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Datasheet for the decision of 27 January 2026

Case Number: T 0096/24 - 3.5.05

Application Number: 19154224.0

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IPC: H04R25/00

Language of the proceedings: EN

Title of invention:
A method of fitting a hearing device to a user's needs, a programming device, and a hearing system

Patent Proprietor:
Oticon A/S

Opponent:
GN Hearing A/S

Headword:
Logical operations vs. logic expression/OTICON

Relevant legal provisions:
EPC Art. 100(c), 123(2), 123(3)
RPBA 2020 Art. 13(2)

Keywords:

Added subject-matter - main request, auxiliary requests 1 to 13, 1a to 13a, 13' and 13b' (yes): *genus* vs. *species*
Admittance of claim requests filed after Art. 15(1) RPBA communication - auxiliary requests 5', 12' and 5(new) (no): no "exceptional circumstances"
Extension of scope of protection - auxiliary request 13b (yes)

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Case Number: T 0096/24 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 27 January 2026

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Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 17 November 2023 concerning maintenance of the European Patent No. 3525489 in amended form.**

Composition of the Board:

Chair	K. Bengi-Akyürek
Members:	K. Peirs
	F. Bostedt

Summary of Facts and Submissions

I. The appeals of the opponent and proprietor lie from the interlocutory decision of the opposition division to maintain the opposed patent in amended form (cf. Article 101(3)(a) EPC) in accordance with the proprietor's "new auxiliary request 1" referred to as "auxiliary request 1" in point 6 of the section "I. Summary of Facts and Submissions" of the appealed decision.

The opposition division found that the ground for opposition under Article 100(c) EPC in conjunction with Article 123(2) EPC prejudiced the maintenance of the patent as granted.

II. Oral proceedings before the board were held on 27 January 2026.

The patent proprietor requested that the decision under appeal be set aside and that the opposition be rejected as a **main request**, or, in the alternative, that the patent be maintained in amended form based on the set of claims according to one of the auxiliary requests in the following order: **auxiliary requests 1, 1a, 2, 2a, 3, 3a, 4, 4a, 5, 5a, 5', 5(new), 6, 6a, 7, 7a, 8, 8a, 9, 9a, 10, 10a, 11, 11a, 12, 12a, 12', 13, 13', 13a, 13b, 13b',**

of which

- the main request and auxiliary request 1 are identical to those underlying the appealed decision;

- auxiliary requests 2 to 12 are identical to those mentioned in point 6 of the section "I. Summary of Facts and Submissions" of the appealed decision;

- auxiliary requests 1a to 12a, 13, 13a and 13b were filed for the first time in the appeal proceedings with the written reply to the opponent's statement of grounds of appeal,

- auxiliary requests 5', 12', 13' and 13b' were filed with a written reply to the board's communication under Article 15(1) RPBA

and

- auxiliary request 5(new) was filed during the oral proceedings before the board.

The opponent requested that the decision under appeal be set aside and that the patent be revoked.

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

III. Claim 1 of the **main request**, **auxiliary requests 2, 3, 6 to 9, 1a to 3a and 6a to 9a** reads as follows (board's feature labelling):

(a) "A method of conducting a fitting session for fitting a hearing device (HD) to a hearing device user's (U) needs, the hearing device comprising an input transducer (IT) for picking up sound in the environment of the user (U) and providing an electric input signal(IN), and an output transducer (OT) for providing output stimuli perceivable to the user (U) as sound based on a

processed version (OUT) of said electric input signal (IN), the method comprising

(b) S1. providing an estimate of a current feedback from said output transducer to said input transducer, while the hearing device is in an operational state;

(c) S2. evaluating said estimate of a current feedback and providing a value of a feedback risk indicator in dependence of said estimate of a current feedback;

(d) S3. determining whether said value of the feedback risk indicator fulfils a high-risk criterion, a fulfilment of said high-risk criterion being dependent of said estimate of the current feedback; and

(e) S4. if said high-risk criterion is fulfilled providing at least one of a warning and a recommendation to a hearing care professional (HCP) and/or to the user (U) in relation to said feedback risk;

(f) wherein steps S1 to S4 are configured to be automatically performed as background processes, said background processes being executed by a computer without a user's active involvement, and

(g) wherein step S3 of determining whether said value of the feedback risk indicator fulfils a high-risk criterion comprises one or more logical operations related to the estimate of a current feedback (H_{est})."

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

(h) "wherein step S3 of determining whether said value of the feedback risk indicator fulfils a high-risk criterion comprises one or more logical operations related to the ~~estimate of a~~ current feedback estimate (H_{est})."

