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**Datasheet for the decision
of 13 December 2022**

Case Number: T 0547/18 - 3.5.04

Application Number: 13860641.3

Publication Number: 2874392

IPC: H04N7/00, H04N21/2343,
H04N21/258

Language of the proceedings: EN

Title of invention:

VIDEO COMMUNICATION METHOD AND APPARATUS

Applicant:

Xiaomi Inc.

Headword:

Relevant legal provisions:

EPC R. 115(2)

RPBA 2020 Art. 15(3), 15(5), 15(6), 13(2)

EPC Art. 52(1), 56

Keyword:

Main request and auxiliary request - Admittance (yes)

Main request and auxiliary request - Inventive step (no)

Decisions cited:

T 0894/19

Catchword:



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Case Number: T 0547/18 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 13 December 2022

Appellant:
(Applicant)

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Decision under appeal:

**Decision of the Examining Division of the
European Patent Office posted on 20 October 2017
refusing European patent application
No. 13860641.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair T. Karamanli
Members: B. Le Guen
A. Seeger

Summary of Facts and Submissions

- I. The appeal is against the examining division's decision to refuse European patent application No. 13 860 641.3.
- II. The following prior-art document was cited in the decision:

D3: US 2009/0231415 A1
- III. One of the grounds for the decision under appeal was that the subject-matter of claims 1, 5 and 10 of the sole request then on file did not involve an inventive step (Article 56 EPC) in view of the disclosure of document D3 combined with the common general knowledge of the person skilled in the art.
- IV. The applicant ("appellant") filed notice of appeal. With the statement of grounds of appeal, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the sole request on which the decision under appeal was based. The appellant also provided arguments why the subject-matter of claim 1 of the sole request then on file involved an inventive step.
- V. A summons to oral proceedings was issued on 23 August 2021, indicating that oral proceedings were scheduled for 13 December 2022.
- VI. In a communication under Article 15(1) of the Rules of Procedure of the Boards of Appeal 2020 ("RPBA 2020"; see OJ EPO 2021, A35) dated 24 March 2022, the board

expressed its preliminary opinion that claim 1 of the sole request then on file was not clear (Article 84 EPC) and that the subject-matter of claims 1, 5 and 10 of that request did not involve an inventive step (Article 56 EPC) having regard to the disclosure of document D3 combined with the common general knowledge of the person skilled in the art.

- VII. With a letter dated 13 November 2022, the appellant filed amended claims of a main request and an auxiliary request. In its letter, the appellant stated that these requests replaced the sole request then on file. The appellant indicated a basis for the amendments in the application as filed and provided arguments in support of its view that claim 1 of both requests was clear and that the claimed subject-matter involved an inventive step in view of the disclosure of document D3 and the common general knowledge of the person skilled in the art.
- VIII. In a letter dated 29 November 2022, the appellant requested that the oral proceedings scheduled for 13 December 2022 be held by videoconference.
- IX. By a communication from the board's registrar dated 1 December 2022, the appellant was informed that the oral proceedings scheduled for 13 December 2022 would be held by videoconference.
- X. In a letter dated 8 December 2022, the appellant stated that its representatives would not attend the oral proceedings and that all requests then on file were maintained.

XI. The oral proceedings before the board were held on 13 December 2022 by videoconference in the appellant's absence.

The board noted that the appellant had requested in writing that the decision under appeal be set aside and that a European patent be granted on the basis of the claims of the main request filed by letter dated 13 November 2022 or, alternatively, on the basis of the claims of the auxiliary request filed by letter dated 13 November 2022.

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

XII. Claim 1 of the **main request** reads as follows:

"A video communication method at a video communication device comprising a camera, the camera having supported capturing resolutions for capturing video, characterized in that, the method comprises:

obtaining (S201) configuration information of an object terminal in video communication with the device and obtaining (S202) a set of resolutions supported by the camera;

determining (S2041) whether the display resolution of the object terminal is included in the obtained set of resolutions, and if so, setting (S2042) the display resolution of the of the [sic] object terminal as the resolution for capturing video, but if not,

determining (S2043) whether a camera resolution, which has the same aspect ratio as that of the display resolution of the object terminal, is included in the

obtained set of resolutions, and if so, setting (S2044) a camera resolution having the same aspect ratio as that of the display resolution of the object terminal as the resolution for capturing video, but if not, setting (S2045) a resolution having the minimum difference of aspect ratio from that of the display resolution of the object terminal as the resolution for capturing video;

capturing (S205) a video according to the resolution for capturing video; and sending (S207) the captured video to the object terminal."

