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# From Incidents to Insight: ISO 45001-Aligned Management Systems and Data-Driven DART Reduction in U.S. Distribution Centers

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## Abstract

This research explores the role of management systems and data-driven approaches that are ISO 45001-aligned in the minimization of DART (Days Away, Restricted, or Transferred) rates in U.S. distribution centers. The aim of the study is to investigate how standardization of occupational health and safety systems and digital technologies can be used synergistically in improving performance on workplace safety. The study is based on secondary data, where a qualitative design is utilized, and the secondary data is based solely on the sources of peer-reviewed journal articles, case studies, and empirical examination found on ResearchGate. The thematic analysis was used to distinguish the major trends in the work of ISO 45001 implementation and data-driven safety practices.

The results have shown that ISO 45001 offers a well-organized platform of prevention of risks and active interaction with the employees, and predictive systems of maintenance and monitoring in real-time and data-driven algorithms based on AI contribute to the correctness and timeliness of safety responses. Combined, these strategies develop a prevention, accountability/continuous improvement culture. The research finds that a combination of ISO 45001 and data-related instruments has the potential to reduce the rates of DART by a significant margin, enhance the culture of safety, and enhance efficiency. These lessons bring out the essence of focusing on the convergence of international safety measures with the technological advancements to develop safer, smarter, and resilient distribution settings throughout the United States.

**Keywords:** Aligned; Centers; Data; DART; Distribution; Driven

## 1. Introduction

The occupational health and safety (OHS) management is an important issue at the distribution centers in the U.S. where the distribution workers are exposed to a number of physical hazards including heavy lifting, repetitive movement as well as machine operations. Being chosen as one of the most hazardous workplaces, the distribution centers need strong safety measures that should protect the workers and ensure high efficiency. The impact of safety management in these workplaces is traditionally evaluated by the DART (Days Away, Restricted, or Transferred) rate which follows the workplace injuries leading to time off work, limited service or job transfer. A low DART rate represents a safer workplace whereas a high DART rate represents the areas, which require advancement in safety management practice.

The international standard of occupational health and safety management systems ISO 45001 is used to set up a framework in which organizations manage health and safety risks in a systematic manner. It assists organizations to avoid the occurrence of a work-related injury and illness through the implementation of proactive safety, the risk

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assessment and continuous improvement. With the implementation of ISO 45001, the organization can dramatically decrease the incidence and extent of injuries in the workplace, including injuries monitored by DART rates.

This research question seeks to identify the potential, using a combination of the ISO 45001- compliant management systems and data-based approaches like predictive maintenance and real-time safety-monitoring in the distribution centers within the U.S to lower the DART rates. The study will focus on two important questions, namely, how does ISO 45001 affect safety management practices within distribution centers, and what is the influence of data-driven strategies in lowering the levels of DARTs? As distribution centers are highly risky, strategy synchronization of the ISO 45001 standards and the data-driven approach to safety is highly essential to enhance the safety of workers and the final results of operations.

## 2. Literature Review

### 2.1. Overview of ISO 45001 and Its Impact on OHSMS

ISO 45001 is a global standard, which is aimed at providing directions to the organizations in developing and sustaining their effective occupational health and safety management systems (OHSMS). Its standard focuses on a structured process of risk assessment, prevention of hazards and control of risks to minimize accidents and illnesses at work place. The ISO 45001 develops a safety culture in the promotion of commitment of leadership, participation excitement among employees and improvement. Its main principles are the risk-based thinking, the engagement of workers across levels, and incorporating safety practices into operating business (Mexiwel, Wardana, and Zulfikar, 2025).

The ISO 45001 has been extensively utilized in safety performance in different industries. It has helped to identify hazards at workplace in manufacturing, construction and distribution centers, proactive safety measures and setting of safety targets. The standard also fosters management of legal and regulatory standards, which is essential to organizations that seek to evade fines and legal tussles that are very costly. In addition, the emphasis of ISO 45001 on making safety culture better makes any organization continually test its safety systems, and hence making safety part and parcel of its organizational culture. A higher level of operational efficiency has also been attributed to the standard as the impact of fewer workplace injuries on the working process, in turn, increases the overall productivity (Polewangi & Delvika, 2022).

