

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte MATS OGREN

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Appeal No. 1997-1373  
Application No. 08/478,811

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HEARD: December 11, 2001

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Before HAIRSTON, RUGGIERO, and BARRY, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claims 2-5 and 18. Claims 1 and 6-17 were canceled earlier in the prosecution. An amendment filed November 27, 1995 after final rejection was approved for entry by the Examiner as indicated in the Advisory Action dated December 14, 1995 (Paper No. 24). This amendment canceled claims 2-5 and 18 and added new claims 19-23; however, the Examiner maintained that these

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added claims would be subject to the existing rejection under 35 U.S.C. § 112, first paragraph. Accordingly, the rejection of claims 19-23 is now before us on appeal.

The claimed invention relates to a method of allocating radio channels among the base stations in a multi-base station radio system. The allocation method utilizes a mathematical model of the radio system derived from an analogy with a heat bath having a plurality of immersed particles. The energy content of the heat bath is gradually changed in order to achieve an energy content which corresponds to an acceptable interaction between the plurality of particles, thereby determining an acceptable level of interference among base stations of the radio system by minimizing the total energy of the system.

Claim 19 is illustrative of the invention and reads as follows:

19. A method of distributing channels between base stations and a multi-base section radio system by analogy with a mathematical model wherein said analogy determines a channel distribution which has an acceptable level of inter-channel interference wherein said mathematical model is based on a heat bath having a plurality of particles immersed therein, said method comprising the steps of:

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assigning each base station of the radio system as a corresponding one particle of said plurality of particles of said mathematical model wherein each of said radio stations corresponds to a discrete state of each of said particles;

assigning selected channels so they are represented by different states of a particles so that changes in said distribution of channels are represented respectively by changes in the states of said particles;

representing interference between base station channels by an interaction between said states of different particles of said plurality of particles;

representing a change in an interference range coverage area ratio (C/I) by a change in energy of said mathematical model of said heat bath;

representing the total number of base stations and channels in said radio systems by the number of particles and states in said mathematical model wherein said number of particles and states correspond to those number of particles and states necessary to meet a predetermined traffic demand with a maximum acceptable level of interference between channels;

wherein a first condition of said radio system is specified by the number of said plurality of particles and interaction between said number of particles and said heat bath and further wherein one of a redistribution of said radio channels and a change in number of channels is represented in said mathematical model by a change in said states and said interactions of said particles;

setting an initial temperature for said heat bath of said mathematical model and reducing said temperature in a series of steps so that the states of the particles change in accordance with a stochastic process in order to establish channel allocation; and

changing energy of said heat bath in order to achieve an energy content which corresponds to an acceptable interaction

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between said plurality of particles and an acceptable level of interference between said base stations.

No prior art references have been relied upon by the Examiner.

Claims 19-23 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to provide an adequate disclosure.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Brief (Paper No. 26) and Answer (Paper No. 27) for the respective details.

#### OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the Examiner, and the evidence and arguments relied upon by the Examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellant's arguments set forth in the Brief along with the Examiner's rationale in support of the rejection and arguments in rebuttal set forth in the Examiner's Answer.

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It is our view, after consideration of the record before us, that Appellant's specification in this application describes the claimed invention in a manner which complies with the requirements of 35 U.S.C. § 112. Accordingly, we reverse.

In the statement of the grounds of rejection, the Examiner asserts a failure "... to provide an adequate written description of the invention." (Answer, page 3). It is apparent, however, from the Examiner's line of reasoning and arguments that the Examiner is actually alleging a failure by Appellant to provide an enabling disclosure.<sup>1</sup> Accordingly, we will direct our discussion primarily to the merits of the Examiner's position as to the enabling nature of Appellant's disclosure. We point out, however, that our review of Appellant's specification and drawing figures reveals a detailed description of the construction of the mathematical model as an analogy to a heat bath, as well as the procedures involved in arriving at an acceptable particle interaction energy to develop a corresponding base station channel allocation with an

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<sup>1</sup> Our reviewing court has made it clear that written description and enablement are separate requirements under the first paragraph of 35 U.S.C. § 112. Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1560, 19 USPQ2d 1111, 1114 (Fed. Cir. 1991).

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acceptable level of interference between base stations. In our view, this description unquestionably provides compliance with the statutory "written description" requirement, i.e., Appellant was clearly in possession of the invention at the time of filing of the application.

