

NOTE: This disposition is nonprecedential.

**United States Court of Appeals
for the Federal Circuit**

AURIS HEALTH, INC.,
Appellant

v.

INTUITIVE SURGICAL OPERATIONS, INC.,
Appellee

2021-1733

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. IPR2019-
01547.

Decided: May 5, 2022

THOMAS ANTHONY BROUGHAN, III, Sidley Austin LLP,
Washington, DC, argued for appellant. Also represented
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ARPITA BHATTACHARYYA, Finnegan, Henderson,
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for appellee. Also represented JACOB ADAM SCHROEDER;
FRANK A. DECOSTA, III, Washington, DC.

Before DYK, PROST, and REYNA, *Circuit Judges*.

DYK, *Circuit Judge*.

Auris Health, Inc. (“Auris”) appeals a decision of the Patent Trial and Appeal Board (“Board”) holding that independent claims 16, 51, and 53 and dependent claims 22–23 and 25–26 of Intuitive Surgical Operations, Inc.’s (“Intuitive”) U.S. Patent No. 6,522,906 (“the ’906 patent”) were not unpatentable as obvious. We affirm the Board’s holding with respect to claims 51 and 53 because the Board did not err in concluding that Auris failed to prove that a skilled artisan would have had a reasonable expectation of success in modifying the prior art to disengage and reengage the master controls. The Board did not reach the reasonable expectation of success issue with respect to claim 16 and the corresponding dependent claims. It held instead that Auris’s asserted prior art references did not disclose the disassociating limitation. We conclude that the Board’s finding that the combination did not disclose the disassociating limitation was based on an improper claim construction, and we vacate and remand the Board’s decision for further proceedings with respect to claims 16, 22–23, and 25–26.

BACKGROUND

Intuitive’s ’906 patent is directed to systems and methods for performing robotically-assisted surgery using a master control. *See* ’906 patent, col. 3, ll. 25–39. The patent contemplates dual functionality using a master control and two modes of operation—one in which the master control directs a surgical robot, and one in which the master control can be used to add and view auxiliary information on or alongside a live image of the surgical field. *Id.*, col. 3, l. 41–col. 4, l., 23. It also contemplates switching between these two modes of operation.

These concepts are reflected in the bodies of the independent claims. Claim 16 recites:

16. A method of performing a surgical procedure on a patient, the method comprising:

manipulating a linkage of a master control in three dimensions whilst viewing a real time image of a surgical site on an image display;

moving an end effector in response to the manipulation of the linkage of the master control, said end effector visible on said image display, so as to perform at least part of a surgical procedure at the surgical site;

selectively accessing a source of auxiliary information in response to the manipulation of the linkage of the master control; and

displaying the auxiliary information on the image display,

wherein the master control is operatively associated with the end effector to cause the end effector to move in response to the manipulating of the master control, and *wherein the selectively accessing the source of auxiliary information comprises disassociating the master control from the end effector*.

Id., col. 30, ll. 17–35 (emphasis added). Claim 51 recites:

51. A method for preparing for or performing a robotic surgical procedure at a surgical site on a patient, the method comprising:

displaying information relevant to the surgical procedure on an image display of the robotic surgical system;

manipulating a linkage of a master control of the robotic surgical system in three dimensions while viewing the image display;

moving an end effector of the robotic surgical system in response to the manipulation of the linkage of the master control so as to prepare for or perform at least part of a surgical procedure at the surgical site when the robotic surgical system is in a first operating mode; and

changing the displayed information on the image display of the robotic surgical system in response to the manipulation of the linkage of the master control when the robotic surgical system is in a second operating mode.

Id., col. 32, l. 65–col. 33, l. 15 (emphasis added). Claim 53 recites:

53. A system for performing a surgical procedure at a surgical site on a patient, the system comprising:

a master having an input device, a linkage of the input device configured for manipulation by a hand of a system operator so as to define a manipulation in three dimensions;

a surgical end effector;

an image display for displaying information relevant to the surgical procedure; and

a processor coupling the input device to the end effector and the image display, the processor having first and second operating modes, the processor in the first operating mode effecting movement of the end effector in response to the manipulation of the input device, the processor in the second operating mode changing the displayed information in response to the manipulation of the input device.

Id., col. 34, ll. 3–19. The parties appear to agree that these claims require hand-held controls be used to both access the auxiliary information and manipulate the robotic surgical device.