### 2.2. Data-Driven Approaches in OHS Management

Occupational health and safety management are changing the manner in which organizations track and control occupational safety risks using data-driven interventions. The features of real-time safety monitoring systems, predictive maintenance, and artificial intelligence (AI)-based analytics are potent types of functionalities that foster better safety performance because they allow organizations to find out and resolve safety risks in advance. Seamless monitoring, e.g., wearables and sensors, will allow to present constant information on the state of workers and environmental conditions and act immediately in the case of a hazardous event. As an example, wearable technology will be able to not only notify the worker about the dangerous environment like heat or excessive noise but will also prevent injuries before they happen (Khakpour, Colomo-Palacios, and Martini, 2021).

Predictive maintenance involves the use of machine and equipment data to predict any potential breakdowns or failures and this may result in accidents in high-risk situations such as distribution centers. Predicting the time of equipment breakdown enables the organization to maintain the constituents before the equipment breakdown and therefore the chances of accidents caused by failure of the equipment are not inevitable. The use of AI-based analytics also contributes to safety management whereby, large volumes of data are examined to identify patterns through which safety risks could be predicted. Such systems are capable of detecting the trends in injury types, root circumstances and potentially at-risk processes that will prove to be valuable and allow the organizations to view safety interventions as custom-made to meet the particularities (Akano, Hanson, Nwakile, and Esiri, 2024). With these data-driven tools, organizations will be able to stop being reactive to safety management and instead move to a more proactive, predictive model that will cause a significant reduction of workplace incidents.

### 2.3. DART Rate Reduction in Distribution Centers

DART (Days Away, Restricted, or Transferred) rates are essential the variables used to evaluate the level of safety at work particularly where there is high risk such as the distribution centers. High DART rate implies that the company should ensure better safety measures, whereas a low rate means that the risk management will be effective. The reason why it is necessary to reduce DART rates is not only to secure the safety of the workers, but also to enhance productivity and reduce operational expenses. At the distribution centers, physical hazards like heavy lifting, repetitive motions, and

the use of forklifts expose the workers to DART, in these centers, a strategic approach is necessary to determine the causes of at-work injuries and reduce them.

Evidence-based plans work best to address particular causative factors of injuries within a distribution setting. As an example, predictive maintenance systems would lessen the number of accidents due to malfunctioning equipment, and real time monitoring devices would aid in determining the presence of danger and reduce the risk of injuries by preventing their occurrence. Also, analytics based on AI can detect trends within an injury data that assist organizations to highlight high-risk tasks or locations within the facility where their attention should be on its safety of the area or its residents (Karimi et al., 2020). Over the past few years, there are distribution centers that have been able to realise high cut in DART rates through the introduction of a synergistic approach between ISO 45001 expected safety management system and data-driven approaches. Such interventions have contributed to the reduction of repetitive motion and machinery-related accidents and falls than occurrence of the work place injuries in these places (Górny, 2024).

### 2.4. Barriers and Challenges in Implementing ISO 45001 and Data-Driven Safety Approaches

Although the introduction of ISO 45001 and data-driven safety methods bring a wide range of advantages to the organizations, there is a range of obstacles associated with the implementation of such strategies. The cost of implementation is one of the major obstacles because it involves such costs as training, obtaining new technology, and the level of compliance with the ISO 45001 standards. To many small to medium-sized distribution centers, these initial expenditures may prove to be a major disincentive toward the notion of all-inclusive safety management systems (Hasle & Zwetsloot, 2011). Also, real-time monitoring systems and predictive maintenance that are poised to be integrated are costly to invest in technology infrastructure, a feat that may not be viable to all companies.

Another problem is employee resistance. Not all workers will be confident in newly introduced safety systems, and some of them will feel uneasy with the constant monitoring the approaches based on data demand. This opposition may be an obstacle to effective execution of safety programs. To cross this barrier, there must be competent change management strategies, such as excellent communication on the benefits of this kind of systems and the participation of workers in the process. Additionally, such barriers can include technology, e.g., problems with data integration, particularly in making attempts to unify old safety systems and new technologies that are more advanced (Karanikas and Pryor, 2021). Such obstacles may make implementing ISO 45001 and data-based approaches to safety complex, yet, with appropriate scheduling, training, and allocation of resources, one can address those obstacles to ensure better safety results in distribution centers, in general.

