

NOTE: This disposition is nonprecedential.

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

DIRECTPACKET RESEARCH, INC.,
Plaintiff-Appellant

v.

POLYCOM, INC.,
Defendant-Appellee

2024-1147

Appeal from the United States District Court for the
Northern District of California in No. 3:19-cv-03918-JD,
Judge James Donato.

Decided: June 25, 2025

TERENCE P. ROSS, Katten Muchin Rosenman LLP,
Washington, DC, argued for plaintiff-appellant. Also represented by CHRISTOPHER FERENC, ALLY JORDAN, ERIC THOMAS WERLINGER, SEAN WOODEN.

EIMERIC REIG-PLESSIS, Winston & Strawn LLP, San Francisco, CA, argued for defendant-appellee. Also represented by DAVID DALKE, Los Angeles, CA; KELLY CATHERINE HUNSAKER, MATTHEW R. MCCULLOUGH, Redwood City, CA; SAMANTHA MAXFIELD LERNER, Chicago, IL.

Before MOORE, *Chief Judge*, CUNNINGHAM, *Circuit Judge*,
and SCARSI, *District Judge*.¹

SCARSI, *District Judge*.

Plaintiff-Appellant directPacket Research, Inc. (“directPacket”) sued Defendant-Appellee Polycom, Inc. (“Polycom”) for infringement of U.S. Patent No. 7,773,588 B2 (the “’588 patent”). The ’588 patent teaches a system and method for multimedia communication that employs an intermediate communication protocol to achieve interoperability between incompatible multimedia systems. The district court granted Polycom’s motion for judgment on the pleadings, concluding that the ’588 patent is directed to a patent-ineligible abstract idea. For reasons explained below, we affirm.

BACKGROUND

The ’588 patent is titled “System and Method for Cross Protocol Communication” and relates to “electronic communications systems and, more particularly, to communication using incompatible communication protocols.” ’588 patent col. 1 ll. 1–2, 6–8. Claim 1 of the ’588 patent teaches

[a] method for multimedia communication comprising:

receiving a multimedia data stream at a communication controller in a first protocol from a communication device, wherein the first protocol comprises a signaling protocol;

detecting a type of said first protocol;

¹ Honorable Mark C. Scarsi, District Judge, United States District Court for the Central District of California, sitting by designation.

converting said first protocol into an intermediate protocol;

translating said intermediate protocol into a second protocol, wherein the second protocol comprises a signaling protocol; and

transmitting said multimedia data stream in said second protocol to a target communication device;

wherein said first protocol comprises one of a text-based protocol and a binary protocol and wherein said second protocol comprises one of a binary protocol and a text-based protocol.

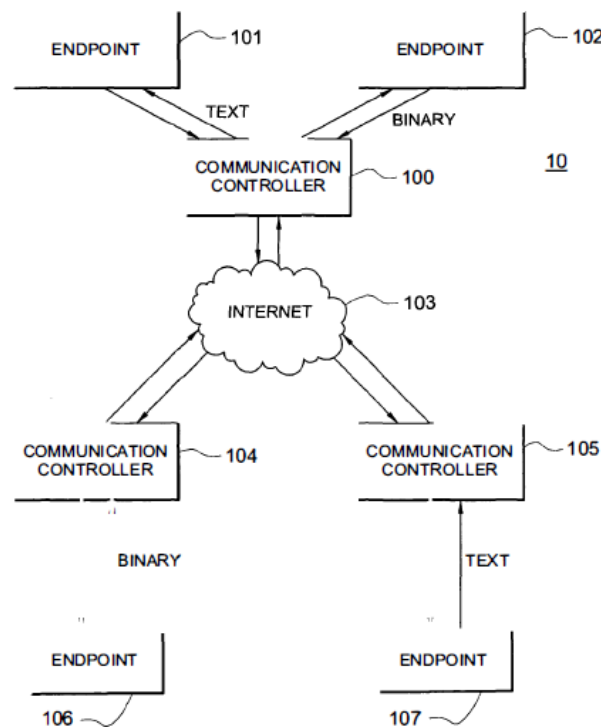
'588 patent col. 7 ll. 26–41.

