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Datasheet for the decision of 6 November 2013

Case Number: T 1542/10 - 3.5.03

Application Number: 03001355.1

Publication Number: 1385279

IPC: H04B10/17

Language of the proceedings: EN

Title of invention:
Optical amplifier

Patent Proprietor:
Fujitsu Limited

Opponent:
Nokia Solutions and Networks Oy

Headword:
Optical amplifier/FUJITSU

Relevant legal provisions:
EPC Art. 52, 54, 56, 83, 84, 111(1), 112(1), 123(2), 123(3)
RPBA Art. 12(1)(b)

Keyword:
Written reply to grounds of appeal (yes)
Referral to the Enlarged Board of Appeal - (no)
Novelty - main request (no) - first auxiliary request (yes)
Amendments - first auxiliary request - allowable (yes)
Claims - clarity - first auxiliary request (yes)
Sufficiency of disclosure - first auxiliary request (yes)
Appeal decision - remittal to the department of first instance (yes)

Decisions cited:
T 0054/90

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

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Case Number: T 1542/10 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 6 November 2013

Appellant: (Patent Proprietor)	Fujitsu Limited 1-1, Kamikodanaka 4-chome, Nakahara-ku Kawasaki-shi, Kanagawa 211-8588 (JP)
Representative:	HOFFMANN EITLE Patent- und Rechtsanwälte Arabellastrasse 4 81925 München (DE)
Respondent: (Opponent)	Nokia Solutions and Networks Oy Karaportti 3 02610 Espoo (FI)
Representative:	Paetsch, Werner Noestrasse 7 81479 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 6 May 2010 revoking European patent No. 1385279 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman: R. Moufang
Members: A. J. Madenach
T. Snell

Summary of Facts and Submissions

I. The present appeal arises from the decision of the opposition division posted on 6 May 2010 according to which the European patent No. 1 385 279 was revoked.

The opposition had been filed by the professional representative Thomas Bruglachner on behalf of Nokia Siemens Networks Oy and was based on the grounds of Article 100(a) and (b) EPC.

The opposition division came to the conclusion that the subject-matter of claims 1 of a main, a first and a second auxiliary request was not new in view of the disclosure of

D1: US 2001/0048343 A1

or

D2: US 6356387 B1.

Third, fourth and fifth auxiliary requests were not admitted into the proceedings as they were late-filed during the oral proceedings before the opposition division and their respective first claim was considered to be *prima facie* clearly not allowable.

II. An appeal was filed against this decision by the patent proprietor, the appropriate fee was paid and the corresponding statement of grounds was filed. It was requested that the appealed decision be set aside and that the patent be maintained as granted (main request). As an auxiliary measure it was requested that the patent be maintained in amended form on the basis of claims of first to sixth auxiliary requests. The

claims of the main and first to fifth auxiliary requests were identical to those before the opposition division. Oral proceedings were conditionally requested.

III. Claim 1 of the patent as granted reads as follows:

"An optical amplifier using optical amplification mediums each doped with a rare earth element for amplifying signal light in a predetermined wavelength band,
wherein said optical amplifier has a center wavelength of a gain peak at a wavelength outside of a signal band, and a gain coefficient which when a pumping condition of said optical amplification medium is maximum, is set so that an efficiency evaluation value obtained by dividing a minimum value of the gain coefficient in the signal band by a maximum value of the gain coefficient at the outside of the signal band becomes a previously set value or more."

Claim 1 of the first auxiliary request reads as follows:

"Method of realizing an optical amplifier using optical amplification mediums each doped with a rare earth element for amplifying signal light in a predetermined wavelength band,
wherein said optical amplifier has a center wavelength of a gain peak at a wavelength outside of a signal band, and a gain coefficient when a pumping condition of said optical amplification medium is maximum,
wherein
the method includes a step of setting the gain coefficient when a pumping condition of said optical amplification medium is maximum so that an efficiency evaluation value obtained by dividing a minimum value of the gain coefficient in the signal band by a maximum

value of the gain coefficient at the outside of the signal band becomes a previously set value or more."

