

# United States Court of Appeals for the Federal Circuit

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IN RE: AT&T INTELLECTUAL PROPERTY II, L.P.,  
*Appellant*

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2016-1830

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. 95/002,353.

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Decided: May 10, 2017

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CONSTANTINE L. TRELA, JR., Sidley Austin LLP, Chi-  
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SCOTT WEIDENFELLER.

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

REYNA, *Circuit Judge*.

AT&T appeals a final decision of the Patent Trial and  
Appeal Board in an *inter partes* reexamination. AT&T  
argues that the Board improperly instituted the reexami-

nation proceedings and erred in finding that the challenged claims are invalid as anticipated. The Board did not exceed its statutory authority when instituting the reexamination and substantial evidence supports the Board's finding of anticipation. We therefore affirm.

## BACKGROUND

### A. Patented Technology

This case concerns methods of compressing and transmitting digital video data. To increase the efficiency of digital video transmission, video images are subdivided into blocks, where each block consists of a discrete number of pixels. To compress and transmit the image, a process called transform coding is used to analyze and transform each block's pixel data into a set of numerical representations, called transform coefficients. After transmittal of the transform coefficient data, the image is reconstructed by converting each block of transform coefficients back into a block of pixels.

Different methods of transform coding vary in efficiency, and some result in higher image quality than others. Prior art methods of transform coding taught a method of scanning the transform coefficients called "run-length encoding," where the coefficients in each block are scanned in a zigzag pattern from top left to bottom right. This method had certain advantages, but the zig-zagging scan pattern could make it difficult to put the coefficients back in their correct order and reconstruct the pixel block.

#### 1. Krause

To address the inefficiencies of run-length encoding, the Krause patent, U.S. Patent No. 5,295,203 ("Krause"), discloses "vector coding," which eliminates the need for scanning the transform coefficients in any particular order or pattern. Vector coding involves assigning a code word to a subset of coefficients that are selected for transmission within a block of transform coefficients, or

within portions of the block referred to as regions. In a preferred embodiment, Krause teaches dividing the block of coefficients into regions and applying vector coding to each region. As the written description explains, this is intended to avoid complexities that arise when coding an entire block of coefficients at once. *Id.* col. 7 ll. 25–35, col. 7 ll. 58–68.

Krause's independent claim 1 describes vector coding, and dependent claim 2 describes the preferred embodiment of vector coding regions of coefficients:

1. A method for coding video transform coefficients for communication comprising the steps of:

providing a block of transform coefficients;

generating a vector to identify locations of a group of coefficients from said block that qualify for transmission according to pre-determined criteria;

encoding said vector to provide a vector code word for transmission; and

encoding the coefficients from said group to provide coefficient code words for transmission;

wherein said vector code word correlates the coefficient code words to coefficient locations in said block.

2. A coding method in accordance with claim 1 comprising the further step of:

dividing said block into a plurality of regions containing subsets of coefficients, said vector identifying a group of coefficients that qualify for transmission in a first one of said regions; and

generating additional vectors for encoding to identify locations of groups of coefficients that qualify for transmission in other regions of said block.

*Id.* col. 11 ll. 36–58.

## 2. AT&T's '071 Patent

Like Krause, AT&T Intellectual Property II, L.P.'s U.S. Patent No. 7,454,071 (“’071 patent”) is directed to a method of compressing and transmitting transform coefficients in a manner that does not rely on scanning the coefficients in any particular order. It relies on a one-shot approach, where all of the coefficients in a block are transmitted at once. *See* ’071 patent col. 4 ll. 43–48. It does not teach Krause’s preferred embodiment of subdividing the pixel blocks into regions.

Representative claim 1 of the ’071 patent follows, with bracketed language added that reflects amendments made during the *inter partes* reexamination proceedings discussed below:

1. A method for identifying non-zero coefficients in a [square] block of image data, the method comprising:

mapping a [square] block of transform coefficients into a one-dimensional list of transform coefficients in a fixed order;

generating a single entity that identifies which transform coefficients in the one-dimensional list are non-zero; and

coding the single entity.

*Id.* col. 6 ll. 15–21.

## B. Prior Proceedings

### 1. Institution of *inter partes* reexamination

On Friday, September 14, 2012, two days before the *inter partes* review procedures went into effect,<sup>1</sup> LG Electronics, Inc. filed a request for *inter partes* reexamination of the '071 patent. LG's request alleged that several claims of the '071 patent were anticipated by an article it asserted as prior art, Yang.<sup>2</sup>

In November 2012—before the PTO decided whether to initiate reexamination—LG sought to have its request for reexamination denied. Critically, LG did not withdraw from the reexamination proceedings, nor did it withdraw its request for reexamination. Instead, LG filed a petition asking the PTO to suspend its standard rule prohibiting a requester from filing any documents between the time of requesting *inter partes* reexamination and the PTO's initial office action on the merits. 37 C.F.R. § 1.939. LG sought the suspension so that it could file a second request asking the PTO to deny LG's initial request for initiation of *inter partes* reexamination. To justify suspending the PTO's rules, LG stated that it “does not believe that there is a reasonable likelihood of prevailing with respect to any of the claims challenged in the Request.” J.A. 172–75.