V. Claim 1 of **auxiliary request 4** differs from claim 1 of auxiliary request 1 in that feature (e) has been replaced by the following feature (board's feature labelling and mark-up, the latter reflecting amendments vis-à-vis feature (e)):

(i) "S4. if said high-risk criterion is fulfilled providing ~~at least one of~~ a warning ~~and~~ or a recommendation to a hearing care professional (HCP) and/or to the user (U) in relation to said feedback risk;"

VI. Claim 1 of **auxiliary request 5** differs from claim 1 of auxiliary request 1 in that features (d) and (h) have been replaced by, respectively, the following features (board's feature labelling and underlining, the latter reflecting amendments vis-à-vis features (d) and (h)):

(j) "S3. determining whether said value of the feed back risk indicator fulfils a high-risk criterion, a fulfilment of said high-risk criterion being dependent of said estimate of the current feed back and being dependent on a current forward path gain (G) applied to an input signal by the hearing device before it leaves the hearing device as an acoustic signal, wherein the high-risk criterion comprises a logic expression related to $F(H_{est}, G)$; and";

(k) "wherein step S3 of determining whether said value of the feedback risk indicator fulfils a high-risk criterion comprises one or more logical operations related to the current feedback estimate (H_{est}) and the current forward path gain (G)."

VII. Claim 1 of **auxiliary request 5(new)** differs from claim 1 of the main request in that feature (g) has been replaced by the following feature (board's mark-up, reflecting amendments vis-à-vis feature (g)):

"wherein step S3 of determining whether said value of the feedback risk indicator fulfils a high-risk criterion comprises ~~one or more logical operations related to the estimate of a current feedback (Hest)~~ comparing a value of the feedback risk indicator to a threshold value to decide whether it fulfills the high-risk criterion."

VIII. Claim 1 of **auxiliary request 10** differs from claim 1 of auxiliary request 1 in that features (a) and (f) have been replaced by, respectively, the following features (board's feature labelling and underlining, the latter reflecting amendments vis-à-vis features (a) and (f)):

(l) "A method of conducting a fitting session for fitting a hearing device (HD) to a hearing device user's (U) needs, said fitting comprising determining, by a fitting system, a customized frequency and level dependent gain based on said user’s hearing data using a fitting rationale, the hearing device comprising an input transducer (IT) for picking up sound in the environment of the user (U) and providing an electric input signal (IN), and an output transducer (OT) for providing output stimuli perceivable to the

user (U) as sound based on a processed version (OUT) of said electric input signal (IN), the method comprising";

(m) "wherein steps S1 to S4 are configured to be automatically performed as background processes during the fitting session, said background processes being executed by a computer without a user's active involvement, and".

IX. Claim 1 of **auxiliary request 11** differs from claim 1 of auxiliary request 1 in that it further comprises, at the end, the following feature (board's feature labelling):

(n) ", wherein during the fitting session settings of a directional system of the hearing device are changed, the feedback risk indicator monitors the hearing device processing including the directional system as a background process, and if it detects an increased feedback risk, a notification or a recommendation is issued and/or wherein during the fitting session settings of a feedback control system of the hearing device are changed, and where the feedback risk indicator monitors and detects an increased feedback risk as a background process, providing a notification or a recommendation in case the indicator fulfills the high-risk criterion".

X. Claim 1 of **auxiliary request 12** differs from claim 1 of auxiliary request 5 in that features (a) and (f) have been replaced by, respectively, features (l) and (m).

XI. In claim 1 of **auxiliary requests 4a, 5a, 10a and 11a,** the same amendments as in claim 1 of auxiliary

requests 4, 5, 10 and 11, respectively, have been made (cf. feature labels (i) to (n) above) but starting from claim 1 of the main request instead of claim 1 of auxiliary request 1.

XII. In claim 1 of **auxiliary request 12a**, the same amendments as in claim 1 of auxiliary request 12 have been carried out (cf. labels (l) and (m) above) but starting from claim 1 of auxiliary request 5a instead of claim 1 of auxiliary request 5.

XIII. Claim 1 of **auxiliary request 13** differs from claim 1 of auxiliary request 1 in that it further comprises, at the end, the following feature (board's feature labelling):

(o) ", wherein said high risk criterion comprises that a current loop gain is compared to specific values of loop gain where loop gain (LG) is defined as

$$LG=G+H_{est},$$

where G is the current desired forward path gain and H_{est} is the current estimated feedback path gain in a logarithmic representation".

XIV. Claim 1 of **auxiliary request 13a** differs from claim 1 of the main request in that it further comprises, at the end, feature (o).

XV. Claim 1 of **auxiliary request 13b** differs from claim 1 of auxiliary request 13a in that the expression "*related to the estimate of a current feedback (H_{est})*" has been removed from feature (g).

XVI. Claim 1 of **auxiliary request 5'** differs from claim 1 of auxiliary request 5 in that feature (k) has been replaced by the following feature (board's feature

labelling and mark-up, the latter reflecting amendments vis-à-vis feature (k)):

(p) "wherein step S3 of determining whether said value of the feedback risk indicator fulfils a high-risk criterion comprises ~~one or more~~ a logical operation~~s~~ evaluating the logic expression and related to the current feedback estimate (H_{est}) and the current forward path gain (G)."