IV. A letter was filed on 10 January 2011 by the professional representative Werner Paetsch. The letter indicated "Nokia Siemens Networks OY" as opponent and used the same internal reference number as that indicated by the representative Bruglachner in the notice of opposition. In addition it referred to an enclosed power of attorney. According to this authorisation the representative Bruglachner authorized Werner Paetsch to represent "Nokia Siemens Networks GmbH & Co. KG" as opponent before the EPO in respect of the European patent 1 385 279.

In this letter, it was inter alia maintained that the subject-matter of claim 1 of the patent as granted was not sufficiently disclosed.

V. In reply, the appellant submitted that this letter could only be considered as a submission of a third party under Article 115 EPC as it was not filed by a representative authorised by the opponent. The opponent had thus not presented its case within the time limit set by the board.

VI. In a communication dated 5 July 2011 the board's registry pointed out that in case of a change of a professional representative an authorisation had to be submitted by the new representative unless the former representative withdrew from representation, and that such an authorisation was lacking in the present case since the submitted authorisation had been signed on behalf of Nokia Siemens Networks GmbH & Co. KG and not on behalf of Nokia Siemens Networks Oy.

VII. By a communication dated 11 June 2013 the board summoned the parties to oral proceedings. In an annex to the summons, the board expressed its preliminary view on several issues considered to be relevant.

VIII. By letter dated 4 October 2013 the appellant submitted arguments together with amended claims of a seventh auxiliary request to be considered if none of the main and the first to sixth auxiliary requests were considered allowable.

IX. By letter dated 13 June 2013 the representative Paetsch submitted an authorisation dated 14 July 2011 and signed by the representative Bruglachner on behalf of Nokia Siemens Networks Oy. In a telefax dated 21 October 2013 he further submitted a letter from Nokia Siemens Networks Oy according to which an authorisation for him had already been sent to him and the EPO on 18 July 2011.

X. By letter dated 9 October 2013 the respondent (opponent) informed the board of a change of its name from Nokia Siemens Network Oy to Nokia Solutions and Networks Oy.

XI. Oral proceedings took place before the board on 5 and 6 November 2013. During the course of the oral proceedings, the respondent's representative inter alia submitted an authorisation in the name of Nokia Solutions and Networks Oy.

XII. The appellant confirmed its previous requests. It furthermore requested that the following two questions of law be referred to the Enlarged Board of Appeal:

"1. Does a party as of right within the meaning of Article 107, second sentence, EPC lose such status -of party as of right- if no written reply to the statement of grounds of appeal is filed within four months of notification of the grounds of appeal pursuant to Article 12(1)(a) [sic] RPBA?

2. If the answer to question 1 is no, is the party as of right, who did not file a reply to the statements of grounds of appeal within the four-month time limit prescribed by Article 12(1)(a) [sic] RPBA, entitled to submit observations regarding the appellant's case set out in the statement of grounds of appeal?"

The appellant furthermore requested that in case of a remittal to the department of first instance the board should order a change of the composition of the opposition division.

XIII. The respondent requested that the appeal be dismissed and maintained that, in the alternative, the case should be remitted to the first instance for further prosecution on the basis of the first auxiliary request.

Reasons for the Decision

1. *Written reply (Article 12(1)(b) RPBA)*

1.1 The appellant takes the view that the letter which was filed by the representative Paetsch on 10 January 2011 (see section IV above) does not qualify as a written reply by the respondent for the purposes of Article

12(1)(b) RPBA and should instead be regarded as a third party observation pursuant to Article 115 EPC. It is argued that the letter was submitted on behalf of a legal person different from the respondent since the enclosed authorisation did not indicate the respondent's name but that of Nokia Siemens Networks GmbH & Co. KG. The appellant further maintains that the respondent having thus failed to reply to the grounds of appeal lost its status as a party as of right according to Article 107, second sentence, EPC or at least its entitlement to submit observations regarding the appellant's case set out in the statement of grounds of appeal.

