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## Obviousness By Resort to Common Sense

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In *Arendi v. Apple*, the U.S. Court of Appeals for the Federal Circuit outlined limited circumstances in which reliance on common sense is acceptable in evaluating obviousness of a claimed invention.<sup>1</sup> These limited circumstances are sometimes referred to as the *Arendi* common sense standard or simply, the *Arendi* standard. In the first half of 2020, two Federal Circuit cases found patent claims obvious by resort to common sense – *Philips v. Google* in January 2020 and *B/E Aerospace v. C&D Zodiac* in June 2020.<sup>2</sup>

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**This article examines how the court applied the *Arendi* standard in these and other cases, and offers practice tips for patent challengers resorting to common sense to establish obviousness.**

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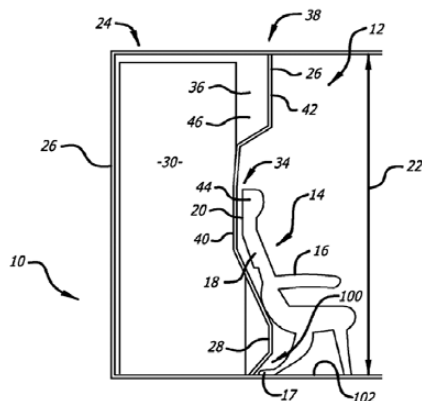
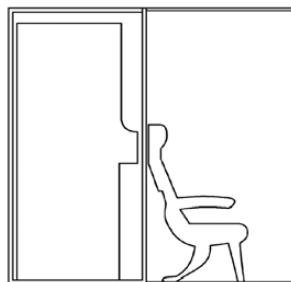
This article examines how the court applied the *Arendi* standard in these and other cases, and offers practice tips for patent challengers resorting to common sense to establish obviousness. Likewise, for supporting patentability, practice tips are provided for patent applicants facing obviousness rejections based on common sense.

### THE *ARENDI* COMMON SENSE STANDARD

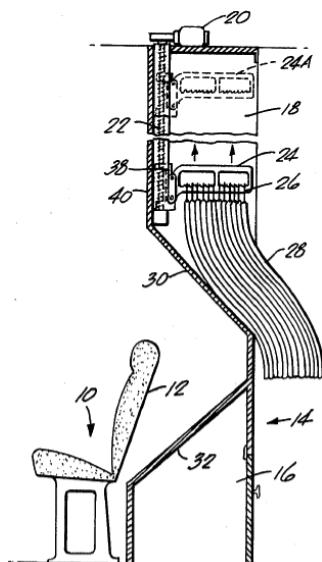
In *Arendi*, the Federal Circuit stressed that courts must “consider common sense, common wisdom, and common knowledge in analyzing obviousness.”<sup>3</sup> This comports with the Supreme Court’s directives in *KSR* that “rules that deny factfinders recourse to common sense” are inconsistent with our case law.<sup>4</sup> However, the Federal Circuit in *Arendi* noted at least three caveats in applying “common sense” in an obviousness analysis:

- “First, common sense is typically invoked to provide a known motivation to combine, not to supply a missing claim limitation.”<sup>5</sup>
- Second, common sense can be invoked to fill in a missing limitation when “the limitation in question was unusually simple and the technology particularly straightforward.”<sup>6</sup>
- “Third, our cases repeatedly warn that references to ‘common sense’ – whether to supply a

The '641 patent, figs. 1-2



Betts, fig. 1



motivation to combine or a missing limitation – cannot be used as a wholesale substitute for *reasoned analysis and evidentiary support*, especially when dealing with a limitation missing from the prior art references specified.”<sup>7</sup>

These three caveats or prongs are commonly referred to as the *Arendi* standard.

**THE DISPUTE IN B/E AEROSPACE**

*B/E Aerospace* is a case where common sense supplies a missing claim limitation under the second prong of the *Arendi* standard and is supported

by reasoned analysis and evidence under the *Arendi* third prong.

**The Patents in the B/E Aerospace Dispute**

The dispute in *B/E Aerospace* involves U.S. patents 9,073,641 (the “’641 patent”) and 9,440,742 (the “’742 patent”) owned by B/E Aerospace, Inc. (“B/E”). The ’641 and ’742 patents are directed to space-saving modifications to the walls of aircraft enclosures to reduce the gaps between the enclosures and adjacent structures such as passenger seats.<sup>8</sup> The ’641 patent contrasts a prior art configuration in Fig. 1 with an embodiment of the

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invention in Fig. 2, reproduced below. Fig. 1 shows a flat, forward-facing lavatory wall immediately behind a passenger seat that has a seat support (i.e., a seat leg) extending toward the lavatory wall. Fig. 2 shows a contoured wall [28] having two recesses [34] and [100], where the recess [34] receives a seat back [44] of a passenger seat [16] and the recess [100] receives a seat support [17] of the same passenger seat.

