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**Datasheet for the decision  
of 29 November 2013**

**Case Number:** T 2065/10 - 3.5.05

**Application Number:** 07842318.3

**Publication Number:** 2070237

**IPC:** H04L1/00

**Language of the proceedings:** EN

**Title of invention:**

Programmable trellis decoder and associated methods

**Applicant:**

Harris Corporation

**Headword:**

Trellis decoder/HARRIS

**Relevant legal provisions:**

EPC Art. 84, 113(1), 116(1), 123(2)

**Keyword:**

Added subject-matter - (no, after amendment)  
Clarity (no) - result to be achieved, "black box"  
Oral proceedings - withdrawal of request for oral proceedings  
Right to be heard - request for decision according to the  
state of the file

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
Boards of Appeal  
Chambres de recours**

European Patent Office  
D-80298 MUNICH  
GERMANY  
Tel. +49 (0) 89 2399-0  
Fax +49 (0) 89 2399-4465

Case Number: T 2065/10 - 3.5.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.05**  
**of 29 November 2013**

**Appellant:** Harris Corporation  
(Applicant) 1025 West NASA Blvd. MS A-11  
Melbourne FL 32919 (US)

**Representative:** Schmidt, Steffen  
Wuesthoff & Wuesthoff  
Patent- und Rechtsanwälte  
Schweigerstrasse 2  
81541 München (DE)

**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 19 May 2010  
refusing European patent application  
No. 07842318.3 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chair:** A. Ritzka  
**Members:** K. Bengi-Akyuerek  
D. Prietzel-Funk

## **Summary of Facts and Submissions**

I. The appeal is against the decision of the examining division, posted on 19 May 2010, to refuse European patent application No. 07842318.3, taken as a "decision according to the state of the file" without oral proceedings having been held. As to the grounds for the refusal, the corresponding form sheet referred to the official communication dated 22 January 2010 (annex to summons to first-instance oral proceedings), which comprised the objections of added subject-matter (Article 123(2) EPC) and lack of inventive step (Article 56 EPC) with regard to claim 1 of a sole request having regard to

D1: WO-A-2006/026334.

II. Notice of appeal was received on 14 July 2010. The appeal fee was paid on the same day. With the statement setting out the grounds of appeal, received on 18 August 2010, the appellant filed a new claim 1. It requested that the decision of the examining division be set aside and that a patent be granted on the basis of claim 1 (as a single claim). In addition, oral proceedings were requested as an auxiliary measure.

III. A summons to oral proceedings scheduled for 30 January 2014 was issued on 4 September 2013. In an annex to this summons, the board expressed its preliminary opinion on the appeal pursuant to Article 15(1) RPBA. In particular, objections were raised under Articles 84 and 56 EPC in view of D1.

IV. By letter of reply dated 13 November 2013, the appellant informed the board that its request for oral proceedings was withdrawn and that it requested a

decision according to the state of the file. Moreover, it did not submit any comments on the substance of the board's communication under Article 15(1) RPBA.

V. By communication dated 29 November 2013 (faxed in advance on 26 November 2013), the appellant was informed that the oral proceedings appointed for 30 January 2014 had been cancelled.

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

"A programmable decoder comprising:

at least one programming input for a plurality of programmable trellis parameters including trellis connectivity information for trellis stages, active and inactive states for each trellis stage, a trellis branch transition data value, a metric index for trellis branch transition, a number of trellis structures, a number of trellis states for each trellis structure and a number of branches for each trellis state;

a field programmable gate array (FPGA) distinct from and connected to said at least one programming input and implementing a programmable trellis decoder for decoding convolutional codes, trellis coded modulation (TCM), ISI channels and CPM waveforms and comprising at least one trellis structure defined based upon the plurality of programmable trellis parameters; and

at least one output connected to said FPGA for outputting one or more of: decoded bits with multiple bits per output and a full traceback of all decoded bits for a best path, a difference between a best and worst path metric and a winning state for a current best path."

## Reasons for the Decision

### 1. Admissibility of the appeal

The appeal complies with the provisions of Articles 106 to 108 EPC (cf. point II above) and is therefore admissible.

### 2. SOLE REQUEST

Claim 1 as amended differs from claim 1 underlying the appealed decision in that it further specifies that

- a) the implemented programmable trellis decoder is for decoding, apart from CPM waveforms, convolutional codes, trellis coded modulation, and ISI channels (emphasis added).

This amendment is based on the disclosure of page 5, lines 4-8 of the application as filed and thus complies with Article 123(2) EPC.

#### 2.1 Article 123(2) EPC

As a result of the amendment according to feature a) made in response to the objection raised by the examining division under Article 123(2) EPC (cf. communication dated 22 January 2010, section 1), the board is satisfied that this objection no longer applies.

#### 2.2 Article 84 EPC: Clarity

The board, however, judges that claim 1 does not meet the requirements of Article 84 EPC, for the following reasons:

2.2.1 The programmable decoder according to claim 1 is merely defined by its input and output parameters and by a result to be achieved, i.e. "implementing a programmable trellis decoder for decoding convolutional codes, trellis coded modulation, ISI channels and CPM waveforms", rather than in terms of structural features allowing the technical problem posed, i.e. how to implement a programmable decoder which is able to decode all those different signals (see page 4, lines 24-27 of the application as filed), to be actually solved. In other words, the claimed programmable decoder is defined solely as a "black box" instead of its essential properties being specified for, in fact, decoding multiple encoded signal types.

2.2.2 Consequently, claim 1 fails to clearly define the solution to the underlying technical problem and therefore lacks clarity.

2.3 In conclusion, the sole request is not considered allowable under Article 84 EPC.

3. *Right to be heard (Article 113(1) EPC)*

In the present case, the appellant did not submit any comments in response to the aforementioned objection under Article 84 EPC raised in the board's communication under Article 15(1) RPBA. Furthermore, the appellant withdrew its request for oral proceedings and requested a decision according to the state of the file (cf. point IV above). Therefore, the board did not see any reason to hold the scheduled oral proceedings under Article 116(1) EPC to decide the present appeal (cf. point V above).

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chair:



K. Götz

A. Ritzka

Decision electronically authenticated