XVII. Claim 1 of **auxiliary request 12'** differs from claim 1 of auxiliary request 12 in that feature (k) has been replaced by the following feature (board's feature labelling and mark-up, the latter reflecting amendments vis-à-vis feature (k)):

(q) "wherein step S3 of determining whether said value of the feedback risk indicator fulfils a high-risk criterion comprises ~~one or more~~ a logical operation~~s~~ evaluating the logic expression and related to the current feedback estimate (H_{est}) and the current forward path gain (G)."

XVIII. Claim 1 of **auxiliary request 13'** differs from claim 1 of auxiliary request 13 in that features (h) and (o) have been replaced, respectively, by the following features (board's feature labelling and mark-up, the latter reflecting amendments vis-à-vis features (h) and (o)):

(r) "wherein step S3 of determining whether said value of the feedback risk indicator fulfils a high-risk criterion comprises ~~one or more~~ a logical operation~~s~~ related to the current feedback estimate (H_{est})";

(s) ", wherein said high risk criterion comprises as the logical operation that a current loop gain is compared to specific values of loop gain where loop gain (LG) is defined as

$$LG=G+H_{est},$$

where G is the current desired forward path gain and H_{est} is the current estimated feedback path gain in a logarithmic representation."

XIX. Claim 1 of **auxiliary request 13b'** differs from claim 1 of the main request in that feature (g) has been replaced by the following feature (board's feature labelling and mark-up, the latter reflecting amendments vis-à-vis feature (g)):

(t) "wherein step S3 of determining whether said value of the feedback risk indicator fulfils a high-risk criterion comprises ~~one or more~~ a logical operation~~s related to the estimate of a current feedback (H_{est})~~, wherein said high risk criterion comprises as the logical operation that a current loop gain is compared to specific values of loop gain where loop gain (LG) is defined as

$$LG=G+H_{est},$$

where G is the current desired forward path gain and H_{est} is the current estimated feedback path gain in a logarithmic representation."

Reasons for the Decision

1. *Opposed patent - technical background*

1.1 The opposed patent relates to a method of conducting a fitting session for a hearing device. It also relates to a hearing system comprising a hearing device adapted

for being programmed according to the needs of a specific hearing-device user.

1.2 During a fitting session, a hearing-care professional (HCP) typically adjusts the hearing-device settings (e.g. gain or compression) to match the user's specific hearing loss.

1.3 A common problem in this context is the risk of acoustic feedback ("howling") when gain settings are increased. Traditionally, to ensure stability, the HCP must manually initiate specific "feedback-manager" tests or interrupt the tuning workflow to check for feedback risks. This process is said to be time-consuming and disruptive to the natural flow of the fitting session.

1.4 The patent proposes a solution wherein the hearing system continuously monitors the feedback risk automatically as a "background process" without requiring an *active* involvement from the HCP or the user. By doing so, the invention is said to allow the HCP to focus on tuning the hearing device, receiving alerts only when a critical feedback situation (i.e. a "high risk") is detected.

1.5 The associated method implementing the solution provided by the opposed patent comprises the following steps:

1.5.1 Step 1: The hearing device provides an estimate of the "current feedback path (H_{est})" while in an operational state.

1.5.2 Step 2: The hearing system evaluates this estimate to calculate a "feedback-risk indicator" (e.g.

related to a "loop gain").

1.5.3 Step 3: It determines whether this "feedback-risk indicator" fulfils a "high-risk criterion". This determination depends on the "current feedback-path estimate (H_{est})".

1.5.4 Step 4: If, and only if, the "high-risk criterion" is fulfilled, the hearing system provides a warning, recommendation or action to the HCP or the user regarding the "feedback risk".

2. *Main request: claim 1 - added matter*

2.1 An important point of dispute between the parties concerned whether **feature (g)** introduced subject-matter which extended beyond the content of the application as filed (Article 123(2) EPC).

2.1.1 In this regard, the opposition division had found in the appealed decision (cf. the last paragraph of Reasons 25) that a relationship between the "logical operations" and the "current feedback estimate" was "*implied by step S3 of original claim 1*". The opposition division reasoned that the skilled reader would "*interpret 'a fulfillment of said high-risk criterion' in step S3 as corresponding the [sic] the fulfilment mentioned in the last feature of claim 1*".

However, the board notes that the impugned decision provides no specific reasoning for this finding beyond invoking the often-cited concept of "a mind willing to understand".

2.1.2 Crucially, the passages cited by the proprietor (i.e. page 3, lines 25 to 30, page 4, line 31 to page 5,

line 7 and page 7, lines 22 to 25 of the description as filed as well as original claims 1 and 5) in this regard do not provide a direct and unambiguous disclosure required for the link between the expressions "*one or more logical operations*" and "*related to the estimate of a current feedback*" as recited in feature (g). The reasons for this conclusion are set out in points 2.2 and 2.3 below. In the following analysis, the board will use the term "current feedback estimate" to refer to the "estimate of a current feedback". This terminology is adopted for brevity and, moreover, corresponds to the wording used in **feature (h)** of auxiliary request 1 on file.

