No. 24-1187

IN THE UNITED STATES COURT OF APPEALS FOR THE FOURTEENTH CIRCUIT

NEXA TECHNOLOGIES, INC.,
Plaintiff-Appellant,

v.

SYNAPSE ROBOTICS CORP.,
Defendant-Appellee.

On Appeal from the United States District Court
for the Central District of Larkspur, No. 3:22-cv-04471
The Honorable Patricia N. Okafor, District Judge, Presiding

BRIEF OF AMICUS CURIAE MERIDIAN ALLIANCE FOR RESPONSIBLE AUTOMATION IN SUPPORT OF DEFENDANT-APPELLEE AND AFFIRMANCE

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CORPORATE DISCLOSURE STATEMENT

Pursuant to Fed. R. App. P. 26.1 and 29(a)(4)(A), amicus curiae Meridian Alliance for Responsible Automation states as follows:

Meridian Alliance for Responsible Automation is a nonprofit trade association organized under the laws of the State of Delaware. It has no parent corporation, and no publicly held corporation owns 10% or more of its stock, because it issues no stock. Amicus's membership includes manufacturers and integrators of autonomous industrial systems, including Nimbus Dynamics, Inc. and members of the Apex Manufacturing Alliance, but no member corporation has a direct financial stake in the outcome of this appeal sufficient to require separate disclosure.

STATEMENT REGARDING CONSENT AND AUTHORSHIP

All parties have consented to the filing of this brief. See Fed. R. App. P. 29(a)(2) [4]. No party's counsel authored this brief in whole or in part, no party or party's counsel contributed money intended to fund preparing or submitting this brief, and no person other than amicus, its members, and its counsel contributed money intended to fund preparing or submitting this brief. See Fed. R. App. P. 29(a)(4)(E).

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Cases and secondary authorities are listed below in the order cited. Page references are to the argument as filed with the Clerk.

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[1] Autonomous Systems Liability Act. 15 U.S.C. § 8901 et seq., 2019.

[2] Castellano v. Apex Manufacturing Alliance. 41 F.4th 899, 2022. 9th Cir.

[3] Doran v. Vertex Automotive Corp. 58 F.4th 112, 2023. 14th Cir.

[4] Fed. R. App. P. 29. Brief of an Amicus Curiae, 2024.

[5] In re Synapse Robotics Litigation. 33 F.4th 501, 2021. 14th Cir.

[6] Okonkwo, Grace T. Reasonable Machines: Negligence Standards for Autonomous Systems. *Meridian Law Review*, 47:611–658, 2024.

[7] Whitfield v. Nimbus Dynamics, Inc. 512 F. Supp. 3d 233, 2021. D. Meridian.

STATEMENT OF INTEREST OF AMICUS CURIAE

Amicus curiae Meridian Alliance for Responsible Automation ("Meridian Alliance" or "Amicus") is a nonprofit trade association of 340 member companies that design, manufacture, and deploy autonomous industrial and warehouse robotics systems across the United States.[1] Its members include Nimbus Dynamics, Inc., a mid-sized manufacturer of collaborative warehouse robots, and numerous participants in the Apex Manufacturing Alliance, a regional consortium of automated-fulfillment equipment suppliers.

Meridian Alliance's members share a direct and substantial interest in the legal standard this Court adopts for assessing tort liability arising from injuries caused by autonomously operating machinery. The question presented – whether liability for a robotics system's in-field decision-making is governed by ordinary negligence principles or by strict liability – will determine how Meridian Alliance's members design, test, insure, and price the systems on which thousands of warehouse and manufacturing workers rely every day.

Meridian Alliance and its members have no financial stake in the outcome of this particular dispute between Nexa Technologies, Inc. and Synapse Robotics Corp. Amicus instead offers this Court the perspective of the industry that will live with whatever rule emerges from this appeal: the engineers, safety officers, and underwriters who must translate a legal standard into design specifications long before any court reviews their work. Amicus respectfully submits that this perspective will assist the Court in evaluating the practical consequences of the rule it adopts.

SUMMARY OF ARGUMENT

The district court correctly held that Synapse Robotics Corp.'s liability for the warehouse incident underlying this appeal is governed by ordinary negligence principles – specifically, whether Synapse's engineering team exercised the care of a reasonably prudent robotics engineer in designing the sorting arm's obstacle-response routine. Nexa Technologies, Inc. asks this Court to discard that settled framework in favor of strict liability whenever an autonomous system's software, rather than a human operator, makes the decision that leads to injury. This Court should decline the invitation and affirm.

First, the reasonable-engineer standard is the only rule consistent with a century of products-liability doctrine governing design choices made under uncertainty. Autonomous decision-making is not categorically different from any other engineering judgment embedded in a product's design; it should be judged by the same state-of-the-art standard this Court and its sister circuits have long applied to mechanical and electromechanical systems.