As the background of the patent states, the Internet is often used “for many forms of communication, including voice conversations, video conferencing, development collaboration, and the like.” *Id.* col. 1 ll. 12–14. Multimedia communication systems, such as Zoom, FaceTime, and Microsoft Teams, facilitate these activities. “Multimedia communication systems . . . are typically designed to be implemented in one of . . . various [communication] protocols.” *Id.* col. 1 ll. 48–50. “Two examples of such protocols . . . are H.323 . . . and the Session Initiation Protocol (SIP) . . .” *Id.* col. 1 ll. 22–27. “A problem arises when a party using an H.323 endpoint on one communication system . . . desires to communicate with another party using a different protocol endpoint on another communication system.” *Id.* col. 1 ll. 54–58.

The claimed method and system include “communication controllers” that convert one communication protocol into an intermediate protocol, and then convert the intermediate protocol into a destination communication protocol. More specifically, “[w]hen initiating multimedia communications, an endpoint transmits the multimedia data streams to [a] communication controller . . .” *Id.* col. 4 ll. 21–23. The communication controller begins

examining the data stream to find protocol messages or commands contained within the data stream. *Id.* col. 4 ll. 29–32. The protocol converter then translates “the data stream line-by-line into a new, interim data stream by retrieving the associated message or command in the interim protocol.” *Id.* col. 4 ll. 47–49. The data, now encoded according to the intermediate protocol, is sent to a downstream communication controller, where the intermediate data stream is decoded into a format appropriate for the destination multimedia system. *Id.* col. 4 l. 52–col. 5 l. 18. Figure 1A illustrates the system and method of the ’588 patent.

FIG. 1A



'588 patent Fig. 1A.

In 2018, directPacket sued Polycom in the Eastern District of Virginia for infringement of the '588 patent and two other directPacket patents. J.A. 200. Following proceedings before the district courts, the Patent Trial and Appeal Board, and this court, the action proceeded in the Northern District of California upon asserted claims in the '588 patent only. *See generally* J.A. 39–63.

In 2023, Polycom moved under Rule 12(c) of the Federal Rules of Civil Procedure for judgment on the pleadings, arguing that the '588 patent was directed to patent-ineligible subject matter, namely the abstract idea of language translation. J.A. 760–76. The district court granted the motion and dismissed the complaint. *directPacket Rsch., Inc. v. Polycom, Inc.*, No. 3:19-cv-03918-JD, 2023 WL 6301066, at *8 (N.D. Cal. Sep. 26, 2023) (“*Opinion*”). The court treated claim 1 as representative for purposes of the patent eligibility inquiry and applied the two-step framework set forth in *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208 (2014). *Opinion*, 2023 WL 6301066, at *4–8. At *Alice* step one, the district court reasoned that the asserted claims were directed to the abstract idea of language translation, and at *Alice* step two, the district court concluded that the claims did not include an inventive concept that transformed the claimed abstract idea into a patent-eligible invention. *Id.*

After the order of dismissal, directPacket declined to amend its complaint; consequently, the district court entered judgment. J.A. 1. directPacket timely filed this appeal. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

STANDARD OF REVIEW

We review a district court’s decision to grant judgment on the pleadings pursuant to Rule 12(c) under the law of the appropriate regional circuit, “here the Ninth Circuit, which reviews Rule 12(c) motions de novo.” *PersonalWeb Techs. LLC v. Google LLC*, 8 F.4th 1310, 1314 (Fed. Cir.

2021) (citing *Allergan, Inc. v. Athena Cosms., Inc.*, 640 F.3d 1377, 1388 (Fed. Cir. 2011)); see *Or. Nat. Desert Ass’n v. U.S. Forest Serv.*, 550 F.3d 778, 782 (9th Cir. 2008).

