

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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NATIONAL OILWELL VARCO, L.P.,  
Petitioner,

v.

TECHNICAL INDUSTRIES, INC.,  
Patent Owner.

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Case IPR2017-00699  
Patent 7,401,518 B2

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Before BRYAN F. MOORE, MINN CHUNG, and  
JACQUELINE T. HARLOW, *Administrative Patent Judges*.

HARLOW, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a) and 37 C.F.R. § 42.73*

## I. INTRODUCTION

National Oilwell Varco, L.P. (“Petitioner”) filed a Petition to institute an *inter partes* review of claims 1–20 of U.S. Patent No. 7,401,518 B2 (Ex. 1001, “the ’518 patent”). Paper 5 (“Pet.”).<sup>1</sup> Technical Industries, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 9 (“Prelim. Resp.”).

On July 28, 2017, we instituted an *inter partes* review of every challenged claim on at least one asserted ground of unpatentability, and of every asserted ground of unpatentability for at least one claim, but we did not institute review as to each claim challenged on each ground asserted. Paper 16 (“Inst. Dec.”). On November 30, 2017, Patent Owner filed a Patent Owner Response to the Petition. Paper 21 (“PO Resp.”). On February 12, 2018, Petitioner filed a Reply to the Patent Owner Response. Paper 29 (“Reply”). Pursuant to our authorization, Patent Owner and Petitioner each filed Sur-Replies. Paper 36 (“PO Sur-Reply”); Paper 40 (“Pet. Sur-Reply”).

Petitioner and Patent Owner additionally filed various evidentiary motions. Petitioner filed a Motion to Strike the opinions of Patent Owner’s declarant, Dr. William Emblom (Paper 38), to which Patent Owner filed an Opposition (Paper 42). Patent Owner filed a Motion to Exclude evidence submitted in conjunction with Petitioner’s Reply (Paper 39), to which Petitioner filed a Response (Paper 43).

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<sup>1</sup> Petitioner filed its Petition on January 17, 2017 (Paper 2), and subsequently filed a Corrected Petition on February 3, 2017 (Paper 5). All citations are to the Corrected Petition (Paper 5).

On March 27, 2018, the parties presented arguments at an oral hearing. The hearing transcript has been entered in the record. Paper 43 (“Tr.”).

On April 30, 2018, in light of the Supreme Court’s decision in *SAS Institute, Inc. v. Iancu*, 138 S. Ct. 1348 (2018) and the Guidance on the Impact of SAS on AIA Trial Proceedings issued by the USPTO (“Agency Guidance”),<sup>2</sup> we modified our Decision on Institution to institute trial on all challenges asserted in the Petition. Paper 47, 2. On July 6, 2018, pursuant to our authorization, the parties filed a Joint Motion to Limit the Petition to the originally instituted grounds (Paper 48), which we granted (Paper 50).

In addition, on April 5, Patent Owner filed a Request for Adverse Judgment seeking cancelation of claims 1–3, 5, 7, 8, 10, 12, 13, 15, 17, and 19 of the ’518 patent (Paper 44), which we granted (Paper 50). Claims 4, 6, 9, 11, 14, 16, 18, and 20 of the ’518 patent remain in trial. *Id.*

We issue this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. Having considered the record before us, we determine that Petitioner has shown by a preponderance of the evidence that claims 4, 6, 9, 11, 14, 16, 18, and 20 of the ’518 patent are unpatentable. *See* 35 U.S.C. § 316(e). Additionally, we decide the parties’ evidentiary motions below, in Section III.

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<sup>2</sup> Available at <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial>.

*A. Related Matters*

The '518 patent is asserted in *Technical Industries, Inc. v. National Oilwell Varco, L.P.*, Case No. 6:15-cv-02744 (W.D. La.). Pet. 4; Paper 5, 2.

In addition, we have instituted petitions for *inter partes* review of U.S. Patent No. 7,263,887 (IPR2017-00648), U.S. Patent No. 7,552,640 (IPR2017-00860), U.S. Patent No. 7,997,138 (IPR2017-00910), each of which is related to the '518 patent.

*B. The '518 Patent*

The '518 patent, titled “Method for Inspection of Metal Tubular Goods,” issued July 22, 2008, from U.S. Patent Application No. 11/849,287, filed September 1, 2007. Ex. 1001, at [54], [45], [21], [22]. The '518 patent is a continuation of U.S. Patent Application No. 10/548,731, filed on March 8, 2004, and now issued as U.S. Patent No. 7,263,887.<sup>3</sup> *Id.* at [63]. The '518 patent claims priority to U.S. Provisional Patent Application No. 60/452,907, filed March 7, 2003. *Id.* at [60].

The '518 patent describes a method for evaluating the condition of tubular metal goods by collecting and analyzing data concerning tubular wall thickness. *Id.* at 1:15–20. In particular, the '518 patent discloses the use of ultrasonic technology to acquire wall thickness data, in association with three-dimensional positional data, for discrete sections of the wall of a metal tubular good, “so that the wall of a metal tubular (or portions thereof)

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<sup>3</sup> U.S. Patent No. 7,263,887 B2 is the subject of IPR2017-00648.

can be displayed, imaged, examined and utilized in simulative/comparative programs as a three-dimensional object.” *Id.* at 1:25–32.

The ’518 patent acknowledges that the use of ultrasonic technology to inspect a metal tubular by determining wall thickness at a position on the tubular was known in the art prior to the time of invention. *Id.* at 2:46–64. The ’518 patent purports to improve upon prior art methods for identifying defects in metal tubular walls by teaching the use of ultrasonic inspection data not only to identify wall defects, but to use “three-dimensional data as to both the defect and the remainder of the tubular” to evaluate, with “mathematical precision,” how such a defect might impact tubular performance. *Id.* at 2:64–3:9. In this regard, the ’518 patent explains that data representing “wall thickness of each incremental section of a tubular and the location of that section can be used in computations which predict the actual effect on the tubular to various stressors, including tensile, bending, collapse and burst forces, aging, etc.” *Id.* at 8:64–9:7. The ’518 patent does not describe how such calculations might be performed, but rather, states that three-dimensional wall thickness data may be “used in mathematical calculations predicting performance of the tubular under certain conditions,” as well as in “engineering calculations and/or programs which predict response of the tubular to various stressors[.]” *Id.* at 3:29–35.

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