



open logistics  
foundation

# The Future of Logistics is Open Source

## April 2024

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Open Logistics Foundation

Malcolm McLean, inventor of the standard container,  
at railing, Port Elizabeth, mid-1960s by Maersk Line  
([CC BY-SA 2.0](#))



# Understanding why open source

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"If Malcolm McLean were alive today, he would have developed open source software and components".

## What is open source?

A community-based approach to creating any intellectual property (such as software) via open collaboration, inclusiveness, transparency, and regular public updates. Well-known examples are **Linux and Firefox**.

# Why Open Source for the logistics industry?

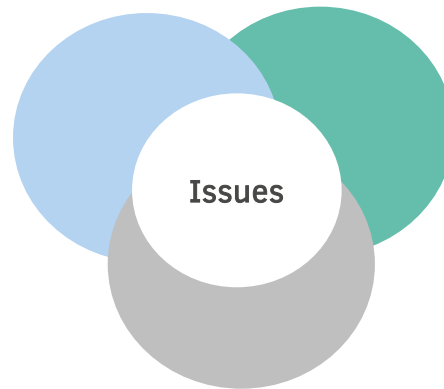
# Logistical pain points can be solved with open source solutions

## Digital platforms

New technologies and disruptive business models put logistics companies under higher strain.

## Lack of influence

Lack of resources and motivation keep organisations from implementing the required elements and standards.



## Incompatibility

Logistics connects different industries, each with individual system structures that change over time.

If these were solved, what impact would it have on your organisation?





# Why couldn't they be solved until today?

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## Lack of cooperation

The lack of collaboration hinders effective innovation: Major advances in social issues such as sustainability and emission reduction can only be achieved through **collaboration**.



## High costs

Individual IT system continuous adaptation is expensive, e.g. integrating new clients or subcontractors.



## Lack of neutrality

Existing solutions in the market often lack neutrality. Centralised or monopolistic platforms are not trusted.



# The digital transformation will not succeed without the use of open source

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## Commodities

What can you NOT earn money within logistics?

// Functionalities that are already not competitively differentiating and are „general standard“ (necessary and valuable, but not very lucrative).

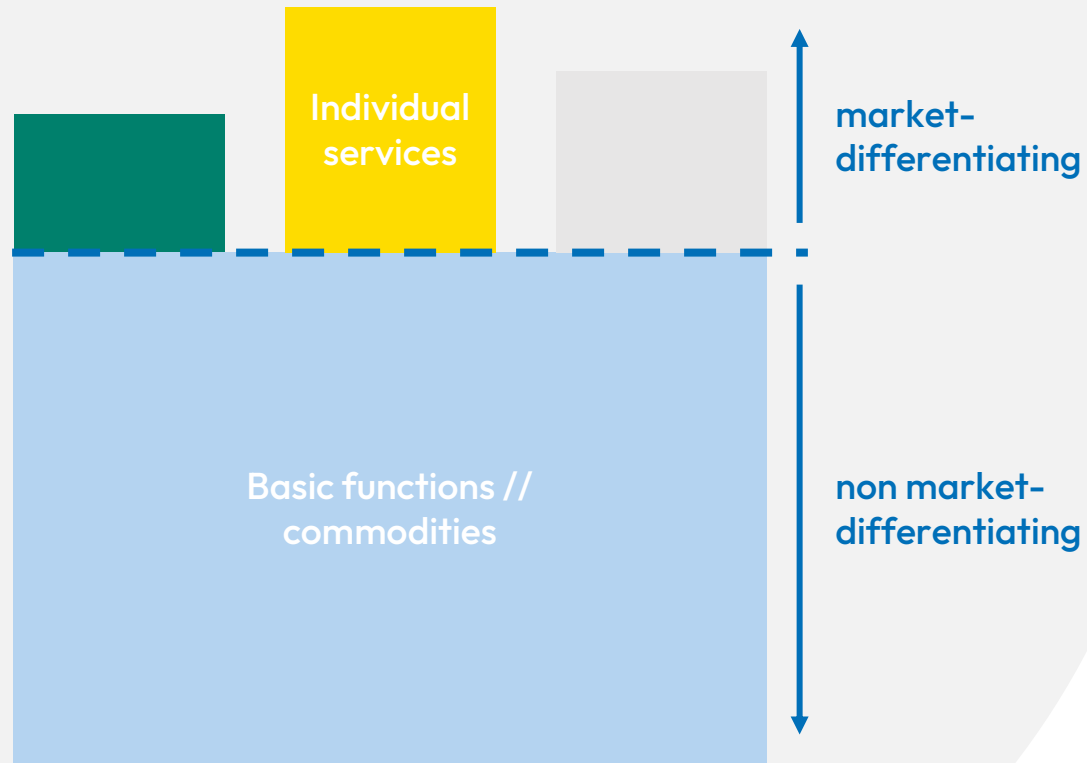
Make standardised basic functionalities usable via open source developments.

