

# PATENT COOPERATION TREATY

REC'D 30 MAR 2005

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From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

To:

see form PCT/ISA/220

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/US2004/038476

International filing date (day/month/year)  
18.11.2004

Priority date (day/month/year)  
29.12.2003

International Patent Classification (IPC) or both national classification and IPC  
H04L27/26, H04L1/00

Applicant  
INTEL CORPORATION

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:

European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Authorized Officer

Telephone No. +49 89 2399-

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - a sequence listing
    - table(s) related to the sequence listing
  - b. format of material:
    - in written format
    - in computer readable form
  - c. time of filing/furnishing:
    - contained in the international application as filed.
    - filed together with the international application in computer readable form.
    - furnished subsequently to this Authority for the purposes of search.
3.  In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. II Priority**

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1.  The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2.  This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/US2004/038476

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-36
Inventive step (IS)	Yes: Claims	
	No: Claims	1-36
Industrial applicability (IA)	Yes: Claims	1-36
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

Reference is made to the following documents:

D1: US 2003/193889 A1

D2: WO 01/67702 A

D3: US 2003/231715 A1

D4: LIU H-H ET AL: "New frame-based network allocation vector for 802.11b multirate wireless LANs" IEE PROCEEDINGS : COMMUNICATIONS, INSTITUTION OF ELECTRICAL ENGINEERS, GB, vol. 149, no. 3, 14 June 2002 (2002-06-14), pages 147-151

D5: EP-A-0 869 647

1. Claim 1 does not meet the requirement of novelty, Article 33(2) PCT.
  - 1.1 Document D1 discloses, in terms of the wording of claim 1, a method comprising adapting a physical layer parameter based on exchanged channel information and exchanging over a channel the adapted physical layer parameter (see, e.g. paragraphs 0019-0023).
2. All the features of claim 1 are also disclosed in D2, D3, D4 and D5 (see citations in the International Search Report).

Therefore, claim 1 also lacks novelty vis-à-vis D2, D3, D4 or D5.
3. Independent claims 11, 17, 23 and 29 comprise the same features as method claim 1 but in terms of apparatus, wireless communication station, wireless communication system and an article features, respectively. Therefore, the objection of lack of novelty (documents D1-D5) is also applied to these claims.
  - 3.1 The applicant should note that the scope of protection of the present independent claims

is very broad and well-known in the art.

4. Even if novelty of the independent claims could be argued, based on minor differences between the features of these claims and those disclosed in the cited prior art documents, the subject-matter of claims 1, 11, 17, 23 and 29 would not involve an inventive step, Article 33(3) PCT, having regard to the disclosure of D1-D5.
5. The dependent claims do not contain any additional feature which, in combination with the independent claims, meet the requirements of novelty and inventive step. All these features are directly derivable from at least one of the documents D1-D5 (see citations in the International Search Report).
6. Claim 1 does not meet the requirement of clarity, Article 6 PCT, because it is not clear between which entities the channel information is exchanged. At least it should be included in the claim that the information is exchanged between two stations of a radio system (see description, page 3, paragraph 0014). Otherwise the scope of the claim would be vague and leading to several interpretations.
  - 6.1 This objection also apply for other independent claims.
7. Independent claim 29 is directed to an article. This notation also leads to confusion about the scope of protection sought, Article 6 PCT. To render it clear, the following wording is proposed: "A data processing system comprising ...".
8. It appears that the features of claims 2, 12, 18, 24 and 30 can only be valid for a system employing multicarrier modulation (see, e.g. description, paragraphs 0091, 0017 and 0018). However, this feature is not present in the claims leading to doubts about their scope of protection, Article 6 PCT.
9. The term "to estimate a transfer function" in claims 16, 22, 28 should be replaced by "to estimate a channel transfer function" for consistency with the other claims and the description, art. 6 PCT.
10. The following terms lack antecedent definition because they have not been defined

previously in the claims (or in the preceding ones): "the training information" in claims 8 and 34 and "in the another exchanged data packet" in claim 34, Art. 6 PCT.

11. The following should also be noted:

11.1 The independent claims are not in the two-part form as required by Rule 6.3(b) PCT, whereby the features already disclosed in document D1 should have been placed in the preamble.

11.2 Reference signs in parentheses should have been inserted in the claims to increase their intelligibility (Rule 6.2(b) PCT). This applies to both the preamble and characterising portion.

11.3 To meet the requirements of Rule 5.1(a)(ii) PCT, the documents D1 and D2 should have been identified in the description and their relevant contents briefly indicated.

11.4 The vague and imprecise statement in the description on page 17, last paragraph implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them (see also the PCT Guidelines, III-4.3a). It should have been deleted.

11.5 When filing amended claims the applicant should at the same time bring the description into conformity with the amended independent claims, Rule 5.1(a)(iii).

11.6 In order to facilitate the examination of the conformity of the amended application with the requirements of Article 34(2)(b) PCT, the applicant is requested to clearly identify the amendments carried out, no matter whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (see also Rule 66.8(a) PCT).

If the applicant regards it as appropriate these indications could be submitted in handwritten form on a copy of the relevant parts of the application as filed.