

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION,
Petitioner,

v.

BRADIUM TECHNOLOGIES LLC,
Patent Owner.

Case IPR2015-01434
Patent 7,908,343 B2

Before BRYAN F. MOORE, BRIAN J. McNAMARA, and MINN CHUNG,
Administrative Patent Judges.

McNAMARA, *Administrative Patent Judge.*

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

BACKGROUND

Microsoft Corporation (“Petitioner”) filed a petition, Paper 2 (“Pet.”), to institute an *inter partes* review of claims 1–20 (the “challenged claims”) of U.S. Patent No. 7,908,343 B2 (“the ’343 Patent”). 35 U.S.C. § 311. Bradium Technologies LLC (“Patent Owner”) timely filed a Preliminary Response, Paper 12 (“Prelim. Resp.”), contending that the Petition should be denied as to all challenged claims. We have jurisdiction under 37 C.F.R. § 42.4(a) and 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

Having considered that arguments and the associated evidence presented in the Petition and the Preliminary Response, for the reasons described below, we decline to institute *inter partes* review.

REAL PARTIES IN INTEREST

Petitioner states that Microsoft Corporation constitutes all the real parties in interest in this proceeding. Pet. 1–2.

PENDING LITIGATION

The Petition states that the ’343 Patent and two related patents, U.S. Patent Nos. 7,139,794 B2 and 8,924,506 B2, which are also the subject of petitions for *inter partes* review,¹ have been asserted against Petitioner in *Bradium Techs. LLC v. Microsoft Corp.*, 1:15-cv-00031-RGA in the District of Delaware.

¹ U.S. Patent No. 7,139,794 B2 is the subject of IPR2015-01432. U.S. Patent No. 8,924,506 B2 is the subject of IPR2015-01435.

THE '343 PATENT (EXHIBIT 1001)

In the '343 Patent, large scale images are retrieved over network communication channels for display on client devices by selecting an update image parcel relative to an operator controlled image viewpoint to display on the client device. Ex. 1001, Abstract; col. 3, ll. 44–47. A request for an update image parcel is associated with a request queue for subsequent issuance over a communication channel. *Id.* at col. 3, ll. 47–50. The update image parcel is received in one or more data packets on the communications channel and is displayed as a discrete portion of the predetermined image. *Id.* at col. 3, ll. 50–57. The update image parcel optimally has a fixed pixel array size and may be constrained to a resolution equal to or less than the display device resolution. *Id.*

The system described in the '343 Patent has a network image server and a client system where a user can input navigational commands to adjust a 3D viewing frustum for the image displayed on the client system. Ex. 1001, col. 5, ll. 24–53. Retrieval of large-scale or high-resolution images is achieved by selecting, requesting, and receiving update image parcels relative to an operator or user controlled image viewpoint. *Id.* at col. 3, ll. 45–48. When the viewing frustum is changed by user navigation commands, a control block in the client device determines the priority of the image parcels to be requested from the server “to support the progressive rendering of the displayed image,” and the image parcel requests are placed in a request queue to be issued in priority order. *Id.* at col. 7, ll. 8–23.

On the server side, high-resolution source image data is pre-processed by the image server to create a series of derivative images of progressively

lower resolution. *Id.* at col. 6, ll. 1–7. Figure 2 of the '343 patent is reproduced below.

