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**Datasheet for the decision
of 23 November 2023**

Case Number: T 2934/19 - 3.5.04

Application Number: 12810750.5

Publication Number: 2730089

IPC: H04N19/66

Language of the proceedings: EN

Title of invention:

SYSTEM AND METHOD FOR ENCODING AND DECODING A BITSTREAM FOR A
3D MODEL HAVING REPETITIVE STRUCTURE

Applicant:

InterDigital VC Holdings, Inc.

Headword:

Relevant legal provisions:

RPBA 2020 Art. 13, 11
EPC Art. 87(1), 111(1)

Keyword:

Amendment after summons - exceptional circumstances (yes)
Priority - basis in priority document (yes)
Remittal to the department of first instance - (yes)

Decisions cited:

Catchword:



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Case Number: T 2934/19 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 23 November 2023

Appellant: InterDigital VC Holdings, Inc.
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Representative: AWA Sweden AB
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 3 June 2019
refusing European patent application
No. 12810750.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair B. Willems
Members: M. Paci
B. Müller

Summary of Facts and Submissions

- I. The appeal is against the examining division's decision refusing European patent application No. 12 810 750.5, published as international patent application WO 2013/007171 A1.
- II. The decision under appeal is a decision according to the state of the file, as requested by the applicant. For its reasons, the decision refers to the communication dated 19 December 2018, which in turn refers to the European Search Opinion dated 20 May 2015 on specific points.

In the communication and the earlier European Search Opinion, the examining division cited the following documents:

- D1: K. Cai et al., "Bitstream specification for repetitive features detection in 3D mesh coding", MPEG98_Proposal_A3DMC_Bitstream, 98. MPEG meeting; 28-11-2011 to 2-12-2011; Geneva; (MOTION PICTURE EXPERT GROUP OR ISO/IEC JTC1/SC29/WG11), no. m22771, 24 November 2011, XP030051334
- D2: WO 2010/149492 A1
- D3: F. Bossen, ed., "Description of core experiments on 3D model coding", 46. MPEG MEETING; 07-12-1998 to 11-12-1998; ROMA; (MOTION PICTURE EXPERT GROUP OR ISO/IEC JTC1/SC29/WG11), no. M4312, 2 December 1998, XP030033562
- D4: Z. Yan et al., "Error-Resilient Coding of 3-D Graphic Models via Adaptive Mesh Segmentation", IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, IEEE SERVICE CENTER,

Piscataway, NJ, US, vol. 11, no. 7, 1 July 2001,
XP011014225, ISSN: 1051-8215

D5: D. Tian et al., "On-demand transmission of 3D
models over lossy networks", Signal Processing:
Image Communication, Elsevier Science Publishers,
Amsterdam, NL, vol. 21, no. 5, 1 June 2006,
396-415, XP027934240, ISSN: 0923-5965

III. The decision under appeal was based on the grounds that the subject-matter of all claims of the sole request then on file did not involve an inventive step in view of document D2 in combination with the skilled person's common general knowledge (Articles 52(1) and 56 EPC). Documents D3, D4 and D5 were cited as evidence of common general knowledge.

IV. The applicant (appellant) filed notice of appeal. With the statement of grounds of appeal, the appellant maintained the sole request underlying the decision under appeal.

V. The appellant was summoned to oral proceedings. In a communication under Article 15(1) RPBA 2020, the board introduced the document:

D6: "Information technology - Coding of audio-visual
objects - Part 16: Animation Framework extension
(AFX) ", International Standard, ISO/IEC
14496-16:2011(E), ISO/IEC JTC1/SC29, dated
18 February 2011, server date 6 April 2011

into the appeal proceedings and gave the following preliminary opinion.

- Since there were no claims in the earlier application even remotely similar to the wording of

the current claims, the onus was on the appellant to convince the board that the subject-matter of the current claims was nevertheless directly and unambiguously derivable from the disclosure of the earlier application (Article 87(1) EPC).