XIII. Claim 1 of the **auxiliary request** reads as follows (features added to claim 1 of the **main request** are underlined; features deleted are crossed out):

"A video communication method at a video communication device comprising a camera, the camera having a set of supported capturing resolutions for capturing video, wherein the set of supported capturing resolutions for capturing video comprises a plurality of capturing resolutions, characterized in that, the method comprises:

obtaining (S201) configuration information of an object terminal in video communication with the device, wherein the configuration information includes a display resolution of the object terminal;~~and~~

obtaining (S202) ~~the~~ a set of capturing resolutions supported by the camera;

determining (S2041) whether the display resolution of the object terminal is included in the obtained set of capturing resolutions supported by the camera, and if

so, setting (S2042) the display resolution of the of the [sic] object terminal as the resolution for capturing video, but if not,

determining (S2043) whether a ~~camera~~capturing resolution, which has the same aspect ratio as that of the display resolution of the object terminal, is included in the obtained set of capturing resolutions supported by the camera, and if so, setting (S2044) a ~~camera~~the capturing resolution having the same aspect ratio as that of the display resolution of the object terminal as the resolution for capturing video, but if not,

setting (S2045) a capturing resolution having the minimum difference of aspect ratio from that of the display resolution of the object terminal as the resolution for capturing video;

capturing (S205) a video according to the resolution for capturing video; and sending (S207) the captured video to the object terminal."

XIV. The appellant's arguments relevant to the present decision can be summarised as follows.

Both requests - Meaning of the feature "supported capturing resolutions [of a camera]"

The capturing resolution was the resolution "captured" by the camera. The expression "capturing resolution", albeit broad, excluded a resolution obtained by converting, inside the camera, a video signal output by the camera's sensors. This was confirmed by the description. Steps S207 and S208 in the description clearly explained that terminal A may cut the captured

video before sending it to the object terminal.
Therefore, the conversion was performed by terminal A,
not the camera.

Both requests - Inventive step

(a) *Distinguishing features*

The subject-matter of claim 1 differed from the disclosure of document D3 in that it specified a camera having a set of supported capturing resolutions for capturing a video as well as the following features.

- (i) Obtaining a set of resolutions supported by the camera.
- (ii) Determining whether a camera resolution with the same aspect ratio as that of the display resolution of the object terminal is included in the obtained set of resolutions and, if so, setting a camera resolution having the same aspect ratio as that of the display resolution of the object terminal as the resolution for capturing video, but if not,
- (iii) setting a resolution having the minimum difference of aspect ratio from that of the display resolution of the object terminal as the resolution for capturing video.
- (iv) Capturing a video according to the resolution for capturing video and sending the captured video to the object terminal.

(b) *Technical effects*

The distinguishing features had the following technical effects.

- (i) Since the camera supported a plurality of resolutions, the video capturing resolution of the camera could be automatically matched to the configuration of the object terminal, and images could be captured in accordance with the selected resolution and sent to the object terminal.
- (ii) There was no need for the object terminal to perform single-direction drawing, compressing or cutting on the received video, so that the authenticity of the image was not degraded and the user's experience was improved.
- (iii) The sending of the video was not affected by the operation of the sending terminal. In contrast, paragraph [0050] of document D3 disclosed a need to renegotiate the capability in accordance with the operation of the terminal if the negotiation failed.
- (iv) The distinguishing features achieved a synergistic effect, at least because only the limited set of resolutions supported by the camera were available to be selected. The selection scheme was efficient because the available choice was limited.

(c) *Objective technical problem*

The board's formulation of the first partial objective technical problem completely ignored the fact that document D3 did not disclose a plurality of supported capturing resolutions.

