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**Datasheet for the decision  
of 17 December 2009**

**Case Number:** T 1123/09 - 3.5.05

**Application Number:** 02028629.0

**Publication Number:** 1324527

**IPC:** H04L 1/00

**Language of the proceedings:** EN

**Title of invention:**

Interleaving apparatus and method for symbol mapping in an HSDPA mobile communication system

**Applicant:**

SAMSUNG ELECTRONICS CO., LTD.

**Opponent:**

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**Headword:**

Interleaving in a HSDPA system/SAMSUNG ELECTRONICS

**Relevant legal provisions:**

EPC Art. 84, 106, 108  
EPC R. 42(1)(b), 43(1)

**Relevant legal provisions (EPC 1973):**

EPC Art. 84, 109  
EPC R. 27(1)(b), 67

**Keyword:**

"Right to amend - violation (yes)"  
"Remittal for further prosecution (yes)"  
"Reimbursement of the appeal fee (yes)"

**Decisions cited:**

J 0010/07, T 2321/08, T 0889/93, T 0022/83, T 0208/88

**Catchword:**

Rule 27(1)(b) EPC incorrectly applied. T 2321/08 followed -  
see Reasons 3.



Case Number: T 1123/09 - 3.5.05

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.05  
of 17 December 2009

**Appellant:** SAMSUNG ELECTRONICS CO., LTD.  
416, Maetan-dong  
Paldal-gu  
Suwon-City  
Kyungki-do (KR)

**Representative:** Grünecker, Kinkeldey,  
Stockmair & Schwanhäusser  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 16 February 2009  
refusing European application No. 02028629.0  
pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman:** D. H. Rees  
**Members:** A. Ritzka  
G. Weiss

## Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division dispatched 16 February 2009, refusing the European patent application No. 02028629.0 under Rules 42(1)(b) and 43(1) EPC and Article 84 EPC.
  
- II. Notice of appeal and the statement setting out the grounds of appeal was filed on 23 April 2009. The appeal fee was paid on the same day. The appellant requested that the decision under appeal be set aside and that the patent be granted on the basis of the enclosed claims and the description and drawings on file, including the amended description pages filed with the statement setting out the grounds of appeal. An auxiliary request for oral proceedings was made. The reimbursement of the appeal fee was requested.
  
- III. In its letter of 29 May 2009 the appellant referred to the decision T 2321/08, the reasoning of which was said to apply to the present case, and requested a revision of the decision under Article 109 EPC.
  
- IV. In a communication accompanying summons to oral proceedings the Board expressed the view that the facts on which the objection under Rule 42(1)(b) EPC were based appeared to be similar to those of T 2321/08 and that the board was minded to follow decision T 2321/08. Further, the objection under Rule 43(1) EPC did not apply to the independent claims of the main request. As a complete examination as to the differences between the claims of the auxiliary request and the prior art documents did not appear to have been performed prior to the appealed decision, the formulation to the

independent claims of the auxiliary request in the two-part form had to be postponed. The board commented on the objections under Article 84 EPC 1974 and announced that it was minded to remit the case to the department of first instance for further prosecution since a complete examination as to novelty and inventive step had not been carried out so far.

V. In its letter of 9 November 2009 the appellant accepted the board's reasoning and requested that the decision under appeal be set aside and the case remitted to the department of first instance for further prosecution.

VI. In a communication of 16 November 2009 the board informed the appellant that the hearing scheduled for 9 December 2009 was cancelled and the proceedings were continued in writing.

VII. The appeal is based on the following documents:

description pages

1 to 4, 7 to 13, 16 to 41	as originally filed;
5, 6, 42	filed with letter of 4 August 2004;
5a	filed with letter of 17 June 2005;
14, 15	filed with letter of 23 April 2009;

drawings

sheets 1/27 to 27/27	as originally filed.
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Claim 1 of the main request reads as follows:

"An apparatus for data transmission in a communication system, comprising:  
a turbo encoder (220) for turbo coding data bits to generate the systematic bits and parity bits;  
a rate matcher (230) for rate matching the systematic bits and parity bits;  
a first and second interleaver (250, 260; 710; 1310) for writing the rate-matched systematic bits row by row and the rate-matched parity bits row by row from a first row to a last row, and performing inter-column permutation according to a determined rule; and  
a modulator (280, 730, 1320) for alternately collecting the permuted bits column by column from a first column to a last column in the first interleaver and the second interleaver, and mapping collected bits from the first interleaver and second interleaver onto one modulation symbol according to a modulation scheme,  
wherein a size of the first interleaver and a size of the second interleaver are same, the first and second interleaving are performed respectively."