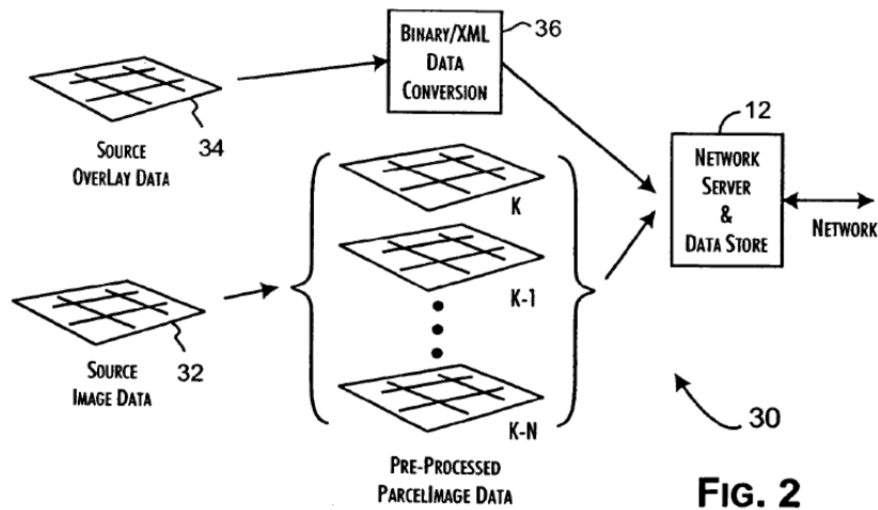


Figure 2 depicts preparation of pre-processed image parcels at the network image server. *See id.* at col. 4, ll. 60–63; col. 5, ll. 60–63; col. 6, ll. 7–10. As illustrated in Figure 2, source image data 32 is pre-processed to obtain a series K_{1-N} of derivative images of progressively lower image resolution. *Id.* at col. 6, ll. 4–6. Initially, the source image data—i.e., the series image K_0 —is subdivided into a regular array of image parcels of a fixed byte size, e.g., 8K bytes. *Id.* at col. 6, ll. 6–11. In an embodiment, the resolution of a particular image in the series is related to the predecessor image by a factor of four while, at the same time, the array subdivision is also related by a factor of four, such that each image parcel of the series images has the same fixed byte size, e.g., 8K bytes. *Id.* at col. 6, ll. 11–16.

In another embodiment, the image parcels are compressed by a fixed ratio—for example, the 8K byte parcels are compressed by a 4-to-1 compression ratio such that each image parcel has a fixed 2K byte size. *Id.* at col. 6, ll. 17–22. The image parcels are stored in a file of defined configuration, such that any parcel can be located by specification of a

$K_{D,X,Y}$ value, representing the image set resolution index D and the corresponding image array coordinate. *Id.* at col. 6, ll. 23–26.

The TCP/IP protocol is used to deliver image parcels, e.g., 2K-byte compressed image parcels, to the clients. *Id.* at col. 7, ll. 28–29, 35–37. For preferred embodiments, where network bandwidth is limited, entire image parcels are preferably delivered in corresponding data packets. *Id.* at col. 7, ll. 29–32. This allows each image parcel to fit into a single network data packet, which improves data delivery and avoids the transmission latency and processing overhead of managing image parcel data broken up over multiple network data packets. *Id.* at col. 7, ll. 32–34.

CLAIMS OF THE '343 PATENT

Claim 1, which is drawn to a method, is illustrative:

1. A method of retrieving large-scale images over network communications channels for display on a limited communication bandwidth computer device, said method comprising:
 - issuing, from a limited communication bandwidth computer device to a remote computer, a request for an update data parcel wherein the update data parcel is selected based on an operator controlled image viewpoint on the computer device relative to a predetermined image and the update data parcel contains data that is used to generate a display on the limited communication bandwidth computer device;
 - processing, on the remote computer, source image data to obtain a series K_{1-N} of derivative images of progressively lower image resolution and wherein series image K_0 being subdivided into a regular array wherein each resulting image parcel of the array has a predetermined pixel resolution wherein image data has a color or bit per pixel depth

representing a data parcel size of a predetermined number of bytes, resolution of the series K_{1-N} of derivative images being related to that of the source image data or predecessor image in the series by a factor of two, and said array subdivision being related by a factor of two such that each image parcel being of a fixed byte size, wherein the processing further comprises compressing each data parcel and storing each data parcel on the remote computer in a file of defined configuration such that a data parcel can be located by specification of a K_D , X, Y value that represents the data set resolution index D and corresponding image array coordinate;

receiving said update data parcel from the data parcel stored in the remote computer over a communications channel; and

displaying on the limited communication bandwidth computer device using the update data parcel that is a part of said predetermined image, an image wherein said update data parcel uniquely forms a discrete portion of said predetermined image.

