considered the arrangement of different electronic components, such as the

"bone-conduction microphones and speakers", on the same PCB to be a "known design choice" (Reasons 10.2.1 of the appealed decision).

The board agrees in this regard with the examining division to that extent that migrating the transducers shown in Figure 4 of D1 onto a single PCB to facilitate their arrangement is indeed an arbitrary, routine design choice. The board notes in addition that, because D1 already addresses the foreseeable acoustic feedback with a damping layer, retaining this standard damping material when migrating the transducers to a single PCB constitutes an obvious engineering equivalent, not an inventive activity.

3.5.2 The appellant further argued that the examining division's reliance on the skilled person's "common general knowledge" constituted an "abuse of procedure", as the Guidelines for Examination state that such knowledge must be substantiated by a handbook, textbook or similar literature, which the examining division failed to provide.

However, the board notes that the examining division did not rely on this common general knowledge in a vacuum: it specifically cited document **D5** (in Reasons 10.5.3 of the appealed decision) to demonstrate that this type of design choice (i.e. of the "bone-conduction microphones and speakers" being arranged on the same PCB) was indeed part of the skilled person's standard repertoire. Moreover, as discussed during the oral proceedings before the board, the examining division had also, in its first communication dated 19 September 2022, referred to D6 with specific citations in this regard (cf. point 4.4.2 of that first communication). While the board acknowledges that a

patent document does typically not represent the skilled person's common general knowledge, it observes that, in this particular case, documents D5 and D6 at least exemplarily show that this type of design choice was indeed among the options of the skilled person at the relevant date.

3.5.3 The appellant also argued that D5 did not disclose a microphone and a speaker "arranged on" a PCB. In that regard, it pointed to Figure 6 of D5, noting that the piezoelectric speaker (608) is separated from the PCB (404) by an interior support structure (502), an essential gap (414), adhesive and damping elements (610, 614). The appellant then argued that the speaker was merely "connected to" the PCB via an interconnect (416), but not "arranged on" it.

Yet, this narrow interpretation is unconvincing, either. The expression "arranged on" used in feature (c) of claim 1 is broad and elusive and does not require a direct physical mounting or a direct contact. The arrangement of a "bone-conduction speaker and microphone" on the same PCB rather encompasses configurations where the components are mounted via the intermediary of additional structural or damping elements, as is precisely the case in D5.

3.6 Hence, the subject-matter of claim 1 of the "corrected main request" does not involve an inventive step. It is therefore not allowable under Article 56 EPC.

4. *Former main request: claim 1 - inventive step*

4.1 The **former main request** was filed for the first time with the statement of grounds of appeal.

4.2 By virtue of the use of the phrase "*in particular*", the subject-matter of claim 1 of this claim request is no longer necessarily limited to a "*headrest for vehicle seats*". It is therefore broader than the subject-matter of claim 1 of the "corrected main request". As a consequence, and irrespective of any admittance issues under Article 12(4) RPBA, the board holds that the "former main request" is not allowable under Article 56 EPC for the same reasons as set out in point 4 above for the "corrected main request".

5. *Auxiliary requests 1 and 2: admittance*

5.1 The **first and second auxiliary requests** were filed for the first time with the statement of grounds of appeal. As such, they constitute an "amendment" within the meaning of Article 12(4), first sentence, RPBA. Their admittance into the appeal proceedings is thus subject to the board's discretion (Article 12(4), second sentence, RPBA).

5.2 The board notes in this regard that, pursuant to Article 12(6), second sentence, RPBA, it shall not admit requests which should have been submitted in the proceedings leading to the decision under appeal, unless the circumstances of the appeal case justify their admittance.

For the following reasons, the arguments provided by the appellant in this regard failed to convince the board:

5.2.1 Concerning the **first auxiliary request**, the appellant argued that, from the written proceedings before the examining division, it was unaware of any divergence in claim interpretation adopted by the applicant itself

and the examining division regarding the term "arranged". It submitted that it had always understood this term to be synonymous with the term "mounted" and that it only became apparent during the oral proceedings before the examining division that the division applied a broader interpretation. Consequently, the appellant argued that it could not have filed the first auxiliary request earlier.

The board cannot accept this justification. As discussed during the oral proceedings before the board, the examining division had, during the examination phase, already referred to documents D5 and D6 in its first communication dated 19 September 2022 to demonstrate that "arranging" electronic components on a PCB was a "known design choice". In its written reply dated 16 January 2023, the applicant discussed these documents and explicitly equated the terms "provided" and "arranged on", while specifically contrasting them with the term "connected to". Furthermore, both the terms "arranged on" and "mounted on" are used distinctly within the application as filed itself. If the appellant genuinely considered these terms to be strictly synonymous, it could and *should* have clarified this during the written proceedings in the examination phase, particularly when confronted with prior art where components are tethered or connected rather than directly mounted. Therefore, the appellant was fully aware of the decisive aspects and therefore could have reasonably been expected to file the first auxiliary request, and indeed should have done so, at the latest during the oral proceedings before the examining division.

5.2.2 Regarding the **second auxiliary request**, the appellant argued that it was surprised by the examining division

maintaining its position that document D1 disclosed or rendered obvious certain claim features. Specifically, it was surprised that the examining division did not accept that D1 failed to disclose a "sound-absorbing layer" combined with a speaker and microphone residing on the same substrate within a single headrest portion.

The board is not convinced that the appellant was taken by surprise in a manner that justifies withholding this claim request until the appeal stage. Crucially, it is apparent from points 15 and 16 of the minutes of the first-instance oral proceedings that the appellant actively considered filing a claim request based on original claims 9 and 10, the former one of which precisely corresponding to the features (g) and (h) added in the second auxiliary request. After requesting and receiving an advisory opinion from the examining division that such a claim request would likely not be allowable under Article 56 EPC, the appellant explicitly chose not to formally file it. Had the appellant really wished to obtain an appealable decision on a claim request incorporating these features, it should have filed it before the examining division. By merely testing the waters and subsequently withholding the potential claim request, the appellant prevented the examining division from issuing a formal decision on this subject-matter. This procedural choice would have actually forced the board to consider the issue for the very first time in these appeal proceedings, which however would in turn run contrary to the primary object of the appeal proceedings to review the decision under appeal.

5.2.3 Consequently, the board concludes that both the first and second auxiliary requests should have been submitted already in the first-instance proceedings. Moreover, the board can recognise no circumstances of

the appeal case that would justify their admittance at this late stage.

5.3 Therefore, the board exercised its discretion not to admit the first and second auxiliary requests into the appeal proceedings (Article 12(6), second sentence, RPBA).

6. In the absence of any request that can be acceded to, the appellant's appeal is not successful.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

B. Brückner K. Bengi-Akyürek

Decision electronically authenticated