Claim 6 is a method claim corresponding to the apparatus of claim 1.

Claims 1 and 6 of the auxiliary request differ from claims 1 and 6 of the main request in being formulated in two-part form.

## Reasons for the Decision

### 1. *Admissibility*

The appeal complies with the provisions of Articles 106 and 108 EPC 1973, (see Facts and Submissions, point II above). Thus, it is admissible.

### 2. *Revision under Article 109 EPC 1973*

The request for revision under Article 109 EPC 1973 was received after the examining division had already decided not to rectify its decision and transferred the file to the Boards of Appeal. Thus, at that stage a revision of the decision was no longer possible.

### 3. *Point I of the decision under appeal*

Point I of the decision under appeal refers to documents

D2: Samsung Electronics: "Enhanced Symbol Mapping method for the modulation of Turbo-coded bits based on bit priority" 3GPP TSG RAN WG1/WG2 Joint Meeting on HSDPA, Sophia Antipolis, FR, 5-6 April 2001, pages 1 to 6 and

D3: Samsung Electronics: "Performance Evaluation of the enhanced Symbol Mapping method based on Priority (SMP) in HSDPA" 3GPP TSG RAN WG1 Meeting #20, Busan, Korea, 21-25 May 2001, pages 1 to 7.

These documents, which originated from the applicant, were not cited in the application as originally filed. The department of first instance considered that Rule 42(1)(b) EPC (Rule 27(1)b EPC 1973) had to be interpreted such that an applicant has the obligation to cite any documents which, as far as known to the applicant, can be regarded as useful for understanding the invention, for drawing up the European search report and for examination in the application as originally filed and that, if the applicant did not cite documents it is deemed to have known, this obligation can not be met by acknowledging the documents in the description only after they have been cited in the search report.

The facts on which case T 2321/08 was based were that several documents cited in the search report were not acknowledged in the application as filed although one of the named inventors of the application was an author of those documents. Consequently, the applicant was deemed to know these documents. As the documents were not cited in the application as filed and this objection could not be overcome at a later stage according to the examining division, the application was refused under Rule 42(1)(b) EPC. These facts are substantially identical to those underlying point I of the decision under appeal in the present case except that D2 and D3 do not give the name of the author, so that in this case the connection is only that they emanate from the applicant company.

The present board agrees with the reasoning of T 2321/08 and adopts points 2 to 9 of the decision in the present case.



Accordingly the board judges that Rule 27(1)(b) EPC 1973 has to be applied instead of Rule 42(1)(b) EPC, these rules being substantially identical, that Rule 27(1)(b) EPC 1973 was incorrectly applied in point I of the decision under appeal and that the appellant has the right to amend the description to acknowledge D2 and D3 following the objection raised by the examining division.

4. *Point II of the decision under appeal*

It was objected in point II of the decision that the independent claims were not properly formulated in the two-part form, since one feature of D2 was missing in the preambles of the claims.

4.1 Main request

This objection does not apply to the current independent claims of the main request, the claims being formulated in one-part form.

4.2 Auxiliary request

Claims 1 and 6 of the auxiliary request correspond to claims 1 and 6 of the set of claims on which the decision under appeal was based.

From its communications the examining division would appear to consider D2 or D3 to represent the closest prior art. However it has given neither a reasoned argument as to which of these should be considered the closest prior art document nor an analysis of which

claimed features are disclosed by that document. Thus, the differences between the claimed subject-matter and the closest prior art disclosure have not yet been determined.

The board considers that it is necessary to determine the differences between a claim and a prior art document prior to the formulation of a claim in the two-part form. As such an examination has not been performed yet, the formulation of the independent claims in the two-part form has to be postponed.

5. *Point III of the decision under appeal*

Considering the amended description pages filed with the statement setting out the grounds of appeal, the description was amended to be adapted to the claims which are limited to first and second interleavers of equal size, implying a code rate of  $1/2$ , overcoming the objection made in point III of the decision under appeal. The board observes that any further amendments of the claims may entail a further adaptation of the description.