Patent eligibility under 35 U.S.C. § 101 is a question of law that may involve underlying questions of fact. *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1342 (Fed. Cir. 2018). “We review the district court’s ultimate conclusion on patent eligibility de novo.” *Id.* To evaluate patent eligibility under § 101, we apply the familiar *Alice* two-step framework. At step one, we determine whether the claim at issue is “directed to” an abstract idea, a law of nature, or a natural phenomenon. *Alice*, 573 U.S. at 218. Under this directed-to inquiry, “we ask what the patent asserts to be the focus of the claimed advance over the prior art to determine whether the claim’s character as a whole is directed to ineligible subject matter.” *Simio, LLC v. FlexSim Software Prods., Inc.*, 983 F.3d 1353, 1359 (Fed. Cir. 2020) (internal quotation marks and citations omitted). If the claim is directed to an abstract idea at step one, we move to step two, “where we examine the elements of the claim to determine whether it contains an inventive concept sufficient to transform the claimed abstract idea into a patent-eligible application.” *Id.* (internal quotation marks omitted). If the claim does not contain such an inventive concept at step two, it is ineligible for patenting.

DISCUSSION

A. Representativeness

directPacket argues that the district court erred in treating claim 1 as representative of all asserted claims of the ’588 patent. Appellant’s Br. 52–55. We agree with the district court that claim 1 is representative for the purpose of the patent eligibility analysis.

Limiting the analysis of a § 101 challenge to representative claims is appropriate when the claims at issue are “substantially similar and linked to the same”

ineligible concept. *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1360 (Fed. Cir. 2017). A court also “may treat a claim as representative in certain situations, such as if the patentee does not present any meaningful argument for the distinctive significance of any claim limitations not found in the representative claim.” *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1365 (Fed. Cir. 2018). In all cases, the representativeness inquiry must be “directly tethered to the claim language.” *Solutran, Inc. v. Elavon, Inc.*, 931 F.3d 1161, 1168 (Fed. Cir. 2019).

Beginning with the independent claims, independent claim 1 is representative of independent claims 7, 11, and 18. Claim 11 very nearly mirrors claim 1 except that the conversion step is performed “irrespective of a second protocol.” ’588 patent col. 8 ll. 63–64. Claim 7 describes the communication controller referenced in claim 1, which is responsible for conducting the conversion of a first protocol into an intermediate protocol. *Id.* col. 8 ll. 19–37. Claim 18 describes the computer program installed on the communication controller that directs the protocol conversion process. *Id.* col. 9 l. 54–col. 10 l. 13. None of these claims contain a material distinction for the purposes of the patent eligibility analysis. In addition, directPacket does not advance any argument rebutting the proposition that independent claim 1 is representative of the other independent claims. Accordingly, we treat claim 1 as representative of claims 7, 11, and 18. *See Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1256 n.1 (Fed. Cir. 2016).

We reject directPacket’s arguments on appeal as to the distinctiveness of dependent claims 2–4, 6, 12, 16, and 23. Appellant’s Br. 53–55. directPacket argues that dependent claims 2 and 12 recite the additional step of “negotiating endpoint device translation *after* transversal of the internet.” Appellant’s Br. 53 (citing ’588 patent col. 7 ll. 42–48, col. 9 ll. 7–13). directPacket argues that this improves the speed and efficiency of transmission across the Internet. *Id.* But the patent’s claim language is devoid of any

reference to speed or efficiency. And while the specification contains two references to the intermediate protocol being efficient, neither evinces that the claimed invention provides more efficient transmission across the Internet. And regardless of *when* the protocols are translated, claims 2 and 12 are still directed toward the abstract idea of *translation*. In sum, directPacket does not identify “a claim limitation” in claims 2 and 12 “not found in the representative claim [that] has ‘distinctive significance’ that would have a material impact on the eligibility analysis.” *Mobile Acuity Ltd. v. Blippar Ltd.*, 110 F.4th 1280, 1290 (Fed. Cir. 2024) (quoting *Berkheimer*, 881 F.3d at 1365).