## 3. Methodology

This research paper employs a qualitative research design, which involves secondary sources, to examine the correlation existing between the management systems that are aligned to the ISO 45001-based standards and data-driven initiatives that can result in the reduction of DART rates at the distribution centers in the U.S. The design is based on the interpretivist approach that seeks to comprehend patterns and insights, but not quantification of relationships. The study uses case studies, empirical reports, and conceptual papers that discuss occupational health and safety management systems (OHSMS), data analytics in safety, and ISO 45001 applications to identify the necessary results through an integrative review of existing peer-reviewed literature (Mexiwel, Wardana, and Zulfikar, 2025; Polewangi and Delvika, 2022). With this design, we thoroughly understand how the two ISO 45001 and the data-driven methods can be used to support each other in providing safer working environment.

The information that was used in this research was collected solely in the form of secondary sources published in ResearchGate. The first sources were magazine articles, messages, and research findings that focused on occupational safety, ISO 45001, and predictive data analysis (Khakpour, Colomo-Palacios, and Martini, 2021; Akano, Hanson, Nwakile, and Esiri, 2024). Selection criteria involved the studies, which reported on the implementation of OHSMS, risk management, or the use of data to make decisions in an industrial or distribution environment. The publications were limited to 2010 and later since English-language because it was thought to be relevant to the contemporary practices. The targeted keywords were applied to identify articles, including the terms; ISO 45001, DART rate reduction, data-driven OHS, and predictive maintenance in distribution centers.

This research used the thematic analysis method, which was based on qualitative synthesis of results gathered using the secondary literature. Codes derived via coding and grouping techniques were used to extract themes which concerned recurring ideas like safety leadership, data integration, compliance issues and usage of technology (Hasle and Zwetsloot, 2011; Karanikas and Pryor, 2021). The analysis was carried out on each of the themes and their contribution to the reduction of DART rates and better performance of OHS. Comparison of findings was also done

across various studies to establish gaps and inconsistencies to achieve validity by triangulation. This method provided the ability to comprehend the process of improving safety management at the distribution centers in the U.S. by means of theist insights into the use of ISO 45001 and data-driven tools collectively.

## 4. Results

### 4.1. Findings from ISO 45001 Implementation

When the distribution centers in the United States have implemented the ISO 45001, the immediate effect was the recordable enhancement of the safety performance in the workplace, which has largely been achieved by implementing a structured safety management system and proactive risk control mechanisms. It has been found out that when organizations are in line with ISO 45001, the improved communication, responsibility, and leadership participation in occupational health and safety management are witnessed (Polewangi & Delvika, 2022). The international standard results in a progressive hazard identification, incident prevention, and continuous improvement that causes a cultural shift between the reactive to preventive safety management. The distribution centers that implemented the ISO 45001 standard also noted a decrease in the DART (Days Away, Restricted, or Transferred) rates through the implementation of the Plan-Do-Check-Act (PDCA) framework, where constant monitoring and corrective actions are advised (Karimi et al., 2020).

Improved safety compliance and employee participation in safety programs due to the focus on worker participation and top management commitment also helped to improve it. The adherence to the ISO 45001 to other management systems, including ISO 9001 and ISO 14001, provides an opportunity to achieve environmental functionality and reduce the safety risk and workplace disturbance further. Results indicate that integrating ISO 45001 into organizational strategy, distribution centers can develop a culture of joint accountability whereby safety performance would be a tangible business goal or an effect of a regulation. Finally, the evidence highlights that ISO 45001 is a compliance and performance facilitator, which is changing safety into a part of operational excellence turnkey versus cost center (Polewangi and Delvika, 2022; Karimi et al., 2020).

### 4.2. Findings from Data-Driven Safety Strategies

The emergence of data-driven safety management systems has become a ground changing element of enhancing occupational safety and lowering DART rates in U.S. distribution centers. Through predictive analytics, artificial intelligence (AI), and real-time monitoring, organizations can detect the possibilities of hazard occurrences prior to their occurrence (Khakpour, Colomo-Palacios, and Martini, 2021). Predictive maintenance technologies, such as monitoring equipment, can predict machinery malfunctions that might result in injuries, whereas non-worn sensors can be used to prevent unsafe behavior, track worker movement. These data-based interventions allow proactive mitigation actions that directly decrease the occurrence and also influence severity of incidents.

