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**Datasheet for the decision  
of 19 December 2022**

**Case Number:** T 0166/18 - 3.5.06

**Application Number:** 13763365.7

**Publication Number:** 2891063

**IPC:** G06F9/50

**Language of the proceedings:** EN

**Title of invention:**

AUGMENTING CAPABILITIES OF A HOST DEVICE

**Applicant:**

Google LLC

**Headword:**

Augmenting capabilities of a host device/GOOGLE

**Relevant legal provisions:**

EPC Art. 56

**Keyword:**

Inventive step - (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 0166/18 - 3.5.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.06**  
**of 19 December 2022**

**Appellant:** Google LLC  
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**Representative:** Thorniley, Peter  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 14 July 2017  
refusing European patent application No.  
13763365.7 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** M. Müller  
**Members:** A. Teale  
B. Müller

## Summary of Facts and Submissions

I. This is an appeal against the decision, dispatched with reasons on 14 July 2017, to refuse European patent application No. 13 763 365.7 on the basis that the claims of a main and an auxiliary request were unclear, Article 84 EPC, and that their subject-matter lacked inventive step, Article 56 EPC, in view of D1 alone or in combination with D5, these documents being as follows:

D1: US 2005/0066229 A1

D5: US 2010/0273422 A1.

II. A notice of appeal and the appeal fee were received on 14 September 2017, the appellant requesting that the decision be set aside in its entirety and making an auxiliary request for oral proceedings.

III. With a statement of grounds of appeal, received on 22 November 2017, the appellant filed claims according to a main and six auxiliary requests. The appellant stated that the main and fifth auxiliary requests were the same as the main and auxiliary requests, respectively, in the decision.

IV. In an annex to a summons to oral proceedings the board set out its preliminary opinion on the appeal, *inter alia* as follows. The deletion from all independent claims of the expression "receiving a request from the first application to use the capability that is available on the second device" seemed to have added subject-matter, Article 123(2) EPC. The board agreed with some of the clarity objections, Article 84 EPC, raised in the decision and also raised some of its own.

Although the decision had assessed inventive step starting from D1, the board regarded D5 not only as a possible starting point but also as possibly more relevant than D1, since D5 disclosed the use of a table to store profiles of paired devices and thus a device database. The subject-matter of claim 1 of all requests seemed to lack inventive step, Article 56 EPC, starting from either D1 or D5, taken alone.

- V. With a response dated 21 November 2022 the appellant filed an amended page 17 of the description and amended claims according to a seventh, eighth and ninth auxiliary request, stating that the new requests were based on the first, fourth and sixth auxiliary requests, respectively, amendments having been made to overcome the objections under Articles 84 and 123(2) EPC raised in the summons.
- VI. In the oral proceedings on 19 December 2022 the appellant's final requests were that the decision under appeal be set aside and a European patent be granted on the basis of the claims of the main request or the first to sixth auxiliary requests, all filed with the statement of grounds of appeal, or on the basis of the seventh to ninth auxiliary requests filed with the letter of 21 November 2022, with amended description page 17 replacing the corresponding description page previously on file for all requests. At the end of the oral proceedings the board announced its decision.
- VII. The application is thus being considered in the following form:

Description (all requests):  
pages 2 to 16 and 18, as published in  
WO 2014/0363311 A1,

pages 1 and 1a, received on 14 September 2016, and page 17, received on 21 November 2022.

Claims:

Requests received with the grounds of appeal:

Main request: 1 to 15.

First auxiliary request: 1 to 12.

Second auxiliary request: 1 to 11.

Third auxiliary request: 1 to 14.

Fourth auxiliary request: 1 to 11.

Fifth auxiliary request: 1 to 14.

Sixth auxiliary request: 1 to 11.

Requests received on 21 November 2022:

Seventh auxiliary request: 1 to 10.

Eighth auxiliary request: 1 to 9.

Ninth auxiliary request: 1 to 9.

Drawings (all requests):

Pages 1/9 to 9/9, as published.

