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// GET INVOLVED: THE FUTURE OF LOGISTICS IS OPEN SOURCE

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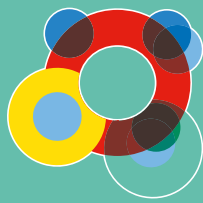
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Welcome



Future-proof digital solutions are no longer created single-handedly. In a world where complexity and speed are increasing, no company can set the necessary standards on its own. Only when knowledge, experience and resources are bundled does digitalisation unfold its full potential. What is decisive is not only the technical excellence of software – what is decisive is acting together, developing together, shaping together.

This is what the OLF-eCMR stands for, the first industry-ready open source software of the Open Logistics Foundation, published in summer 2025.

Developed by companies for companies, the new standard for the digital consignment note (eCMR) is a flagship project that has attracted attention far beyond logistics. The project demonstrates not only what is technologically possible, but above all what emerges when companies are prepared to take a new path of collaborative software development across corporate and national boundaries. The result shows how fruitful collaborative development is: companies listen to one another, they are curious, they learn from each other. Mistakes are not concealed but used as learning moments. Success arises not in spite of differences, but because of them. In doing so, the participants do not act for the short-term benefit of the individual, but for the entire sector. The prerequisite for this is to share knowledge and assume responsibility together.



The work on the eCMR has also proven that the processes in the Open Logistics Foundation are effective. From the generation of ideas, to the specialist work of the Working Groups, through to coding in the projects – the Foundation provides a framework that relieves companies' burdens. It enables them to concentrate on content while covering their back administratively. It creates commitment

without constraining. Clear rules and structures shape the framework; trust builds the foundation. Without trust, there is no community; without community, there is no success. Ideas, projects and solutions emerge through open exchange. Every perspective counts, every voice carries weight. Diversity is not an obstacle, but a driver of innovation. Results are the goal.

For logistics, this form of collaboration was a bold step. That it has succeeded fills us with gratitude – and also with pride: pride in a community that today counts among the most active and inspiring networks of European logistics.

Carina Tüllmann

CCO at the Open Logistics Foundation

Open borders, open solutions

Participation in the European market and integration into its systems are key tasks for logistics companies, both within and outside the EU. **Closer cooperation** between all industry stakeholders is essential to ensure continued economic growth in Europe and maintain its attractiveness to businesses.

■ **Despite the existence of a single market and a customs union, the European logistics sector remains highly fragmented to this day.** National characteristics, different technical systems, and legal requirements hinder the smooth movement of goods. At the same time, it is clear that value creation and supply chains no longer end at national borders – for logistics companies in both EU and non-EU countries. Armin Wagner, Senior Advisor for Sustainable Mobility at the Deutschen Gesellschaft für Internationale Zusammenarbeit (GIZ), a German Society for International Cooperation, is familiar with the difficulties faced by logistics

and transport companies seeking to gain a foothold in the European Union or market. “In practice, this often involves very specific issues, from long waiting times at external EU borders to different customs clearance procedures. However, the bigger task is aligning national systems of non-EU countries so that they are compatible with European structures,” says Wagner. GIZ is currently supporting governments in EU candidate countries, on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ), in preparing for the European market and creating a common knowledge base.



Out of the digital sidelines: how open source supports digital sovereignty

Europe stands at a crossroads. The **continent's digital sovereignty** is no longer a theoretical debate but a geopolitical necessity. Now is the **time for decisive action** – a plea for 100% open source by Sebastian Raible (APELL) and Lothar Becker (OSBA).

Dependencies on individual providers or non-European technologies have made us in Europe clearly aware in recent years of how vulnerable we have become. Supply chains, energy supply, IT security – everywhere it becomes apparent: the ability for self-determination and to shape our own digital infrastructure determines economic strength and political capacity to act. Especially now, in a time of geopolitical tensions and growing digital dependencies, this ability is more important than ever. At the same time, it must be noted: compared with the rest of the world, we are lagging behind when it comes to digital technologies. Only if Europe now consistently relies on open technologies can we accelerate innovation, build trust, and overcome digital fragmentation. As long as individual manufacturers control proprietary interfaces, Europe will remain on the digital sidelines.

Open source software guarantees transparency, reduces dependencies, strengthens European value creation, and ensures that taxpayers' money is invested sustainably. Every euro that flows into open source software can remain effective in Europe – because it does not flow into licence fees, but can be invested locally in further development, support and innovation. International and national open source associations have therefore been in continuous dialogue with European institutions, national governments, and companies for years. By now, terms such as “independence from manufacturers” or “digital resilience” hardly need explaining anymore

– rather, they are part of the political debate and of digital culture. Also, within the framework of legislative procedures for regulating digitalisation at the EU level, much has been achieved for the open source community. A key lever for accelerating the introduction of open source software and hardware lies in public administration or procurement. Open standards and technologies must be made mandatory there. Therefore, a core demand of both APELL, the European Open Source Business Association, and of the German Open Source Business Alliance (OSBA) is that the public sector should rely 100% on open source by 2035. The administration can take on a pioneering role here and build a European open source ecosystem.