1.2 However, in the board's view the letter dated 10 January 2011 has to be interpreted as having been filed by the respondent. The representative Paetsch indicated the respondent's name as that of the opponent. It also indicated as "Our reference" the same internal reference number that had been used by the opponent in the proceedings before the first instance. The enclosed authorisation was signed by the representative Bruglachner who had represented the respondent in the first instance. The authorisation did not only indicate the patent in suit but also the above-mentioned internal reference number. There is no suggestion whatsoever in the letter that a transfer of opponent status was requested or contemplated. Under these circumstances it was quite obvious from an objective perspective that the indication of the name Nokia Siemens Networks GmbH & Co. KG. in the authorisation had been made erroneously.

1.3 The fact that the board's registry did not receive an answer after it had sent out a communication pointing out that no valid authorisation had been submitted by

the respondent's new representative does not entail any negative consequences for the respondent. In particular it is noted that the communication did not specify any time limit so that the sanction provided for by Rule 152(6) EPC cannot apply. Neither is the lack of response a sufficient reason for retrospectively giving a different meaning to the letter dated 10 January 2011 since that meaning has to be assessed objectively as understood at the time when the letter was received.

1.4 In view of the authorisations submitted by the respondent in its letter dated 13 June 2013 (see section IX above) and at the oral proceedings (see section XI above), the board has no doubt that the representative Paetsch has been authorized to represent the respondent.

1.5 It follows from the above that the letter dated 10 January 2011 has to be regarded as a written reply to the appellant's statement of grounds of appeal for the purposes of Article 12(1)(b) RPBA.

1.6 The two questions of law submitted by the appellant for referral to the Enlarged Board of Appeal according to Article 112(1)(a) EPC (see section XII above) rely on the assumption that the respondent had failed to submit a written reply to the appellant's grounds of appeal in time and relate to the ensuing legal consequences. Since the board does not consider the assumption to be correct (see above, point 1.5), an answer to these questions is of no relevance for the outcome of the appeal. The appellant's referral request is therefore refused.

2. *Main request: novelty (Article 54 EPC)*

2.1 The present invention relates to an optical amplifier using optical amplification media ("mediums") each doped with a rare earth element for amplifying signal light in a predetermined wavelength bandwidth, wherein said optical amplifier has a center wavelength of a gain peak at a wavelength outside of a signal band.

According to a preferred embodiment, the optical amplification medium is an erbium doped optical fiber (see claim 8) and the signal band is the so-called S-band (*i.e.* 1480 - 1530 nm, see claim 4).

Erbium doped optical fiber amplifiers (EDFAs) when applied to the amplification of the S-band suffer from a reduced efficiency resulting from an amplified spontaneous emission in the vicinity of 1530 nm, outside the S-band (paragraph [0006] of the patent in suit).

Previous efforts to remedy this problem involved the use of optical filters (paragraphs [0009] and [0010] of the patent in suit).

The invention seeks to provide a solution to the above efficiency problem. It is defined in terms of a parameter, namely the efficiency evaluation value, which is obtained by dividing a minimum value of the gain coefficient in the signal band by a maximum value of the gain coefficient at the outside of the signal band.

According to the invention as defined in claim 1 of the patent as granted (see section III above), a gain coefficient, when a pumping condition of said optical

medium is maximum, is set so that the efficiency evaluation value becomes a previously set value or more.

2.2 This feature defines the gain coefficient in terms of a process step ("is set so that ..."). It is further noted that the terms "predetermined wavelength band" and "signal band" do not specify any specific wavelength band. Likewise, the term "a previously set value" does not specify any specific value. According to the established case law concerning process features in product claims, the amplifier defined by the above features must be understood to encompass any amplifier in which the gain coefficient has an efficiency evaluation value which equals or is greater than the "previously set" value, irrespectively of whether that process step of "previously setting" has actually been performed or not.