- If the appellant was not entitled to the right of priority for the claimed subject-matter, document D1 belonged to the state of the art under Article 54(2) EPC.
- If document D1 belonged to the prior art, the subject-matter of all claims lacked novelty (Articles 52(1) and 54(1) and (2) EPC).
- The subject-matter of claim 1 did not involve an inventive step in view of document D2 in combination with any of documents D3, D4 and D5. The same conclusion applied *mutatis mutandis* to independent claims 4, 7 and 10.

VI. With a letter dated 16 November 2023, the appellant filed amended claims of a first and a second auxiliary request and submitted reasons why these requests should be admitted into the appeal proceedings. The appellant provided arguments why, in its opinion, the claims of all requests enjoyed priority of the earlier application; why document D1 did not constitute prior art under Article 54(2) EPC; and why the subject-matter of claims 1, 4, 7 and 10 of the first and second auxiliary requests involved an inventive step in view of the disclosures of documents D2 to D6.

VII. The board held oral proceedings on 23 November 2023 via videoconference, as requested by the appellant.

During the oral proceedings, the appellant withdrew the main request then on file.

The appellant's final requests were that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request filed as first auxiliary request with a letter dated 16 November 2023 or the first auxiliary request filed as second auxiliary request with a letter dated 16 November 2023.

At the end of the oral proceedings, the Chair announced the board's decision.

VIII. Claim 1 **forming the basis of the decision under appeal** reads as follows:

"A method for encoding or decoding a bitstream representing a 3D model, comprising:

accessing a plurality of instance information associated with the 3D model, each instance being associated with a corresponding pattern and transformation data;

encoding, or decoding, the plurality of instance information for transmission in a bitstream in one of first and second modes, wherein in the first mode, the transformation information associated with each respective instance is grouped in the bitstream with the respective instance on an instance by instance basis, and in the second mode, the transformation information is grouped in the bitstream on a transformation information type by transformation type basis; and

using an indicator to determine whether the instance information is grouped in the first mode or in the second mode."

IX. Claim 1 of the appellant's **main request** reads as follows (with additions to claim 1 **forming the basis of**

the decision under appeal underlined and deletions struck through) :

"A method for encoding or decoding a bitstream representing a 3D model, comprising:

accessing a plurality of instance information associated with the 3D model, each instance being associated with a corresponding pattern and transformation data;

encoding, or decoding, the plurality of instance information for transmission in a bitstream in one of first and second modes, wherein the bitstream comprises a header buffer, and wherein in the first mode, the transformation information associated with each respective instance is grouped in the bitstream with the respective instance on an instance by instance basis, and in the second mode, the transformation information is grouped in the bitstream on a transformation information type by transformation type basis; ~~and~~

~~using an indicator to determine~~ wherein the header buffer comprises information indicating whether the instance information is grouped in the first mode or in the second mode;

determining whether there is a part of the 3D model not included in any repetitive structure; and

in response to determining that there is a part of the 3D model not included in any repetitive structure, encoding, or decoding, the part of the 3D model not included in any repetitive structure in the bitstream, wherein information in the header buffer is used to indicate whether there is a part of the 3D model not included in any repetitive structure."

- X. Claim 1 of the appellant's **first auxiliary request** reads as follows (with additions to claim 1 **forming the**

basis of the decision under appeal underlined and deletions ~~struck through~~):

"A method for encoding or decoding a bitstream representing a 3D model, comprising:

accessing a plurality of instance information associated with the 3D model, each instance being associated with a corresponding pattern and transformation data;

determining whether there is a repetitive structure in the 3D model;

in response to determining that there is no repetitive structure in the 3D model, encoding, or decoding, the instance information for transmission in a bitstream using a 3D model compression method, wherein the bitstream comprises a header buffer, the header buffer comprising information indicating the 3D model compression method and information indicating that there is no repetitive structure in the 3D model; and

in response to determining that there is a repetitive structure in the 3D model:

encoding, or decoding, the plurality of instance information for transmission in ~~a~~ the bitstream in one of first and second modes, wherein in the first mode, the transformation information associated with each respective instance is grouped in the bitstream with the respective instance on an instance by instance basis, and in the second mode, the transformation information is grouped in the bitstream on a transformation information type by transformation type basis; ~~and~~

using an indicator to determine encoding into the header buffer, or decoding from the header buffer, information indicating whether the

instance information is grouped in the first mode or in the second mode;

determining whether there is a part of the 3D model not included in any repetitive structure;
and

in response to determining that there is a part of the 3D model not included in any repetitive structure, encoding, or decoding, the part of the 3D model not included in any repetitive structure in the bitstream, wherein information in the header buffer is used to indicate whether there is a part of the 3D model not included in any repetitive structure."

