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**Datasheet for the decision
of 25 October 2011**

Case Number: T 1220/09 - 3.5.05

Application Number: 02255086.7

Publication Number: 1282255

IPC: H04L 1/00

Language of the proceedings: EN

Title of invention:

System and method for automatic optimization of WDM optical communication systems

Patentee:

Tyco Electronics Subsea Communications LLC

Opponent:

Nokia Siemens Networks GmbH & Co. KG

Headword:

Adjusting parameters of WDM optical system/TYCO ELECTRONICS
SUBSEA COMMUNICATIONS

Relevant legal provisions:

EPC Art. 123(2), 123(3)

Relevant legal provisions (EPC 1973):

EPC Art. 84

Keyword:

"Clarity of amended claims - yes"
"Added subject-matter - no"
"Extension of the protection - no"

Decisions cited:

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Case Number: T 1220/09 - 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 25 October 2011

Appellant: Tyco Electronics Subsea Communications LLC
(Patent Proprietor) 412 Mount Kemble Avenue
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Representative: Brookes Batchellor LLP
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Respondent: Nokia Siemens Networks GmbH & Co. KG
(Opponent) St. Martin Strasse 76
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Representative: Paetsch, Werner
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 2 April 2009
revoking European patent No. 1282255 pursuant
to Article 101(2) EPC.

Composition of the Board:

Chairman: A. Ritzka
Members: P. Cretaine
D. Prietzel-Funk

Summary of Facts and Submissions

I. This appeal is against the decision of the opposition division dispatched 2 April 2009 to revoke the European patent 1 282 255. The patent was revoked for the reasons that the claims as amended in opposition did not meet the requirements of Article 84 EPC 1973 and Article 123(2) EPC.

II. Notice of appeal was submitted on 1 June 2009. The appeal fee was paid on the same day. The statement setting out the grounds of appeal was submitted on 3 August 2009.

The appellant (patentee) requested the cancellation of the decision and the maintenance of the patent in amended form according to independent claims 1 and 12, as filed with the statement setting out the grounds of appeal, to be substituted for independent claims 1 and 11 on which the decision to revoke had been based.

III. In its letter received 3 September 2009 the respondent (opponent) commented on the statement of grounds of appeal and requested that the appeal be dismissed because the amendments to the independent claims consisted either in features which were present in the description but which had not been claimed in the granted claims or in features which were not present in the description. The respondent further requested to dismiss the appeal because the amended independent claims did not involve an inventive step, having regard to the disclosure of

D1: US 6 115 157, cited in the notice of opposition.

- IV. In a communication accompanying the summons to oral proceedings, dated 14 June 2011, the board gave its preliminary opinion that the independent claims 1 and 12 were lacking clarity (Article 84 EPC) and did not meet the requirements of Article 123(2) and (3) EPC. The board announced that these objections would be discussed at the hearing.
- V. In its letter of 6 September 2011 in response to the board's communication the respondent presented objections in respect of clarity of the amended claims and of the whole application. It objected again that the claims had been amended to contain subject-matter which was either not disclosed in the originally filed application or was not present in the granted claims. The respondent also pointed out the relevance of the prior art documents cited in the opposition phase before the examining division.
- VI. In its letter of 26 September 2011 in response to the board's communication the appellant filed a replacement set of claims 1 to 24 in which amendments had been made in particular to the independent claims 1 and 12 for overcoming the clarity objections raised by the board.
- VII. The oral proceedings took place on 25 October 2011. The Chair first announced that, since the decision under appeal was based solely on the grounds that the claims, as amended in opposition, did not meet the requirements of Articles 84 and 123(2) EPC, only the compliance of the amended claims with the requirements of Articles 84 and 123 EPC would be examined. The appellant (patentee) requested that the decision under appeal be set aside and the case be remitted to the department of first

instance for further prosecution on the basis of the set of claims 1 to 22 submitted in the oral proceedings. The respondent (opponent) requested that the appeal be dismissed. At the end of the oral proceedings the Chair announced the board's decision.

VIII. Claim 1 of the sole request reads as follows:

"A method of maintaining an established error count for data transmitted on a WDM optical communication network comprising a plurality of channels, on a channel-by-channel basis, said method comprising:
obtaining a previous interval FEC error count associated with data transmitted to a receiver on one of a plurality of channels of said network;
comparing said previous interval FEC error count to a reference error count associated with said channel;
characterized by:
adjusting one of a plurality of different operational parameters associated with said channel in response to a difference between said previous interval FEC error count and said reference error count, said plurality of different operational parameters including a channel pre-emphasis parameter, at least one operational parameter of said transmitter and at least one operational parameter of said receiver; and
repeating said obtaining, comparing and adjusting steps to adjust each of said plurality of said different operational parameters associated with said channel on an automatic basis, whereby each of said different operational parameters is adjusted periodically at a different predetermined time from the other operational parameters, and when the channel pre-emphasis parameter is to be adjusted, previous interval FEC error counts

for all channels are obtained for pre-emphasis, and the channel with the highest error count is selected for adjustment."