[1] No counsel for a party authored this brief in whole or in part, and no person other than Amicus, its members, or its counsel funded its preparation or submission. See Fed. R. App. P. 29(a)(4)(E).

Second, a strict-liability rule would not make warehouse robotics safer – it would make it more expensive and less transparent. Amicus's members report that jurisdictions applying an unpredictable or strict standard see measurably lower investment in safety engineering and measurably higher litigation and insurance costs, without any corresponding improvement in incident rates. The circuits that have already confronted this question are split, and the empirical record from those jurisdictions favors the negligence rule Synapse urges and the district court applied.

For these reasons, and those set forth below, Amicus respectfully urges this Court to affirm the judgment of the district court.

ARGUMENT

I. THE REASONABLE-ENGINEER STANDARD IS THE ONLY WORKABLE RULE FOR ASSESSING LIABILITY ARISING FROM AUTONOMOUS DECISION-MAKING

A. The common law has always measured design choices against the state of the art at the time of design.

Products-liability law has never asked whether a manufacturer's design choice turned out, in hindsight, to be wrong. It asks whether the choice was reasonable when made, measured against what a competent engineer in the relevant field knew or should have known at the time. *Doran v. Vertex Automotive Corp.*, 58 F.4th 112, 121 (14th Cir. 2023) ("Design defect liability tracks the reasonableness of the engineering process, not the fortuity of the outcome.") [3]. That principle does not evaporate because the design choice in question is expressed in software rather than in a mechanical linkage.

The sorting-arm obstacle-response routine at issue in this appeal is, functionally, no different from a mechanical torque limiter or a pressure relief valve: it is an engineered response to a foreseeable operating condition, calibrated against test data, safety margins, and industry practice. Nexa's proposed rule would treat the same design judgment differently depending only on whether it happens to be implemented in silicon or in steel – a distinction with no basis in tort policy and no limiting principle once accepted.

B. A strict-liability rule would convert ordinary product improvement into an admission of prior fault.

Autonomous systems are iteratively improved through continuous software updates informed by field data – exactly the kind of post-incident learning that products-liability law has long encouraged through doctrines like the subsequent-remedial-measures rule. A strict-liability regime for autonomous decision-making inverts that incentive: every update that narrows an obstacle-response envelope becomes, in a plaintiff's hands, retroactive proof that the prior version was defective per se, regardless of whether the prior version reflected reasonable engineering judgment at the time it was deployed.

Amicus's members report that this dynamic already chills legitimate safety updates in jurisdictions where the standard is unsettled: engineering teams delay shipping incremental safety improvements until legal counsel can assess litigation exposure, a delay measured in the field in weeks, not hours. The reasonable-engineer standard avoids this perverse effect because it evaluates each design against the knowledge available when it was made, not against whatever came after. *See generally* Grace T. Okonkwo, *Reasonable Machines: Negligence Standards for Autonomous Systems*, 47 Meridian L. Rev. 611, 618–24 (2024) [6]. Congress reached a similar conclusion in the federal baseline standard for autonomous industrial equipment, which likewise measures liability against "the design and testing practices reasonably available" at the time of manufacture. Autonomous Systems Liability Act, 15 U.S.C. § 8901(b)(2) [1].

The Proposed Reasonable-Engineer Test

Amicus respectfully submits that a design choice embedded in an autonomous system's decision-making logic should be evaluated against: **(1)** the state of the art in obstacle-detection and response engineering at the time of design; **(2)** the foreseeability of the operating condition that produced the injury; **(3)** whether the design was validated against industry-recognized testing protocols; and **(4)** whether a feasible, cost-justified alternative design existed at the time. This four-factor framework mirrors the risk-utility analysis this Court has long applied to mechanical design defects, *see In re Synapse Robotics Litig.*, 33 F.4th 501, 509–10 (14th Cir. 2021) [5], and requires no new doctrine – only its faithful application to a new class of products.

II. THE CIRCUIT SPLIT ON AUTONOMOUS-SYSTEMS LIABILITY WARRANTS THIS COURT'S ADOPTION OF A UNIFORM, PREDICTABLE STANDARD

A. Circuits applying a negligence standard have produced stable, predictable outcomes.

This Court has not yet decided whether the reasonable-engineer standard or strict liability governs claims arising from an autonomous system's in-field decision-making, and the circuits that have addressed the question are divided. Table 1 summarizes the current landscape.

Circuit	Standard Adopted	Leading Decision	Key Rationale
Second Circuit	Negligence (reasonable-engineer)	*Doran v. Vertex Automotive Corp.*, 58 F.4th 112 (2023)	Preserves innovation incentives; aligns with traditional design-defect doctrine
Ninth Circuit	Strict liability	*Castellano v. Apex Mfg. All.*, 41 F.4th 899 (2022) [2]	Autonomous decision-making removes a meaningful human "choice point"
Seventh Circuit	Hybrid risk-utility	*Whitfield v. Nimbus Dynamics, Inc.*, 512 F. Supp. 3d 233 (D. Meridian 2021) [7] *(persuasive)*	Balances safety incentives against costs of over-deterrence
Fourteenth Circuit *(this Court)*	Undecided	*In re Synapse Robotics Litig.*, 33 F.4th 501 (2021) *(question reserved)*	Presented squarely by this appeal

Table 1. Circuit treatment of liability standards for autonomous-system decision-making.