directPacket next argues that dependent claims 6, 16, and 23 offer “additional innovation” over claim 1 in that they teach “the creation of a new and simplified intermediate communication protocol,” not merely a one-for-one translation. Appellant’s Br. 54. Notably, directPacket failed to raise its arguments regarding claims 6, 16 and 23 below. These claims merely cover a version of the intermediate protocol described in independent claims 1, 11, and 18 that comprises messages common to the text-based and binary protocols used by the transmitting and receiving devices. ’588 patent col. 8 ll. 16–18, col. 9 ll. 48–50, col. 10 ll. 58–60. As with dependent claims 2 and 12, claims 6, 16, and 23 do not offer limitations of “distinctive significance” from those in the independent claims for the purpose of the eligibility analysis. *Berkheimer*, 881 F.3d at 1365. Irrespective of the composition of the intermediate protocol, these dependent claims rely on the same fundamental methods of employing an intermediate protocol for translation asserted in the respective independent claims. Accordingly, they are “substantially similar and linked to the same” ineligible concept. *Cleveland Clinic*, 859 F.3d at 1360.

Lastly, directPacket argues that dependent claims 3 and 4 recite the use of a “protocol table” as part of the conversion steps of claim 1. Appellant’s Br. 55. These claims

describe the use of a lookup table mapping elements of original messages to their corresponding translations, which is readily analogized to a human consulting a language translation dictionary. Analyzing whether claim 1 is directed to language translation would naturally encompass these claims.

Accordingly, we treat claim 1 as representative of the other asserted claims of the '588 patent.

B. § 101 Patent Eligibility

We begin with *Alice* step one. The '588 patent teaches an invention that “allows communication devices that use different communication protocols to participate in multimedia communications on the same system.” '588 patent col. 2 ll. 25–27. The district court concluded that “the translation of ‘multimedia streams’ using an intermediate protocol is readily analogized to the abstract idea of language translation.” *Opinion*, 2023 WL 6301066, at *6. We have consistently held that the ideas of “encoding and decoding . . . data” and of “converting formats” are abstract. *Hawk Tech. Sys., LLC v. Castle Retail, LLC*, 60 F.4th 1349, 1357 (Fed. Cir. 2023) (quoting *Adaptive Streaming Inc. v. Netflix, Inc.*, 836 F. App'x 900, 903 (Fed. Cir. 2020)).

directPacket attempts to overcome this conclusion by arguing that the '588 patent's claims are directed to “improving the functioning of videoconferencing systems by achieving endpoint device interoperability in such a manner that allows for real-time multimedia communication over the Internet.” Appellant's Br. 32. However, our “analysis at step one ‘must focus on’ the claim language,” and the claim language makes no reference to videoconferencing systems, real-time communication, or the Internet. *Hawk Tech.*, 60 F.4th at 1357 (quoting *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 769 (Fed. Cir. 2019)). In addition, claim 1 does not “recite a specific enough solution to make the asserted technological improvement concrete.” *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d

1143, 1152 (Fed. Cir. 2019). Claim 1 recites five functional steps for (1) “receiving a multimedia data stream . . . in a first protocol,” (2) “detecting a type of said first protocol,” (3) “converting said first protocol into an intermediate protocol,” (4) “translating said intermediate protocol into a second protocol,” and (5) “transmitting said multimedia data . . . to a target communication device.” ’588 patent col. 7 ll. 26–41. But the claim says little “of *how* the purported invention improve[s] the functionality” of device interoperability; its limitations “are recited at such a level of result-oriented generality” that it fails to teach anything beyond a generalized implementation of the abstract idea of translation. *Hawk Tech.*, 60 F.4th at 1358 (alteration in original) (quoting *Koninklijke*, 942 F.3d at 1152).

“At *Alice* step two, we consider the claim elements—individually and as an ordered combination—to assess whether [they] transform the nature of the claim into a patent-eligible application of the abstract idea.” *Id.* (alteration in original) (quoting *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1338 (Fed. Cir. 2017)). We conclude that the ’588 patent fails to include “an inventive concept sufficient to transform the claimed abstract idea into a patent-eligible invention.” *Yu v. Apple Inc.*, 1 F.4th 1040, 1045 (Fed. Cir. 2021).

directPacket argues that the ’588 patent “recites the use of a new and simplified intermediate communication protocol comprised of the common elements of the communication protocols used by the incompatible endpoints to transmit the multimedia data stream across the Internet in real time.” Appellant’s Br. 41 (citing ’588 patent col. 3 ll. 40–56). directPacket asserts that this is unconventional, as “[t]he conventional solution would be to convert directly between incompatible communication protocols.” *Id.* The innovation directPacket advances does not mirror the claim limitations; none of the ’588 patent’s claims prescribe real-time transmission. Further, using an intermediate protocol itself rests on the abstract idea of translation.