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**The PTAB found Zodiac's arguments convincing and that Zodiac supported its "common sense" argument with "reasoned explanation and record evidence."**

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Claim 1 of the '641 patent recites, in part, "wherein said forward wall portion . . . includes a first recess configured to receive . . . a portion of [a] seat back [and] a second recess configured to receive . . . a portion of [a] seat support. . . ." The limitation of "a second recess" was a point of contention in the relevant Patent Trial and Appeal Board ("PTAB") proceeding and on appeal to the Federal Circuit.

### **The PTAB Proceeding**

Zodiac, Inc. ("Zodiac") filed a petition for inter partes review ("IPR") of the '641 and '742 patents, asserting that the claims were obvious over the Admitted Prior Art (Fig. 1 of the '641 patent) and U.S. Patent 3,738,497 (Betts).

Betts discloses a coat closet immediately behind a passenger seat in an airplane, and the coat closet has a contoured wall that accommodates the seat's tilted back.

The PTAB instituted the IPR and determined that it would have been obvious for a skilled artisan to modify the flat wall of the Admitted Prior Art with the contoured wall of Betts to meet the "first recess" limitation of claim 1.<sup>9</sup> The parties did not dispute this point on appeal. *B/E Aerospace*.<sup>10</sup>

Regarding the missing "second recess" limitation, the PTAB agreed with Zodiac that it would have been obvious to further modify the combination of the Admitted Prior Art and Betts to include "a second recess" to receive the seat support.<sup>11</sup> Zodiac made the arguments under two approaches.

First, Zodiac argued that the logic of using a recess to receive the seat back (i.e., Betts) applies equally to using another recess to receive the aft extending seat support in the Admitted Prior Art, which is nothing more than the application of known technology for its intended purpose with a predictable result.<sup>12</sup>

Second, Zodiac argued that it was a "common sense" solution to include a recess in a wall to enable a seat support to be positioned further aft, citing to Mr. Anderson's testimony.<sup>13</sup> Zodiac's expert, Mr. Anderson stated that:

a primary motivation of one of ordinary skill in the art of aircraft interior design would have been to make efficient use of space in the aircraft interior cabin. One way to accomplish a more efficient use of space is to reduce the space between seats and monuments in the aircraft (e.g., walls for closets or lavatories). . . . As seats are moved closer to these monuments, the rearmost component of the seat may impact the monument. . . . [A] person of ordinary skill in the art would recognize that as a seat is moved further aft the seat support necessarily is also moved further aft. As the seat is moved aft the feet of the seat support may come into contact with the lower section of the wall. Creating one or more recesses to accommodate whatever portion(s) of the seat support that would contact the forward wall of the enclosure is the obvious solution to this known problem.<sup>14</sup>

The Anderson Declaration cited to three design drawings as evidence that recesses configured to receive seat supports were known in the art.<sup>15</sup>

The PTAB found Zodiac's arguments convincing and that Zodiac supported its "common sense" argument with "reasoned explanation and record evidence."<sup>16</sup> Consequently, the PTAB did not reach the issue of whether the "second recess" limitation is a central limitation as in *Arendi* or a peripheral limitation as in *Perfect Web*, the former appearing to require a higher evidentiary standard than the latter.<sup>17</sup>

### **Review by the Federal Circuit**

On appeal, the Federal Circuit affirmed the PTAB's conclusion under both approaches.<sup>18</sup>

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Regarding the second approach invoking common sense, the Federal Circuit credited the Board's invocation of common sense as "properly accompanied by reasoned analysis and evidentiary support" under the third prong of the *Arendi* standard.<sup>19</sup> The court noted that "the Board dedicated more than eight pages of analysis to the 'second recess' limitation and relied on Mr. Anderson's detailed expert testimony."<sup>20</sup> The court agreed with the PTAB that Zodiac's arguments and expert testimony are sufficient to meet the *Arendi* standard, regardless of the design drawings.<sup>21</sup>