Auris petitioned for inter partes review of claims 16, 22–23, 25–26, 51, and 53. It asserted six combinations of four prior art references—Borst, Salvati, Wang ’099, and Wang ’850—to support its unpatentability contentions. Borst was the primary prior art reference for each of the asserted grounds. The preferred embodiment of the robotic surgical system disclosed in Borst has “at least one control robotic instrument to be *manually operated* and connected to the robotic computer system to supply the robotic computer system with control signals.” PCT International Application Publication No. WO 95/01757 (“Borst”), col. 11, ll. 15–17. The robotic computer system controls “at least one robotic surgical instrument” that is “connected to the robot arm.” *Id.* at col. 11, ll. 9–11. Borst describes utilizing cameras to produce “arrested video image[s]” of a moving surgical target area, such as a beating heart, *id.* at col. 22, ll. 25–33, and the system’s robotic surgical arms “track the [moving surgical] target in real time,” *id.* at col. 23, ll. 6–8. Using “voice control” or “other means. . . e.g. [] a foot switch,” the surgeon can zoom in and out of the arrested video images. *Id.* at col. 18, l. 25–col. 19, l. 1.

Salvati teaches a dual-mode endoscope that has a “steering control mechanism and a viewing screen conveniently combined in a hand-held control unit.” U.S. Patent No. 5,373,317 (“Salvati”), col. 2, ll. 25–27. In the “first mode,” the joystick controls the “bending of the endoscope or borescope articulation neck; and in a second mode,” it controls “the cursor position of the viewing screen.” *Id.* at col. 2, ll. 30–33.

Wang ’099 teaches a master controller that includes a “means for receiving selection commands and . . . control

commands . . . included in a voice control interface (“VCI”).”¹ U.S. Patent No. 6,496,099 (“Wang ’099”), col. 2, ll. 32–35. Selection or control commands may also be received through “a foot pedal, a hand held device, or some other device.” *Id.* at col. 2, ll. 36–37. The master controller is connected to slave controllers—one of which controls a surgical robot, while the other controls a network gateway used to access patient information available at a hospital computer terminal, which “includes, but is not limited to x-rays, patient history, MRIs, angiography and CAT scans.” *Id.* at col. 10, ll. 31–39. With the master controller, a surgeon can “select[] and control[] a plurality of devices . . . in electrical communication or in wireless communication with the master controller, either directly or via a slave controller.” *Id.* at col. 2, ll. 14–18.

Before the Board, Auris contended that Borst taught every element of the independent claims except for a master control with dual operating modes. For that element, Auris proposed that Borst could be modified to incorporate the identified dual-mode functionality disclosed in either Salvati or Wang ’099. At oral argument, Auris explained that the proposed combination would be “using Borst’s hand controls for both purposes”—that is, using the hand controls to manipulate a robotic surgical device and to access the auxiliary information. Oral Arg. 2:10–2:44.

Auris proposed that a skilled artisan would have been motivated to combine Borst with Salvati or Wang ’099 because Borst taught that its “zooming [action] may be provided by other means than by voice activation.” Borst, col. 18, l. 36–col. 19, l. 1. Auris’s expert witness, Dr. Hannaford, testified that a master control could perform the

¹ Selection commands select a device for use, such as a laser. Control commands and signals are then routed to that device once it has been selected.

zooming function, and that a skilled artisan would have been motivated to combine that function into the master control to simplify Borst's separate controls and avoid the need for a second input device. J.A. 1014, ¶¶ 92-93 (“A POSA would have been motivated to modify Borst to achieve the same benefit by removing the separate joystick/mouse and allowing the control instruments to perform the functions of the joystick/mouse.”).

With respect to claims 51 and 53, the Board held that Auris failed to demonstrate that a skilled artisan would have reasonably expected to successfully modify Borst's system to incorporate either Salvati or Wang '099's dual modes. It relied on Intuitive's un rebutted expert testimony that both combinations would require “at least five significant reconfigurations in the robotic system” to incorporate the dual-mode functionality. J.A. 35; *see also* J.A. 51.

For claim 16 and the corresponding dependent claims, the Board held that the combination of Borst and Wang '099 did not disclose the disassociation limitation, finding that Wang did not teach “operatively disassociat[ing] from the other devices” when the user switched between using the surgical robot and accessing the patient data. J.A. 43.²

Auris appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4).

DISCUSSION

We review “the Board's conclusions of law de novo” and its “findings of fact for substantial evidence.” *Homeland Housewares, LLC v. Whirlpool Corp.*, 865 F.3d 1372, 1374 (Fed. Cir. 2017). “Obviousness is a question of law” that is “based on multiple underlying factual determinations,

² Unlike claims 51 and 53, Auris did not challenge claim 16 and its corresponding dependent claims on the basis of Borst and Salvati.

including whether a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and whether there would have been a reasonable expectation of success in doing so.” *TQ Delta, LLC v. Cisco Sys., Inc.*, 942 F.3d 1352, 1357 (Fed. Cir. 2019) (internal quotation omitted). Claim construction is a legal question reviewed de novo “where, as here, there is no relevant extrinsic evidence.” *Homeland Housewares*, 865 F.3d at 1374.