VIII. Claim 1 of the main and first and second auxiliary requests reads as follows:

"A computer-implemented method for augmenting capabilities of a host device(104), performed on the host device having at least one processor (402) and memory (410) storing at least one program for execution by the at least one processor to perform the method, the method comprising: pairing (706, 802) the host device and a second computing device (106) via a network (120, 121), wherein the second computing device has at least one processor (602) and memory (610) storing at least one second program for execution by the at least one processor; storing information regarding a first capability of the second computing

device in a device database (210, 304), wherein the first capability includes a media or sensor capability that is not provided by the host device, and the device database includes, for a plurality of devices that are paired with the host device, information regarding at least one respective media or sensor capability of each of the plurality of devices; executing on the host device, a first application (206) that is configured to use the first capability not provided by the host device; determining by reference to the device database that the second computing device of the plurality of devices provides the first capability; establishing (706) a connection to the second device through at least one network; and facilitating (708) communications between the first application and the second computing device through the at least one network to allow the first application to access the first capability of the second computing device of the plurality of devices, and wherein the first application does not have knowledge of the capabilities of the second device."

Claim 1 of the seventh auxiliary request has the same wording except that the expression "receiving a request from the first application to use the first capability;" has been inserted before the expression "determining by reference".

IX. Claim 1 of the third and fourth auxiliary requests differs from that of the main request in the addition of the following passage at the end:

"and that the second computing device is connected to the host device and is being used to provide the first

capability that the first application has requested from the host device."

Claim 1 of the eighth auxiliary request has the same wording except that the expression "receiving a request from the first application to use the first capability;" has been inserted before the expression "determining by reference".

X. Claim 1 of the fifth, sixth and ninth auxiliary requests reads as follows:

"A computer-implemented method for augmenting capabilities of a host device (104), performed on the host device having at least one processor (402) and memory (410) storing at least one program for execution by the at least one processor to perform the method, the method comprising: pairing (706, 802) the host device and a second computing device (106) via a network (120, 121), wherein the second computing device has at least one processor (602) and memory (610) storing at least one second program for execution by the at least one processor; storing information regarding a first capability of the second computing device in a device database (210, 304), wherein the first capability includes a media or sensor capability that is not provided by the host device, and the device database includes, for a plurality of devices that are paired with the host device, information regarding at least one respective media or sensor capability of each of the plurality of devices; executing on the host device, a first application (206) that is configured to use the first capability not provided by the host device; an enhanced capability module (204) of the host device receiving a request from the first application requesting access to a capability that is not included



in the native capabilities (226) of the host device wherein, when the first application makes the request, the first application is assuming that the host device includes the capability; the enhanced capability module querying the device database to determine whether a device that is currently paired with the host device includes the capability that was requested by the first application thereby determining by reference to the device database that the second computing device of the plurality of devices provides the first capability and the enhanced capability module issuing a request to a pairing module (202) of the host device to establish a connection to the second computing device, wherein the enhanced capability module hides the complexity of connecting to the second computing device to access the capability the first application is requesting; the pairing module of the host device and a pairing module (222) of the second computing device establishing (706) a connection to the second computing device through at least one network; and facilitating (708) communications between the first application and the second computing device through the at least one network to allow the first application to access the first capability of the second computing device of the plurality of devices."

### **Reasons for the Decision**

1. The admissibility of the appeal

In view of the facts set out at points I to III above, the appeal fulfills the admissibility requirements under the EPC and is consequently admissible.

2. A summary of the invention
  - 2.1 As illustrated in figure 1 (see [16]), the application relates to extending the capabilities of a "host" electronic device (104), such as a set-top box for a digital television (102) (see [2,18-19]), by making use of the capabilities of a second electronic device (106), such as a mobile phone or a satellite receiver, which is connected to the host device via a network (120, 121). The method steps are shown in figure 7; see [42-45].
  - 2.2 In an initial step, shown in figures 2A and 8 (see [24, 49]), the host device is "paired" with the second device, enabling the two devices to communicate from then on, and the second device informs the host of its capabilities; see figure 8. A device database (210) either in (see figure 2A) or connected to (see figure 3A) the host stores details of devices that have been paired with the host including their capabilities.
  - 2.3 Subsequent, post-pairing, communication between the host and the second device is illustrated in figure 2B; see [28]. During execution of an application (206) on the host a capability is required which does not belong to the "Native Capabilities" (208) of the host, meaning that it is not available on the host. The application makes a request for a capability to the host's "enhanced capability module" (204) which searches the device database for a device with the required capability. The application in the host then sends data and/or commands (240) to access the capability in the second device using the communication link between the two devices. Figures 4 to 6 illustrate the hardware of

the host, server and second device, respectively; see [33 to 41].