(d) *Obviousness*

- (i) In its preliminary opinion, the board had not explained how the person skilled in the art would have arrived at a video communication device that supported a plurality of capturing resolutions.
- (ii) The technical means at the relevant date of the application in hand could only be adjusted on the receiving side: there was no technology for changing the format of the video recorded by devices (or for the live screen, for changing the settings of the camera that captured the live screen), and thus those skilled in the art had no incentive to make such changes. Therefore, adjusting the operating mode of the camera of the sending terminal (according to the capabilities of the receiving side) was not in line with the common general knowledge of the person skilled in the art at the relevant date.
- (iii) Document D3 was completely silent about how to determine the optimal transmission capability when the capabilities of the two parties were inconsistent.
- (iv) The person skilled in the art would not have solved the mismatch (between the

capturing resolutions supported by the camera and the display resolution) by selecting a resolution for the camera of the sending device from a finite set of supported resolutions and by addressing the mismatch on the sending side starting from a piece of prior art not disclosing a set of supported resolutions and teaching to address the mismatch on the receiving side by processing the received video.

- (v) The skilled person would not have been motivated to select a capturing resolution from a finite set when they could have achieved any desired resolution via scaling, cropping and padding.

- (vi) At the relevant date of the application in hand, all the existing methods for resolving mismatches between the sending video format and the receiving video format were implemented by processing the picture on the receiving side.

Reasons for the Decision

1. The appeal is admissible.

2. *Non-attendance of the appellant at the oral proceedings before the board*

The duly summoned appellant did not attend the oral proceedings. However, under Rule 115(2) EPC, the proceedings could continue without that party. In accordance with Article 15(3) RPBA 2020 (which is

applicable in accordance with Article 25(1) RPBA 2020), the board relied for its decision on the appellant's written submissions. The board was in a position to announce a decision at the conclusion of the oral proceedings since the case was ready for decision (Article 15(5) and (6) RPBA 2020, which applies in accordance with Article 25(1) RPBA 2020), and the voluntary absence of the appellant was not a reason for delaying the decision (Article 15(3) RPBA).

3. *Both requests - Admittance (Article 13(2) RPBA 2020)*

3.1 In the case in hand, the summons to oral proceedings was notified after the date on which RPBA 2020 entered into force, i.e. 1 January 2020 (Article 24(1) RPBA 2020). Thus, in accordance with Article 25(1) and (3) RPBA 2020, Article 13(2) RPBA 2020 applies to whether to admit the appellant's main and auxiliary requests because both requests represent amendments to the appellant's case made after notification of the summons to oral proceedings.

3.2 The amended claims of both requests are a reaction to new objections under Article 84 EPC raised by the board in its communication pursuant to Article 15(1) RPBA 2020 dated 24 March 2022. The fact that these new objections were raised constitutes exceptional circumstances within the meaning of Article 13(2) RPBA 2020.

3.3 Therefore, the board, exercising its discretion under Article 13(2) RPBA 2020, admits both requests into the appeal proceedings.

4. *Both requests - Meaning of the feature "supported capturing resolutions [of a camera]"*

- 4.1 Claim 1 of both requests defines a method to be carried out by a device comprising a camera having supported capturing resolutions (i.e. a set of supported capturing resolutions) for capturing a video.
- 4.2 Unlike the appellant (see point XIV. above, first part), the board sees no reason to understand the feature "*supported capturing resolutions* [of a camera]" to exclude resolutions obtained inside the camera by converting a video signal directly output by the camera's sensors. In the board's view, a capturing resolution supported by a camera is simply a resolution that can be produced, e.g. recorded or output, by the camera. This resolution depends not only on the resolution of the camera's image sensor but also on the camera's capability to process, e.g. convert, the signal output by this sensor. For example, a camera with an HD image sensor would normally not be considered to support an HD capturing resolution unless its hardware or software is capable of processing the output of the image sensor for generating an HD output. Conversely, a camera capable of converting the output of an HD image sensor into a signal with resolutions other than HD (e.g. VGA, CIF or QCIF) would be considered to support those capturing resolutions.
- 4.3 There is no evidence on file to corroborate the appellant's assertion that the person skilled in the art would have understood the expression "capturing resolution" to exclude a resolution obtained inside the camera by converting a video signal directly output by the camera's sensor. The appellant's reliance on steps 207 and 208 - described in paragraphs [0060] and [0061] of the description - is inconclusive. In these steps, the video captured by the camera is either sent to the

object terminal as is (step 207) or cut before sending (step 208) if its aspect ratio differs from the aspect ratio of the display resolution of the object terminal. Contrary to the appellant's view, a conversion of a video signal **inside** the camera cannot be excluded from the mere fact that the captured video may be cut outside the camera. The camera's capability to convert the signal directly output by its sensor may be limited by its hardware or its software. Thus, a conversion inside the camera does not necessarily mean that resolutions of all aspect ratios can be captured and that the captured video will not have to be cut. Therefore, there is no contradiction between (i) understanding the feature "*supported capturing resolutions* [of a camera]" to cover resolutions that can be obtained inside the camera by converting a video signal directly output by the camera's sensor and (ii) cutting the captured video before sending it to the object terminal, as described in paragraph [0061] of the description.