ART CITED IN PETITIONER'S CHALLENGES

Petitioner cites the following references in its challenges to patentability:

Reference	Designation	Exhibit No.
Michael Potmesil, <i>Maps Alive: Viewing Geospatial Information on the WWW</i> , Computer Networks and ISDN Systems Vol. 29, No. 7, pp. 1327-1342, Aug. 1997	Potmesil	Ex. 1002

Peter Lindstrom <i>et al.</i> <i>An Integrated Global GIS and Visual Simulation System</i> , Graphics, Visualization & Usability Center, Georgia Institute of Technology, undated ²	Lindstrom	Ex. 1004
PCT Publication No. WO 99/41675, Network Image View Server Using Efficient Client- Server, Tiling And Caching Architecture, Cecil V. Hornbacker, III, published Aug. 19, 1999	Hornbacker	Ex. 1003
U.S. Pat. No. 6,650,998 issued Nov. 18, 2003	Rutledge	Ex. 1006
U.S. Pat. No. 5,682,441 issued Oct. 28, 1997	Ligtenberg	Ex. 1005
U.S. Pat. No. 6,118,456 issued Sept. 12, 2000	Cooper	Ex. 1007
U.S. Pat. No. 5,940,117 issued Aug. 17, 1999	Hassan	Ex. 1012
PCT Publication No. WO98/15920, Method of Displaying Three Dimensional Images, published Apr. 16, 1998	Austreng	Ex. 1008

² Petitioner asserts this document was published in March, 1997. Pet. 14 (citing Declaration of Dr. Peter Lindstrom, Ex. 1012 (“Lindstrom Dec.” and Declaration of Charles Randall Carpenter, Ex. 1013(“Carpenter Decl.”)).

CHALLENGES ASSERTED IN PETITION

Claims	Statutory Basis	Challenge
1–9, 13, 17–19	35 U.S.C. § 103(a)	Obvious over Potmesil in view of Hornbacker
10–12, 14–16, 20	35 U.S.C. § 103 (a)	Obvious over Potsmesil in view of Hornbacker and Lindstrom
1, 2, 4–11, 13–19	35 U.S.C. § 103 (a)	Obvious over Rutledge in view of Ligtenberg and Cooper
3	35 U.S.C. § 103(a)	Obvious over Rutledge in view of Ligtenberg, Cooper and Hassan
12, 20	35 U.S.C. § 103(a)	Obvious over Rutledge in view of Ligtenberg, Cooper and Austreng

CLAIM CONSTRUCTION

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their “broadest reasonable construction in light of the specification of the patent” in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278–79 (Fed. Cir. 2015) (“Congress implicitly adopted the broadest reasonable interpretation standard in enacting the AIA,” and “the standard was properly adopted by PTO regulation.”). Applying that standard, we interpret the claim terms according to their ordinary and customary meaning in the context of the patent’s written description. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Neither Petitioner nor Patent Owner proposes that any of the terms be construed to have any meaning other than their ordinary meaning, as used in the specification. Pet. 9.

Neither party has proposed construing any specific claim terms. However, as discussed further herein, Patent Owner argues that Petitioner fails to explain how at least two references, Potmesil and Hornbacker, which refer to “tiles,” relate those tiles to the claimed “updated data parcel.” Prelim. Resp. 35. Patent Owner’s argument suggests that the term “data parcel” as it is used in the claims requires construction.

Although the term “data parcel” appears several times in the specification, neither “data parcel” nor “update data parcel” is defined explicitly in the ’343 Patent. The ’343 Patent refers to “source image data” being processed to obtain a series of K_{1-N} derivative images of progressively lower image resolution. Ex. 1001, col. 6, ll. 6–6. The ’343 Patent also discloses the source image data corresponding to the series image K_0 being subdivided into a regular array such that each resulting “image parcel” of the array has, for example, 64 by 64 pixel resolution, where the “image data” has a color or bit per pixel depth of 16 bits, which represents a “data parcel” size of 8 K bytes. Ex. 1001, col. 6, ll. 6–11. Thus, an image parcel is an element of a source image array that defines a source image and a data parcel is data that corresponds to an image parcel. In view of this disclosure, we construe “data parcel” to mean *data that corresponds to an element of a source image array*.