2.2 Claim construction

2.2.1 During the oral proceedings before the board, the question arose as to whether the expression "*comprises one or more logical operations*" according to feature (g) relates to the "high-risk criterion" (i.e. the definition of the "criterion" itself) or to the "*step S3 of determining*" (i.e. the process of checking the fulfilment of said criterion).

2.2.2 The board agrees with the proprietor that, both grammatically and technically, the verb "comprises" in feature (g) refers exclusively to the subject "*step S3 of determining*". Consequently, claim 1 defines a method step which, in its execution, involves "*one or more logical operations*" related to the "current feedback estimate".

2.3 Assessment of direct and unambiguous disclosure

2.3.1 The proprietor argued that the skilled reader would not read the term "logical operations" introduced by

original claim 5 in isolation, but would rather consider its purpose within the context of "step S3" as defined in original claim 1. Since "step S3" in original claim 1 already established that the fulfilment of the "high-risk criterion" was dependent on the "current feedback estimate", the proprietor contended that the "logical operations" were the specific means used to assess this fulfilment and realise this dependency. Consequently, the proprietor argued that the skilled reader would directly and unambiguously understand that these operations cannot act upon "parameters" unrelated to this claimed dependency: to fulfil the explicitly stated purpose of "step S3", they must necessarily be related to the "current feedback estimate".

The board acknowledges that original claim 5 discloses that "step S3" comprises "*one or more logical operations*". However, "step S3" of original claim 1 only requires the *fulfilment* of the "criterion" — not the "logical operations" themselves — to depend on the "current feedback estimate". Hence, original claim 1 does not require every "logical operation" within that step to be dependent on the "current feedback estimate". Moreover, original claim 5 provides no indication that the "logical operations" are "*related to the estimate of a current feedback*".

2.3.2 To demonstrate a basis for the alleged specific relationship between the "parameters" and the "current feedback estimate" referred to in point 2.3.1 above, the proprietor relied primarily on the passage bridging pages 4 and 5 of the originally filed description (i.e. page 4, line 31 to page 5, line 7). This passage stated, in the proprietor's view, that the fulfilment of the "high-risk criterion" may be directly related to

the value of the "current feedback estimate", providing the specific example: "*e.g. 'the current feedback estimate is larger than or equal to a critical value' ($H_{est} \geq H_{crit}$)*".

However, the board is not persuaded that this passage provides a direct and unambiguous disclosure for the broad wording of feature (g). Rather, the amendment underlying this feature constitutes an unallowable intermediate generalisation for the following reasons:

- Generalisation of the specific "logical operation":

  The cited passage discloses a single, specific type of operation: a numerical comparison where the "current feedback estimate" is larger than or equal to a threshold. Feature (g), however, recites "*one or more logical operations*" in broad terms. The term "logical operations" is a generic term that encompasses functional acts beyond the specific comparison disclosed. The proprietor acknowledged this broad scope in its written reply to the board's communication under Article 15(1) RPBA (cf. page 11), stating that a logical operation "*can in particular be a comparison*". This formulation confirms that the term "logical operations" is a *genus* of which "comparison" is merely one *species* (cf. point 2.3.3 below for a more detailed analysis of this *genus-species* relationship). By extracting the generic term "logical operations" from the specific context of the "*larger than or equal to*" comparison, the claim encompasses embodiments — such as operations that do not involve a threshold comparison — that are not directly and unambiguously disclosed in the application as

filed.

- Generalisation of the relationship ("*related to*"):

  Furthermore, feature (g) requires the "logical operations" to be "*related to*" the "estimate of a current feedback". The disclosure on pages 4 and 5 of the description as filed describes a comparison that *directly involves* the "current feedback estimate" as an operand in a specific mathematical function (F). Yet, elevating this specific disclosure to a generalised step comprising "logical operations" merely "*related to*" the "current feedback estimate" creates a new technical teaching that was not available to the skilled reader of the original application. The wording "*related to*" is broader than this direct involvement. It could comprise, for instance, an empiric relationship not (yet) describable by a mathematical function F as originally present. The application as filed, however, does not disclose such a broad logical relationship within step S3.

2.3.3 The proprietor posited that, irrespective of the claim construction mentioned in point 2.2.2 above, the skilled reader seeking a direct and unambiguous basis for the fulfilment step according to feature (g) would consider several passages in the description as filed. Because feature (g) explicitly required determining whether a "high-risk criterion" is fulfilled, the proprietor argued that the skilled reader would naturally consult the passages relating to this "high-risk criterion" itself to find support for this step. In that regard, the proprietor referred to page 3, lines 25 to 30 as an example of such a passage and indicated that this passage mentions a "*logic*

expression related to F(H_{est}, G)".