- 2.4 According to paragraph [45], the application running on the host may "assume" that a capability is available on the host when, in reality, the host's enhanced capability module (204) is hiding the fact that the capability is being provided by a second device. This means that the application is unaware of the capabilities of the second device. In the board's understanding, the term "assume" means that the application is written for an ideal host with an ideal list of capabilities which is simulated by the actual host in conjunction with one or more connected second devices.

3. Clarity, Article 84 EPC

The board finds that the claims are sufficiently clear for the assessment of inventive step.

4. The board's understanding of the claimed invention

- 4.1 The claims mention a host device and a second computing device having "capability including a media or sensor capability" which is "not provided by the host device". The board understands this to mean that capabilities not provided by the host device must include a media or a sensor capability and may include others, as listed in dependent claims 9 and 10 of the main request. The fact that the capability is not provided by the host device is understood as limiting the claim and would, for example, exclude the case of the host and second computing devices being identical. In the light of paragraph [22] in the description, a "media capability" is understood to be a "media device" that provides the host device 104 with access to a content source 112,

for instance via an over-the-air television service, a cable television service or a satellite television service. In the light of paragraphs [24,25], a "sensor capability" is understood to be hardware, such as a built-in camera.

4.2 The claims set out that "the first application [executing on the host device and configured to use the first capability not provided by the host device] *does not have knowledge of the capabilities of the second device*" (emphasis by board). The cited passage occurs in all original independent claims (1, 13 and 25). In the description, paragraph [15] states that "A request is then received from the first application to use the capability that is available the [sic] second device, *where the first application does not have knowledge of the capabilities of the second device*" (emphasis by the board). In paragraph [45] it is stated that "In some embodiments, *the first application does not have knowledge of the capabilities of the second device*". The board understands this feature as firstly relating to the use of the device database (210) to store information on the capabilities of devices paired with either the host (see figures 2A/2B and [24-29]) or the server (110); see figures 3A/3B and [30-32]. Secondly, it follows from the fact that the first application does not have knowledge of the capabilities of the second device that the first application does not even learn that a second device is required to carry out a function. Paragraph [45] states that the "enhanced capability module" 204 in the host "hides the complexity of connecting to the second device to access the capability that the application is requesting".

4.3 Claim 1 according to the fifth, sixth and ninth requests sets out that, when the enhanced capability

module receives a request from the first application for access to a capability that is not included in the native capabilities of the host device, "the first application is assuming that the host device includes the capability". The board understands the term "assuming" to mean that the first application is written to run on an ideal host device having more capabilities than the actual host device. The appellant agreed with this interpretation in the oral proceedings. The missing capabilities are provided by connecting to suitable second devices. Thus the expression "the first application is assuming that the host device includes the capability" is of no limitative effect beyond what is implied by the first application making the request to the enhanced capability module.

4.4 In connection with the fifth, sixth and ninth auxiliary requests, the board understands the expression "enhanced capability module" as a functional unit which receives a request from the first application to provide a capability. The board understands a "pairing module" in the host and second devices to facilitate initial pairing and subsequent connections between the host and second devices.

5. The prior art on file

5.1 Document D1 (US 2005/0066229 A1)

5.1.1 D1 was the starting document in the decision for the assessment of inventive step. According to its abstract and paragraphs [10-14], D1 relates to processor sharing between in-range, wirelessly connected devices; see figure 1. D1 uses the term "processor" broadly to mean a device processing capability, for instance audio or video information processing. Devices have "processing

capability identification" modules which advertise device capabilities to other devices; see figure 2. One device may then make a request via an interface module to another device to utilise an identified processing capability; see figure 3.