OSPOs as gamechangers

When it comes to Europe's technological sovereignty, however, European industry also bears responsibility. Companies can translate open source into concrete solutions, integrate open standards into products, and accelerate innovation. But why has the industry been slower than the public sector so far? Much of it is due to a certain “resistance to change”. Managers still ask two initial questions when it comes to open source: Who bears liability? And: How can business secrets be protected? Above all, in medium-sized companies, there is a great fear of giving away know-how. A decisive instrument for the structural spread of open source (not only in companies) are Open Source Programme Offices (OSPOs). They find answers to these questions, pool knowl-



edge, coordinate the use of software as well as hardware, and ensure that not only consumption takes place, but also giving back. With OSPOs, however, openness becomes a strategic element – and that changes everything. Openness does not mean that companies have to disclose their business model – on the contrary: it opens up new possibilities, from cost-sharing to innovation partnerships, right through to additional sales arguments.

Lighthouse logistics

A lighthouse for a fundamental change towards more open source is logistics, with the Open Logistics Foundation as a trailblazer. Here, companies that otherwise compete with one another work together on a joint open infrastructure. Competition no longer occurs at the level of basic functionalities, but rather at the level of services built upon them. This model builds trust – and demonstrates how cooperation across process chains can succeed. This is exactly how Europe must think of its digital infrastructure: not in silos, but in open platforms that benefit everyone.

Digital fragmentation in Europe is not a law of nature. Open standards, open source, clear political direction and the active involvement of industry can secure for Europe the digital sovereignty that we so urgently need. Every day of hesitation increases dependence on non-European technologies. Every step towards openness, on the other hand, strengthens Europe – economically, technologically and socially. It is time for decisive action.

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APELL and OSBA are Network Partners of the Open Logistics Foundation.

LOGISTICS COMPANIES IN EUROPE ARE COMMITTED TO STANDARDS THAT INTEGRATE OPEN SOURCE PRINCIPLES.

Digitalisation plays a key role. Regulatory requirements must be met through appropriate technical solutions: “The EU has set itself the goal of simplifying and digitalising logistics in Europe, for example through the eFTI Regulation on Europe-wide paperless freight document exchange in goods transport, which is currently being implemented,” says Armin Wagner. However, countries such as Ukraine, which are digitally savvy, have already made considerable efforts to digitalise their logistics in recent years. In doing so, they have relied on open solutions that are spreading rapidly. Against this backdrop, collaborative work on logistics at the EU and European levels is the right way forward. “The many small logistics companies with limited financial and technical resources can particularly benefit from open and interoperable solutions, as they allow them to integrate into the market more quickly.”

Entering new markets

The member companies of the Open Logistics Foundation from countries such as Slovenia and Romania, which joined the EU in 2004 and 2007, respectively, are also convinced that integration into European logistics systems can only be successful with open solutions. The involvement of Eastern European companies in the Foundation's Working Groups and projects is an expression of their specific interest in European integration through technology. “The early introduction of open source technologies and interoperability give us an opportunity to facilitate entry into new markets,” says Matjaž Auflič, Head of Development at TRINET Informatika, d.o.o., based in Ljubljana, Slovenia, who sees the company's membership in the Foundation as a stepping stone to strengthen its position in Europe. TRINET is one of the leading providers of software solutions for automated customs

procedures and logistics on the Slovenian and Croatian markets. At the same time, according to Auflič, membership also helps the company to better keep pace with the changing regulatory environment in Europe.

Another important point, particularly for companies in Eastern Europe, is visibility within the pan-European logistics community. “Membership of the Open Logistics Foundation allows us to connect with leading European logistics and supply chain companies, develop strategic partnerships, and promote collaborative innovation,” says Razvan Perțicaș, Chief Executive Officer of CargoTrack. The Romanian company provides transport companies with digital solutions for GPS fleet monitoring, real-time vehicle tracking, and toll payment automation. “By working with the logistics community, we gain access to extensive knowledge bases, research results and technical standards. We can contribute to industry standards and regulations, promoting our operational efficiency in the EU. Ultimately, this strengthens our ability to provide efficient, scalable and integrated logistics solutions.” Membership in the Foundation also enhances brand reputation and market position in Europe.