“Adding one abstract idea . . . to another abstract idea . . . does not render the claim non-abstract.” *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017). Nor is employing an intermediate protocol to facilitate communication inventive in the context of translation. We need look no further than the longstanding and well-known historical practice of employing a *lingua franca* to facilitate trade among various nations. Claim 1 presents no inventive concept to transform the abstract idea of translation into something patent eligible.²

Accordingly, we agree with the district court that the asserted claims of the ’588 patent are invalid under § 101.

C. Procedural Error

directPacket contends that the district court improperly violated principles of party presentation and relied on facts outside the reviewable record. Appellant’s Br. 44–51. The district court analogized the claimed invention to “the commonplace human communication practice of . . . ‘relay translation,’” a phrase neither party raised in its respective briefing. *Opinion*, 2023 WL 6301066, at *6. To support its analogy, the court cited academic texts outside the record for propositions of fact, including that “[r]elay translation is common in polyglot communities for use in

² directPacket argues that dependent claims 2 and 12 recite an inventive concept by requiring a specific order of operations, namely transmitting the multimedia data stream over the Internet in the intermediate protocol and then translating it into the receiving protocol. Appellant’s Br. 42. Even if we had not found claim 1 representative of claims 2 and 12, because directPacket “did not present this alleged inventive concept . . . before the district court,” it has forfeited this argument. *Eolas Techs. Inc. v. Amazon.com, Inc.*, No. 2022-1932, 2024 WL 371959, at *6 (Fed. Cir. Feb. 1, 2024); see J.A. 801–02.

circumstances ranging from refugee and asylum centers to court proceedings and sign language communication.” *Id.*

We cannot say the district court’s relay translation analogy itself “departed so drastically from the principle of party presentation as to constitute an abuse of discretion.” *United States v. Sineneng-Smith*, 590 U.S. 371, 375 (2020). After all, “reasoning by analogy” is “a commonplace task for any lawyer or judge,” *N.Y. State Rifle & Pistol Ass’n v. Bruen*, 597 U.S. 1, 28 (2022), and we have approved “the practice of taking note of fundamental economic concepts and technological developments” in the *Alice* inquiry, *Affinity Labs of Tex.*, 838 F.3d at 1270. Moreover, while Polycom did not specifically use the phrase “relay translation,” Polycom’s district court briefing made clear that its *lingua franca* analogy represented the same concept. *See, e.g.*, J.A. 829. We see no abuse of discretion by the district court in comparing the claimed invention to relay translation.

That said, a district court generally may not rest a Rule 12 decision on matters outside the pleadings, Fed. R. Civ. P. 12(d), or take judicial notice of adjudicative facts without offering the parties an opportunity to be heard, Fed. R. Evid. 201(e). Rule 12 is clear that, if materials outside the pleadings are presented in support of a Rule 12(c) motion and received by the district court, the court must treat the motion as one for summary judgment. Fed. R. Civ. P. 12(d). The district court’s reliance on extra-record academic texts — which were not presented by the parties — is incompatible with the procedural requirements of the Federal Rules. However, this error is harmless in this case where the “dismissal can be justified without reference to any extraneous matters.” 5C Charles A. Wright & Arthur R. Miller, *Federal Practice and Procedure* § 1364 (3d ed. 2025); *Hawk Tech.*, 60 F.4th at 1360. Upon de novo review and without reference to extraneous materials, we conclude the asserted claims of the ’588 patent are invalid.

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CONCLUSION

We have considered directPacket's remaining arguments and find them unpersuasive. For the foregoing reasons, we affirm the district court's decision.

AFFIRMED