## Innovations

Which developments are putting pressure on the logistics industry?

// Functionalities that will become established in the industry in a short time (novel and disruptive).

Share development risks and development costs via open innovation.



## Many developments serve basic or commodity services

- Many developments and innovations currently serve basic functions and commodity services that provide no option to monetise.
- Commodities are non-market-differentiating services or basic features that companies offer to their clients.

Development of commodities collaboratively. Focus on market-differentiating services individually.



# Let's share resources to develop commodities

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A common ground and a stable basis can better be established together, when it comes to developing and implementing cutting-edge technologies:

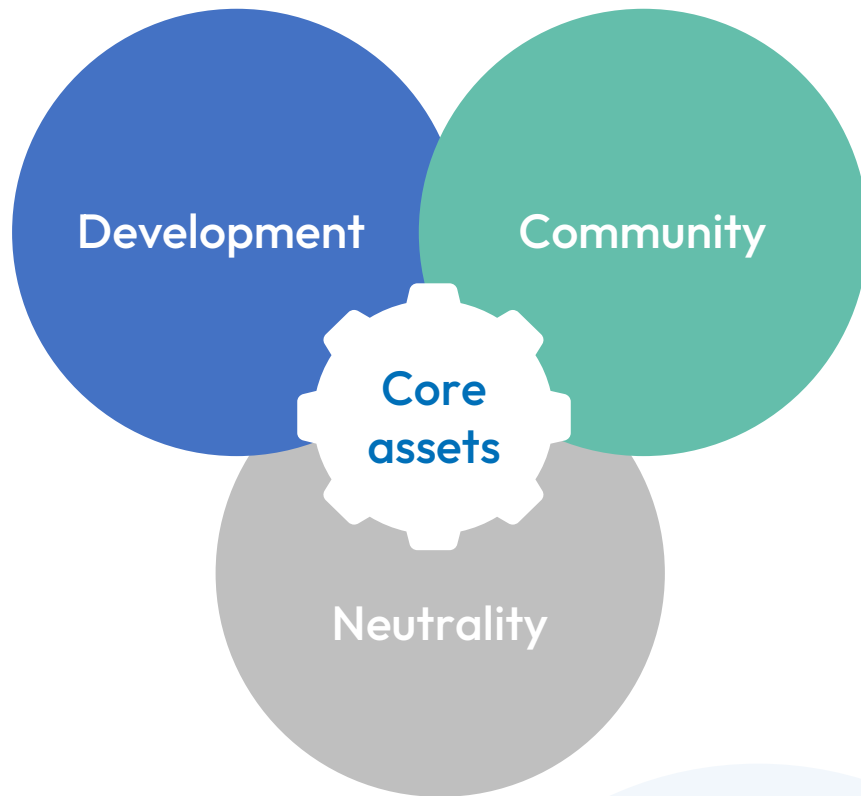
- The logistics industry needs to implement and react quickly to technological innovations.
- Topics such as Internet of Things and Artificial Intelligence are best tackled through open source collaboration: Eliminates the effort of integrating frameworks and toolchains individually within every company again.
- Example: The MLCVZoo (Machine Learning Computer Vision Zoo) provides a toolbox for an ecosystem of algorithms that can be put together in a pipeline, regardless of the framework that is used for their implementation.

Joint innovations upon which companies can build individual functions.



# The Open Logistics Foundation as a solution

# Open source development is the Foundation's core



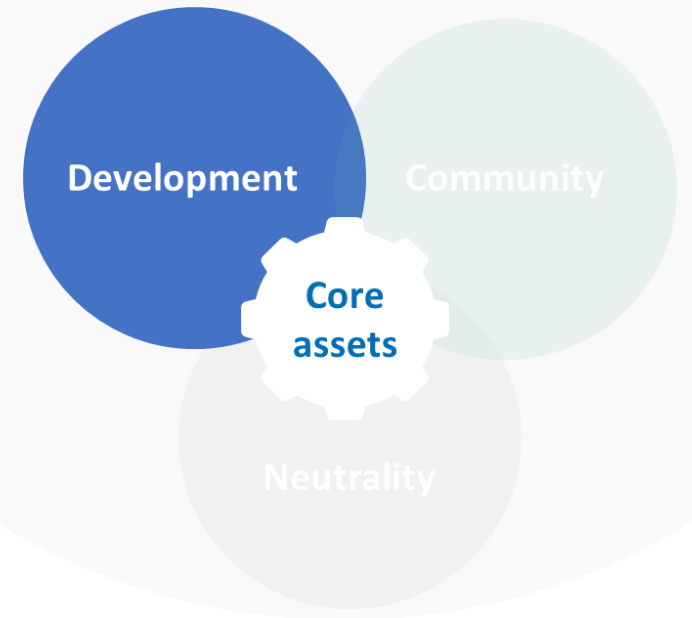
Development of open source solutions and projects.