We agree that no other specific claim construction is required and we accord the claim terms their ordinary meaning as used in the ’343 Patent specification.

REFERENCES ARGUED AS NOT APPLICABLE PRIOR ART

Patent Owner contends that Petitioner has failed to demonstrate that Potmesil (Ex. 1002) and Lindstrom (Ex. 1004) constitute applicable prior art

references. Prelim. Resp. 3–12. We addressed the same arguments as those advanced by Patent Owner in this proceeding in our Decision to Institute in related proceeding *Microsoft Corp. v. Bradium Technologies LLC*, Case IPP2015-01432, slip op. at 10–14 (PTAB Dec. 23, 2015)(Decision to Institute)³ and *Microsoft corp. v. Bradium Technologies LLC*, Case IPR2015-01435, slip op. at 8–16 (PTAB Dec. XX, 2015)⁴. We arrive at the same result in this proceeding and find that, although Petitioner has established that Potmesil is applicable as prior art, Petitioner has not established Lindstrom is prior art that may be applied in Petitioner’s challenge.

ANALYSIS OF PETITIONER’S PRIOR ART CHALLENGES

In view of our determination that Petitioner has not demonstrated that Lindstrom is applicable prior art, we do not institute a trial on Petitioner’s challenge to claims 10–12, 14–16, and 20 under 35 U.S.C. § 103 as obvious over Potmesil in view of Hornbacker and Lindstrom.

We turn our attention to Petitioner’s remaining challenges. Petitioner’s challenges are all based on obviousness under 35 U.S.C. § 103. A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

The question of obviousness is resolved on the basis of underlying factual

³ In IPR2015-01432, Potmesil was designated Ex. 1002 and Lindstrom was designated Ex. 1011.

⁴ In IPR2015-01435, Potmesil was designated Ex. 1002 and Lindstrom was designated Ex. 1004.

determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of non-obviousness.

Graham v. John Deere Co., 383 U.S. 1, 17–18 (1966).

Introduction

Patent Owner contends that, as a general principle, Petitioner fails to map each claim element to a particular teaching of an asserted reference. In particular, Patent Owner notes that, rather than state the claim language in the Petition, Petitioner provides Exhibit 1013, which breaks the claims into specific phrases and assigns each phrase a designation, e.g., 1.A, 1.B. Prelim. Resp. 32. Patent Owner argues that Petitioner’s approach improperly incorporates the claims by reference and that no relief can be granted unless the arguments in the Petition itself, of which the claims are an essential part, support granting the relief. *Id.* at 33. We agree that Petitioner’s use of an Exhibit to specify the claim elements and its failure to include the claim language anywhere in the Petition is an improper incorporation by reference. Nevertheless, although the claim language is not repeated in the Petition, the Petition contains a paragraph for most, if not all the claim element designations. Therefore, we do not dismiss the Petition on this basis alone.

Patent Owner contends that for every claim element Petitioner provides only a generalized commentary summarizing a portion of asserted references, followed by a string of citations to the reference, without an explanation of the relevance of the references or sufficient analysis to link the actual claim element to a particular teaching of the reference. *Id.* at 34.

Our rules do not require Petitioner to employ claim charts, and claim charts, when employed, may not include argument. Office Patent Trial Practice Guide 77 Fed. Reg. 48756, 48764 (Aug. 14, 2012). Although our rules do not require any specific form of argument presentation, Petitioner bears the burden of producing evidence and must “specify where each claim element is found in the prior art patents or printed publications relied upon.”

37 C.F.R. § 42.104(b)(4). In addition, we may “exclude or give no weight to the evidence where a party has failed to state its relevance or to identify specific portions of the evidence that support the challenge.” 37 C.F.R. § 42.104(b)(5). We consider Petitioner’s remaining challenges with these principles in mind.

