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# UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE PATENT TRIAL AND APPEAL BOARD

RF CONTROLS, LLC, Petitioner,

v.

A-1 PACKAGING SOLUTIONS, INC., Patent Owner.

Case IPR2014-01536<sup>1</sup> Patent 8,690,057 B2

Before HOWARD B. BLANKENSHIP, BRYAN F. MOORE, and GREGG I. ANDERSON, *Administrative Patent Judges*.

MOORE, Administrative Patent Judge.

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

<sup>&</sup>lt;sup>1</sup> IPR2015-00119 has been consolidated with this case. All citations are to the IPR2014-01536 consolidated record unless otherwise indicated.



#### I. INTRODUCTION

RF Controls, LLC ("Petitioner") filed a Petition (Paper 4, Corrected Petition ("Pet.")) to institute an *inter partes* review of claims 1–16 (the "challenged claims") of U.S. Patent No. 8,690,057 B2 (Ex. 1001, "the '057 patent"). See 35 U.S.C. §§ 311–319. A-1 Packaging Solutions, Inc. ("Patent Owner") filed a Preliminary Response (Paper 7, "Prelim. Resp."). RF Controls, LLC ("Petitioner") also filed a second Petition (IPR2015-00119, Paper 1, Petition ("Second Pet.")) to institute an *inter partes* review of claims 17–30 (the "challenged claims") of the '057 patent." A-1 Packaging Solutions, Inc. ("Patent Owner") filed a Preliminary Response to the Second Petition (IPR2015-00119, Paper 6 ("Second Prelim. Resp.")). We determined Petitioner had established a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims in each Petition. We instituted an *inter partes* review as to claims 1, 17, and 27. Paper 10 ("Dec. on Inst."); Paper 15 ("Second Dec. on Inst."). We declined to institute an *inter partes* review as to claims 2–16, 18–26, and 28–30. *Id.* We also exercised our authority under 35 U.S.C. § 315(d) to consolidate the IPR2015-00119 proceeding and the proceeding in IPR2014-01536 as one trial. Second Dec. on Inst. 21.

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 16 ("PO Resp.")) and Petitioner filed a Reply (Paper 17 ("Pet. Reply")). The parties did not ultimately request an oral hearing. Papers 17, 19.

The Board has jurisdiction under 35 U.S.C. § 6(c). 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 shown by



a preponderance of the evidence that claims 1, 17, and 27 of the '057 patent are unpatentable.

## II. BACKGROUND

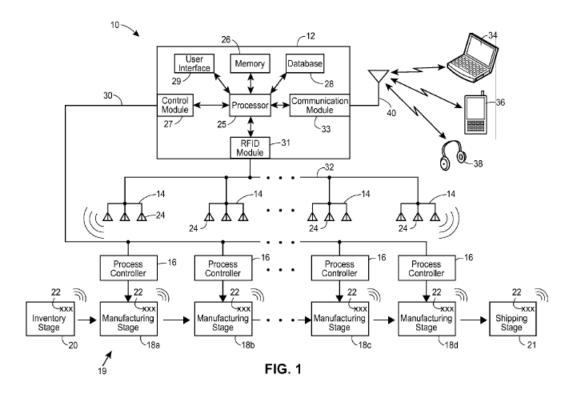
### A. Related Matters

The parties have not identified any related proceedings.

B. The '057 Patent (Ex. 1001)

The '057 patent relates to a process management system that uses a radio frequency identification (RFID) detection system in the form of, for example, a phased array antenna based RFID detection system to track and manage material storage and flow in a manufacturing process or plant.

Ex. 1001, Abstract. A block diagram of an exemplary process management system is shown in Figure 1 of the '057 patent, reproduced below.





As illustrated in Figure 1, above:

[I]nventory and process management or tracking system 10 include[s] a command system 12 connected to an RFID detection and tracking system that includes a network of antenna systems 14 (which may be for example, one or more electronically steerable phased array antenna systems each having multiple antenna elements 24) connected to a processor (not shown) that directs or operates the antennas or elements 24 . . . and performs RFID detection and tracking.

*Id.* at 13:66–14:7. "During operation, material inputs and material outputs at each stage or region of the manufacturing process 19 are tagged with RFID tags 22 for identification and tracking." *Id.* at 14:25–28. "The antenna systems 14 . . . are used to detect and track the location and movement of the RFID tagged material inputs and material outputs and use this tracking information to manage the manufacturing process 19 using, for example, the controllers 16." *Id.* at 14:28–36.

C. Illustrative Claim

Of the challenged claims, claim 1 is independent. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. An inventory tracking system for use in tracking placement of physical items within an inventory tracking region, comprising:

a radio frequency tag detection system including:

- a plurality of radio frequency antennas disposed in a spaced apart manner within the inventory tracking region; and
- a detection controller coupled to the plurality of radio frequency antennas, the detection controller including a beam-steering control system that controls the operation of each of the radio



frequency antennas, wherein one of the plurality of radio frequency antennas uses a beam to scan a portion of the inventory tracking region to detect a current physical location of one or more radio frequency tags disposed in a scanned portion of the inventory tracking region, wherein the current physical location corresponds to a position defined by two coordinate units in a multidimensional coordinate system and the value of each of the two coordinate units is determined by the one of the plurality of radio frequency antennas, and wherein the detection controller generates indications of the one or more detected radio frequency tags and the current physical locations of the one or more detected radio frequency tags in the scanned portion within the inventory tracking region; and

- a tracking system coupled to the radio frequency tag detection system to receive the indications of the one or more detected radio frequency tags and the current physical locations of the one or more detected radio frequency tags in the scanned portion within the inventory tracking region, the tracking system including:
  - a memory for storing inventory item information for each of a plurality of inventory items, the inventory item information for each of the plurality of inventory items including an inventory item radio frequency tag identifier, inventory item identification information defining the identity of the inventory item, and an indication of the current physical location of the inventory item within the inventory tracking region; and
  - an access system that accesses the memory and provides at least a subset of the inventory item information for one or more of the inventory items to a user for determining the current physical location of the one or more of the inventory items within the inventory tracking region,



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