As to the Examiner's assertion of lack of enablement of Appellant's disclosure, we note that, in order to comply with the enablement provision of 35 U.S.C. § 112, first paragraph, the disclosure must adequately describe the claimed invention so that the artisan could practice it without undue experimentation. In re Scarbrough, 500 F.2d 560, 566, 182 USPQ 298, 305 (CCPA 1974); In re Brandstadter, 484 F.2d 1395, 1404, 179 USPQ 286, 293 (CCPA 1973); and In re Gay, 309 F.2d 769, 774, 135 USPQ 311, 316 (CCPA 1962). If the Examiner has a reasonable basis for questioning the sufficiency of the disclosure, the burden shifts to Appellant to come forward with evidence to rebut this challenge. In re Doyle, 482 F.2d 1385, 1392, 179 USPQ 227, 232 (CCPA 1973), cert. denied, 416 U.S. 935 (1974); In re Brown, 477 F.2d 946, 950, 177 USPQ 691, 694 (CCPA 1973); and In re Ghiron, 442 F.2d 985, 992, 169 USPQ 723, 728 (CCPA 1971). However, the burden is initially upon the Examiner to establish

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a reasonable basis for questioning the adequacy of the disclosure. In re Strahilevitz, 668 F.2d 1229, 1232, 212 USPQ 561, 563 (CCPA 1982); In re Angstadt, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976); and In re Armbruster, 512 F.2d 676, 677, 185 USPQ 152, 153 (CCPA 1975).

The Examiner has questioned (Answer, page 3) the sufficiency of Appellant's disclosure in describing any physical link between the heat bath mathematical model and the base station channel allocation system. In arguments related to this contention, the Examiner asserts a failure of Appellant's disclosure to show how the changes of heat bath particle state are related to base station interference, as well as failure to provide a description of how the reduction of heat bath temperature would effect a change in the base station interference level. (Id., at 4). In the Examiner's view, Appellant's disclosure fails to provide a "nexus" between the heat bath mathematical model, which the Examiner likens to a theoretical experiment, and the base station channel distribution system. (Id., at 5).

After careful review of the arguments of record, however, we are in agreement with Appellant's position as stated in the

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Brief. In our view, the Examiner's requirement for establishing a direct physical link between the mathematical model and the channel allocation system is misplaced since, as pointed out by Appellant, no direct physical link exists because a mathematical model, by its very nature, provides an analog to a physical system. (Brief, page 9).

We further agree with Appellant that the present disclosure does in fact provide a detailed description of the correspondence between elements of the radio system base and components of the heat bath. For example, Appellant's specification at pages 9 and 10 describes the analog relationship between the radio system base stations and the particles of a heat bath, as well as the relationship between channels of the radio system and the various discrete states of the particles. In addition, the relationship between the interference range between base stations in the radio system and the energy created by particle interaction in the heat bath is described in detail at pages 11 and 12 of the specification.

We also find to be persuasive the comments made in the Simpson declaration filed August 10, 1995 (Paper No. 19) under 37 CFR

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§ 1.132. In particular, Mr. Simpson, at page 4 of the declaration, makes reference to the example of the mathematical model provided at pages 16-18 of Appellant's specification. In our view, Mr. Simpson's statements that all of the functions required to obtain a value for the level of interference for a multi-channel, multi-base station radio system are contained in the model example is persuasive evidence relating to the adequacy of Appellant's disclosure.

In view of the above discussion, we find that the Examiner has not established a reasonable basis for challenging the sufficiency of the instant disclosure. For all of the reasons discussed supra, we are persuaded that the present disclosure is of sufficient detail so as to enable one of ordinary skill to implement an operative embodiment of the invention without undue experimentation.

Accordingly, we will not sustain the rejection of claims 19-23 under the first paragraph of 35 U.S.C. § 112. Therefore, the decision of the Examiner rejecting claims 19-23 is reversed.

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REVERSED

KENNETH W. HAIRSTON	)	
Administrative Patent Judge	)	
	)	
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	)	
	)	BOARD OF PATENT
JOSEPH F. RUGGIERO	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
LANCE LEONARD BARRY	)	
Administrative Patent Judge	)	

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JUDGE RUGGIERO

APPEAL NO. 1997-1373

APPLICATION NO. 08/478,811

APJ RUGGIERO

APJ HAIRSTON

APJ BARRY

DECISION: **REVERSED**

**PREPARED:** Nov 7, 2002

**OB/HD**

**PALM**

**ACTS 2**

**DISK (FOIA)**

**REPORT**

**BOOK**