Claims 1, 2, 4–11, and 13–19 As Obvious Under 35 U.S.C. § 103(a) Over Rutledge, Cooper and Ligtenberg

We turn first to the following limitation, which Petitioner treats as three elements (1.H, 1.I, 1.J) and is common to independent claims 1 and 13 and therefore incorporated into all the other challenged claims:

resolution of the series K_{1-N} of derivative images being related to that of the source image data or predecessor image in the series by a factor of two and [1.H], said array subdivision being related by a factor of two [1.I] such that each image parcel being of a fixed byte size [1.J]

Pet. 44–45, Ex. 1013. We considered this limitation in *Microsoft Corp. v. Bradium Technologies LLC*, Case IPR2015-01435, slip op. at 17–22 (PTAB Dec.23, 2015), where we determined that Petitioner had not established this limitation was disclosed by the combination of Rutledge, Ligtenberg and Cooper. To the extent that Petitioner asserts the same combination of references against the same claim element, we reach the same result and decline to institute a trial of claim 1, 2, 4–11, and 13–19 based on the

combination of Rutledge, Ligtenberg and Cooper. *See, Microsoft Corp. v. Bradium Technologies LLC*, Case IPR2015-01435 Petition (Paper 2) (advancing substantially identical arguments presented in the Petition in this proceeding).

Claim 3 As Obvious Under 35 U.S.C. § 103(a) Over Rutledge, Cooper, Ligtenberg, and Hassan

As discussed above, we are not persuaded that Petitioner demonstrated that the combination of Rutledge, Cooper, and Ligtenberg discloses the limitations Petitioner identifies as elements 1.H, 1.I, and 1.J. Petitioner does not argue that Hassan discloses this limitation, which is present in dependent claim 3. Pet. 56–57. Therefore, we do not institute a trial on Petitioner’s challenge to claim 3 as obvious over Rutledge in view of Ligtenberg, Cooper, and Hassan.

Claims 12 and 20 As Obvious Over Rutledge, Cooper, Ligtenberg, and Austreng

As discussed above, we are not persuaded that Petitioner demonstrated that the combination of Rutledge, Cooper, and Ligtenberg discloses the limitations Petitioner identifies as elements 1.H, 1.I, and 1.J. Petitioner does not argue that Austreng discloses this limitation, which is present in dependent claim 12. Pet. 59–60. Independent claim 13, from which claim 20 depends, contains the same limitation as that recited in elements 1.H, 1.I, and 1.J. Therefore, we do not institute a trial on Petitioner’s challenge to claims 12 and 20 as obvious over Rutledge in view of Ligtenberg, Cooper and Austreng.

Claims 1-9, 13, and 17–19 As Obvious over Potmesil and Hornbacker

Petitioner cites Potmesil’s disclosure of an online system that allows viewers to view geographic information over the worldwide web (WWW) using 2D or 3D map browsers on a wide variety of devices, including cell phones and heads-up displays. Pet. 11. Petitioner notes that in discussing “tiles,” Potmesil references the Open GL standard, which uses pre-filtered power of two images for texture mapping and employs “mip-maps” discussed in the provisional application from which the ’343 Patent claims priority. *Id.* Petitioner states that the system in Potmesil includes a tile server in which images and elevation data are stored in a power of two pyramid to allow fast access and scroll and zoom application. *Id.* Petitioner further notes that in Potmesil, 2D and 3D geographical map browsers implement a tile caching process that calculates and requests from the server those tiles needed to render the current view, as well as tiles likely to be needed in the future. *Id.* at 11–12.

We note that Potmesil discloses that the browser performs a memory allocating caching process that receives information about the current view from a compositing process and, based on the user’s current position, velocity, and acceleration, estimates where the user is moving and allocates new tiles there. Ex. 1002, 1332. The compositing process composites tiled data from off-screen cached tiles into the on-screen window image. *Id.* at 1333.

Petitioner cites Hornbacker for its disclosure of a system to display large images, such as digital documents, retrieved from a server networked to client workstations. Pet. 12. Petitioner notes that Hornbacker discloses that the documents are divided into 128x128 pixel view tiles and that these

tiles are organized hierarchically at different resolutions spaced by factors of two. *Id.*

Petitioner contends that a person of ordinary skill would have been motivated to combine Potmesil and Hornbacker because they both address common technical issues in visualizing large amounts of data obtained over a network (e.g., optimizing bandwidth, determining which portions of the larger image set to request) using a client device with smaller memory than that of the database. *Id.* at 13.

