

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*.

DECISION  
Instituting *Inter Partes* Review  
37 C.F.R. § 42.108

## 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.”). Signal IP, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 11 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” For the reasons given below, we institute an *inter partes* review in this proceeding with respect to claims 17 and 21.

### 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.

The ’007 patent is also the subject of IPR2015-01004, for which trial was instituted on multiple grounds, including anticipation of claims 1–3, 5, 9, 17, 20, and 21 based on anticipation by Schousek<sup>1</sup>. *American Honda Motor Co., Inc. v. Signal IP, Inc.*, Case IPR2015-01004, slip op. at 18 (PTAB October 1, 2015) (Paper 11).

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

*C. Asserted Grounds of Unpatentability and Evidence of Record*

Petitioner contends that the challenged claims are unpatentable under 35 U.S.C. §§ 102 and 103 based on the following grounds (Pet. 4–5, 12–44).

References	Basis	Claims Challenged
Schousek	§ 102	17 and 21
Schousek and Fu <sup>2</sup>	§ 103	17 and 21

Petitioner also provides testimony from Scott Andrews. Ex. 1007 (“the Andrews Declaration”).

*D. 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 to inhibit 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

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<sup>2</sup> U.S. Pat. No. 5,848,661; issued Dec. 15, 1998 (Ex. 1003, “Fu”).

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. An “Adult Lock Flag” can be set to always allow airbag deployment. *Id.* at 4:40–41. When determining whether to set the “Adult Lock Flag,” the total force is compared to “a lock threshold[,] which is above the total force threshold” (i.e., the threshold used as the minimum allowable value for airbag deployment), and “an unlock threshold[,] which represents an empty seat.” *Id.* at 4:41–44. A lock timer is compared to a lock delay to determine when to set the “Adult Lock Flag.” *Id.* at 4:44–46, Fig. 8. “If . . . the total force is greater than the lock threshold, and the lock timer is larger than the lock delay . . . the Adult Lock Flag is set.” *Id.* at 4:46–50.

*E. 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,  
establish a lock threshold above the first threshold,  
set a lock flag when the relative weight parameter is above the lock threshold and deployment has been allowed for a given time,  
establish an unlock threshold at a level indicative of an empty seat,  
clear the flag when the relative weight parameter is below the unlock threshold for a time, and  
allow deployment while the lock flag is set.

Ex. 1001, 7:51–8:8.

21. Means for inhibiting and allowing deployment as defined in claim 17 wherein the relative weight parameter is the total force detected by all the sensors.

*Id.* at 8:30–32.

## II. ANALYSIS

### A. *Claim Construction*

Petitioner acknowledges that the '007 patent expired on December 1, 2015. *See* Pet. 7. “[T]he Board’s review of the claims of an expired patent is similar to that of a district court’s review.” *In re Rambus, Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012). Specifically, because the expired claims of the patent are not subject to amendment, we apply the principle set forth in

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