Joint, active and diverse community working together to establish and maintain open source solutions.

Neutral place where all parties can freely contribute and access open source software publications.

# We jointly develop open source solutions

- Joint development and free publication of open source software and hardware
- Operation of an open and neutral platform: the Open Logistics Repository
- Organisation and moderation of content-related working groups
- Collection of new ideas and topics for upcoming open source developments



Development and establishment of de-facto standards  
to boost the logistics industry

# We create an active Open Source Community

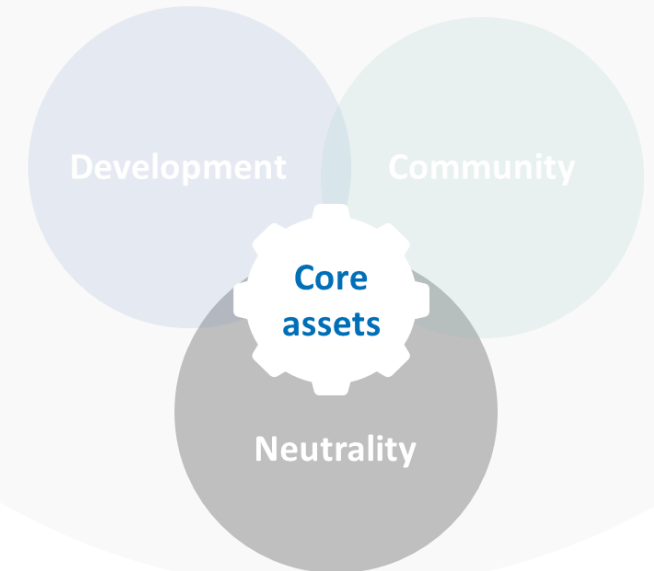
- Our international community is diverse and every contribution matters. There is an eye-to-eye interaction between SMEs and big players.
- Merging results from practice and research into practical open-source applications
- Networking of people and companies with relevant know-how and logistical background



Rethinking open source for logistics  
and joining forces.

# The Foundation is your neutral partner

- As a foundation, we are
  - a neutral partner, independent from single companies or commercialisation activities,
  - safe from acquisitions,
  - following European values and legal standards.
- To support the Open Logistics Foundation, companies can join the Support Association: Open Logistics e. V.



Results are published under the Foundation's umbrella and not branded by individual companies.



We actively create open source  
solutions





# Understanding: Working Groups, projects and ideation topics

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Participation is limited to members.



## The Working Groups

Address certain topics found to be of high relevance for the logistics industry.

- // Organisational, legal and technical questions
- // Can host several projects
- // Collaboration of business developers, innovation managers and logistics experts



## The Projects

Jointly develop initial ideas into promising open source solutions.

- // Development, testing and documenting of software components
- // Collaboration of software developers
- // Working in the repository (GitLab)



## The Ideation Topics

Collection of logistical pain points.

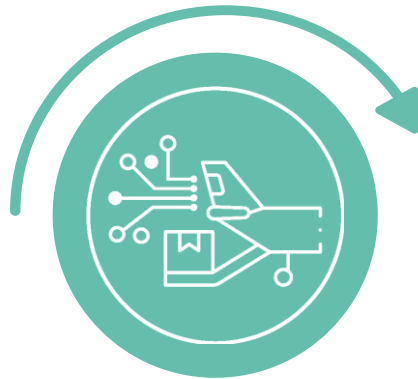
- // Identified in a multi-stage process through open ideation and design thinking
- // Topic is challenged based on the chances of realisation and logistical relevance
- // Saved in the Idea Collection in the GitLab

# The Working Groups create open source solutions



## Electronic Transport Documents

Focus on digital transport processes.



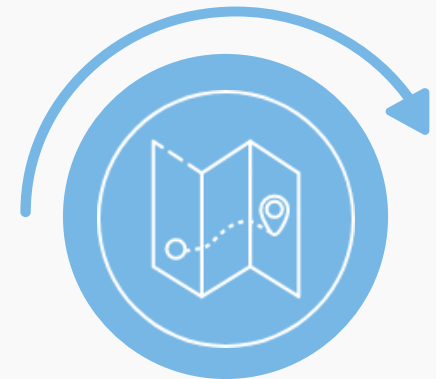
## Digital Air Cargo

Focus on efficient data exchange in air freight.



## Open Customs Blockchain

Focus on reduced border delays and digital data exchange.