Patent Owner presents specific arguments concerning elements Petitioner designated 1.A (Prelim. Resp. 35, 41–42), 1.B (*id.* at 35–36, 42–43), and 1.L, (*id.* at 36–37, 43). However, as discussed below, we are not persuaded that Petitioner has demonstrated that the combination of Potmesil and Hornbacker discloses the elements Petitioner designates as elements 1.H, 1.I, and 1.J.

Elements 1.H, 1.I, 1.J: resolution of the series K_{1-N} of derivative images being related to that of the source image data or predecessor image in the series by a factor of two [1.H], and said array subdivision being related by a factor of two [1.I] such that each image parcel being of a fixed byte size [1.J]

Petitioner cites the same subject matter of Potmesil and Hornbacker as disclosing elements 1.H and 1.I. Pet. 17–18 (citing Ex. 1002, Fig. 1, 1329–30, 1332.; Ex. 1003, 6:13–7:25, 8:7–15). As to element 1.J, Petitioner also cites pages 1334–1335 of Potmesil and 14:2–16 of Hornbacker. *Id.* at 18.

Petitioner contends that Potmesil teaches both storing data in fixed-size power of two arrays of tiles related to the predecessor image by a factor of two, that both Potmesil and Hornbacker teach storing data in power-of-two tile arrays and that Potmesil teaches that tiles may be transferred in compressed form as JPEG or GIF, such as GIF image files with a 4:1

compression ratio. Pet. 18. Petitioner contends that Hornbacker teaches fixed size tiling is beneficial because it allows a more effective caching mechanism. *Id.* (citing Ex. 1003, 7:14–15).

As we discussed in *Microsoft Corp. v. Bradium Technologies LLC*, Case IPR2015-01435, slip op. at 17–22 (PTAB Dec.23, 2015) although Petitioner treats this feature as three separate limitations, the limitation captures a single concept in the specification and should be considered as a whole. In particular, this limitation as a whole captures the concept of varying the resolution and array subdivision of the series images in relation to each other, so as to maintain the size of each image parcel at the same fixed byte size. *Id.* at 19. The subject matter Petitioner cites in Potmesil discloses that “[a]ll tiles in a data set have usually the same size with the possible exception of tiles along the edges of the data set.” Ex. 1002, 1329. The subject matter Petitioner cites in Hornbacker discloses that a view tile typically represents about 128 x 128 pixels of the image file. Ex. 1003, 7:11. If the view being displayed is reduced 2 to 1, then a view tile will represent a 256 x 256 pixel area of the image file that has been scaled down to 128 x 128 pixels. *Id.* at 7:11–14. Hornbacker then states that “[f]or each possible scale factor there is an array of tiles to represent the view. Fixed size tile viewing is beneficial because it allows more effective use of the caching mechanism at the server and the client.” *Id.* at 7:13–15.

Petitioner does not match the actual claim language to the teachings of the references. Petitioner fails to explain how the cited portions of the references disclose varying the resolution and array subdivision of the series images in relation to each other, so as to maintain the size of each image parcel at the same fixed byte size. Thus, we are not persuaded that

Petitioner has demonstrated this element of claim 1, which also appears in independent claim 13, is disclosed by the combination of the references. Therefore, we are not persuaded that Petitioner has demonstrated it is reasonably likely to succeed in its challenge to independent claim 1, and claims 2–9, which depend from claim 1 or independent claim 13, and claims 17–19, which depend from claim 13. In consideration of the above, we decline to institute a trial on Petitioner’s challenge to claims 1–9, 13, and 17–19 as obvious over Potmesil and Hornbacker.

SUMMARY

We are not persuaded that Petitioner has demonstrated a reasonable likelihood it will prevail on any of the challenges in the Petition. Therefore, we decline to institute *inter partes* review.

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ORDER

In consideration of the foregoing, we do not institute *inter partes* review.

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