4.4 In view of the above, the board understands the feature "*supported capturing resolutions* [of a camera]" to cover resolutions obtained inside the camera by converting a video signal directly output by the camera's sensors. The following assessment of inventive step is made on this basis.

5. *Main request - Inventive step*

5.1 An invention is to be considered to involve an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art (Article 56 EPC).

5.2 *Document D3's disclosure*

Document D3 discloses a video communication method (see paragraph [0049]: "*resolution negotiation flow*"; paragraph [0064]: "*FIG. 9 illustrates a logic flow diagram for process 900 of facilitating a video conference with send and receive capabilities negotiation according to embodiments.*") in a video communication device comprising a camera (see paragraph [0021]: "*Participant machines 102, 104 may be any computing device with audio/video capability such as desktop or laptop computers with a camera ...*"; paragraph [0028]: "*The computation of the negotiated combinations may take place at the sender based on information forwarded by the MCU from the recipients or at the MCU*"). The video communication device is capable of generating videos at a spatial resolution comprised in a limited set of supported spatial resolutions (see paragraph [0050]: "*user A has a VGA/CIF/QCIF capable machine (Dual Core+CPU, VGA camera)*").

The method disclosed in document D3 also comprises the following steps.

- Obtaining configuration information of an object terminal in video communication with the device; the configuration information including a display resolution of the object terminal (see paragraph [0034]: "*This may be accomplished at the source client 222 by all receiving clients providing their receive capabilities to the source client through MCU 216*"; paragraph [0027]: "*Video capabilities may be defined as resolution ... One example scenario is when multiple people request the same source to send different video resolutions*"; paragraph [0045]: "*receive capabilities table*").

- Obtaining the set of spatial resolutions supported by the video communication device (see paragraph [0050]: "*user A has a VGA/CIF/QCIF capable machine (Dual Core+CPU, VGA camera)*"; paragraph [0045]: "*send capabilities table*"; paragraph [0046]: "*the second column (541) is the name of the capability (resolution)*").

- Determining whether the display resolution of the object terminal is included in the obtained set of spatial resolutions (see paragraph [0048]: "*the system (or in a specific implementation, the source client) may compare each send combination with receive combination, and if the send capability exists in the receive capabilities, use the highest frame rate and/or bit rate.*") and, if so, setting the display resolution of the object terminal as the resolution for outputting the video (*ibid.*).

- Sending a captured video to the object terminal (see paragraph [0041]: "*Frames captured from Camera Src are routed and encoded to video channel output and sent to the other client.*"; paragraph [0049]: "*Those streams are then sent to video receiver 664, which may validate the incoming streams.*").

5.3 *Distinguishing features*

5.3.1 The board agrees with the appellant that document D3 does not disclose a camera having a set of supported capturing resolutions for capturing a video (see point XIV.(a) above). The board also agrees on the distinguishing features (i) and (iv) identified by the appellant (*ibid.*). As stated under point 5.2 above, document D3 discloses a video communication device capable of generating videos at a spatial resolution

comprised in a limited set of supported spatial resolutions. It also discloses steps of obtaining the set of spatial resolutions supported by the video communication device and sending a captured video to the object terminal. However, document D3 does not specify whether the supported spatial resolutions are resolutions supported by the camera alone or in combination with other modules of the video communication device. Taking the example of the VGA/CIF/QCIF capable machine with a VGA camera mentioned in paragraph [0050] of document D3, document D3 does not specify how the CIF and QCIF resolutions are obtained. Thus, it leaves open whether, for example, these resolutions are (i) output directly from a part of the image sensor; (ii) obtained by converting, **inside the camera**, a VGA signal output by the camera; or (iii) obtained by converting, **outside the camera**, a VGA signal output by the camera (in cases (i) and (ii), in line with the board's understanding of the feature "*supported capturing resolutions [of a camera]*" discussed under section 4. above, the CIF and QCIF resolutions would have been capturing resolutions supported by the camera).