5.1.2 Figure 4 shows a first and a second device (410,450) in communication, each device having *inter alia* a communication module (415,455), a capability identification module (420,460) and a processing module (440,480); see [67-72, 81, 105 and 112]. Some devices have relatively large computing power ([6]) whilst others have relatively little; see [7].

5.1.3 Figures 5, 6 and 8 concern the case of a first and a second device being a PDA and a desktop computer, respectively; see [124-133]. The PDA can make a request (140) (see [55-58]) to the desktop computer to use a capability, and the capability is utilised (150); see [59]. The user of the PDA can use its display to utilize the resources of the desktop; see [134]. For instance, the PDA user can access word recognition functionality on the desktop; see [138]. The PDA user may also use the desktop's network connection to access email or other data; see [139].

5.1.4 The appellant has argued that D1 does not disclose a first application running on a host device not having knowledge of the capabilities of a second device, pointing to the statement in paragraphs [7, 32] that networked systems with less computing power could have reduced versions of related complete applications, such as a word processor, running on devices with more computing power. In the context of the first and second devices being a PDA and a desktop computer, respectively, shown in figure 5, the skilled person would under-

stand that a reduced word processor application on the PDA would know that it had limited functionality and that the complete word processor running on the laptop had more. Moreover, given the choice, the user in D1 would use the word processor on the laptop rather than that running on the PDA.

5.1.5 As set out below, the board chooses to assess inventive step starting from D5 (the secondary document in the decision) rather than D1, since D5 disclosed the use of a table to store profiles of paired devices and thus a device database.

5.2 Document D5 (US 2010/0273422 A1)

5.2.1 The decision (see page 7, last 2 paragraphs) cites D5 as a prior art example of a device discovering the capabilities of linked devices and storing capability data in a database. According to its abstract and paragraphs [6, 20, 22 and 33-37], D5 relates to a Bluetooth-enabled mobile device which discovers the Bluetooth profile capability of a plurality of mobile phones by pairing with them (see figure 3; step 301) and storing their profile information in a database (step 302). As shown in figures 2 and 4, a plurality of profiles is stored in the database (38) for each paired mobile phone; see [25,43]. Thereafter, when an application issues an event necessitating a connection (see [21]), the host can establish that connection with one of the mobile phones, selected using the profile database (steps 303, 305), and exchange data with it (step 307).

5.2.2 Figure 1 shows a navigation device (5) acting as host and establishing a connection with a Bluetooth-capable mobile phone (X) to communicate via a wireless tele-

communications network (26) with a remote server (15). This allows the navigation device to send GPS location information to the server, which responds with real-time information on local traffic accidents; see [15].

- 5.2.3 The appellant has argued that D5 does not disclose an application running on a host device not having knowledge of the capabilities of the second device, since in D5 (see figure 1) the navigation device (5) uses the capabilities of a mobile phone (X) to access a remote server (15) to download a picture (see [27]) in a more limited way (see abstract) to how, according to the application, the set-top box (see paragraphs [18,19]) uses the capabilities of a satellite receiver to receive a satellite signal. As the appellant put it, in D5 the mobile phone was treated as a conduit, a "dumb peripheral", as illustrated by the fact that data was transmitted using audio modulation; see [14] and figure 2, "In-Band Signalling (IBS) modem 9". The appellant did however agree with the board that the profiles J-M stored in table 38 of figure 2 would typically relate to the types of data that the various mobile phones could accept. The appellant argued that a "media capability" in the sense of the claims was a broadband capability as distinct from an audio bandwidth. The board sees no limitation in the application, in particular paragraph [22], of "media capability" to a particular bandwidth. Moreover, given that both cases involve a media capability not provided on the host device (the navigation device/the set-top box), the board is not persuaded by the appellant's arguments that a technical difference exists.