I. Claims 51 and 53

Auris first argues that the Board’s obviousness analysis erroneously extended claim 16’s disassociating limitation to claims 51 and 53. Claim 16 teaches a method wherein “selectively accessing a source of auxiliary information in response to the manipulation of the linkage of the master control . . . comprises *disassociating* the master control from the end effector.” ’906 patent, col. 30, ll. 26–28, 34–35 (emphasis added). Unlike claim 16, claims 51 and 53 do not contain an express disassociating limitation. But they do require first and second operating modes respectively enabling the surgeon to (1) control the robotic surgical system “in response to the manipulation of the linkage of the master control,” or “the input device,”³ *id.* at col. 33, ll. 6–8; col. 34, l. 16, and (2) change the displayed auxiliary information “in response to the manipulation of the linkage of the master control” or “the input device,” *id.* at col. 33, ll. 13–14; col. 34, ll. 18–19.

The Board’s decision did not improperly import claim 16’s disassociating limitation to claims 51 and 53. To the contrary—the Board recognized that “claim[s] 53 [and 51]

³ The input device is connected to the master, as described in the claims: “a master having an input device, a linkage of the input device configured for manipulation by a hand of a system operator.” ’906 patent, col. 34, ll. 5–7.

do[] not recite disassociating the master control from the surgical instrument.” J.A. 35. But in addressing whether a skilled artisan would reasonably expect success in combining Auris’s asserted prior art references, the Board found, based on Intuitive’s expert testimony, that disassociating the master control from the surgical instrument was required to combine Borst’s surgical system with either Salvati or Wang ’099’s second operating mode.

Auris argues that even if the Board were correct in requiring disassociating, it erred in concluding that a “skilled artisan would not have reasonably expected success in modifying Borst’s master control to have a second mode.” J.A. 34–35. According to Auris, “a skilled person would have used common sense to engage or disengage Borst’s ‘control robotic instruments’ from the surgical end effectors” given that “this functionality was well known” at the time “and described in many prior art references.” Appellant’s Opening Br. 47–48, 52.

But the Board found that Auris never refuted “persuasive expert testimony,” J.A. 36, from Intuitive’s expert, Dr. Rentschler, who explained that five different steps would be necessary to successfully modify Borst:

- 1) [T]oggle to a second mode to place additional information on the display screen, on or alongside the live image of the surgical site, 2) disassociate the master controls from the surgical instruments/end effectors, 3) maintain the current position of the surgical instruments/end effectors, 4) toggle back to the first mode after manipulation of additional information, and 5) reposition master controls in a configuration so as to be engaged with the original end effector locations.

J.A. 1898, Ex. 2003 ¶ 81. Regarding the final step, Dr. Rentschler explained that “if Borst’s master control [] [is] used to add information on the screen in a second mode,

the position and orientation of the master control itself will change” to a position that differed from the position it was in when the surgeon exited the first mode. J.A. 1897, Ex. 2003 ¶ 80. He further noted that Auris’s proposed combination did not describe “how [the] master control [could] be returned to the position it occupied immediately before transitioning to the second mode, so that engagement between the master control and the end effector [could] be re-established to permit the surgeon to proceed with the surgery.” *Id.*

It may be, as Auris argues, that a skilled artisan would know how to overcome these problems. But as Intuitive notes, “Auris offered no evidence rebutting [Dr. Rentschler’s] testimony.” Appellee’s Br. 26. Under these circumstances, the Board did not err in finding that Auris had “not demonstrated by a preponderance of the evidence that there would have been a reasonable expectation of success in modifying Borst’s system to incorporate a dual functioning master,” J.A. 36; *see also* J.A. 51–52, and in concluding that claims 51 and 53 were not shown to be unpatentable.⁴

II. Claim 16 and the Dependent Claims

The Board’s decision upholding claim 16 and the corresponding dependent claims was limited to a finding that Wang ’099 was “missing the element of disassociating the master control from the end effector.” J.A. 43. The Board explained that in Wang ’099, “selecting a ‘device for operation does not mean that [the] master controller [] is

⁴ In light of our conclusion that substantial evidence supports the Board’s reasonable expectation of success findings for claims 51 and 53, we need not address Auris’s other unpatentability arguments for these claims because they similarly rely on modifying Borst. Auris raises nothing concerning the addition of Wang ’850 that would suggest the Board erred.

operatively disassociated from the other devices.” *Id.* According to the Board, Wang ’099 did not disclose “the communication” between the master controller and the previously-selected device ever being “even temporarily interrupted,” a characteristic the Board believed was required to satisfy the disassociating limitation. *Id.* The Board also concluded that Auris’s addition of Wang ’850 to the prior art combination failed because Auris did not “persuasively identify how Wang ’850’s master . . . could be integrated . . . to arrive at the limitation of disassociating a master controller.” J.A. 44.