Thus, document D3 does not disclose a camera having a set of supported capturing resolutions for capturing a video or steps of obtaining a set of resolutions supported **by the camera**, capturing a video according to the determined supported resolution (which implies that the video is captured **by the camera** rather than the video communication device as a whole) and sending the captured video (i.e. the video captured **by the camera** rather than the video communication device as a whole) to the object terminal. In the following, these features will be referred to as "**the first set of distinguishing features**".

5.3.2 The board also agrees with distinguishing features (ii) and (iii) identified by the appellant (see point XIV.(a) above). In the following, these features will be referred to as "**the second set of distinguishing features**".

5.4 *Technical effects*

5.4.1 It is established case law that if a claim is a mere aggregation of sets of features which do not mutually influence each other to achieve a technical success over and above the sum of their respective individual effects, it is to be established whether each set of features is separately obvious in light of the state of the art (see Case Law of the Boards of Appeal of the European Patent Office, 10th edition 2022 ("Case Law"), I.D.9.3.2).

5.4.2 The appellant submitted that the two sets of distinguishing features identified under points 5.3.1 and 5.3.2 above provided a synergistic effect, at least because only the limited set of resolutions supported by the camera (first set of distinguishing features) were available to be selected (second set of distinguishing features) (see point XIV.(b)(iv) above). The selection scheme outlined by the second set of distinguishing features was efficient because the available choice, defined by the first set of distinguishing features, was limited (*ibid.*).

5.4.3 The board notes that an output resolution adapted to the display resolution of the object terminal is determined both in the method defined by claim 1 and the method disclosed in document D3. Both methods also select the output resolution from a limited set of

supported resolutions (for document D3, see point 5.2 above). Unlike document D3, claim 1 specifies that the resolution is chosen from a set of resolutions supported by the camera (see first set of distinguishing features). However, claim 1 does not specify any feature implying that the set of capturing resolutions supported by the camera is more limited than the set of resolutions supported by the video communication device disclosed in document D3. Hence, there is no reason to conclude that the selection scheme specified in claim 1 is more efficient than the one disclosed in document D3.

- 5.4.4 The board cannot identify a synergistic effect achieved by the two sets of distinguishing features identified under points 5.3.1 and 5.3.2 above.

As explained above, document D3 discloses determining a resolution among a plurality of resolutions (e.g. VGA, CIF and QCIF) supported by a video communication device having a camera (e.g. a VGA camera). Document D3 does not specify which module(s) of the communication device generate the different supported resolutions. In the board's view, the **first set of distinguishing features** merely narrows down the meaning of "spatial resolutions supported by the video communication device" to "supported capturing resolutions of a camera". Because the board understands the latter expression to cover resolutions obtained inside the camera by converting a video signal directly output by the camera's sensors, this limitation has the technical effect that the supported resolutions (e.g. VGA, CIF and QCIF) are all obtained inside the camera (rather than outside but within the video mobile device). The effects put forward by the appellant (see point XIV.(b)(i) above), namely that the camera (rather than the mobile device

as a whole) supports a plurality of capturing resolutions, that the selected resolution is one of the capturing resolutions supported by the camera (rather than a resolution supported by the mobile device as a whole) and that the video signal sent to the object terminal is the video signal output by the camera (rather than the mobile device as a whole) are mere consequences of this limitation. None of these effects is related to the second set of distinguishing features and, therefore, none of them can be regarded as a synergistic effect achieved by the two sets of distinguishing features identified under points 5.3.1 and 5.3.2 above.

The **second set of distinguishing features** has the technical effect that, when the display resolution of the object terminal is not included in the set of resolutions supported by the video communication device, a resolution is selected among the supported resolutions that best preserves the proportions of the image content after a video generated at the selected resolution has been processed to make its resolution match the display resolution of the object terminal. The board disagrees with the appellant that the distinguishing features **completely remove** the need for the object terminal to perform single-direction drawing, compressing or cutting on the received video (see point XIV.(b)(ii) above: "*no need*"). For example, claim 1 does not guarantee that the set of supported capturing resolutions comprises a resolution having the same aspect ratio as the display resolution and that no cutting will be necessary. A more credible consequence of selecting the resolution that best preserves the proportions of the image content is that there is **less** need for the object terminal to perform single-direction drawing, compressing or cutting on the

received video (thus improving the authenticity of the image and the user's experience; *ibid.*). The first set of distinguishing features does not play a role in the achievement of any of these effects. Therefore, none of them can be regarded as a synergistic effect achieved by the two sets of distinguishing features identified under points 5.3.1 and 5.3.2 above.