- 5.2.4 In the terms of claim 1 of the main request, D5 discloses a computer-implemented method for augmenting capabilities of a host device (figure 1; navigation



device 5), performed on the host device having at least one processor and memory (implicit in the navigation device) storing at least one program (software 8) for execution by the at least one processor to perform the method, the method comprising: pairing (figure 3; step 301) the host device and a second computing device (figure 1; mobile phone X) via a network (Bluetooth), wherein the second computing device has at least one processor and memory (implicit in a mobile phone) storing at least one second program for execution by the at least one processor; storing information (figure 3; step 302 and [34]) regarding a first capability (see [27]; downloading a picture) of the second computing device in a device database (figure 2; table 38), wherein the first capability includes a media or sensor capability that is not provided by the host device, and the device database includes, for a plurality of devices that are paired with the host device, information regarding at least one respective media or sensor capability of each of the plurality of devices (see figure 2; profiles J-M); executing on the host device, a first application (see the "application" mentioned in [21]) that is configured to use the first capability not provided by the host device; determining by reference to the device database that the second computing device of the plurality of devices provides the first capability (see [26], first sentence; establishing ([31]) a connection to the second device through at least one network; and facilitating communications (Bluetooth) between the first application and the second computing device through the at least one network to allow the first application to access the first capability of the second computing device of the plurality of devices. In addition, D5

also implicitly discloses receiving a request from the first application to use the first capability.

5.2.5 In the terms of claim 1 of the fifth auxiliary request, D5 discloses a computer-implemented method for augmenting capabilities of a host device (figure 1; navigation device 5), performed on the host device having at least one processor and memory (implicit in the navigation device) storing at least one program (software 8) for execution by the at least one processor to perform the method, the method comprising: pairing (figure 3; step 301) the host device and a second computing device (figure 1; mobile phone X) via a network (Bluetooth), wherein the second computing device has at least one processor and memory (implicit in a mobile phone) storing at least one second program for execution by the at least one processor; storing information (figure 3; step 302 and [34]) regarding a first capability (see [27]; downloading a picture) of the second computing device in a device database (figure 2; table 38), wherein the first capability includes a media or sensor capability that is not provided by the host device, and the device database includes, for a plurality of devices that are paired with the host device, information regarding at least one respective media or sensor capability of each of the plurality of devices (see figure 2; profiles J-M); executing on the host device, a first application (see [21]) that is configured to use the first capability not provided by the host device; an enhanced capability module of the host device receiving a request from the first application requesting access to a capability that is not included in the native capabilities of the host device wherein, when the first application makes the request, the first application is assuming that the host device includes the capability; the enhanced

capability module querying the device database (table 38) to determine whether a device (mobile phone X) that is currently paired with the host device includes the capability that was requested by the first application thereby determining by reference to the device database that the second computing device of the plurality of devices provides the first capability and the enhanced capability module (implicit) issuing a request to a pairing module (implicit) of the host device to establish a connection to the second computing device, the pairing module of the host device and a pairing module of the second computing device establishing a connection ([31]) to the second computing device through at least one network (Bluetooth); and facilitating communications between the first application and the second computing device through the at least one network to allow the first application to access the first capability of the second computing device of the plurality of devices; see [27], downloading a picture.

- 5.2.6 The appellant has argued that D5 does not disclose a first application having no knowledge of the capabilities of the second device. The board agrees that software 8 has to be assumed to "know" the Bluetooth profiles, i.e. "capabilities", of the various available "second" mobile devices. However the "application" triggering the event (see [21]), which causes software 8 to select a mobile phone with a suitable profile, need not know. That said, the board takes the view that D5 does not disclose whether or not the application "knows" or does not "know" the capabilities of the second device.