On appeal, Auris contends that the prior art taught the disassociating limitation and that the Board’s conclusion was based on an improper claim construction. Auris argues that the Board’s construction “exclud[ed] any system that maintains any communication between the master control and the end effectors, even if that communication is solely to allow the master controller to later re-establish an operative association.” Appellant’s Opening Br. 53. While the Board’s construction is not entirely clear, we think that Auris is correct in its interpretation of the Board’s decision in that respect, and that the Board’s claim interpretation is too narrow.

In describing the disassociating limitation, the ’906 patent specification does not require the wholesale termination of communications between the master control and the controlled devices. The specification explains that “the masters [] are normally operatively associated with the slaves,” but “when one, or both, or either, of the masters are to be used selectively to place an image corresponding to auxiliary information . . . in the image or scene of the surgical site, the operative association between the master, or masters, and the slaves is temporarily interrupted.” ’906 patent, col. 23, ll. 1–7. During this temporary interruption, the “slaves are typically held or locked in stationary positions at the surgical site . . . in the positions they

occupied immediately before disassociation.” *Id.* at col. 23, ll. 8–11. Thus, disassociating requires only that the operative association be temporarily interrupted in a way that causes the slave devices to be held or locked in stationary position. The Board’s construction erred in requiring an interruption in communication.

Auris argues that we should reverse on this issue, rather than remand, because Wang ’099 discloses disassociating under the proper construction. According to Auris, Wang ’099’s “master control is able to electronically control end effectors and separately access patient data from a network without causing the end effectors to move.” Appellant’s Opening Br. 53.

Auris’s expert, Dr. Hannaford, testified that a person of skill in the art would understand that in Wang ’099, “user selection rout[es] control signals to a specified device, and thus, it disassociates the master control from other devices.” J.A. 1044, Ex. 1003 ¶ 146 (internal quotation marks omitted). But Intuitive’s expert, Dr. Rentschler, testified to the contrary. *See* J.A. 1907, Ex. 2003 ¶ 103 (“[T]he Wang ’099 system allows for multiple operating room devices to be active at once.”). We believe the question whether the combination satisfies the disassociating limitation is best left for the Board to address in the first instance.

Finally, Intuitive proposes an “alternative reason” to affirm the Board’s decision to uphold claim 16 and the dependent claims: that “Auris failed to carry its burden to establish a skilled artisan would have been motivated to modify Borst to include ‘a second operating mode’” with a reasonable expectation of success. Appellee’s Br. 30–31. Intuitive argues that affirming would be proper “given that the Board already made the requisite factual findings on identical facts with respect to” claims 51 and 53. *Id.* at 31.

Contrary to Intuitive’s assertion, the record for claim 16 was not “identical” to the record that the Board relied

on in upholding claims 51 and 53. For example, Intuitive’s experts never testified that the same five steps required to modify Borst—applicable to claims 51 and 53—would be necessary to modify Borst with respect to claim 16. Dr. Rentschler testified only that Auris “has not provided any explanation on how a person skilled in the art would have expected to use Borst’s master control [] to add auxiliary information without inadvertently translating the movements of the master control to the end effector within the patient.” J.A. 1909, Ex. 2003 ¶ 106. Intuitive’s other expert, Dr. Grossi, testified only that Borst does not “teach how to disengage/re-engage the master controls with the surgical instruments when transitioning between the two modes of operation.” J.A. 1956, Ex. 2004 ¶ 24.

Intuitive’s Patent Owner Response also never referenced the five steps argument. It contended only that Auris “has [] not established that a person skilled in the art would have had a reasonable expectation of success in modifying Borst’s master controls [] to incorporate the ability to obtain and display auxiliary information,” and characterized Auris’s conclusory statements that Borst’s system “could be modified . . . with a high degree of predictability [] that [] would work as expected” as being “insufficient to establish . . . a reasonable expectation of success.” J.A. 386 (internal quotations omitted).

Given that Intuitive did not make the same arguments or create the same record for claim 16 as it did for claims 51 and 53, we decline Intuitive’s request to affirm on these alternative grounds. On remand, the Board should consider (1) whether Wang ’099 discloses disassociating under the proper construction; and if it does (2) whether claim 16 and the corresponding dependent claims would be nonobvious, including whether a person of skill in the art would reasonably expect success in combining the asserted prior art references.

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CONCLUSION

For the foregoing reasons, we affirm the Board's decision with respect to independent claims 51 and 53. We vacate and remand the Board's decision with respect to claims 16, 22–23, and 25–26.

**AFFIRMED IN PART, VACATED AND REMANDED
IN PART**

COSTS

No costs.