Diversity of perspectives

The implementation of the eFTI Regulation is currently of particular interest to European companies. Through eFTI (Electronic Freight

Transport Information), the European Union is establishing a Europe-wide framework to digitalise control and authorisation processes for freight transport by road, rail, water, and air. The regulation came into force in August 2020 and will take full effect from 2027. Initially, authorities will be required to accept electronic transport documents. However, companies will also be required to use the eFTI-compliant format when transmitting documents electronically.

“The key thing now is to work towards a uniform, open solution that everyone can use,” says Jens Leveling, Technology Advisor at the Open Logistics Foundation. “To achieve this, we need a variety of perspectives from logistics companies across Europe and beyond. This is the only way to develop solutions that work technically and meet the specific requirements of different markets. On the other hand, this diversity means that the resulting standards and systems are more likely to be interoperable.”

Armin Wagner from GIZ also believes that the Open Logistics Foundation's work and engagement are of great interest to companies in both the EU and candidate countries. He says, “It is crucial for every company to understand how the European market works and to anticipate future developments at an early stage. Taking an active role in such initiatives is always worthwhile if you want to establish and grow your business in Europe in the long term.” </>

The development of uniform standards is also crucial for digital interfaces.



// iStock

Sharing means **winning**

Crucial for the **success of software** for commodities is that it takes into account the requirements of multiple stakeholders.

■ **Not every piece of software that is first to market also ends up shaping the industry** – especially when it comes to commodities, i.e. standardised goods or services used by many stakeholders. In logistics in particular, it is of vital importance how open and usable a solution is for many stakeholders. This is evident in the “Emissions Data Exchange” project of the Open Logistics Foundation. Companies from across Europe are working there on the implementation of the iLEAP standard developed by Smart Freight Centre and SINE Foundation. This standard is intended to facilitate the digital and automated exchange of emissions data in logistics. The Finnish start-up Way Data Technologies is also involved in the project. The company supports logistics service providers and transport companies in better recording and optimising the emissions of mixed fleets – i.e. a combination of electric, hybrid, and conventional fuel vehicles. Against this background, Way already developed its own implementation of the iLEAP standard in the Go programming language and published it as open source. The reference implementation of the SINE Foundation served as a starting point. At the same time, Way became a member of the Open Logistics Foundation – and is now actively involved in the Foundation’s “Emissions Data Exchange” project.

For the start-up, this is simply a logical decision: “We have over a decade of combined experience with software for emissions calculation and reporting,” says Oscar Söderlund, Engineering at Way. “That’s why we immediately recognised the value of the iLEAP standard. However, many aspects of such software have so far not been standardised, meaning that we often have to make assumptions in our implementation. That’s why we want to exchange ideas with other companies in the Open Logistics Foundation. Because

we don’t believe it makes sense for everyone to keep rebuilding the same functionality in slightly different and non-interoperable ways.”

Learning faster together

Nathalie Böhning, Innovation and Project Manager at the Open Logistics Foundation, sees it the same way: “When companies like Way or the Norwegian software developer Kinver, which has also already tested the iLEAP standard, come to us with their solutions, it’s a gain. Because they bring their practical knowledge, new perspectives, and European diversity to the work. The experiences of early adopters are especially valuable for those who are just getting started. They can build directly on existing knowledge, share experiences, learn from each other – and ultimately avoid unnecessary mistakes.”

What Way particularly values in its participation in the project is the feedback from industry stakeholders with their specific needs and requirements: “As a technology platform, we are constantly looking for the best ways to help our customers adapt to the changing requirements of their business environment,” says Juho Hyytiäinen, co-founder and CEO of Way. “Through our involvement in the Open Logistics Foundation, we now better understand how the standard and our own implementation can and must evolve to achieve even greater impact.” </>

**HAVING YOUR OWN
TECHNICAL SOLUTION
AND CONTRIBUTING TO A
STANDARD – THESE ARE NOT
MUTUALLY EXCLUSIVE.**

Juho Hyytiäinen, Way Data Technologies



From data to action

With the OLF-eCMR, the Open Logistics Foundation has published the first **building block for 100% digital logistics**. It is now up to companies to make use of the potential of the software – to increase the efficiency of their processes for new business models and applications.





THE OPEN LOGISTICS FOUNDATION'S ECMR SOFTWARE IS AN OPEN SOURCE DEVELOPMENT BY COMPANIES, FOR COMPANIES.