Reasons for the Decision

1. The appeal is admissible.

Main request and first auxiliary request - admittance

2. In its communication pursuant to Article 15(1) RPBA 2020 (*the communication*), the board questioned for the first time whether the subject-matter of the claims forming the basis for the decision under appeal was entitled to priority from the earlier application (Article 87(1) EPC). The board also pointed out for the first time in the communication that if the priority was not validly claimed, document D1, published between the priority date and the filing date of the current application, would belong to the prior art and would be novelty-destroying (Articles 52(1) and 54(1) and (2) EPC) for the subject-matter of all claims.
3. In reaction to the above objections raised for the first time in the communication, the appellant filed

with the letter dated 16 November 2023 the first and second auxiliary requests (later renamed the main request and first auxiliary request after the withdrawal of the then main request during the oral proceedings), which *prima facie* overcame these objections (for the reasons given in point 5. below).

4. The board accepted that the above constituted "exceptional circumstances" within the meaning of Article 13(2) RPBA 2020 and admitted the main and first auxiliary requests into the appeal proceedings.

Main request and first auxiliary request - entitlement to priority from the earlier application (Article 87(1) EPC)

5. The board is satisfied that the subject-matter of the claims of the main request and the first auxiliary request are entitled to priority from the earlier application for the following reasons.

The independent claims specify that the information indicating whether the instance information is grouped in the first mode or in the second mode **is comprised in a header buffer** in the bitstream. The absence of the header buffer in the claims forming the basis for the decision under appeal put the validity of the claimed priority in doubt.

The remaining new features of the independent claims are directly and unambiguously derivable from the description of the earlier application (see page 4, line 27 to page 5, line 8).

Remittal of the case to the department of first instance - Article 111(1), second sentence EPC and Article 11 RPBA 2020

6. Under Article 111(1), first sentence EPC, "[f]ollowing the examination as to the allowability of the appeal, the Board of Appeal shall decide on the appeal". The appellant withdrew the sole request underlying the decision under appeal during the oral proceedings before the board. As a consequence, the decision under appeal cannot be upheld. The appeal therefore is allowable within the meaning of this legal provision. Under Article 111(1), second sentence EPC, the board, in deciding upon the appeal, may either exercise any power within the competence of the department responsible for the decision appealed or remit the case to that department for further prosecution.

Pursuant to Article 11 RPBA 2020, which applies in the case in hand in accordance with Article 25(1) RPBA 2020, a remittal should be the exception, requiring "*special reasons*" for it to be ordered.

7. In the case in hand, the independent claims of the main and first auxiliary requests comprise new features taken from the description of the application which were not present in any claim on file during first-instance proceedings. It might, therefore, be necessary to carry out an additional search on the basis of the new claims.
8. In the board's view, the above reasons may be regarded as special reasons within the meaning of Article 11 RPBA 2020 justifying a remittal under Article 111(1), second sentence EPC.

Final remarks

9. The board observes *obiter* that prior-art document D2 might be less relevant than previously acknowledged in the Reasons for the decision, the statement of grounds of appeal and the board's communication. Indeed, although the transformation information of instances is assigned to clusters in document D2 (see, for instance, page 3, lines 6 to 27 and page 18, lines 5 to 26), it seems that the transformation information of instances is not grouped by clusters or "*on an information type by information type basis*" in the bitstream (see, for instance, claim 1 of document D2).

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. Boelicke

B. Willems

Decision electronically authenticated