The Federal Circuit went a step further than the PTAB by analogizing the present facts to those of *Perfect Web*.<sup>22</sup> The court noted that the technology in *Perfect Web*, relating to a method for delivering a predetermined quantity of emails, "was simple" and the missing limitation – step D of steps A through D – merely involves repeating known steps A, B, and C until success is achieved.<sup>23</sup> The court noted that the present case is "just like in *Perfect Web*," the "technology of the claimed invention is simple," and the missing limitation – the "second recess" – involves repetition of an existing element (the "first recess") until success is achieved.<sup>24</sup> In *Perfect Web*, the Federal Circuit held that, for cases involving a simple technology, "[n]o expert opinion is required to appreciate the potential value to [a skilled artisan] of [the missing limitation]."<sup>25</sup> "If the relevant technology were complex, the court might require expert opinions."<sup>26</sup>

Since this case merely involves a "simple" technology like in *Perfect Web*, the Federal Circuit could have found the challenged claims obvious even without the expert opinion (the Anderson Declaration) under the second prong of the *Arendi* standard. However, the Federal Circuit did not have to go that route after finding that the Board's invocation of common sense met the third prong of the *Arendi* standard regardless of whether the challenged technology is simple or complex.

### **Resorting to Common Sense for Obviousness Considering B/E Aerospace**

*B/E Aerospace* refreshes patent challengers on how to fill in missing claim limitations under the *Arendi* standard. First, it can be dispositive to establish that the challenged technology is "simple" by

comparing it to those in the Federal Circuit's precedents such as *Perfect Web*. Second, it is prudent to support "common sense" arguments by reasoned analysis and evidence and to avoid conclusory arguments regardless of whether the challenged technology is simple or complex.

### **Establish That the Challenged Claim Involves a Simple Technology**

Similar to what the Federal Circuit has done in *B/E Aerospace*, a patent challenger may establish that a challenged claim involves a simple technology by analogizing it with that in *Perfect Web*. Once a patent claim is found "simple," the patent challenger can invoke common sense under the second prong of the *Arendi* standard even without expert opinion or evidentiary support.<sup>27</sup>

In addition to *Perfect Web*, patent challengers may resort to other Federal Circuit precedents where the court has held that the invocation of common sense was proper. For example, the Federal Circuit has held that it is common sense to replace a fax machine with an electronic transaction device because "applying computer and internet technology to replace older electronics has been commonplace in recent years."<sup>28</sup>

### **Support "Common Sense" Arguments by Reasoned Analysis and Evidence**

It is prudent for patent challengers to support "common sense" arguments by reasoned analysis and evidence regardless of whether the challenged technology is simple or complex. This ensures a proper invocation of common sense under the third prong of the *Arendi* standard.<sup>29</sup>

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In this regard, the Anderson Declaration in *B/E Aerospace* provides a working example as both the PTAB and the Federal Circuit considered the rationale and related analysis in the Anderson Declaration sufficient to meet the *Arendi* standard. Turning to the Anderson Declaration cited above, the expert

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started his analysis with the motivation of person of ordinary skill in the art (“POSA”) (i.e., “mak[ing] efficient use of space in the aircraft interior cabin”) and a known way to accomplish that (i.e., moving passenger seats closer to walls<sup>30</sup>), then explained the problem that a motivated POSA would have faced when moving passenger seats closer and closer to a wall (i.e., eventually “the feet of the seat support may come into contact with the lower section of the wall”), and reached an “obvious” solution to the problem (i.e., creating a recess in the lower section of the wall to accommodate the feet of the seat support).<sup>31</sup> Such analysis focused on what a POSA would have done with the general knowledge, and the “obvious” solution it reached appears to be specifically tied to the missing claim limitation, “a second recess configured to receive . . . a portion of [a] seat support. . . .”<sup>32</sup>

This type of motivation–problem–solution analysis has similarly won the “common sense” arguments in cases where the challenged technologies are not deemed simple. For example, in *Philips v. Google*, a case involving a media playback technology, the Federal Circuit held that the background knowledge was sufficient to supply the missing claim feature – retrieving the next media segment while playing the current one.<sup>33</sup> In *Philips*, the Federal Circuit found that the PTAB had properly relied upon expert evidence corroborated by literature establishing that pipelining in media presentation was within the general knowledge of a skilled artisan and a skilled artisan would have been motivated to reduce the wait time to receive media content over the Internet by modifying the primary reference with the pipelining.<sup>34</sup>

Some winning analysis may not fall exactly within the framework of motivation–problem–solution, but nonetheless focuses on what a skilled artisan would have done with the general knowledge to arrive at the missing claim limitations. For example, the court relied on “common sense” to invalidate claims in a pharmaceutical patent as obvious in *Merck v. Hospira*.<sup>35</sup> In *Merck*, the Federal Circuit agreed with the lower court that the missing limitations – the order of process steps, the simultaneous addition of base, the specific temperature range, and a final moisture content – “are all experimental details that POSA would have utilized via routine experimentation” while implementing known principles.<sup>36</sup> Notably, in both the *Philips* and the

*Merck* cases, the Federal Circuit did not characterize the involved technology as “simple” as in *Perfect Web*.

