

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

BRAIN CORPORATION,

Plaintiff,

v.

AVIDBOTS CORP. AND AVIDBOTS USA
CORP.,

Defendant.

Case No. 1:24-cv-12569

Honorable Jeremy C. Daniel

DEFENDANT AVIDBOTS'S FINAL INVALIDITY CONTENTIONS

[REDACTED]

Exhibits	Reference	Type
	moveable objects,” IEEE International Conference on Robotics and Automation 6115-6120 (2011) (“Scholz”)	
A-12 B-11	Avidbots System Art ⁶	System
C-1 D-1	Stachniss et al., <i>Springer Handbook of Robotics, Chapter 46: Simultaneous Localization and Mapping</i> , Springer (2d ed.) (Jan. 1, 2016) (“Stachniss”)	Non-Patent Literature
D-11	Prassler et al., <i>Springer Handbook of Robotics, Chapter 65: Domestic Robots</i> , Springer (2d ed.) (Jan. 1, 2016) (“Prassler”)	Non-Patent Literature
C-3 D-10	U.S. Patent No. 9,538,892 (“Fong (892)”)	Patent

⁶ The Avidbots System Art includes Avidbots’s system prior art that Avidbots understands to have been patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the ’780 patent, see Avidbots’s First Supplemental Invalidity Contentions, § III.B.1.C, and therefore qualifies as prior art under at least 35 U.S.C. §§ 102(a)(1) and (2). Specifically, the designated Exhibits address the Avidbots ARS-2 and the Avidbots Neo. The Avidbots ARS-2 refers to an autonomous commercial floor cleaner that was in public use and/or on sale by at least October 21, 2015. For example, the ARS-2 was publicly displayed at the ISSA/Interclean 2015 showcase in Las Vegas, Nevada, for three days, from October 21 to October 23, 2015, prior to the filing of the ’780 patent on November 2, 2016. ISSA/Interclean Exhibitor List & Floor Plan, <https://www.cleantlink.com/sm/graphics/15/09/sm0915.pdf> at pg. 69, last accessed May 15, 2025. Avidbots negotiated and executed its first sale of the ARS-2 on the third day of that event, on October 23, 2015. AVID0007849–AVID0007850. The ARS-2 was also publicly demonstrated at Mohawk College of Applied Arts and Technology in Hamilton, Ontario, Canada, and deployed at the college for two weeks, from December 8 to December 21, 2015. AVID0022649–AVID0022655. Mohawk College employees witnessed and graded the performance of the ARS-2’s automated coverage, cleaning quality, ease of use, and safety. AVID0022653. Avidbots also gave Mohawk College employee Keith Brewster a tutorial on mapping using the ARS-2. AVID0022649. The Avidbots Neo refers to an autonomous commercial floor cleaner that was in public use and/or on sale by at least August 24, 2016, prior to the filing of the ’780 patent on November 2, 2016. For example, the Neo was publicly demonstrated at the Avidbots Headquarters in Ontario, Canada, on August 24, 2016, to employees of the Rochester Institute of Technology (RIT). AVID0517413–AVID0517414. RIT requested this demonstration through Avidbots’s web portal on July 9, 2016. AVID0517411. Avidbots followed this demonstration in Ontario with another public demonstration, this time on-site at RIT, in Rochester, New York, in or around October 4, 2016. AVID0031247, at -255. It was also publicly demonstrated in Indianapolis, Indiana, from October 17 to October 20, 2016, for representatives for Simon Properties. Id.

publications, systems, and products is prior art under at least 35 U.S.C. §§ 102(a)(1) or (2), as applicable. Avidbots's reliance on each prior art reference below includes the reference itself, anything incorporated by the reference, and any testimony by those with knowledge of the reference, such as named authors and inventors.

The exhibits listed in the table below are charts setting forth where in the prior art references each element of the Asserted Claims of the '780 Patent are found.

Exhibit¹⁹	Reference
A-14	U. S. Patent No. 9,216,745 ("Beardsley")
A-13	Chang, Ya-Chun, Yamamoto, Yoshio, On-line path planning strategy integrated with collision and dead-lock avoidance schemes for wheeled mobile robot in indoor environments, <i>Industrial Robot, An International Journal</i> 35(5) 421-34 (2008) ("Yamamoto")
A-16	O. Khatib, "Real-Time Obstacle Avoidance For Manipulators and Mobile Robots," <i>5 Int'l J. of Robotics Research</i> 90–98 (1986) ("Khatib")
A-16	J.A. Castellanos, J. Montiel, J. Neira, J.D Tardos, "The SPmap: A probabilistic framework for simultaneous localization and map building," <i>15(5) IEEE Trans. Robotics and Automation</i> 948–952 (1999) ("Castellanos")
A-16	J. Scholz, S. Chitta, B. Marthi and M. Likhachev, "Cart pushing with a mobile manipulation system: Towards navigation with moveable objects," <i>IEEE International Conference on Robotics and Automation</i> 6115-6120 (2011) ("Scholz")
A-12	Avidbots System Art

Avidbots further identifies that these references form the following invalidity grounds for each of the Asserted Claims of the '780 Patent.

¹⁹ These Final Invalidity Contentions include any exhibits served herewith as well as any exhibits referenced herein and previously served on Brain, such as any exhibits (including claim charts) served with Avidbots's Initial Non-Infringement and Invalidity Contentions or any supplements or amendments thereto, *e.g.*, on April 14, 2025, June 4, 2025, August 27, 2025, and January 7, 2026.

Ground No.	Type	Reference(s)	Claims
1	Obviousness	Beardsley in combination with Castellanos.	8, 9, 12, 13, 17, 18
2	Obviousness	Beardsley in combination with Castellanos and Khatib.	8, 9, 12, 13, 17, 18
3	Obviousness	Yamamoto in combination with Khatib and Beardsley.	8, 9, 12, 13, 17, 18
4	Obviousness	Avidbots System Art in combination with Beardsley, Khatib, and Scholz.	8, 9, 12, 13, 17, 18

2. Obviousness (Grounds 1–4)

a. Level of Ordinary Skill in the Art

A person of ordinary skill in the art at the time of the earliest effective filing date of the '780 Patent would have had a Bachelor's degree or higher in electrical or computer engineering (or equivalent discipline) and at least two years' experience in research, design and/or development of autonomous robotics and/or robotic mapping/navigation and/or mechanical engineering and/or a related field. Additional education could substitute for experience, and vice versa.

b. Scope and Content of the Prior Art

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. For example, the '780 Patent generally relates to route planning via the use of sensors to learn and detect things about the environment. In some embodiments, these routes are planned by autonomous robots. See '780 Patent, Abstract. As shown by the prior references disclosed herein and by those set forth in the '780 Patent and file history, autonomous robotic route planning, including the use of sensors to gather data on the environment and update a route, was well-known as the asserted priority date of the '780 Patent.

c. Motivations to Combine Prior Art

A person of ordinary skill in the art would have been motivated to combine the identified prior art to form the grounds listed in Section III.C.1. *See also* IPR2025-1603, Paper 1 and