

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TOYOTA MOTOR CORP.,  
Petitioner,

v.

SIGNAL IP, INC.,  
Patent Owner.

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Case IPR2016-00292  
Patent 6,012,007

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Before MEREDITH C. PETRAVICK, JEREMY M. PLENZLER, and  
JAMES A. TARTAL, *Administrative Patent Judges*.

PLENZLER, *Administrative Patent Judge*.

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

## I. INTRODUCTION

### A. Background

Toyota Motor Corp. (“Petitioner”) filed a corrected Petition to institute an *inter partes* review of claims 17 and 21 (“the challenged claims”) of U.S. Patent No. 6,012,007 (Ex. 1001, “the ’007 patent”). Paper 7 (“Pet.”). In our Decision on Institution, we instituted trial to review the patentability of claims 17 and 21 based on anticipation by Schousek<sup>1</sup>. Paper 16 (“Decision to Institute” or “Dec.”).

Subsequent to institution, Signal IP, Inc. (“Patent Owner”) filed a Patent Owner Response. Paper 19 (“PO Resp.”). Petitioner filed a Reply to the Patent Owner Response. Paper 21 (“Pet. Reply”). Petitioner provides testimony from Scott Andrews. Ex. 1007 (“the Andrews Declaration”).

An oral hearing was held on February 16, 2017, and a transcript of the hearing is included in the record. Paper 25 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has failed to show, by a preponderance of the evidence, that claims 17 and 21 of the ’007 patent are unpatentable.

### B. Related Proceedings

Petitioner and Patent Owner indicate that the ’007 patent is the subject of a number of co-pending federal district court cases, including: *Signal IP, Inc. v. Toyota Motor North America, Inc.*, No. 2:15-cv-05162 (C.D. Cal.) (“the related litigation”). Pet. 1–2; Paper 3, 2–3.

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<sup>1</sup> U.S. Pat. No. 5,474,327; issued Dec. 12, 1995 (Ex. 1002, “Schousek”).

The '007 patent is also the subject of IPR2016-00366, and was the subject of IPR2015-01004, which was terminated prior to issuance of a final written decision (IPR2015-01004, Paper 29). We issued a final written decision in IPR2016-00366 concurrently with this decision.

*C. The '007 Patent*

The '007 patent is directed to “an airbag system having seat pressure detectors [mounted] in the seat” and its method of operation. Ex. 1001, 1:10–12. The '007 patent explains that one “object of the invention [is] to discriminate in a [supplemental inflatable restraint] system between large and small seat occupants for a determination of whether an airbag deployment should be permitted” and “[a]nother object in such a system is to maintain reliable operation in spite of dynamic variations in sensed pressures.” *Id.* at 1:52–57.

The '007 patent describes “seat sensing system 14 [as] inhibit[ing] air bag deployment when a seat is empty or occupied by a small child, while allowing deployment when the occupant is large.” *Id.* at 2:55–58. An example is provided where the system is tuned to always inhibit airbag deployment for occupants weighing less than 66 pounds, and always allow deployment for occupants exceeding 105 pounds. *Id.* at 2:58–61. The seat occupant sensing system includes a microprocessor and sensors mounted in a seat monitored by the microprocessor to determine whether to inhibit airbag deployment. *Id.* at 2:61–3:7.

The sensors are periodically sampled and decision measures are computed. *Id.* at 3:39–43. Decision measure computations include, for example, “calculating total force and its threshold, sensor load ratings and measure, long term average of sensor readings and its threshold.” *Id.* at

3:49–52. A “main decision algorithm” is illustrated in Figure 9 of the ’007 patent, reproduced below.

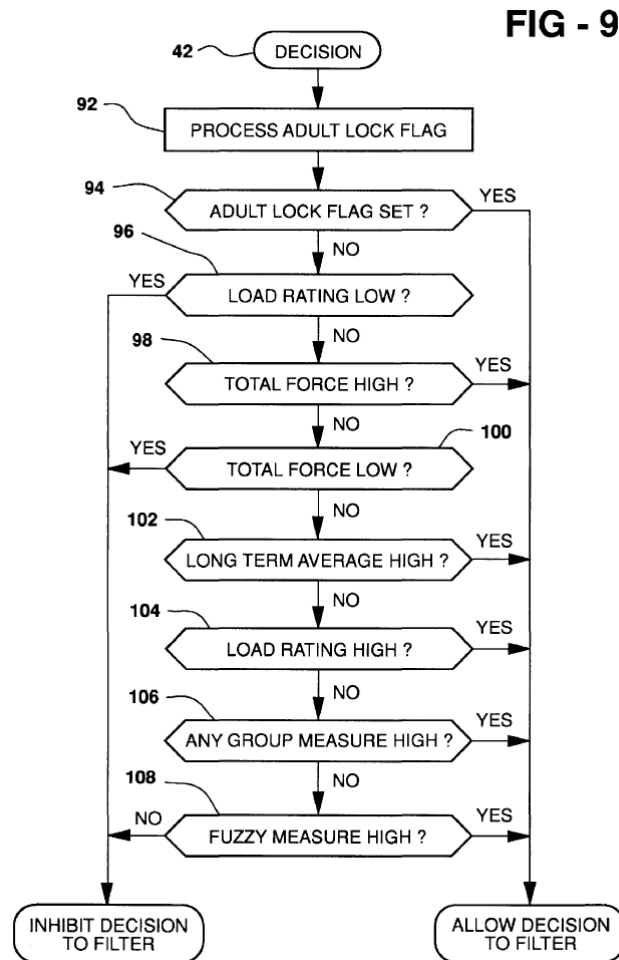


Figure 9 is a flow chart illustrating the determination of an airbag deployment decision. The ’007 patent explains that “this algorithm will result in an allow or an inhibit decision, but this decision is preliminary, subject to subsequent filtering to obtain a final consent to deployment.” *Id.* at 4:59–61. As shown in Figure 9, a decision to allow airbag deployment occurs when an “Adult Lock Flag” has been set at step 94 or when the total force is above a threshold (“Total Force High”) at step 98. Step 98 provides

an “allow” decision for airbag deployment when the total force is above a threshold, with no further evaluation required. *Id.* at 5:1–2.

Although the decisions noted above are “preliminary,” these decisions are described as “preliminary” because a “final judgment of whether to consent to deployment is made in the decision filter.” *Id.* at 5:8–9. The decision filter counts allow and inhibit decisions to determine whether final consent for deployment is granted. *Id.* at 5:8–24. None of these decisions are decisions to deploy the airbag. Rather, they are decisions to determine whether deployment is allowed, should the circumstances for deployment arise (e.g., a collision).

*D. Illustrative Claim*

As noted above, Petitioner challenges claims 17 and 21. Claim 17 is independent, with claim 21 depending therefrom. Claims 17 and 21 are reproduced below:

17. In a vehicle restraint system having a controller for deploying air bags, means for inhibiting and allowing deployment according to whether a seat is occupied by a person of at least a minimum weight comprising:

seat sensors responding to the weight of an occupant to produce sensor outputs;

a microprocessor coupled to the sensor outputs and programmed to inhibit and allow deployment according to sensor response and particularly programmed to

determine measures represented by individual sensor outputs and calculate from the sensor outputs a relative weight parameter,

establish a first threshold of the relative weight parameter,

allow deployment when the relative weight parameter is above the first threshold,

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