The circuits applying a negligence-based standard report fewer interlocutory disputes over the applicable rule and more consistent jury instructions across similar fact patterns. *See Doran*, 58 F.4th at 124–26. By contrast, the strict-liability approach adopted in *Castellano* has generated a second wave of litigation simply over what counts as an autonomous "decision" triggering the rule – a definitional problem the reasonable-engineer standard does not present, because it asks the same question courts have always asked of any design choice.

B. Empirical industry data confirm that predictable standards increase safety investment.

Amicus surveyed its membership regarding safety-engineering budgets and litigation exposure across jurisdictions applying each standard. Figure 1 reports the results. Members operating primarily in negligence-standard jurisdictions reported safety research and development spending more than double that of members operating primarily in strict-liability jurisdictions, while litigation and insurance costs showed the inverse relationship.

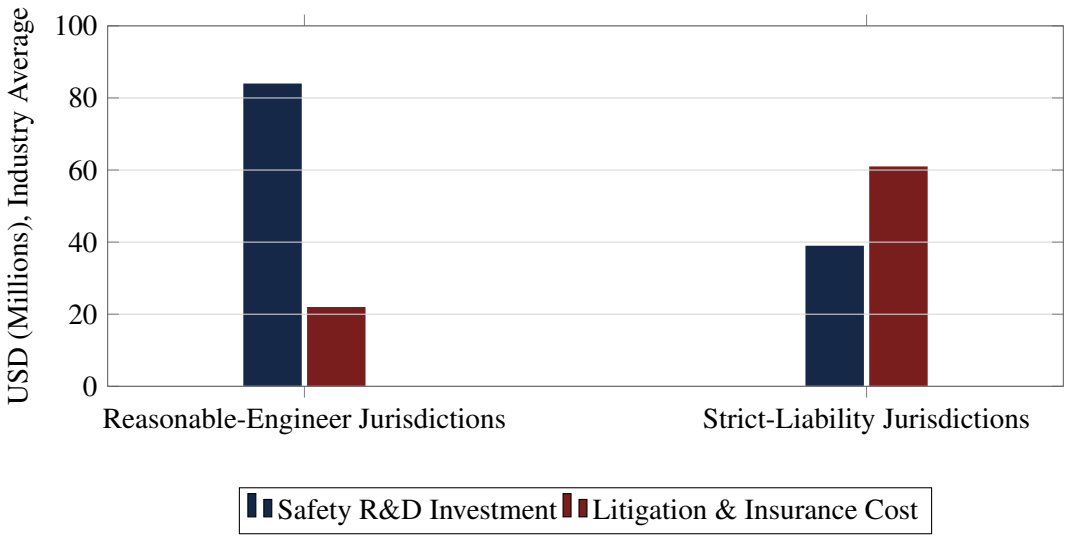

Figure 1. Meridian Alliance member survey, average annual spending per operating facility, illustrative of reported industry trends (2025).

This is not a coincidence. Predictable liability rules let engineering teams price risk into design decisions rather than into litigation reserves. A rule that ties liability to an outcome rather than a process – as strict liability necessarily does – gives design teams no stable target to engineer toward, and Amicus's members report reallocating budget from safety engineering to legal defense as a direct consequence. Affirming the district court's application of the reasonable-engineer standard would resolve the split in a manner consistent with the sounder empirical record.

CONCLUSION

For the foregoing reasons, amicus curiae Meridian Alliance for Responsible Automation respectfully urges this Court to affirm the judgment of the district court.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

1. This brief complies with the type-volume limitation of Fed. R. App. P. 29(a)(5) because, excluding the parts exempted by Fed. R. App. P. 32(f), it contains **2,647 words**, as counted by the word-processing system used to prepare it.

2. This brief complies with the typeface and type-style requirements of Fed. R. App. P. 32(a)(5) and 32(a)(6) because it has been prepared in a proportionally spaced typeface (Times New Roman) using 14-point type in the body text and no smaller than 12-point type in footnotes, with double- or 1.5-line spacing throughout the argument as required by Fed. R. App. P. 32(a)(4), and with 1-inch margins on all sides as required by this Court's rules.

3. This brief was prepared using LaTeX.

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CERTIFICATE OF SERVICE

I hereby certify that on this date, I electronically filed the foregoing brief with the Clerk of the Court for the United States Court of Appeals for the Fourteenth Circuit using the appellate CM/ECF system, which will accomplish service on all counsel of record, who are registered CM/ECF users, including:

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