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<sup>1</sup> In September 2011, Congress enacted the America Invents Act, which amended and altered the procedures for *inter partes* reexamination and created the procedures for *inter partes* review, effective September, 16, 2012. See Pub. L. No. 112–29, § 6, 125 Stat. 284, 299–305 (2011).

<sup>2</sup> Wenye Yang & Jerry D. Gibson, “Coefficient Rate and Significance Maps in Transform Coding,” Conference Record of the Thirty-First Asilomar Conference on Signals, Systems & Computers, Vol. 2, pp. 1373–77 (November 2–5, 1997).

Two weeks later, the PTO issued an Office Action granting LG's initial request for *inter partes* reexamination based on anticipation by Yang. J.A. 200. AT&T filed a response seeking reconsideration of the Office Action. LG filed a comment in support of AT&T's response, urging the PTO to withdraw its stated grounds for rejection because they were "based on a factual interpretation of Yang that [was] not consistent with Yang's disclosure." J.A. 1429–33.

The PTO denied LG's petition to suspend the rules. The PTO recognized that the rules can be waived in extraordinary situations, but found that this did not present an extraordinary situation. Further, the PTO noted that LG's concerns did not warrant any additional filing, because the examiner is already required to "make a thorough study of the patent and a thorough investigation of the available prior art relating to the subject matter of the claimed invention upon taking it up in a reexamination proceeding." J.A. 1441–42 & n.4.

2. Finding of anticipation by Krause, LG's withdrawal, and AT&T's interview with the examiner

The examiner responded to the reexamination submissions in March 2013, agreeing that AT&T and LG's arguments were sufficient to overcome Yang, but finding new grounds of rejection based on Krause. J.A. 1447. The examiner's initial reasoning was that Krause's disclosure of scanning a region of coefficients can be extrapolated to cover an entire block of coefficients. J.A. 1449–50. AT&T argued that the regional scanning in Krause does not correspond to the disclosed method in the '071 patent where the entire pixel block is scanned at once. AT&T argued that the regions described in Krause had to be of irregular shape, whereas the block referenced in the '071 patent was a perfect square.

In August 2013, while the discussions between AT&T and the examiner were ongoing, LG withdrew from the

proceedings. With LG out of the proceedings, AT&T filed a petition asking the PTO to suspend the usual prohibition against interviews during *inter partes* reexamination proceedings. The PTO granted the petition.

The interview took place in January 2014 and focused on the issue of whether the regions described in Krause correspond with the block described in the '071 patent. According to the examiner's interview summary: "No agreement in respect to the patentability of the claims was reached." J.A. 2033. AT&T's interview summary differs in that it concludes there was a general agreement that AT&T's proposed amendment changing the term "block" to "square block" would overcome the anticipation rejections. J.A. 2037–38.

### 3. Post-interview office action, amendment, and rejection

In February 2014, prior to any amendment, the examiner issued an Action Closing Prosecution that explained a different basis for finding the '071 patent anticipated by Krause. Instead of asserting that the irregular-shaped regions described in Krause could be extended to correlate to the square block in AT&T's claim, the examiner argued that Krause's regions are only a preferred embodiment and that Krause's written description and claims disclose coding an entire pixel block. J.A. 2020–21.

In March 2014, AT&T amended its claims to recite "a *square* block of transform coefficients." J.A. 2047–77 (emphasis added). The examiner entered the amendments, but issued a Right of Appeal Notice maintaining rejections in view of Krause. J.A. 2088–2102. The examiner's rejections were based on the same reasoning provided in the February 2014 pre-amendment Action Closing Prosecution—*i.e.*, Krause's division of a block into regions is only a preferred embodiment, and the written description discloses coding an entire pixel block. J.A. 2090.

#### 4. The Board affirms

AT&T appealed, and the Board affirmed the examiner's finding of anticipation by Krause. The Board reiterated the examiner's reasoning that Krause's division of a pixel block into regions is only a preferred embodiment. The Board agreed with the examiner that Krause's written description discloses vector coding of an entire block, even though Krause also explains that doing so would not be easy. J.A. 5-7.

#### DISCUSSION

AT&T appeals, raising three arguments. First, AT&T argues that it was improper to institute reexamination after LG requested that its request for reexamination be denied. Second, AT&T challenges the merits of the Board's finding that the '071 patent is anticipated by Krause. Third, AT&T asserts that the examiner improperly shifted its basis for finding anticipation by Krause. The PTO intervenes, arguing that this court lacks jurisdiction to entertain AT&T's challenge to the institution decision and defending the Board's finding of anticipation.