2.3 On the basis of this interpretation and with the signal band taken as being for example the S-band, *i.e.* between wavelengths of 1480 and 1530 nm, an efficiency evaluation value can be calculated on the basis of the gain curves of optical amplifiers shown in Figure 2 of D1 or Figure 1 of D2 which would, in the absence of any further specification, be equal to "a previously set value or more". This consideration also holds true for the related art discussed with respect to Figure 21 of the patent in suit. The skilled person would understand the gain curves of Figure 2 of D1 and Figure 1 of D2 as being obtained when a pumping condition of the optical amplification medium is maximum. This follows for example from the curves of Figure 21 of the patent in suit which shows the gain for different population inversion rates which represent a pumping condition (page 2, lines 33 to 34 of the patent in suit). The

curve having the maximum population inversion rate has a shape similar to those shown in Figure 2 of D1 and Figure 1 of D2, indicating to the skilled person that these curves were also obtained with a maximum population inversion. This point was not contested by the appellant.

2.4 Since all the features of claim 1 of the patent as granted are known from D1 or D2, the subject-matter of this claim is not novel over any single one of these documents, contrary to the requirements of Articles 52(1) und 54 EPC.

2.5 The appellant objected that D1 and D2 did not explicitly mention an "efficiency evaluation value". However, having such a value is an inherent property of the amplifiers with the gain curves shown in these documents, as the "efficiency evaluation value" is a simple quotient of quantities explicitly disclosed in these documents, *i.e.* of a minimum value of the gain coefficient in the signal band and of a maximum value of the gain coefficient outside the signal band (Figure 2 of D1 and Figure 1 of D2).

The appellant objected furthermore that neither D1 nor D2 discloses the feature of "setting" a gain coefficient such that the claimed efficiency evaluation value is achieved. The board again notes that the claims are directed to a device. In this context, the term "is set" implies that the gain coefficient of the device for which protection is sought is already set such that the claimed conditions are met. According to the established case law on the novelty of product-by-process-claims, process features not previously described can establish the novelty of the claimed product only if they cause it to have different

properties from the products previously described. This is, however, not the case here so that the process feature "is set ...." does not distinguish the claimed devices from the prior art devices.

2.6 For the reasons set out above the main request is not allowable.

3. *First auxiliary request*

3.1 The claims of the first auxiliary request (for claim 1 see section III above) relate to a method of realizing an optical amplifier. That apart, the features correspond to those of the claims of the main request.

3.2 Realizing an optical amplifier is disclosed in paragraphs [0020] and [0022] of the patent in suit which are identical in wording to the patent application as originally filed. Furthermore, the protection conferred by a product claim covers all methods for production of the product so that a limitation to one of these methods cannot extend the protection conferred originally (see T 54/90 of 16 June 1993, point 3.2 of the reasons). Hence, claim 1 fulfils the requirements of Article 123(2) and (3) EPC.

3.3 The claim is also clear. It concerns the realization of an optical amplifier which has a gain coefficient when a pumping condition of said optical amplification medium is maximum. Pumping conditions or, equivalently, population inversion rates are undisputedly known in the art and refer to amplification media. The maximum pumping condition is understood to mean the maximum achievable inversion rate for a given optical amplification medium and is, thus, a well-determined quantity. Whereas amplification media may have their

own gain coefficient, according to the claim it is the gain coefficient of the optical amplifier which is defined, as is the case for the amplifiers based on the gain coefficient of Figure 2 of D1 and Figure 1 of D2. Finally, the feature that "an efficiency evaluation value ... becomes a previously set value or more" is understood to mean quite straightforwardly that the efficiency evaluation value has to be at least as high as a deliberately chosen (predetermined) value which was set in a step previous to the claimed method of realization. Hence, claim 1 is clear and thus fulfills the requirements of Article 84 EPC.