### **Avoid Conclusory “Common Sense” Arguments**

When supporting “common sense” arguments, patent challengers should avoid making conclusory statements and should close the gap between the missing claim limitations and what is known with coherent analysis under the third prong of the *Arendi* standard. When the Federal Circuit finds a “common sense” analysis conclusory or not specifically tied to the missing claim limitation, it has rejected the analysis.

For example, in *Arendi*, the disputed technology involved displaying a document using a first computer program, finding a searchable first information in the document, searching for the first information in another source external to the document in order to find a second information related to the first information, and performing an action to the second information.<sup>37</sup> The patent challengers established with substantial evidence that a broader notion of searching for data in a database is known in the art.<sup>38</sup>

In addition, a prior art reference taught a computer program that displays a phone number and prompts user to “Add to address book.”<sup>39</sup> The point of contention was whether it would have been “common sense” to search for the phone number in the address book when adding it to the address book.<sup>40</sup> The PTAB agreed with the patent challengers that it would have been “common sense” to do so in order to avoid duplicating entries in the address book, and once an entry is located using the phone number (the claimed first information), both the phone number and the associated information such as name and/or address (the claimed second information) would be displayed to the user.<sup>41</sup>

On appeal, the Federal Circuit reversed and found that searching for a contact name in an address book would have avoided duplicating a contact entry but searching for a phone number would have not, and the “Board overlooked this *common sense* distinction.”<sup>42</sup> “For example, if John Smith had two phone numbers and ‘John Smith’ was already in the database with one phone number, searching the database for the second, new number to be added to ‘John Smith’ would not reveal that ‘John Smith’ is already in the database.”<sup>43</sup> The Federal Circuit

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faulted the PTAB for relying on “conclusory statements and unspecific expert testimony regarding searches in general . . . in drawing its conclusion that it would have been ‘common sense’ to search a database for a telephone number to be added [while] ignor[ing] Arendi’s arguments regarding the differences between searching for duplicate entries with a telephone number versus with a name or address.”<sup>44</sup>

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**The Arendi line of cases also provide important contexts to patent applicants during prosecution when examiners use “common sense” as a source of POSITA’s knowledge in obviousness rejections.**

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Similarly, in *DSS Technology Management*, the Federal Circuit faulted the PTAB’s analysis as conclusory and unspecific to the missing claim limitation.<sup>45</sup> In *DSS Technology*, the PTAB agreed with Apple that it would have been common sense to modify a reference’s base station to operate in RF burst mode like the reference’s mobile unit because the two have the same physical structure.<sup>46</sup> The Federal Circuit reversed, finding that the Board and Apple failed to consider that the reference imposes different transmission requirements on the base station and the mobile unit and failed to close the gap between the proposed modification and some specific terms in the missing claim limitation.<sup>47</sup>

**PRACTICE TIPS FOR PATENT APPLICANTS FACING REJECTIONS BASED ON COMMON SENSE**

The *Arendi* line of cases also provide important contexts to patent applicants during prosecution when examiners use “common sense” as a source of POSITA’s knowledge in obviousness rejections.<sup>48</sup>

For example, when faced with obviousness rejections relying on general knowledge or common sense, patent applicants may challenge the examiner to show reasoned analysis and evidentiary support under *Arendi*. Further, it is important for patent applicants to have robust backup dependent claims in case that allowable features in independent claims, though missing in the prior art references during prosecution, are shown to be “common sense” solution during adversarial proceedings.

**CONCLUSION**

While *B/E Aerospace* is the latest case invoking common sense for obviousness, we do not expect it to be the last teaching example on this issue. Rather, we expect to see frequent resort to common sense not only for motivation to combine references but also for filling in missing claim limitations.

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**When supported by an expert witnesses’ reasoned analysis, “common sense” can properly fill in the missing claim limitations and render the claims obvious.**

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Whether the challenged claims involve simple technologies or complex ones, patent challengers should keep “common sense” on their list of arguments, particularly when prior art references have inexact disclosures of claim limitations. When supported by an expert witnesses’ reasoned analysis, “common sense” can properly fill in the missing claim limitations and render the claims obvious.