5.4.5 The board notes that paragraph [0050] of document D3 discloses that the capability is renegotiated "*[i]f, for any reason, the initial capability is not valid anymore (due to third party application running, etc.)*", not that the capability is renegotiated if the negotiation fails, as submitted by the appellant (see point XIV.(b)(iii) above). The board understands paragraph [0050] of document D3 to mean that the sender's and receiver's capabilities may change over time and that, therefore, the sender's capabilities that best matches the receiver's capabilities may have to be determined anew. Such a renegotiation is not excluded by the subject-matter of claim 1. For these reasons, the further effect put forward by the appellant (*ibid.*) is not credibly achieved.

5.5 *Partial objective technical problems*

5.5.1 As stated under point 5.3.1 above, document D3 does not specify whether the supported spatial resolutions are resolutions supported by the camera alone or in combination with other modules of the video communication device. The person skilled in the art implementing the video communication device disclosed in document D3 would therefore have had to choose a location for generating videos of the supported spatial resolutions. Accordingly, the **(first) partial objective technical problem, based on the first set of**

distinguishing features, may be formulated as choosing a location in the video communication device for generating videos of the supported spatial resolutions.

Contrary to the appellant's view (see point XIV.(c) above), this formulation of the partial objective technical problem takes into account the fact that document D3 does not disclose a plurality of supported capturing resolutions. As explained under points 5.3.1 and 5.4.4 above, the primary effect underlying the first set of distinguishing features is that the resolutions supported by the video communication device are resolutions supported by the camera, i.e. that the supported resolutions are generated fully inside the camera rather than in cooperation with another module of the video communication device. The partial objective technical is formulated on the basis of this effect.

5.5.2 The **(second) partial objective technical problem, based on the second set of distinguishing features**, may be formulated as allowing two participants to communicate via videoconference even if the device of either of them ("video communication device" in claim 1) does not support the display resolution of the device of the other ("object terminal"), i.e. when there is a mismatch between the resolutions supported by the video communication device and the display resolution of the object terminal.

5.6 *Obviousness: first set of distinguishing features*

5.6.1 The board endorses the view expressed in T 894/19 (Reasons 3.6) that in cases in which the person skilled in the art would have been aware of several solutions and their respective advantages and disadvantages, each

of these solutions represents a mere obvious and consequently non-inventive selection among a number of known and equally likely possibilities (see also Case Law, I.D.5, last paragraph).

- 5.6.2 There are only two possible options for solving the partial objective technical problem formulated under point 5.5.1 above: either generating the videos fully inside the camera or converting the videos captured by the camera in another module of the video communication device. Thus, these options would have been known to the person skilled in the art. The person skilled in the art would also have been aware that choosing either of them would have shifted the processing load either to the camera or the other module. Thus, the person skilled in the art would have known their respective advantages and disadvantages. For these reasons, each option would have been obvious (see previous point).
- 5.6.3 By choosing the obvious option of generating videos of the supported resolutions fully inside the camera, the person skilled in the art would have arrived at a camera having a set of supported resolutions for capturing a video and at a method comprising steps of obtaining a set of resolutions supported by the camera; capturing, with the camera, a video of the determined supported resolution; and sending the video captured by the camera to the object terminal. Thus, the above reasoning explains how the person skilled in the art would have arrived at all the features in the first set of distinguishing features (see the appellant's arguments reproduced under points XIV.(d) (i) above).
- 5.6.4 The appellant's arguments in support of its view that adjusting the operating mode of the camera of the sending terminal was not in line with the common

general knowledge of the person skilled in the art at the relevant date of the application in hand (see point XIV.(d) (ii) above) are not persuasive. Document D3 was published on 17 September 2009, i.e. before the priority date of the application in hand (6 December 2012), and discloses adjusting the operating mode of the video communication device (i.e. the sending terminal) to produce a video at the spatial resolution that matches the display resolution used on the receiving side (see point 5.2 above). Thus, document D3 contradicts the appellant's statement that no technology existed at the relevant date of the application in hand allowing to adjust the operating mode of the sending terminal to change the video format at the sending terminal (*ibid.*). Therefore, before the relevant date, i.e. the priority date of the application in hand, the mere idea of implementing such technology inside the camera would have been obvious to the person skilled in the art for the reasons provided under point 5.6.2 above.