More quality

The electronic consignment note (eCMR) is a central building block of Rhenus' digital strategy. With the successful integration of the solution, together with the members of the Open Logistics Foundation, we have achieved a



milestone in digital transformation. The digitalisation of the previously paper-based CMR document is becoming an important data source and a driver of efficient processes along the entire transport chain. In the pilot projects, it has already become apparent that from scheduling to accounting, manual effort decreases significantly, throughput times are reduced, and data such as loading and recipient data, as well as digital signatures, automatically flow into the TMS system. High shipment volumes are processed more efficiently, invoices can be created directly, manual tasks are eliminated, and cash flow as well as liquidity improve. Quickly available data also increases efficiency, enabling evaluations, analyses and data-driven decisions. Delivery times, waiting times and routes can be specifically optimised. For Rhenus, the eCMR is particularly relevant in direct load traffic, but also has potential in the groupage network "Rhenus Groupage Network". In the long term, the eCMR is to be rolled out to the entire road freight business in order to use the improved data quality for analyses and decisions.

Boris Jeggle, Managing Director, Rhenus 4PL Solutions GmbH

Transparent supply chain

For Dachser, its commitment to the electronic consignment note (eCMR) is fundamentally about driving forward the digitalisation of the logistics industry. At the centre of this is the barrier-free collaboration of all actors along the supply chain – from the sender via the transport service provider through to the recipient. The OLF-eCMR now enables not only the integration of large companies into the system, but also that of small and medium-sized enterprises (SMEs) on an equal footing. In tests of the software with our partner Markant, it has become clear that the digital consignment note brings considerable relief for all parties in the transport chain – from drivers to planners through to the recipients of the goods. The successful pilot applications also confirm to us that with the open source approach, we can digitalise many more commodities, i.e. transport documents and information. In this way, the OLF-eCMR paves the way for a more networked, more efficient and more transparent supply chain, from which all parties will benefit in the long term.



Ingo Müller, Department Head Prototyping & Testing – Corporate Research & Development, DACHSER SE

THE NEW OLF-ECMR IS LEGALLY COMPLIANT, INTEROPERABLE, AND SUITABLE FOR COMPANIES OF EVERY SIZE AND INDUSTRY.

Finally interoperable

Our goal at Markant is to fully digitalise all documents relevant to delivery in logistics and to provide them as structured, machine-readable data. With our cloud-based Digital Transaction File (DVA), we already enable suppliers, freight forwarders and retailers to use a central platform for end-to-end digitalisation, automation and real-time communication. The DVA is characterised by a high degree of innovation with a particular impact on process optimisation between industry and trade, and for this it won the retail award of the EHI Retail Institute e. V. in

2022 in the category "Best Enterprise Solution". Processes such as delivery, complaint and status reporting are thereby handled efficiently, transparently and standardised at the position level. The DVA uses established standards such as the electronic standard format EDI, which replaces

paper-based documents such as orders or invoices. With the OLF-eCMR, we have now been able to integrate a new standard, which once again ensures interoperability across company boundaries, creates process security, reduces effort and supports sustainable, future-proof supply chains throughout the entire industry. In this way, we can now offer our customers an improved product that creates even more tangible benefits.

Reiner Sailer, Lead Service Owner Supply Chain Services, Markant Services International GmbH



Real innovations

Open source components are often the starting point for real innovation because they are modular, flexible and open for integration. The OLF-eCMR is an example of this. Currently, the digital consignment note primarily serves as digital documentation. However, its potential is much greater and includes, for example, many more possibilities for automated and intelligent processes.

As an IT company that co-developed the eCMR, we want to maximise the potential of digital consignment notes for our customers in logistics.

We are working in two directions. Our developers are currently working on an application for drivers who only need to take a photo of a paper-based CMR. The data is automatically read out with the help of generative artificial intelligence and loaded into the eCMR system. This process, previously manual, is thus mapped more efficiently in digital form and also simplifies traceability. But the eCMR can also automatically trigger entire processes and value chains. Imagine the following: After the goods have been delivered and the eCMR updated, an AI agent automatically informs the ERP system, customer service and the accounting department so that the invoice for the delivery can be created. The OLF-eCMR shows how open standards enable real innovations – not through isolation, but through cooperation. When processes are intelligently networked and automated, companies gain major competitive advantages based on open source components.

Ulrich Buhrmann, Director Market Transport & Logistics, iteratec



New stages

For EDITEL, it has been a central concern from the very beginning to place security and reliability at the forefront in the standardisation of digital transport documents. Only if authenticity, integrity and traceability of a document are guaranteed can the necessary trust be created so that companies, as well as authorities, fully accept digital processes in cross-border transport. For us, standards are not a marginal condition, but the basis for a functioning, digital supply chain.