6. Inventive step, Article 56 EPC
- 6.1 The main and first, second and seventh auxiliary requests
  - 6.1.1 Claim 1 of these requests is the same as that of the main request in the decision, albeit with the expression "receiving a request from the first application to use the first capability" reintroduced into claim 1 of the seventh auxiliary request.
  - 6.1.2 The appellant has argued that the feature at the end of claim 1, that the first application does not have knowledge of the capabilities of the second device, was not known in the prior art and, as stated in paragraph [45] of the description, hid the complexity from the first application of how a connection was made to a second device to provide a capability. This lent inventive step to claim 1. Storing information on device capabilities in a database speeded up the determination of a device offering a required capability. D5 did not disclose storing device sensor or media capabilities, in particular those lacking in the host, in a database.
  - 6.1.3 The board finds that, at best, the subject-matter of claim 1 of these requests differs from the disclosure of D5 in that the first application does not have knowledge of the capabilities of the second device. The skilled person structuring the software on the first system would have encapsulated the functionality relating to the capabilities of the second system separately from the first application, for instance so that further applications could make use of the second system, as a matter of usual software design. Hence the board finds that the difference feature would have been

a usual matter of design for the person skilled in the art of wireless computing devices.

6.1.4 The appellant argued in the oral proceedings, referring to paragraph [20], that the invention had the advantage that an application, for instance a camera application taking pictures, which conventionally could only run on a host having a built-in camera, could now run on a host device lacking a camera and make use of the camera of a remote second device. As the claims are not limited to this case, the board does not see how these arguments prove an inventive step.

6.1.5 The board concludes that the subject-matter of claim 1 of the main and first, second and seventh auxiliary requests lacks inventive step in view of D5 alone.

6.2 The third, fourth and eighth auxiliary requests

6.2.1 Claim 1 of these requests is the same, albeit with the expression "receiving a request from the first application to use the first capability" reintroduced into claim 1 of the eighth auxiliary request. These claims result from the combination of claims 1 and 2 of the main request, the feature added to claim 1 reading as follows:

"[the first application does not have knowledge] that the second computing device is connected to the host device and is being used to provide the first capability that the first application has requested from the host device."

6.2.2 The appellant has argued that the added features are not known from *inter alia* D5 and have the advantage, disclosed in paragraph [45], that the enhanced

capability module 204 hides the complexity of connecting to the second device to access the capability that the application has requested. Moreover the expression "is being used" emphasised the fact that, until the host device started using a capability not provided on the host device, it was not certain which second devices providing this capability were within range and which one of these would be selected. The network of the host device and various second devices according to the application was more efficient and reliable than that in the prior art.

6.2.3 The board finds that the additional feature does not limit claim 1, since "connected" is implied by the term "paired", and "providing the first capability" is set out, albeit in different terms, in claim 1 of the main request. Moreover even if, for the sake of argument, some limitation were accepted, the additional feature would merely extend the encapsulation of the functionality relating to the capabilities of the second computing device separately from the first application. As set out above in the context of the main request, the encapsulation of software functionalities would have been a usual matter of design for the person skilled in the art of wireless computing devices starting from D5. As the first application is written for an ideal host device, there would be no need for the application to know which devices were providing the necessary capabilities.

6.2.4 Hence the subject-matter of claim 1 according to the third, fourth and eighth auxiliary requests lacks inventive step over D5.

- 6.3 The fifth, sixth and ninth auxiliary requests
- 6.3.1 Claim 1 of these requests is the same as claim 1 of the auxiliary request in the decision. The subject-matter of claim 1 of these requests differs from the disclosure of D5 in that the enhanced capability module hides the complexity of connecting to the second computing device to access the capability the first application is requesting.
- 6.3.2 In the oral proceedings the appellant argued that, in contrast to claim 1 of the previous requests, claim 1 of these requests set out a positive definition of the first application, namely that it assumed that the host device included a requested capability. There was agreement between the appellant and the board that this implied that the application was written for an ideal host device having more capabilities than were available on the actual host device.
- 6.3.3 The application gives little detail of the features of the enhanced capability module and pairing module in the host device and the pairing module in the second device beyond their role in the method, now set out in claim 1. Hence the board finds that the new formulations do not restrict the subject-matter of the claims compared to that of the main request.
- 6.3.4 Hence the subject-matter of claim 1 of the fifth, sixth and ninth auxiliary requests lacks inventive step over D5 for the same reasons as set out above for the main request.

**Order**

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

The appeal is dismissed.

The Registrar:

The Chairman:



L. Stridde

M. Müller

Decision electronically authenticated