**Notes**

1. *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361–62 (Fed. Cir. 2016).
2. *Koninklijke Philips N.V. v. Google LLC*, No. 2019-1177 (Fed. Cir. Jan. 30, 2020); *B/E Aerospace v. C&D Zodiac, Inc.*, No. 2019-1935 (Fed. Cir. Jun. 26, 2020).
3. *Arendi*, 832 F.3d at 1361.
4. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).
5. *Arendi*, 832 F.3d at 1361–62.
6. *Id.* at 1362 (referring to *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324 (Fed. Cir. 2009)).
7. *Arendi*, 832 F.3d at 1361–62 (emphasis added).
8. U.S. patents 9,073,641 at 1:15–20, 2:14–19.
9. *C&D Zodiac, Inc. v. B/E Aerospace, Inc.*, No. IPR2017-01275 at 16–17 (P.T.A.B. Oct. 23, 2018).
10. No. 2019-1935 at 9 (Fed. Cir. Jun. 26, 2020).
11. *C&D Zodiac, Inc. v. B/E Aerospace, Inc.*, at 18–26.
12. *Id.* at 18.
13. *Id.* at 19.
14. IPR2017-01275, Ex. 1004 (Anderson Declaration), ¶ 74; see also *id.* at ¶ 191.
15. *Id.* at ¶¶ 74–78.
16. *C&D Zodiac, Inc. v. B/E Aerospace, Inc.*, No. IPR2017-01275 at 21–26 (P.T.A.B. Oct. 23, 2018).

17. *Id.* at 20–21; See *Perfect Web Techs., Ins. v. InfoUSA, Inc.*, 587 F.3d 1324 (Fed. Cir. 2009).
18. *B/E Aerospace v. C&D Zodiac, Inc.*, No. 2019-1935 at 9–12 (Fed. Cir. Jun. 26, 2020).
19. *Id.* at 11.
20. *Id.*
21. *Id.* at 13–14. B/E Aerospace contended that the design drawings cited to in Anderson Declaration were not printed publications under 35 U.S.C. § 311(b). The Federal Circuit did not reach this issue.
22. *Id.* at 11–12.
23. *Id.*
24. *Id.*
25. *Perfect Web*, 587 F.3d at 1330.
26. *Id.*
27. *Arendi*, 832 F.3d at 1362 (Common sense can be invoked to fill in a missing limitation when “the limitation in question was unusually simple and the technology particularly straightforward.”); *Perfect Web*, 587 F.3d at 1330 (for cases involving a simple technology, “[n]o expert opinion is required to appreciate the potential value to [a skilled artisan] of [the missing limitation].”).
28. *W. Union v. Moneygram Payment Sys.*, 626 F.3d 1361, 1370 (Fed. Cir. 2010).
29. *Arendi*, 832 F.3d at 1361–62 (“Third, our cases repeatedly warn that references to ‘common sense’ – whether to supply a motivation to combine or a missing limitation – cannot be used as a wholesale substitute for *reasoned analysis and evidentiary support*, especially when dealing with a limitation missing from the prior art references specified.”).
30. Prior to the “common sense” analysis, the Anderson Declaration discussed Betts as providing a known solution to making efficient use of space in an aircraft cabin. See IPR2017-01275, Ex. 1004 (Anderson Declaration), ¶¶ 57–59.
31. IPR2017-01275, Ex. 1004 (Anderson Declaration), ¶ 74.
32. The ‘641 patent, claim 1.
33. *Koninklijke Philips N.V. v. Google LLC*, 2019-1177 (Fed. Cir. Jan. 30, 2020).
34. *Id.* at 11–14.
35. *Merck v. Hospira*, 221 F. Supp. 3d 497 (D. Del. 2016), *aff’d in pertinent part*, 874 F.3d 724 (Fed. Cir. 2017).
36. *Id.* at 730.
37. *Arendi*, 832 F.3d at 1357–58.
38. *Id.* at 1365.
39. *Id.* at 1358–59.
40. *Id.* at 1359.
41. *Id.* at 1359–60.
42. *Id.* at 1366.
43. *Id.*
44. *Id.*
45. *DSS Technology Management v. Apple Inc.*, 885 F.3d 1367 (2018).
46. *Id.* at 1373.
47. *Id.* at 1376–77.
48. See MPEP § 2141 (“In short, the focus when making a determination of obviousness should be on what a person of ordinary skill in the pertinent art would have known at the time of the invention, and on what such a person would have reasonably expected to have been able to do in view of that knowledge. This is so regardless of whether the source of that knowledge and ability was documentary prior art, general knowledge in the art, or *common sense*.”) (emphasis added).

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