In that context, the board notes that, as feature (g) specifically requires "*one or more logical operations*", the proprietor's reliance on this passage hinges on the premise that the disclosed "logic expression" provides a direct and unambiguous basis for the claimed "logical operations". Therefore, the meaning of the terms "logic expression" and "logical operations" was a central aspect in the discussion during the oral proceedings before the board:

- The opponent argued that the term "logic expression" concerned a specific embodiment of the broader term "logical operations". Consequently, in its view, relying on the former to support the latter constitutes an unallowable generalisation from a *species* to a *genus*.

- The proprietor argued in writing and during the oral proceedings before the board that the terms are used interchangeably or at least imply each other. Specifically, the proprietor explained that a "logical operation" is essentially the "*process of operating on or evaluating*" the respective "logic expression" to obtain a Boolean result (TRUE/FALSE).

The board observes that the application as filed contains no definition of the term "logical operations". There is only the notion of a "logic expression" as used on pages 3 and 5 as originally filed in the sense of a *specific* static mathematical construct (e.g. a Boolean formula involving the function "F(H_{est}, G)"). To bridge the gap between this static construct and the dynamic method step of present

claim 1, the proprietor argued that the claimed "logical operations" represented the actual evaluation of this disclosed "logic expression". As will be explained in point 2.3.4 below, the board is not convinced that the application as filed provides a direct and unambiguous basis for this premise. However, even if the board were to adopt this premise in the proprietor's favour, it does not overcome the added-matter objection. This is because, in order to perform the evaluation suggested by the proprietor, the system implementing the claimed method must, from a technical perspective, necessarily employ some "logical operators" (such as comparators, AND, OR, NOT, etc.). Consequently, as an inherent technical necessity of the evaluation step proposed by the proprietor, the term "logical operations" in this context simply denotes its ordinary technical meaning: the active execution or use of at least one such logical operator. This technical reality highlights the critical difference between the specifically disclosed "logic expression" and the broadly claimed "logical operations": whereas a "logic expression" defines a specific arrangement of these operators, the claimed "logical operations" merely denote the generic mathematical application of those operators.

Metaphorically speaking, a "logical operator" is a fundamental building block, like a *brick*, and a "logical operation" relates to the application of that operator, akin to the act of *laying a brick*. A "logic expression", by contrast, is a specific structure built through these activities, such as a specific *wall*. While it is true that one cannot build a *wall* without *laying bricks*, the disclosure of a specific wall does not equate to a generic disclosure of laying bricks in isolation. By claiming "logical operations" based

solely on the disclosure of a specific "logic expression", the proprietor effectively claims the *genus* based on the *species*: claim 1 encompasses the *generic* activity of using these logical building blocks rather than being limited to the *specific* structural arrangement disclosed in the application as filed. This broad claim to "logical operations" covers entirely different constructs — akin to using the act of *laying bricks* to build a *walkway* instead of the disclosed *wall* — for which there is, however, no direct and unambiguous basis in the application as filed. Thus, feature (g) covers *any* method step that employs these building blocks (e.g. simple flag checks or timeout gates involving the "current feedback estimate") regardless of whether they form the specific "logic expression" disclosed in the application as filed. This constitutes an unallowable intermediate generalisation.

2.3.4 For the sake of completeness, and because the proprietor relied on this exact same "bridging" argument to defend the subsequent auxiliary requests (cf. point 9.2 below), the board considers it appropriate to explain why the proprietor's underlying premise mentioned in point 2.3.3 above is flawed. In support of its argument that a "logical operation" is simply the use of a "logic expression", the proprietor particularly referred to page 7, lines 22 to 25 of the description as filed. It argued that this passage, which states that determining step S3 "*may e.g. comprise comparing*", formed a link to the example in the paragraph bridging pages 3 and 4, which also involves comparing a value based on the "current feedback estimate" - namely the "loop gain" - to a threshold. The proprietor contended that the skilled reader would understand these as different examples of the same concept: using the "current feedback estimate"

in a comparison, which thus constitutes the "logical operation".

This argument is not convincing. First, neither the paragraph bridging pages 3 and 4 nor the passage on page 7 of the original description mentions any "logical operations" that are "*related to the estimate of a current feedback*" in the general context of feature (g). Secondly, while the passage on page 7 as filed may link "step S3" to a "comparison", it refers to comparing the "feedback-risk indicator", a parameter which is distinct from the "current feedback estimate" mentioned in feature (g). As the opponent pointed out during the oral proceedings before the board, the example set out on pages 3 and 4 of the description as filed relies on the "loop gain", which is missing from claim 1. The fact that different examples use the term "comparing" does not directly and unambiguously allow the skilled reader to combine them to derive a general teaching of "*logical operations related to the estimate of a current feedback*" that is absent from the original claims.

2.4 In conclusion, the ground for opposition under Article 100(c) EPC prejudices the maintenance of the patent as granted.

3. *Auxiliary request 1: claim 1 - added matter*

3.1 Claim 1 of **auxiliary request 1** differs from claim 1 of the main request in that the wording "*related to the estimate of a current feedback*" used in feature (g) has been replaced by "*related to the current feedback estimate*" (i.e. **feature (h)**).