5.6.5 In view of the above, the board concludes that the first set of distinguishing features would have been obvious to the person skilled in the art having regard to their common general knowledge.

5.7 *Obviousness: second set of distinguishing features*

5.7.1 The board recalls that document D3 discloses determining, from a set of spatial resolutions supported by a video communication device, the spatial resolution that matches the display resolution of an object terminal (see points 5.2, 5.3.1, 5.4.3 and 5.4.4 above). Thus, the appellant's argument that the obviousness assessment starts from a piece of prior art

that does not disclose a set of supported resolutions (see point XIV.(d) (iv) above) is not convincing.

5.7.2 The appellant's argument that document D3 teaches addressing the problem of a mismatch (between the resolutions supported by the video communication device and the display resolution of the object terminal) by processing the received video on the receiving side (*ibid.*) is also not convincing. Document D3 does not address the mismatch problem. In the method disclosed in document D3, tables listing the capabilities of the receiver and the sender are intersected to obtain a negotiated capability (see, for example, paragraphs [0036], [0037] and [0046] to [0048] or claim 10). Document D3 does not address the situation in which the intersection of the spatial resolutions supported by both sides is an empty set. *A fortiori*, document D3 does not teach any solution to this problem (as, in fact, acknowledged by the appellant; see point XIV.(d) (iii) above).

5.7.3 In case of a mismatch between the spatial resolutions supported by the video communication device and the display resolution of the object terminal, none of the supported resolutions can perfectly match the display resolution. This means that basic editing operations such as scaling, cropping or padding will always be required before displaying the video. It is self-evident that such operations negatively impact the quality of the displayed video. Thus, even though generating a video of the desired (display) resolution from a video of any (i.e. any arbitrarily selected) spatial resolution supported by the video communication device via scaling, cropping or padding would have been obvious (see the appellant's argument reproduced under point XIV.(d) (v) above), the person skilled in the art

would have looked for ways of selecting the supported spatial resolution that minimises the negative impact of such operations on the quality of the displayed video. This is consistent with document D3's disclosure that teaches selecting the supported spatial resolution that matches the display resolution of an object terminal, i.e. a non-arbitrary selection.

5.7.4 One way to identify selection criteria that would have been obvious to the person skilled in the art is to first consider the obvious solution consisting of not using any criterion, i.e. the obvious solution put forward by the appellant consisting of arbitrarily selecting a resolution from the set of supported spatial resolutions. In this case, the person skilled in the art would inevitably have arrived at situations in which the horizontal and vertical dimensions of the selected supported resolution ("Hs" and "Vs") would not have been correlated with the horizontal and vertical dimensions of the display resolution ("Hd" and "Vd"); for example, situations in which Hs would have been much smaller than Hd (or Vs much smaller than Vd) or Hs/Vs (the aspect ratio of the selected supported resolution) would have been very different to Hd/Vd (the aspect ratio of the display resolution). When Hs was much smaller than Hd (or Vs much smaller than Vd), the scaling of the images required to generate a video at the display resolution would obviously have resulted in a large loss of detail in the horizontal (or vertical) direction. When Hs/Vs was very different to Hd/Vd, the person skilled in the art would have expected the image content to appear squeezed in one direction and stretched in the other.

5.7.5 To avoid these distortions, the person skilled in the art would have taken into account criteria that define

the display resolution of the object terminal. The dimensions H and V and the aspect ratio H/V are obvious criteria for defining a spatial resolution. Thus, the following solutions, among others, would have been obvious for the problem identified under point 5.5.2 above.