Equally important in our view is interoperability: digital standards only deliver their full benefits when they are consistently adhered to and actively applied. This allows all parties to collaborate seamlessly within their existing systems, eliminating media discontinuity, costly interface projects, and the limitations of closed networks. This is exactly where we see our strength: together with the Open Logistics Foundation, EDITEL ensures that compliance and efficiency go hand in hand and that every partner can digitalise their processes without losing flexibility.

Looking ahead, we already see new stages on the path to seamless digitalisation.

Customising options, such as flexible PDF layouts or the targeted adaptation of content and process steps, open companies up to the possibility of embedding digital transport documents precisely into their established workflows. In

the long term, we envision the next logical step in integrating further documents

that extend the transformation beyond transport to the entire supply chain. In this way, we create the basis for fully seamless, legally compliant and interoperable documentation – for the entire order-to-cash process.

Thomas Höfler, Product Manager, EDITEL Group



What specific advantages the OLF-eCMR offers and how companies can integrate the software into their IT systems – more on the website “Explore the OLF eCMR”.



/* Scan for further information */

More than transport

Since the publication of the industry-ready OLF-eCMR, the introduction of the digital consignment note has been gaining momentum rapidly

and is developing into a European movement. In addition to the OLF members Rhenus and Dachser,

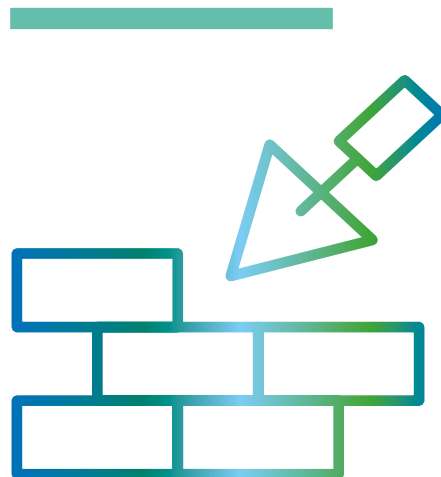
which are among the most important and highest-revenue logistics service providers in Europe, small and

medium-sized transport companies, which represent the largest share of the industry in terms of numbers, are also joining in rapid succession and at high speed. This accelerates the spread of the digital consignment note far beyond established supply chains. In the consultations that the Open Logistics Foundation regularly offers on the OLF-eCMR, it is no longer a question of “if”, but “how”. The development partners of the OLF-eCMR, for example, are then available for the concrete technical implementation in companies. The electronic seal is a frequent topic whose importance for digitalisation, not only in logistics, is often still underestimated. The seal implementation can also be used far beyond eCMR – wherever companies sign digitally.

Jens Leveling, Lead Software Architect, Fraunhofer IML; Technology Advisor, Open Logistics Foundation



Those who contribute, help build: **An invitation to SMEs**



The use of open source software has reached **small and medium-sized enterprises (SMEs)** – but true digital sovereignty first comes through active involvement. For SMEs, active contribution to open source projects is a lever to **achieve sustainable benefits** with manageable resources, strengthen their digital independence, and drive innovation.



Cost savings, expanded innovation potential, and increased flexibility: worldwide, more and more companies are recognising and making use of the benefits of open source software.

Because: open, standardised, and source-accessible software helps to avoid expensive in-house developments and proprietary solutions, reduce IT costs, and give digitalisation the often decisive push. Perceptions of open source have also changed in the SME sector in recent years: "Open source software is no longer seen as a stopgap for tight budgets, but increasingly understood as a strategic option with real added value," observes Prof. Dr. Dirk Riehle, Professor of Open Source Software at the Friedrich-Alexander University Erlangen-Nürnberg. Especially in logistics – an industry driven by highly standardised, interconnected processes – open source offers more than just a cost advantage: it is a catalyst for interoperability, innovation, and resilience. Yet, in many places, siloed solutions, outdated IT systems, and a lack of interface standards continue to hinder efficiency – including in logistics.

Community as a success factor

While large corporations have been strategically investing in software infrastructures and both using and developing open source software for many years, small and medium-sized enterprises often still struggle with the latter: resources are limited, external dependencies are high, and internal IT capacity is rarely scalable. Yet SMEs benefit from contributing to open source projects in a very particular way, because their investments have greater impact. Even small contributions can have a major effect – helping to differentiate their own products or services and strengthening independence, innovative capacity, and visibility. "The Open Logistics Foundation has recognised these leverage effects and offers SMEs exactly what has often been lacking until

now: a community that invites companies not only to use software, but to help shape it," says open source professor Dirk Riehle. The principle is: those who contribute, help build – for themselves and for others. This is how a digital ecosystem emerges in which everyone grows, not just the few.