The application of data analytics to safety systems has enhanced decision-making and performance measurement by availing of actionable insights of large datasets. By embracing AI-driven digital twins and safety dashboards, companies have had the opportunity to visualize on workplace risk, monitor trends in compliance and focus on high-risk areas that require immediate attention (Akano, Hanson, Nwakile, and Esiri, 2024). These systems have real-time feedback mechanisms that create a learning-based system where the safety improvements are constantly being improved through the continuous provision of data evidence instead of intuition.

These methods also help to enhance the safety culture through the introduction of transparency and accountability of workers and managers. The measurement of leading indicators near misses and unsafe behaviors, etc., can make interventions earlier, and optimize the preventive ethos that sits at the core of ISO 45001. As such, data-driven safety management supplements the principles of ISO 45001 through its operationalization of technologies, which has led to the reduction in the number of workplace injuries, absenteeism, and compensation costs (Khakpour, Colomo-Palacios, and Martini, 2021; Akano, Hanson, Nwakile, and Esiri, 2024).

## 5. Discussion

### 5.1. Interpretation of Results

The outcomes of this research disclose a high correlation of ISO 45001-compatible management systems and data-driven strategies in lowering the rate of DART in the United States distribution centers. It is the interplay of these two methods that forms a proactive safety ecosystem that focuses on prevention, responsibility and improvement. It is a structured and procedural pillar on the concept of occupational safety developed through the systematic risk management and employee involvement system, which is established by ISO 45001, and supported by data-driven approaches contributing to better insights in real-time and prediction power, respectively. When put together, they will help organizations to change their reactive responses to be predictive and preventive with respect to safety management.

Continuous evaluation and action on the insights provided by ISO 45001 PDCA (Plan-Do-Check-Act) model create a facilitation of continuous improvement. Use of analytics tools enables safety managers to detect leading indicators including near misses, unsafe acts that can later be used in corrective actions before an incident happens. This compatibility of standardization and the digital innovation contribute to the development of learning caring culture that makes it not only less traumatizing but more productive and morale-enhancing. Therefore, the interaction between the ISO 45001 compliance and the data-driven decision-making offer a strategic outline of how sustainable decrease in the DART rates can be achieved and how the general performance of the organization can be developed.

### 5.2. Comparison with Existing Literature

The results of the present research are in line with available literature highlighting the importance of ISO 45001 and data analytics in improving occupational safety performance. Górny (2024) notes that the application of ISO 45001 results in quantifiable changes of the workplace injury rates by introducing a method of systematic risk assessments and control to everyday routines. In construct, Karimi et al. (2020) confirm the role of the international safety standards as the motivational factor to ongoing monitoring and connect with the employees, which are essential to the attainment of the long-term safety benefits.

The findings are also aligned with the emerging studies that data-driven safety management will convert the conventional reactive practices into predictive systems with the ability to foresee hazardous occurrences. In the case of AI-powered analytics and real-time data monitoring, one can note the fact that such means give an organization an opportunity to understand risk patterns that might go unseen during traditional audits. This is the complement to the fact that ISO 45001 focuses on continual improvement allowing organizations to rely on empirical points of intervention, instead of presuming about the safety aspects. In this way, the intersection of standardization and digital analytics in the given study is indicative of the change in the sphere of safety science where technology enhances the functionality of formulated management systems.

### 5.3. Implications for Practice

The implicational essence of these findings as relates to safety officers, operations managers and policymakers in the distribution industry is profound in practical sense. To begin with, the incorporation of ISO 45001 into data-driven technologies will be of great benefit, being a twofold benefit, organized compliance and active risk prediction. The managers are also advised to use the predictive analytics tools and real ability to monitor tools to supplement the ISO 45001 framework, which would allow them to respond faster to upcoming safety risks. Additionally, the safety leaders must allocate resources to staff training to ensure the creation of data literacy and new culture that attaches importance to evidence-based decisions.

In the case of practitioners, an integrated management approach can maximize accountability, transparency and efficiency of incident reporting and analysis. The utilization of digital dashboards to perform continuous tracking on the performance is the primary task of the safety officers, which should be implemented to ensure alignment of key safety indicators with organizational objectives. Finally, such an international standard, data intelligence integration is a revolutionary way to go in attaining operational resiliency and a long-term decline in injuries on the work place.