Independent claim 12 contains the same features as claim 1 but expressed in terms of a claim for a computer program medium.

Reasons for the Decision

1. *Admissibility*

The appeal complies with the provisions of Article 106 to 108 EPC (see Facts and Submissions point II above). Therefore, it is admissible.

2. *Amendments*

The claims were amended during the oral proceedings. Since the aim of the amendments was to overcome the Articles 84 and 123 EPC objections raised by the board in the annex to the summons to oral proceedings, the amended claims were admitted into the proceedings although being late filed.

- 2.1 The **preamble** of claim 1 was amended with respect to claim 1 on which the impugned decision was based first by mentioning that the method operates **on a channel-by-channel basis**. It was also amended by reciting in the obtaining step that the previous interval FEC error count is associated with data transmitted **on one of a plurality of channels**, instead of being associated with data transmitted **on each of a plurality of channels**,

and by specifying in the comparing step that the **reference error count is associated with said channel** instead of being **associated with each said channel** according to claim 1 on which the impugned decision was based. By performing these last two amendments, the appellant reverted to the wording of the preambles of originally filed claim 1 and granted claim 1.

Since claim 1 defines in its characterizing part that the parameter adjustments are performed periodically, it relates unambiguously to the background adjustments described in the specification, and not to the set-up adjustments. In respect of the background adjustments, Paragraph [0044] in combination with Figure 6, and claims 11 and 12 of the published application describe that each of the operational parameters is adjusted, at a different time from the other operational parameters, on all the channels of the WDM system in turn. This supports the amendment that the method operates **on a channel-by-channel basis**. The two other amendments in the preamble are, as mentioned above, based on features already present in the preamble of claim 1 as originally filed. The board is thus satisfied that the amendments to the preamble of claim 1 are supported by the originally filed application documents (**Article 123(2) EPC**).

The feature that the method operates on a channel-by-channel basis limits the protection conferred by claim 1 as granted; the two other amendments to the preamble consist in features which were already present in the preamble of claim 1 as granted. The amendments to the preamble of claim 1 therefore meet the requirements of **Article 123(3) EPC**.

The features that the previous interval FEC error count is obtained on one of the channels and that the reference error count used for the comparison is associated with that channel are both described in respect of background adjustments for transmit and receive parameters (see Figure 7 and the corresponding description passages) and also in respect of background adjustments for the pre-emphasis (see Figure 8 and the corresponding description passages). With a view to these, Figure 7 describes the procedure used for adjusting a transmit or receive parameter on one channel; step 708 shows that a previous interval FEC error count "ECprev" associated with data transmitted on that channel is obtained; steps 716, 720, 736 and 728 show that the reference error count "ECref" can be considered to be associated with said channel since it corresponds to the error count which has been obtained for said channel at the previous adjustment time. Figure 8 describes the procedure used for adjusting the pre-emphasis, wherein the previous interval FEC error counts for all channels are obtained (steps 810 and 824) and the channel with the highest error count is selected for adjustment of its pre-emphasis parameter (steps 812 and 826). The previous interval FEC error count for that channel to be adjusted is thus also obtained, together with the previous interval FEC error counts for the other channels. The reference error count "ECref" used in the comparing step (steps 828, 834, 842 and 850 of Figure 8B) is the previous interval FEC error count obtained on the channel which had been previously selected for the adjustment of pre-emphasis at the previous time for pre-emphasis adjustment (steps 818, 836, 844 and 852). This reference error count can

be considered to be associated with the channel being currently adjusted since it will be used only in the adjustment procedure of that channel. Thus the preamble of claim 1 is adapted to include both scenarios, the background adjustments of transmit and receive parameters on one channel and the background adjustments of pre-emphasis parameter on one channel. The board is therefore satisfied that the amendments to the preamble of claim 1, with respect to claim 1 of the impugned decision, overcome the clarity objections (**Article 84 EPC**) raised in said decision (point 3.3) in respect of the comparing step.