Close to the processes

SMEs are a key factor in this success. Because SMEs operate close to the processes – and know exactly where digitalisation efforts fall short. This applies not only to logistics companies but also to IT firms working in logistics. In the projects of the Open Logistics Foundation, they benefit from sitting at the forefront of development and being able to provide their customers with targeted support in the implementation of new open source solutions. And it is precisely SMEs that can bring their specific requirements directly into the projects through active contributions – instead of having to adapt to solutions primarily made for large companies. This results in software that truly meets their needs. "Being part of an open source project community does not give a company an advantage over competitors who are also active in the community. However, it does give them a competitive advantage over everyone who is not part of that community," says Prof. Dr. Dirk Riehle. "I call this the country or cluster-level competitive advantage that foundations like the Open Logistics Foundation offer their members."

Sustainable change

Whether it's data models, interfaces, or the digital mapping of logistics processes: the challenges currently facing small and medium-sized enterprises are similar. Martin Schulze, CEO of IT consultancy BusinessCode, a member of the Open Logistics Foundation, consistently observes: "As a solution provider specialising in unlocking

Every perspective is important: in the Open Logistics Foundation, companies develop solutions jointly.

// Open Logistics Foundation

the value of data in the logistics industry, we have observed that many logistics service providers operate on proprietary data models, creating extra effort for both providers and their customers.”

SMEs, in particular, often don't have the same opportunities to work on innovations as larger companies. This could ultimately limit, or even threaten, their competitiveness, says logistics technology strategist André Kaeber, who advises SMEs on digitalisation projects through his company, also OLF member ANDKAEBER: “That's why I especially recommend cooperative approaches for SMEs, like those offered by the Open Logistics Foundation, to work on innovations together with a network of experts.”

Ulrich Buhrmann, Director Market Transport & Logistics at IT company iteratec, with 500 employees across seven locations, also sees a major opportunity for SMEs in collaboration within a network: “Everyone who wants to elevate industry standards is invited to join – to bring in real challenges and co-create practical, scalable solutions. We all face similar hurdles. Together, we can create a lasting impact that benefits the entire industry.”

MANY COMPANIES ARE ALREADY USERS OF OPEN SOURCE SOFTWARE – BUT THAT'S NOT ENOUGH.

Prof. Dr. Dirk Riehle



Collaboration works

Within the Open Logistics Foundation, SMEs also have the opportunity to engage with young, innovative companies. Especially when it comes to knowledge transfer, promoting innovation, and forming strategic partnerships, the exchange with start-ups offers great added value for SMEs. And the reverse is also true. As Gabriel Beslic, Chief Product Officer at start-up Gryn – one of the newest members of the OLF – emphasises: “The Open Logistics Foundation is a rare space where collaboration really works. What's especially valuable is being able to work directly with much larger companies. That kind of exchange makes a real difference.” Gryn is a SaaS platform that helps companies to capture, report, and reduce transport-related carbon emissions. Its customers include leading global companies that are supported by Gryn in complying with sustainability standards.

Against this backdrop, Gryn is involved in the “Emissions Data Exchange” project of the Open Logistics Foundation, which is working on the implementation and adoption of the iLEAP standard for logistics emissions. “In projects like this, we get to bring in our hands-on perspective and help shape solutions that actually fit the industry's needs,” says Beslic. Martin Schulze from BusinessCode also appreciates the cooperative collaboration in the network: “As an active member of the Open Logistics Foundation, I see firsthand how the collaborative work within the Foundation ensures SME's voices are truly heard and valued.” `</>`

More flexibility in time slot management

The companies of the Open Logistics Foundation are developing a standardised solution for flexible time slots through the new “Time Slot Management” project, which is available to all market participants free of charge.

So far, the logistics industry has lacked consistent, manufacturer-independent standards for managing time slots. Many companies – both suppliers and recipients – use proprietary, isolated solutions that are neither flexible nor capable of communicating with each other. This is precisely where the Open Logistics Foundation steps in: The latest project from the Track & Trace Working Group, “Time Slot Management”, aims to create an open, interoperable framework that will digitalise, simplify and synchronise processes surrounding transshipment points. “At present, logistics service providers often have to work with several different time slot systems in parallel,” explains Gerry Daalhuisen, Senior Director of Dock & Yard/Fleet Products at Transporeon, one of the project's two leaders. “With this project, we want to resolve this fragmentation and create a system that functions flexibly and interoperably.” Interest is high, with more than 20 Open Logistics Foundation member companies already participating in the project.



// istock

Digital solutions can control the arrival and processing of lorries in real time.