3.2 This amendment concerns only the terminology used to refer to the "feedback estimate" mentioned in feature (b). It does not address the deficiencies identified in point 2 above. Specifically, feature (h) retains the broad term "*one or more logical operations*" and the broad relationship "*related to*", neither of which finds a direct and unambiguous disclosure in the specific comparison disclosed in the application as filed (cf. points 2.3.2 to 2.3.4 above).

3.3 Consequently, the reasoning set out in point 2 above also applies to claim 1 of auxiliary request 1.

3.4 Therefore, auxiliary request 1 is not allowable under Article 123(2) EPC.

4. *Auxiliary requests 2 to 12: claim 1 - added matter*

4.1 Claim 1 of **auxiliary requests 2 to 12** differs from the higher-ranking claim requests primarily due to the introduction of additional features (e.g. relating to the "fitting" itself). With the exception of **auxiliary request 5** discussed below, the proprietor did not provide specific arguments as to why these additional features would remedy the deficiencies identified in point 2 above regarding the "logical operations" as per feature (g) or (h). Since these auxiliary requests retain the wording "*comprises one or more logical operations related to the current feedback estimate*" (or the "*estimate of a current feedback*") without any further limitation to the specific comparison disclosed, the reasoning set out in point 2 above applies equally.

4.2 Regarding **auxiliary request 5**, the proprietor argued that the added-matter objection raised against claim 1

of the main request was overcome by the introduction of **features (j) and (k)** into claim 1. More specifically, these features specify that the "high-risk criterion" comprises a "logic expression" dependent on the "current feedback estimate (H_{est})" and the "current forward path gain (G)". The proprietor submitted that these features limited claim 1 to the specific embodiment disclosed at page 4, lines 31 to 36 of the application as filed. According to the proprietor, the skilled reader would understand from feature (g) in conjunction with these new features that the "logic expression" defining the criterion must necessarily be evaluated. The proprietor further argued that this evaluation was the "logical operation". Hence, the requirement of feature (g) that the determining step "*comprises one or more logical operations*" was merely the inevitable technical consequence of evaluating the now-defined "logic expression". The proprietor thus contended that the broad term "logical operations" was effectively limited by the presence of the "logic expression", rendering feature (g) superfluous or at least fully supported.

4.3 The board is not convinced by this line of argumentation:

4.3.1 First, the argument that feature (g) is "superfluous" or merely a "technical consequence" is contradicted by the claim language itself. The limitations imposed by features (j) and (k) as underlined by the board in point VI above are introduced additively. Because these features are simply added to claim 1, the presence of a more specific definition for the "high-risk criterion" does not replace or restrict the broad definition of the "logical operations" used for the "determining

step S3".

4.3.2 Secondly, the unallowable intermediate generalisation identified in point 2 above persists. As established in point 2.3.3 above, "logical operations" represent the generic mathematical application of logical operators (akin to the act of *laying bricks*), whereas the "logic expression" represents a specific arrangement (akin to the *wall*). Even if the claim now explicitly requires the *wall* (i.e. the "logic expression") to be present in the "criterion", feature (g) still *independently* claims the generic act of *laying bricks* (i.e. the application of the "logical operations") in the "determining step S3". By retaining the broad term "logical operations" in the "determining step", present claim 1 continues to encompass operations (e.g. complex control logic, state checks or independent comparisons involving these parameters) that are "*related to*" the "current feedback estimate" and "current forward-path gain" but that are not the direct evaluation of the disclosed "logic expression". Thus, the application as filed does not provide a direct and unambiguous disclosure for a "determining step" comprising such broad operations, even if the "high-risk criterion" itself is now defined more narrowly.

4.4 Consequently, claim 1 of auxiliary requests 2 to 12 contains subject-matter which extends beyond the content of the application as filed. These auxiliary requests are therefore not allowable under Article 123(2) EPC, either.

5. *Auxiliary request 5(new): admittance*

5.1 The claim request designated as **auxiliary request 5(new)** was filed during the oral proceedings

before the board, i.e. *after* notification of the board's communication under Article 15(1) RPBA. It is, accordingly, an "amendment" within the meaning of Article 13(2) RPBA, which shall, in principle, not be taken into account unless there are "exceptional circumstances", which have been justified with cogent reasons by the party concerned.

5.2 The proprietor argued that "exceptional circumstances" existed because the discussion regarding the distinction between "logical operations" and "logic expression" had not been held in such detail during the first-instance proceedings or in the written phase of the appeal proceedings. The proprietor submitted that the opposition division had previously accepted these terms as being synonymous. Furthermore, it contended that the objection regarding **feature (g)** in the opponent's statement of grounds of appeal was unclear and that the board's preliminary opinion, while identifying the issue, did not provide a sufficient reasoning as to why the terms were not synonymous. Therefore, the oral proceedings before the board represented the first opportunity to fully understand and react to the detailed objection.