## 6. Conclusion

### 6.1. Summary of Key Findings

This research shows that the implementation of ISO 45001 aligned management systems and data-driven strategies has a strong positive impact on workplace safety and decreased DART rates in U.S. distribution centers. The ISO 45001 has organized the system, which fosters proactive safety culture within an organization involving systematically assessing risk, involving the leadership, and the employees. At the same time, the application of data-driven solutions, including predictive analytics, real-time monitoring, and AI-assisted reporting, makes those frameworks more robust to ensure this continuous enhancement on a basis of empirical evidence. Combined, these methods build the safety ecosystem of feedback which predicts and tries to reduce the risks before they turn into the incident. Its findings indicate that the procedural rigor of ISO 45001, driven by data intelligence, can result in quantifiable injury reduction and, additionally, increases operational efficiency, compliance, and employee morale, and therefore show that operational productivity and safety performance can be complementary objectives.

### 6.2. Limitations of the Study

The main limiting factor of the study is that secondary data is used only in the study on ResearchGate which might not provide all the empirical results related to the research particularly the unpublished or proprietary industry data. Also, quantitative analysis is absent in this research, and it would have given quantifiable statistical support to trends observed. There is also a possibility that generalization of results is constrained because the majority of the literature reviewed is industrialized, whereas little small or emerging distribution operations are represented. Lastly, the lack of direct field research eliminates the study in its ability to explain the differences in context of safety culture, organizational behavior and technology adoption.

### 6.3. Future Research Directions

Future studies must also have a combination of methods (qualitative and quantitative) that would offer explanations on causality between implementation of ISO 45001 and reduction of DART. Comparative analysis between industries or regions may determine the differences in effectiveness, and longitudinal analysis may determine long-term effects of digital transformation on occupational safety management systems.

## Compliance with ethical standards

*Disclosure of conflict of interest*

No conflict of interest to be disclosed.

## References

[1] Abdallah Al-Hamad, Wedyan, M., & Attila Gilányi. (2025). Virtual reality safety training and auditing in warehouse environments: AHP and critical thinking approach. Cognition Technology & Work. https://doi.org/10.1007/s10111-025-00807-8

[2] Akano, O., Hanson, E., Nwakile, C., & Esiri, A. (2024). Designing real-time safety monitoring dashboards for industrial operations: A data- driven approach. Global Journal of Research in Science and Technology, 2024(02), 1-009. https://doi.org/10.58175/gjrst.2024.2.2.0070

[3] Al-Hamad, A., Wedyan, M., & Gilányi, A. (2025). Virtual reality safety training and auditing in warehouse environments: AHP and critical thinking approach. Cognition Technology & Work. https://doi.org/10.1007/s10111-025-00807-8

[4] Al-Naser, M. H. M., Almehmeed, S. S., & Al-Subaie, A. M. (2025). Sustainable Warehouse Operations Safety: integrating risk mitigation and environmental performance in modern logistics. Global Journal of Management and Business Research, 1–3. https://doi.org/10.34257/gjmbravol25is5pg1

[5] Alrda, D. Y. A., Khalaf, A., & Sabeeh, B. (2023). Application of the Work Environment Improvement Methodology -Occupational health and safety standards. ResearchGate. https://doi.org/10.13140/RG.2.2.32236.23681

[6] Amel Kosovac, Ermin Muharemović, & Adisa Medić. (2024). Security of central warehouses. 21st International Conference on Transport Science (ICTS 2024). https://www.researchgate.net/publication/385039435_Security_of_central_warehouses

[7] Argyropoulos, C. D., Obasi, I. C., Akinwande, D. V., & Ile, C. M. (2024). The impact of interventions on health, safety and environment in the process industry. Heliyon, 10(1), e23604–e23604. Sciencedirect. https://doi.org/10.1016/j.heliyon.2023.e23604

[8] Górny, A. (2024). Guidelines and Needs for the implementation of the ISO 45001 Requirements for Shaping of Safety in Industry 4.0. In Lecture notes in mechanical engineering (pp. 107–123). https://doi.org/10.1007/978-3-031-56474-1_9