##### A. The Decision to Institute

Our authority to review the Board's decision to institute *inter partes* reexamination is limited by 35 U.S.C. § 312(c) (effective Sept. 16, 2011). That statute provides that “[a] determination by the Director *under subsection (a)* shall be final and non-appealable.” *Id.* (emphasis added). Subsection (a) concerns only whether “the information presented in the request shows that there is a reasonable likelihood that the requester would prevail with respect to at least 1 of the claims challenged in the request.” 35 U.S.C. § 312(a) (effective Sept. 16, 2011). Thus, § 312(c) of the *inter partes* reexamination statute only restricts our review of a determination made under § 312(a).

In *Belkin International, Inc. v. Kappos*, 696 F.3d 1379 (Fed. Cir. 2012), this court explained the § 312(c) non-appealability bar (under slightly different earlier language) as follows: “[A]n *inter partes* reexamination is a two-step process. First, the Director must make a determination ‘whether a substantial new question of patentability affecting any claim of the patent is raised by the request.’ . . . The statute is clear that *that* decision is ‘final and non-appealable.’ § 312(c).” *Id.* at 1382 (emphasis added). To the extent AT&T argues that, without a request or requester, the Board lacks statutory authority to institute a reexamination, we may review that issue because it does not pertain to whether “the information presented in the request shows that there is a reasonable likelihood that the requester would prevail.” The record does not support a finding that the Board instituted *inter partes* reexamination without the presence of a request and a requester. LG was the requester, and LG submitted a request. LG was still involved in the proceedings at the time the institution decision was made. While LG may have desired that its request to institute be denied, it was granted. Because a request and a requester were present, the Board acted within its statutory authority when it decided to institute reexamination in this case, and we lack authority to further consider the prudence or propriety of the Board’s institution decision.

#### B. Anticipation by Krause

We have jurisdiction to review the merits of the Board’s final decision finding that the ’071 patent is anticipated by Krause. 28 U.S.C. § 1295(a)(4)(A).

To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either expressly or inherently. *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1341 (Fed. Cir. 2016). Whether a claim is anticipated by prior art is a question of fact reviewed for substantial evidence. *Id.* Substantial evi-

dence is more than a mere scintilla; it is evidence that a “reasonable mind might accept as adequate to support a conclusion.” *Id.* at 1337.

The only dispute before us is whether Krause discloses the element in representative claim 1 of the '071 patent that requires: “mapping a square block of transform coefficients into a one-dimensional list.” '071 patent col. 6 ll. 17–18. Accordingly, the question before us is whether substantial evidence supports the Board’s factual determination that Krause discloses vector coding of an entire pixel block. We conclude that the Board’s finding of anticipation is supported by substantial evidence.

As the examiner and the Board have explained, Krause’s written description describes vector coding a subset of transform coefficients without limitation. Its disclosure of dividing a block of coefficients into regions is only a preferred embodiment, not a limitation on the scope of the patent’s disclosure. Anticipation occurs when a prior art reference discloses each element of the claimed invention, not only where a particular embodiment within a reference discloses each element of the claimed invention. *See Blue Calypso*, 815 F.3d at 1341. In addition, the written description’s acknowledgement that vector coding an entire block at once is difficult does not limit the scope of the reference, but only demonstrates the advantage of the preferred embodiment. This distinction between Krause’s disclosure of the general ability to vector code a subset of transform coefficients and the need to divide a block of coefficients into regions is further demonstrated by comparing Krause’s independent claim 1, which claims vector coding a “group of coefficients,” with dependent claim 2, which requires the additional limitation of dividing a block into regions. '203 patent col. 11 ll. 36–58. Based on that evidence, a reasonable mind could accept the conclusion that Krause discloses vector coding an entire block of transform coefficients, and the Board’s decision is supported by substantial evidence.

### C. Changing Basis for Anticipation

AT&T seems to argue that the reexamination proceedings were flawed because the examiner changed its basis for finding anticipation by Krause. The record does not support AT&T's objection. The examiner's initial reason for finding anticipation by Krause was that the irregular-shaped regions described in Krause could be extended to correlate to the square block in AT&T's claim. AT&T discussed that argument during its interview with the examiner and amended its claims to address the issue. Despite AT&T's impressions, the examiner's interview summary plainly states that the parties did not reach any agreement as to patentability of the '071 patent claims. And as early as the examiner's February 2014 Action Closing Prosecution—before any amendment to the claims—AT&T received notice of a second basis for finding anticipation, which was that Krause's regions are only a preferred embodiment and that Krause's written description and claims disclose coding an entire pixel block. Despite this notice, AT&T did not amend its claims to respond to the examiner's second basis for finding anticipation. Ultimately, that was the same basis upon which the examiner found anticipation by Krause and upon which the Board affirmed. As explained above, the Board's finding of anticipation is supported by substantial evidence. We therefore affirm.

### **AFFIRMED**

### COSTS

Each party to bear its own costs.