6. *Point IV of the decision*

In point IV of the decision under appeal the independent claims were held to be unclear since the applicant had made contradicting statements whether the claimed interleaver was limited to the definition given in the description corresponding to a description as often found in textbooks or the claimed interleaver should also include interleavers according to real

implementations which differed from the textbook definition.

With respect to point IV of the decision under appeal, the board notes that according to Article 84 EPC 1973 the claims shall define the matter for which protection is sought.

According to claim 1 of both requests the first and second interleaver inter alia perform inter-column permutation according to a determined rule and the modulator collects the permuted bits column by column from a first column to a last column. The skilled person would understand the column permutation and the collection of permuted bits to be separate operations. Thus, the claims are clear.

According to paragraph [0053] of the description as published it would be obvious to the skilled person that the column permutation operation and the reading operation could be united into one operation by changing the order of reading (page 10, lines 8 and 9). This option is disclosed as an obvious alternative which differs from the embodiment requiring separate operations. The board notes that this obvious alternative does not literally fall under the wording of the claim.

The appellant stated at page 4, second to last paragraph of the statement setting out the grounds of appeal, that interleaving could be physically implemented by using at least one memory formed by rows and columns, or logically performed by using a software

algorithm. The board understands this comment as an explanation of interleaving as known in the art.

However, the content of the claims is defined by their wording which has to be supported by and interpreted in the light of the description. The board considers that the wording of the claims only covers the first option, as supported by page 10, lines 8 and 9 of the description, cited above.

7. *Novelty and inventive step/ Remittal*

A complete examination as to novelty and inventive step has not been carried out yet, although the prior art documents on file appear to disclose some features of the claimed subject-matter.

Therefore, the board remits the case to the department of first instance for further prosecution.

8. *Reimbursement of the appeal fee*

According to Rule 67 EPC 1973 (applicable here, see J 10/07, point 7 of the reasons), the appeal fee shall be reimbursed where the board of appeal deems an appeal to be allowable, if such reimbursement is equitable by reason of a substantial procedural violation.

In the present case the appeal is deemed to be allowable, (see points 3 to 7 above).

As to the assessment of a substantial procedural violation the following procedural steps are considered:

In the communication of 11 February 2005 the then applicant was requested to acknowledge documents D2 to D4 in the description, (see point 12). In point 13 of the same communication it was noted that D2 to D4 all originated from the applicant and that they must clearly have been known to the applicant in the sense of Rule 27(1b) [sic] EPC 1973. In reaction to this communication the applicant filed an amended page 5a with letter of 17 June 2005, page 5a replacing previous page 5a and referring to D2 to D4.

In point 3 of a communication accompanying summons to oral proceedings the examining division noted that D2 and D3 originated from the applicant. As they were highly relevant to the application, at least one of them should have been cited in the application as originally filed. However, this had not been done, contrary to Rule 42(1)(b) EPC. The examining division stated that this was a sufficient condition for refusing this application.

In reaction to the applicant's submissions in its letter of 19 December 2008 and its email of 14 January 2009 the examining division confirmed in its email of 19 January 2009 that the refusal under Rule 42(1)(b) EPC had to be expected.

In reaction to this statement the applicant withdrew its request for oral proceedings and requested an appealable decision.

The board notes that the matter at issue consists in a general interpretation and application of a legal provision rather than an assessment of facts. According

to established case law of the Boards of Appeal (see e.g. T 889/93, point 2 and T 22/83, point 3(iv)), the Boards of Appeal allow, or require, erroneous statements about the prior art to be corrected and/or supplemented where necessary. Further there is no case law which even suggests that an applicant may be prohibited from correcting and/or supplementing such statements on the grounds that omitted prior art "could be deemed known to the applicant" at the date of filing (cf. decision point I). Neither does the board see any basis in the European Patent Convention for such a prohibition on these grounds.

In the board's judgement, under these circumstances this use of a new and unsupported principle by the examining decision constitutes a substantial procedural violation, in analogy to T 208/88, point 6, and the reimbursement of the appeal fee is equitable.

**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.
3. The appeal fee is to be reimbursed.

The Registrar:

The Chairman:

K. Götz

D. H. Rees