Where to meet us

We offer a regular **Open Consultation Hour**, a one-hour online meeting where we introduce the Open Logistics Foundation and provide an overview of current projects. We also organise **OS Meetups** with companies and organisations across Europe to discuss current logistics and supply chain management challenges that can be solved through cross-company collaboration. You will also regularly find us and our Network Partners at **industry trade fairs and conferences**. We look forward to meeting you and informing you about our activities.



/* Scan for current dates */

Use cases for iLEAP started

As part of the “Emissions Data Exchange” project, which aims to implement the iLEAP standard, the current focus is on use cases for calculating logistics and transport emissions. Three exemplary use cases demonstrate how logistics service providers and platform operators are integrating the standard into their operational processes. While LKW Walter is implementing the current version with Kinver and Transporeon, Dachser is collaborating with GRYN. Additionally, Way Data Technologies is testing the implementation with one of its customers. These reference implementations will then be published in the Open Logistics Foundation Repository and made available for other companies.

“Open Source shows the way internally”

In the open source world, it is self-evident that many people contribute to a project, code is openly documented, and discussions are conducted transparently. **Companies can also use these principles internally**, explains Clare Dillon, an expert on open source and InnerSource issues, in an interview.

The world is in a state of constant and profound change. Companies now need to take new paths to overcome the challenges of the future. What role can open source play in this?

The developments of recent years clearly show: stability is no longer a constant – adaptability is becoming the decisive factor for success. In today’s VUCA world – an acronym standing for volatility, uncertainty, complexity and ambiguity – companies need new planning and management approaches. The past is no longer a reliable benchmark. We must find new ways of doing things. Technology can support us in this. The following applies: collaboration beats isolation. No one can do it alone anymore. Open source principles and practices offer a solution here, because they are based on openness, collaboration, and shared learning – concepts that

are crucial in the VUCA world to remain flexible and innovative.

The term InnerSource emerged in the early 2000s. What does it mean?

InnerSource is the use of open source principles and practices to create proprietary code within a company. The term was coined by open source advocate Tim O’Reilly. However, at that time, corporate organisations were still highly sceptical of open source, as it was not yet considered a professional development approach. Over the years, it has become apparent that open source software is the bedrock of modern software stacks and that well-managed open source practices are incredibly effective for enabling large-scale distributed development projects. As a result, more and



THE OPEN SOURCE COMMUNITY PROVIDES IMPORTANT MOMENTUM FOR SOFTWARE DEVELOPMENT IN COMPANIES.

more organisations are exploring how they can leverage best practices from the open source community to also deliver better code internally.

So how did InnerSource develop?

A crucial turning point for InnerSource came around 2015. In that year, Danese Cooper was brought on board by the online payment service PayPal to prepare the company for the open source world. Ms Cooper is a pioneer of the open source movement and has played a key role at the US computer and software manufacturer Sun Microsystems in making proprietary software such as Java and Open Office available as open source. At PayPal, she found that the corporate culture there was not geared towards open collaboration and decided to employ the concept of InnerSource as a way to get all the PayPal development staff familiar with open source practices. She simultaneously founded InnerSource Commons as an open community for InnerSource practitioners. Since 2015, over 4000 individuals and 800 organisations have participated in the InnerSource Com-

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is Vice President of InnerSource Commons, an international non-profit organisation that supports open collaboration in corporate software development, as well as Community Lead with CURIOS, a network for employees in Open Source Program Offices (OSPOs) at universities and research institutions. She is also a member of the OSPO at Lero, a Science Foundation Ireland-funded software research centre, and conducts research on InnerSource topics at the University of Galway. As a member of the leadership team at Microsoft Ireland, she led the "Developer Experience and Evangelism" division for over eight years; prior to that, she spent over five years at Microsoft as a Developer Program Manager.



Clare Dillon, as a guest at the Open Logistics Foundation's Open Source Innovation Days in Berlin: after her keynote, the open source and InnerSource expert also took part in discussions with interested participants.

mons community to share learnings about how to employ open source practices within their organisation.

Why do organisations practice InnerSource?

Early InnerSource Commons members were often open source advocates and used InnerSource as a way to build open source capacity within their organisations. However, in more recent years, InnerSource has grown in popularity simply as a way to encourage internal code reuse and efficiency and a better developer experience. You can think of InnerSource as bringing the benefits of working in the open source way to an even wider set of developers.

So InnerSource is not mandatory for companies that want to operate open source, but rather a bonus?

Yes, of course, many organisations successfully engage with open source without first investing in InnerSource. Communities like the Open Logistics Foundation actively support companies in developing open source software – technically, legally,

and organisationally. However, where an organisation wishes to increase open source engagement within their organisation and is faced with cultural blockers, InnerSource can help developers practice open source methods on internal code before engaging with open source communities directly. I would describe InnerSource more as a strategically smart addition to fully exploit the benefits of open collaboration internally – or as a logical step to systematically embed open source practices within the company.