5.3 The board is not convinced by these arguments:

5.3.1 First, the fact that the first-instance proceedings may have focused on *other* aspects is irrelevant in this respect, as the framework of the appeal proceedings is defined by the statement of grounds of appeal and the written reply thereto. The board notes that the opponent had already clearly raised and substantiated the specific objection under Article 123(2) EPC regarding feature (g) in its statement of grounds of appeal (cf. pages 6 to 10). In particular, section a.2

on page 7 explicitly discussed whether the "logical operations" of original claim 5 could be considered to be "*related to the current feedback estimate*". The opponent further provided an extensive analysis of the relevant passages in the application as filed (cf. pages 7 to 9 of the opponent's statement of grounds of appeal).

5.3.2 Consequently, the nature of the objection was clear at the outset of the appeal proceedings. The proprietor was thus fully aware of this objection, as evidenced by its written reply to the statement of grounds of appeal (cf. pages 7 to 9), where it addressed the opponent's arguments, characterising them as "unsubstantiated" and "not convincing from a technical perspective". This demonstrates that the proprietor understood the objection but made the strategic choice to rely solely on counter-arguments rather than filing appropriate fallback amendments at the earliest opportunity.

5.3.3 The detailed discussion during the oral proceedings before the board did not introduce new factual or legal arguments, but merely deepened the debate on objections already on file. The fact that the board's preliminary opinion or the discussion at those oral proceedings ultimately revealed that the proprietor's counter-arguments were not convincing does not constitute an "exceptional circumstance" justifying the filing of a new claim request at the oral proceedings before the board.

5.3.4 Furthermore, even if "exceptional circumstances" were to be acknowledged, the board notes that an amended request filed at this late stage must, at the very least, not give rise to new objections (see also Article 13(1), fourth sentence, RPBA). Auxiliary

request 5(new), however, fails in this respect: as pointed out by the opponent, claim 1 as amended introduces a *prima facie* lack of clarity (Article 84 EPC) due to the inconsistent terminology of the expressions "*said value of the feedback risk indicator*" and "*a value of the feedback risk indicator*".

5.4 In view of the above, the board decided not to admit auxiliary request 5(new) into the appeal proceedings (Article 13(2) RPBA).

6. *Auxiliary requests 1a to 12a, 13 and 13a: claim 1 - added matter.*

6.1 Claim 1 of **auxiliary requests 1a to 12a, 13 and 13a** retains the feature requiring "step S3" to comprise the expression "*one or more logical operations related to the estimate of a current feedback*". Since this expression is identical to that of the main request discussed in point 2 above, the reasoning set out in that point also applies here.

6.2 The proprietor provided no specific arguments regarding these auxiliary requests during the oral proceedings before the board, referring instead to the written proceedings, which rely on the same line of argumentation already addressed in point 2.3 above.

6.3 Certain auxiliary requests (e.g. auxiliary requests 5a and 13) additionally contain the definition of the "high-risk criterion" (comprising a "logic expression"). With respect to this definition, the reasoning set out in point 4.3 above regarding auxiliary request 5 equally applies.

6.4 Consequently, auxiliary requests 1a to 12a, 13 and 13a are likewise not allowable under Article 123(2) EPC.

7. *Auxiliary request 13b: claim 1 - extension of protection conferred*

7.1 Claim 1 of **auxiliary request 13b** differs from claim 1 of the main request essentially in that the expression "*related to the estimate of a current feedback*" used in feature (g) has been deleted and that a new feature was added, namely **feature (o)**, which requires that a "current loop gain" is compared to specific values where the "loop gain" is defined as the sum of the "current forward-path gain" and the "current feedback estimate" (cf. points XIV and XV above).

7.2 While this amendment addresses the added-matter objection raised in point 2 above by removing the unallowable expression, it does so by shifting, and consequently extending, the scope of protection conferred by the patent as granted, contrary to Article 123(3) EPC.

7.3 The proprietor provided arguments regarding this objection only in writing. It contended that the new feature (o) was a more specific embodiment of the original feature (g) and therefore necessarily fell within its scope. In the proprietor's view, comparing a "loop gain" — a parameter whose definition incorporates the "current feedback estimate" — is intrinsically a "*logical operation related to the estimate of a current feedback*".

7.4 The board is not convinced by this argumentation.

7.4.1 Feature (g) of the granted patent imposed a specific functional limitation on "step S3": the "determining step" was required to comprise "logical operations" that were explicitly "*related to the estimate of a current feedback*". This limitation excluded any method where that "determining step" relied solely on "logical operations" that are unrelated to the specific "current feedback estimate" provided in step S1 (e.g. "logical operations" based solely on fixed parameters or alternative variables).

