EXHIBIT 5

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Paper No. 6
Entered: May 24, 2018

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ALIGN TECHNOLOGY, INC.,
Petitioner

v.

3SHAPE A/S,
Patent Owner.

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Case IPR2018-00196
Patent 9,629,551 B2

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Before ELENI MANTIS MERCADER, MICHELLE N. WORMMEESTER,
and JESSICA C. KAISER, *Administrative Patent Judges*.

KAISER, *Administrative Patent Judge*.

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

IPR2018-00196
Patent 9,629,551 B2

Align Technology, Inc. ("Petitioner") filed a Petition pursuant to 35 U.S.C. §§ 311–19 to institute an *inter partes* review of claims 1–25 of U.S. Patent No. 9,629,551 B2, issued on April 25, 2017 (Ex. 1001, "the '551 patent"). Paper 2 ("Pet."). 3Shape A/S ("Patent Owner") filed a preliminary response. Paper 5 ("Prelim. Resp."). Applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we deny Petitioner's request and do not institute an *inter partes* review of any challenged claim.

I. BACKGROUND

A.   *The '551 Patent (Ex. 1001)*

The '551 patent relates to a method for detecting a movable object in a location, when scanning a rigid object in the location by means of a 3D scanner for generating a virtual 3D model of the rigid object. Ex. 1001, 1:6–9. As one example, the '551 patent discusses scanning a patient's teeth using a handheld scanner. *Id.* at 1:9–11. The '551 patent describes its subject matter as follows.

> A method for detecting a movable object in a location includes – providing a first 3D representation of at least part of a surface by scanning; –providing a second 3D representation of at least part of the surface by scanning; –determining for the first 3D representation a first excluded volume; –determining for the second 3D representation a second excluded volume; –if a portion of the surface in the first 3D representation is located in space in the second excluded volume, the portion of the surface in the first 3D representation is disregarded, and/or –if a portion of the surface in the second 3D representation is located in space in the first excluded volume, the portion of the surface in the second 3D representation is disregarded.

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Id. at [57].

B.   *Illustrative Claim*

Claims 1–25 are challenged. Claim 1 is illustrative of the challenged claims, and is reproduced below:

> 1. A method for detecting a movable object in a location, when scanning a rigid object in the location by means of a 3D scanner for generating a virtual 3D model of the rigid object, wherein the method comprises:
> providing a first 3D representation of at least part of a surface by scanning at least part of the location;
> providing a second 3D representation of at least part of the surface by scanning at least part of the location;
> determining for the first 3D representation a first excluded volume in space where no surface can be present in both the first 3D representation and the second 3D representation;
> determining for the second 3D representation a second excluded volume in space where no surface can be present in both the first 3D representation and the second 3D representation;
> if a portion of the surface in the first 3D representation is located in space in the second excluded volume, the portion of the surface in the first 3D representation is disregarded in the generation of the virtual 3D model, and/or
> if a portion of the surface in the second 3D representation is located in space in the first excluded volume, the portion of the surface in the second 3D representation is disregarded in the generation of the virtual 3D model.

Id. at 29:45–30:2.

C.   *Related Proceedings*

Petitioner states that the '551 patent has not been involved in any litigation proceedings. Pet. 75. Petitioner identifies another *inter partes* review proceeding (IPR2018-00195) also challenging the '551 patent as well as a pending patent application that claims priority to the '551 patent. *Id.*

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Patent Owner also identifies the same *inter partes* review and another
pending patent application. Paper 4, 1.

D. References

Petitioner relies on the following references:

1. "Bernardini" (US 6,750,873 B1; issued June 15, 2004) (Ex.
   1018);

2. "Rubbert" (US 7,741,821 B2; issued Dec. 30, 2008) (Ex. 1019);

3. "Thiel" (US 2009/0279103 A1; published Nov. 12, 2009) (Ex.
   1024);

4. "Newcombe" (US 2012/0195471 A1; published Aug. 2, 2012)
   (Ex. 1020); and

5. "Bodony" (US 2012/0141949 A1; published June 7, 2012) (Ex.
   1021).[1]

E. Grounds Asserted

Petitioner challenges the patentability of the '551 patent claims on the
following grounds:

Reference(s)	Basis	Claim(s)
Bernardini	35 U.S.C. § 103(a)	1, 6–8, 11–13, 15, 16, and 20–25
Bernardini and Rubbert	35 U.S.C. § 103(a)	2–5, 18, and 19
Bernardini and Thiel	35 U.S.C. § 103(a)	9 and 10
Bernardini and Newcombe	35 U.S.C. § 103(a)	14
Bernardini and Bodony	35 U.S.C. § 103(a)	17

Petitioner also relies on expert testimony from Dr. Chandrajit L.
Bajaj, Ph.D. (Ex. 1003, "Bajaj Decl.").

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[1] Patent Owner contends Petitioner has not adequately shown that Bodony
qualifies as prior art for purposes of this proceeding. Prelim. Resp. 57–60.
Because we find Petitioner has not demonstrated a reasonable likelihood of
success for other reasons discussed below, we do not address this issue.

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