- 2.2 The characterizing part of claim 1 has been amended by adding the following features to the characterizing part of claim 1 as granted:
- a) each of the different operational parameters is adjusted periodically at a different predetermined time from the other operational parameters, instead of having only the channel pre-emphasis adjusted periodically at a different predetermined time from the other operational parameters;
 - b) when the channel pre-emphasis parameter is to be adjusted, previous interval FEC error counts for all channels are obtained for pre-emphasis, and the channel with the highest error count is selected for adjustment.

- 2.2.1 Feature a) is clear and supported, inter alia, by Figure 6 of the application as originally filed, which shows several transmit and receive parameters and the pre-emphasis being adjusted each at a different predetermined time ("hour") during a day (Article 84 and 123(2) EPC). Moreover, feature a) restricts the

adjustment of transmit and receive parameters to be done at different times, which was not specified in claim 1 as granted (Article 123(3) EPC).

- 2.2.2 Feature b) is fully supported by the description as originally filed, in particular paragraph [0054] of the published application in combination with Figure 8A, steps 824 and 826 (Article 123(2) EPC).

Feature b) defines that the pre-emphasis is adjusted on the channel having the highest previous interval FEC error count among all channels. Figure 6 shows that each operational parameter is adjusted at specific scheduled times. From the description and dependent claims 11 and 12 as originally filed, it is clear that each transmit or receive operational parameter is adjusted at its specific scheduled time on all channels of the WDM system, each in turn. By contrast, at a time when the pre-emphasis parameter is to be adjusted (hours 8, 16 and 24 as illustrated in Figure 6), the pre-emphasis parameter is adjusted for only one channel, the channel having the highest FEC error count in the previous interval. Due to the addition of feature b), claim 1 now clearly defines the two distinct background adjustment procedures (for transmit/receive parameters on one side and for pre-emphasis parameter on the other side) described in the application. The board is thus satisfied that the clarity objections raised in the impugned decision (point 3.3) in respect of the difference between the two adjustment procedures have been overcome by the insertion of feature b) in claim 1 (Article 84 EPC).

Feature b) limits the adjustment, at each predetermined time dedicated to pre-emphasis adjustment, to a single channel. The protection conferred by claim 1 has thus been restricted by the addition of feature b) (Article 123(3) EPC).

2.3 Therefore, claim 1 meets the requirements of Articles 84, 123(2) and 123(3) EPC. Independent claim 12 contains the same features as claim 1 but expressed in the terms of a claim for a computer program medium. Thus, claim 12 meets the requirements of Articles 84, 123(2) and 123(3) EPC too.

3. The respondent argued that claim 1, as amended during the oral proceedings before the board, still did not meet the requirements of Article 84 EPC for the following reasons.

3.1 The wording "maintaining an established error count" used in the preamble of claim 1 was, according to the respondent, unclear since the claimed method only defined how to adjust channel parameters, not how to maintain an error count. In the board's judgement however, this term was already present in claim 1 as granted and thus a clarity objection based on the use of this wording can not be raised in the opposition proceedings. Moreover, the board judges that the appellant is entitled to use such a wording in the preamble for designating the subject-matter of the invention (Rule 43(1)(a)) since the background adjustments of the operational parameters, to which claim 1 is directed, do achieve, according to the description, a maintenance or even a reduction of the

error count on a channel (see in particular paragraph [0022] of the published application).

3.2 The term "difference" used in the adjusting step of the characterizing part of claim 1 was, according to the respondent, unclear since it was not supported by the description and the drawings. Again the board judges that this term was already present in claim 1 as granted and that a clarity objection based on the use of this term can not be raised in opposition proceedings. Moreover, the adjusting step in claim 1 should be interpreted, in the light of the flow-charts in Figures 7 and 8, as meaning that the operational parameters are adjusted when the previous interval FEC error count and the reference error count are judged to be different, as a result of the previous comparing step, without the difference having been calculated.

4. The decision under appeal was based solely on the grounds that the claims as amended in opposition proceedings did not meet the requirements of Articles 84 and 123(2) EPC. The opposition was however based on the grounds that the claims did not meet the requirements of Article 54 and 56 EPC. Since the board judges that the claims now on file meet the requirements of Articles 84, 123(2) and 123(3) EPC, it has to remit the case to the department of first instance for further assessment of novelty and inventive step of the claims.

The board notes that the wording "data transmitted to a receiver" in the preamble of claim 1 should be replaced by "data transmitted **from a transmitter** to a receiver", as it was used in granted claim 1, in order to support

the definition of "one operational parameter of **said transmitter**" in the characterizing part. This amendment should be done during the further prosecution of the case before the department of first instance.

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.

The Registrar:

The Chair:

K.Götz

A. Ritzka