7.4.2 The amendment in claim 1 of **auxiliary request 13b** deletes this explicit functional limitation. In its place, it introduces feature (o), which requires a comparison of "a current loop gain". While feature (o) defines the "loop gain" as a sum involving the "feedback estimate", the deletion of the specific requirement of feature (g) shifts the definition of the present invention. Claim 1 as granted required the presence of "logical operations" characterised by their relationship to the "feedback estimate". The amended claim, however, requires a comparison of values ("loop gain"). These are technically distinct concepts (i.e. corresponding to an "*aliud*"). While replacing the generic term "logical operations" used in feature (g) with the more specific term "comparison" used in feature (o) might appear to be a simple limitation, the proprietor has in fact removed the constraint in claim 1 as granted that the "logical operations" in accordance with step S3 must be performed on the "current feedback estimate" as provided by step S1. Consequently, the amendment severs a structural and functional link required by claim 1 as granted, leading to a shift, and therefore to an extension, of the protection that the patent confers.

7.5 In conclusion, auxiliary request 13b is not allowable under Article 123(3) EPC.

8. *Auxiliary requests 5' and 12': admittance*

8.1 Having been filed shortly before the oral proceedings before the board and after notification of the board's communication under Article 15(1) RPBA, auxiliary requests 5' and 12' constitute "amendments" within the meaning of Article 13(2) RPBA, which shall, in principle, not be taken into account unless there are "exceptional circumstances", which have been justified with cogent reasons by the party concerned.

8.2 The proprietor invoked the presence of "exceptional circumstances" for these auxiliary requests, arguing that they were a reaction to a "new" opinion expressed in the board's preliminary opinion, namely that "logic expression" and "logical operations" were not interchangeable. The proprietor asserted that the opponent, however, had previously considered them to be interchangeable.

8.3 The board cannot accept this assertion as it contradicts the file history at hand:

- In its preliminary opinion (point 5.4), the board stated: "*The proprietor could, in particular, not convince the board that the terms 'logic expression' and 'logical operations' are used interchangeably*". This statement did not raise a new objection *sua sponte;* it merely confirmed that the proprietor had failed to refute an existing objection raised by the opponent. The failure of a party to convince the board of its position does not constitute an "exceptional circumstance" *per*

se.

- Crucially, the opponent had not conceded that the terms were "interchangeable". On page 9 of its statement of grounds of appeal, the opponent explicitly stated: "*'logical expression' is a specific embodiment of 'logical operation'*". Thus, the distinction between the *genus* (i.e. "logical operation") and the *species* (i.e. "logic expression") was clearly drawn by the opponent at the outset of the appeal proceedings.

8.4 Given that the opponent had already formulated these objections in its statement of grounds of appeal, there has been no new development in the appeal proceedings that could constitute "exceptional circumstances" warranting the admittance of these auxiliary requests at this late stage.

8.5 Consequently, the board decided not to admit auxiliary requests 5' and 12' into the appeal proceedings (Article 13(2) RPBA).

9. *Auxiliary requests 13' and 13b': claim 1 - added matter*

9.1 Irrespective of the issue of admittance as regards auxiliary requests 13' and 13b', the board notes that the amendments underlying claim 1 of these auxiliary requests introduce a new deficiency under Article 123(2) EPC. This is because the application as filed contains no direct and unambiguous disclosure for the specific definition that a comparison of a "loop gain" acts "*as the logical operation*" (singular) mandated by the claim.

9.2 Although the proprietor presented its arguments regarding added subject-matter only in the context of **auxiliary request 13b'**, the board considers that these arguments apply equally to **auxiliary request 13'**. To provide a basis for the specific amendment introduced in these auxiliary requests — namely, that the "loop gain" comparison acts "*as the logical operation*" — the proprietor relied on the exact same "bridging" argument discussed in point 2.3.4 above. It contended that claim 1 of auxiliary request 13b' simply reflects this bridge, demonstrating that the "high-risk criterion" and the determination act upon the same statement (i.e. the inequality).

9.3 However, for the reasons already detailed in point 2.3.4 above, the board is not convinced by this artificial combination of distinct passages. The mere fact that different examples use the term "comparing" cannot provide a direct and unambiguous basis for the skilled reader to bridge the "loop-gain example" on pages 3 and 4 as filed with the separate "logical operations" passage on page 7 as filed.

9.4 Furthermore, the specific amendments introduced in **features (s) and (t)** give rise to a separate objection. By phrasing the claim such that the comparison of the "loop gain" functions "*as the logical operation*", the proprietor essentially defines the "logical operations" mentioned in original claim 5 as being synonymous with this specific loop-gain comparison. However, as noted by the opponent, the term "logical operations" appears only in original claim 5 and on page 7 as originally filed. In both of these instances, it refers to determining whether the "feedback-risk indicator" fulfils a "high-risk criterion". It is however not disclosed as a definition for the "high-risk criterion"

itself via a loop-gain comparison as is required by features (s) and (t).

9.5 Hence, the combination of the distinct passages of pages 3, 4 and 7 as filed to allege that a loop-gain comparison constitutes "the logical operation" of "step S3" constitutes an artificial construction that is not directly and unambiguously disclosed in the application as filed.

9.6 Therefore, auxiliary requests 13' and 13b' are not allowable under Article 123(2) EPC, either.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chair:

B. Brückner K. Bengi-Akyürek

Decision electronically authenticated