- (a) Selecting the supported spatial resolution whose dimensions (Hs, Vs) best match the dimensions (Hd, Vd) of the display resolution. This solution would have had the obvious advantage of preserving the level of detail in the image content and the obvious disadvantage of not preserving its proportions (the aspect ratio of the display resolution not being taken into account).
- (b) Selecting the supported resolution whose aspect ratio (Hs/Vs) best matches the aspect ratio (Hd/Vd) of the display resolution. This solution would have had the obvious advantage of preserving the proportions of the image content and the obvious disadvantage of not preserving its level of detail (the dimensions Hs and Vs not being taken into account as such).
- (c) Selecting the capturing resolution on the basis of both the dimensions and the aspect ratio of the display resolution. This solution would have had the obvious advantage of preserving both the proportions of and the level of detail in the image content and the obvious disadvantage of being more complex.

5.7.6 It has not been contested that the technical effects of operations such as scaling, cropping and padding were part of the common general knowledge of the person

skilled in the art before the relevant date, i.e. the priority date of the application in hand (6 December 2012). The person skilled in the art could have recognised the solutions listed in point 5.7.5 solely on the basis of these known effects. Thus, each of these solutions represents a mere obvious and consequently non-inventive selection among a number of known and equally likely possibilities (see point 5.6.1 above).

- 5.7.7 It follows that the solution identified under point 5.7.5(b) above would have been obvious having regard to the common general knowledge of the person skilled in the art.
- 5.7.8 The two-step matching process specified by the second set of distinguishing features is an obvious way of implementing that solution.
- 5.7.9 The appellant's argument that at the filing date of the application in hand, all the existing methods for resolving mismatches between the sending video format and the receiving video format were implemented by processing the picture on the receiving side (see point XIV.(d) (vi) above) is not convincing. The board notes that the method claimed by claim 1 does not fully resolve the mismatch between the sending video format and the receiving video format. As stated under points 5.4.4 and 5.7.3 above, the claimed method does not remove the necessity of carrying out basic operations such as scaling, cropping or padding after a resolution is selected from the set of supported resolutions. Claim 1 does not specify whether these operations are to be carried out at the video communication device or at the object terminal. Hence, whether before the priority date of the application in hand such

operations were always carried out at the receiver is irrelevant. Furthermore, as stated under point 5.7.3 above, in case of a mismatch between the resolutions supported by the video communication device and the display resolution of the object terminal, the person skilled in the art would have looked for ways of selecting the spatial resolution supported by the video communication device that minimises the negative impact of such operations on the quality of the displayed video. It would have been obvious to carry out that selection at the video communication device (i.e. on the sending side) because document D3 discloses selecting a resolution supported by the sender **at the sender** (see point 5.2 above referring to paragraph [0028] of document D3; see also point 5.6.4 above).

5.7.10 In view of the above, the board concludes that the second set of distinguishing features would have been obvious to the person skilled in the art having regard to their common general knowledge.

5.8 *Conclusion on inventive step*

Since the features distinguishing the subject-matter of claim 1 of the main request from the disclosure of document D3 would have been obvious to the person skilled in the art having regard to their common general knowledge, the subject-matter of claim 1 does not involve an inventive step within the meaning of Article 56 EPC.

6. *Auxiliary request - Inventive step*

6.1 Claim 1 of the auxiliary request differs from claim 1 of the main request in that it further specifies that:

- (a) the camera supports a plurality of capturing resolutions. The set of capturing resolutions supported by the camera is the set obtained in the first obtaining step of the claim (step S202)
- (b) the display resolution of the object terminal is part of the obtained configuration information of the object terminal
- (c) the determined camera resolution is one of the capturing resolutions from the obtained set of capturing resolutions supported by the camera
- (d) the resolution set in the setting step of the claim (step S2045) is a capturing resolution

6.2 The appellant's arguments in support of its view that the subject-matter of claim 1 of the auxiliary request involves an inventive step are the same as those submitted for claim 1 of the main request.

6.3 Features 6.1(c) and 6.1(d) were already implied by the wording of claim 1 of the main request. Features 6.1(a) and 6.1(b) were already found to be disclosed in document D3 under point 5.2 above. Therefore, these differences do not render the claimed subject-matter inventive.

6.4 The board's conclusion is therefore that the subject-matter of claim 1 of the auxiliary request does not involve an inventive step within the meaning of Article 56 EPC either.

7. *Conclusion*

The invention claimed in claim 1 of both requests does not meet the requirements of Article 52(1) EPC in conjunction with Article 56 EPC. Since neither of the appellant's requests is allowable, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



K. Boelicke

T. Karamanli

Decision electronically authenticated