3.4 The patent in suit discloses three ways for realizing an optical amplifier: a first consisting of operating an optical amplifier comprising a temperature adjusting section in such a way that the claimed conditions are fulfilled (see page 5, line 25 to page 6, line 44 of the patent in suit); a second consisting of refining an additive in the erbium doped optical fiber (EDF) (see page 6, line 44 to page 7, line 35 of the patent in suit); and a third consisting of refining the host glass to be used as the optical amplification medium (see page 6, line 45 to page 8, line 50). The latter two examples thus relate essentially to methods of manufacturing an optical amplifier in such a way that the claimed conditions are fulfilled. In the board's view these examples suffice to disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art as required by Article 83 EPC.

3.5 The board considers that the fact that the optical amplifiers of D1 and D2 have the claimed properties necessarily implies a "method for realizing" them comprising all the features of claim 1 of the first

auxiliary request apart from "the step of setting the gain coefficient ... so that an efficiency value ... becomes a previously set value or more". Neither D1 nor D2 discloses anything which could be understood as setting an efficiency evaluation value to a previously set value or more, which the board understands as a value which was set before realizing the optical amplifier. It is true that according to D1 and D2 the gain spectrum of the optical amplifier is optimised in view of a better performance by co-doping the EDF (D1, paragraph [0005]) or by using a different host glass for the EDF (D2, abstract) resulting in a gain spectrum which has an efficiency evaluation value higher than that of an non-optimised optical amplifier. These documents do not, however, teach previously, *i.e.* before realizing the optical amplifier, setting an efficiency evaluation value to a given value so that this previously set value functions as the target efficiency value when setting the gain coefficient.

The opposition division argued that the method of realizing an optical amplifier also encompassed the simple turning on of a standard erbium doped fibre amplifier such as known from D1 or D2. Turning on and operating an amplifier at a certain gain was equivalent to setting the gain coefficient. The board reaches a different conclusion. If it were accepted for the sake of argument that, as maintained by the opposition division, turning on an optical amplifier was a form of realizing it, there is nothing in D1 or D2 which could be interpreted as a step of setting a coefficient. A step of setting implies a deliberate step which, according to the invention, is achieved by adjusting the temperature or doping the amplification medium or modifying the host glass. Simply turning on an existing device cannot be considered to imply a step of setting

the gain coefficient. The gain coefficient has to have been set previously before turning on the amplifier.

3.6 For the reasons set out above, the subject-matter of claim 1 of the first auxiliary request is novel over the teaching of D1 or D2.

4. Remittal to the first instance (Article 111(1) EPC)

4.1 According to Article 111(1) EPC the Board of Appeal may either exercise any power within the competence of the department which was responsible for the decision appealed or remit the case to that department for further prosecution.

In the present case, the question as to whether the invention defined by claim 1 of the first auxiliary request involves an inventive step has not been dealt with by the opposition division. Both parties expressed their wish that the case be remitted for further prosecution. Hence, the board exercises its discretion and decides to remit the case to the opposition division.

5. Request to order a change of the composition of the opposition division

The appellant requested that the composition of the opposition division be changed. It *inter alia* pointed to page 8, line 5 of the minutes of the oral proceedings before the opposition division and maintained that the term "argued vehemently" as used by the opposition division to characterise the pleading of the patent proprietor's representative was inappropriate and showed that the opposition division was biased.

The board does not share the appellant's conclusion. The minutes of the oral proceedings before the opposition division are very detailed, extend over nine pages and use terms like "argued", "countered" or "replied" numerous times in connection with the proprietor's and the opponent's representatives. Against this background, the board considers the use of the term "vehemently" as a possibly maladroit effort to characterise the emphasis placed by the proprietor's representative on his argument. The board, however, fails to see any sign of bias against the proprietor.

The request for ordering a change in the composition of the opposition division is therefore refused.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance for further prosecution on the basis of claims 1 to 11 of the first auxiliary request filed with the letter dated 13 October 2009.

3. The appellant's request that two questions of law be referred to the Enlarged Board of Appeal is refused.

4. The appellant's request that the composition of the opposition division be changed is refused.

The Registrar: The Chairman:

G. Rauh R. Moufang

Decision electronically authenticated