One of the biggest structural challenges for companies is still silo thinking ...

... and overcoming organisational silos is in fact one of the main reasons for introducing InnerSource today. In many companies, development departments work in isolation – even when they are developing similar or even identical technologies in parallel. In large corporations, it is often the case that several dozen different versions of the same software arise side by side – each developed, funded, and maintained in a separate department. Successful InnerSource

initiatives, therefore, start with small pilot projects between a core team and a few contributor teams. Objectives and processes are coordinated – similar to an open source project in the Open Logistics Foundation.

Can open source principles and practices really be implemented so easily within the complexity of a company?

There are certainly challenges at many levels: in management, among executives, and among employees. Some employees view it as a hurdle to engage with others, to understand or use a project, rather than seeing it as an opportunity for collaboration and learning. Some managers, in turn, feel attacked when it is suggested to use existing software. They interpret it as a criticism of their team's competence – in what is sometimes referred to as “not invented here” syndrome. In some companies, the existing

cost-centre logic even leads to efficiency not being rewarded at all.

What is needed to improve the situation or even change structures?

You have to create transparency – through clear agreements and an open culture. Reliable expectations and consistent practices prevent frustration on all sides. Using existing software within the company should be rewarded, not punished. Reuse is not a loss of competence, but a sign of maturity, efficiency, and strategic thinking. External training and internal events can help to anchor this perspective. Project marketing is also very important: the benefits of a project must be actively demonstrated through internal presentations or by sharing success stories. It also helps to build a small community around the project, i.e. to create spaces and opportunities for participants to exchange ideas. </>

Open Source vs. InnerSource

Open source stands for open, collaborative software development across organisational boundaries; InnerSource stands for the application of open source principles and practices to create proprietary code. The info box shows how the two approaches differ, what connects them, and what kind of cultural change they can initiate.

	Open Source	InnerSource
Who?	Teams in a community	Teams within the company
How?	External cross-team collaboration	Internal cross-team collaboration
What?	Publicly accessible for everyone on the internet	Open and accessible within the company, or a subset of teams within the company
Why?	Shared development, promotion of standardisation and interoperability, new perspectives	Breaking down silos, reuse, knowledge sharing, efficiency, learning culture, open source readiness
What changes?	Visible externally, has internal impact – strengthens external image, employer brand, and trust	Has internal impact, radiates outward – promotes openness, responsibility, and collaboration

Our Working Groups and Projects

CURRENT WORKING GROUPS



The air cargo industry is under increasing pressure to accelerate processes and provide real-time information. The Working Group **DIGITAL AIR CARGO** aims to make air cargo processes more efficient, transparent, and future-proof.



Shipping documents are often inconsistent, fragmented, and difficult to automate. The Working Group **ELECTRONIC TRANSPORT DOCUMENTS** is developing open solutions for standardised and digitalised handling across company and system boundaries.



The path to climate-neutral logistics requires standardised data and digital tools for measuring and reducing emissions. The Working Group **ENABLING LOGISTICS DECARBONISATION** is creating open foundations for all stakeholders in the supply chain.



Trust in digital customs data is essential for automated border processes. As a basis for next-generation digital customs processes, the Working Group **OPEN CUSTOMS BLOCKCHAIN** relies on blockchain technology.



Lack of transparency hinders planning certainty, sustainability, and compliance. The Working Group **TRACK & TRACE** is standardising track and trace processes on an open source basis, creating a common digital language for shipment tracking.

CURRENT PROJECTS



The blockchain-based application **BORDER**, from the project of the same name, enables the digital handling of customs-relevant processes.



The software for the digital consignment note from the **ECMR** project is key to seamless digital logistics processes.



The **EMISSIONS DATA EXCHANGE** project uses the iLEAP data standard as an example to provide an interoperable data model for emissions measurement across the entire supply chain.



The **GOODS PASSPORT ID (GPID)** project is designed for the rapid identification of critical goods and is specifically tailored to the needs of authorities.



In the **NE:ONE** project, an open source solution is being developed to implement the IATA ONE Record standard for continuous, connected, and open air cargo processes.



The **TIME SLOT MANAGEMENT** project aims to create a common understanding of a basic model for slot management.



In the **TRACKING EVENT MODEL** project, the focus is on uniform terms for track and trace processes, which serve as the basis for a fundamental architecture.



To the website
openlogisticsfoundation.org



To the repository
git.openlogisticsfoundation.org/explore/projects/starred