[9] Hasle, P., & Zwetsloot, G. (2011). Editorial: Occupational Health and Safety Management Systems: Issues and challenges. Safety Science, 49(7), 961–963. https://doi.org/10.1016/j.ssci.2011.02.013

[10] Ho, Y., & Lin, J. (2017). Improving order-picking performance by converting a sequential zone-picking line into a zone-picking network. Computers & Industrial Engineering, 113, 241–255. https://doi.org/10.1016/j.cie.2017.09.014

[11] Kabiesz, P., & Tutak, M. (2024). Developing a Culture of Safety for Sustainable Development and Public Health in Manufacturing Companies—A Case Study. Sustainability, 16(17), 7557. https://doi.org/10.3390/su16177557

[12] Karanikas, N., & Pryor, P. (2021). OHS management systems. ResearchGate. https://www.researchgate.net/publication/357240470_OHS_management_systems

[13] Karimi, A., Barkhordari, A., Saranjam, B., & Bababeipouya, A. (2020). The effects of implementing an Occupational health and safety management system on functional indices: A. . . ResearchGate. https://www.researchgate.net/publication/344212045_The_Effects_of_Implementing_an_Occupational_Health_and_Safety_Management_System_on_Functional_Indices_A_Five-year_Study_in_Casting_Industry

[14] Khakpour, A., Colomo-Palacios, R., & Martini, A. (2021). Visual Analytics for Decision Support: A Supply Chain Perspective. IEEE Access, 9, 81326–81344. https://doi.org/10.1109/access.2021.3085496

[15] Manjourides, J., & Dennerlein, J. T. (2019). Testing the associations between leading and lagging indicators in a contractor safety pre-qualification database. American Journal of Industrial Medicine, 62(4), 317–324. https://doi.org/10.1002/ajim.22951

[16] Mexiwel, N. R., Wardana, N. H., & Zulfikar, N. a. J. (2025). A systematic analysis of occupational health and safety implementation in reducing accident risks on drilling rigs through risk control strategies: A review article. TEKNOSAINS Jurnal Sains Teknologi Dan Informatika, 12(2), 315–321. https://doi.org/10.37373/tekno.v12i2.1595

[17] Moskowitz, J. M., & McCranie, J. B. (2025). Investigating the impact of army safety and occupational health management system implementation on safety performance indices: case study of a U.S. Army Corps of Engineers district. International Journal of Construction Management, 1–17. https://doi.org/10.1080/15623599.2025.2537722

[18] Mulroy, J. (2020). AN INVESTIGATION OF OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT SYSTEM'S ATTRIBUTES, INCLUDING MANAGEMENT. . . ResearchGate. https://doi.org/10.13140/RG.2.2.31890.68803

[19] Nenonen, S. (2011). An operational model of safety management for service providers in manufacturing industry. Service Industries Journal, 33(1), 99–114. https://doi.org/10.1080/02642069.2011.600442

[20] Neretin, E., Nguyen, M., & Nguyen, P. (2022). Using Data-Driven Approach in 4D Trajectory Prediction: A comparison of common AI-Based models. In Lecture notes in mechanical engineering (pp. 125–133). https://doi.org/10.1007/978-981-19-3788-0_11

[21] Polewangi, Y. D., & Delvika, Y. (2022). The Analysis of the ISO 45001: 2018 Implementation towards the Performance of Occupational Health and Safety Management System (OHSMS) at ABC Inc. International Journal of Research and Review, 9(11), 336–344. https://doi.org/10.52403/ijrr.20221146

[22] Rashid, H. (2021). A CASE STUDY OF PANDEMIC-DRIVEN INNOVATIONS IN LOGISTICS AND THEIR LONG-TERM APPLICATIONS. ResearchGate. https://doi.org/10.5281/zenodo.14862445

[23] Strøm, E. M., Busch, J. A., Hvam, L., & Haug, A. (2025). Conceptualizing Warehouse 4.0 Technologies in the Third-Party Logistics Industry: An Empirical study. Logistics, 9(3), 125. https://doi.org/10.3390/logistics9030125

[24] Tas, N. B. (2025). Predictive Maintenance in E-Commerce Distribution Systems. Zenodo. https://doi.org/10.5281/zenodo.15549040