## Track & Trace

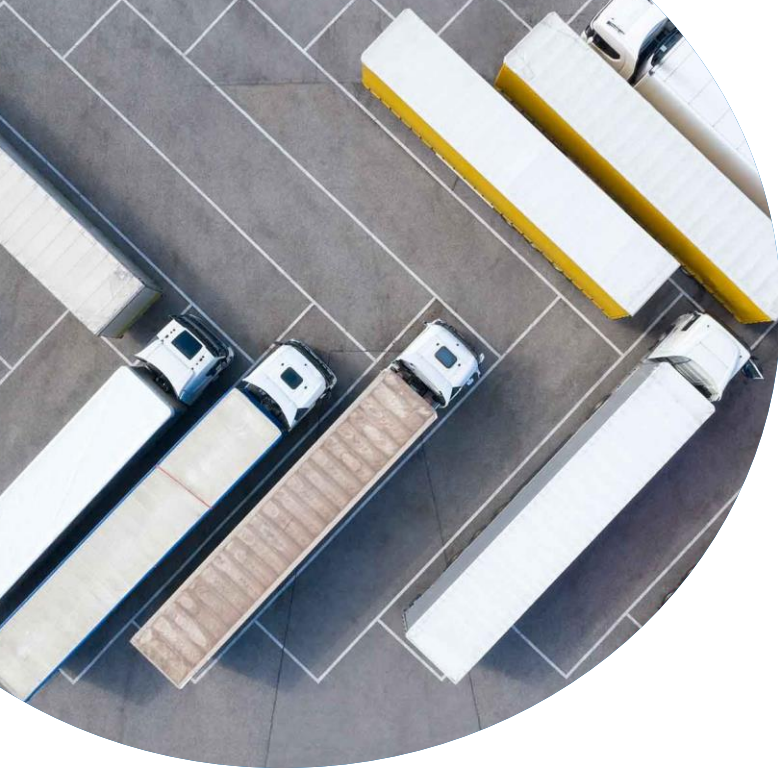
Uniform definition of an event and notification model for the transport process.



# Working Group Electronic Transport Documents

- Topic: Identifying and handling cargo from sender to recipient requires shipping documents. Even today, most of these documents are paper-based. Attempts have been made in recent years to provide these documents in different electronic formats, but these are incompatible.
- Goal: Develop an open source solution for companies to handle all kinds of digital shipping documents in a uniform and interoperable manner.
- Central question: How can open and interoperable solutions for transport documents look like?

For projects, active members and more information please visit the Working Group's website page: [Working Group Electronic Transport Documents | Open Logistics Foundation](#)



## Working Group Lead



Ingo Müller  
DACHSER SE



Jonas Kassan  
Rhenus SE & Co.KG



# Working Group Digital Air Cargo

- Topic: The level of digitalisation in air cargo is still low: the large number of players at airports – from pick-up to delivery – and the global scale make it difficult to network and automate processes digitally.
- Goal: Establish digital processes and seamless data exchange between different stakeholders in air cargo, like airports, carriers, shippers and authorities.
- Central question: How can all stakeholders in air cargo collaborate in a paperless and digital way?

For projects, active members and more information, please visit the Working Group's website page: [Working Group Digital Air Cargo | Open Logistics Foundation](#)

## Working Group Lead



Oliver Ditz  
Fraunhofer IML



Andreas Nettsträter  
Open Logistics Foundation





# Working Group Open Customs Blockchain

- Topic: The mostly paper-based exchange of documents in the customs area makes it difficult for all stakeholders, including authorities, to verify the authenticity of the information exchanged.
- Goal: Develop open source solutions that strengthen the trust and transparency of data used in customs processes. Improve the integration of customs and logistics processes using blockchain technology while focusing on authorities' needs.
- Central question: How can we ensure smooth border crossing and compliant trade?

## Working Group Lead



Michael Douglas  
ALS Customs Services



Roman Koller  
Fraunhofer IML

For projects, active members and more information, please visit the Working Group's website page: [Working Group Open Customs Blockchain | Open Logistics Foundation](#)



# Working Group Track & Trace

- Topic: There are currently many different IT systems, standards and platforms that deal with the track and trace of shipments and goods. These generally have their own definition of data models, events and notifications. The exchange of information, e.g. about specific events, along the supply chain and between all parties involved is therefore limited or only possible with a certain amount of effort.
- Goal: Firstly, the creation of a minimum common event and notification model, including status codes, between LSPs and customers, i.e. what events and notifications occur during an end-to-end transport. Second, a standardised event and notification model, including status codes, between LSPs and carriers (subcontractors) for individual shipments.
- Central question: What events and notifications can we all agree on, and under what title/code?

## Working Group Lead



Marius Hilb  
DB Schenker



Nathalie Böhning  
Open Logistics Foundation

For projects, active members and more information, please visit the Working Group's website page: [Working Group Track & Trace | Open Logistics Foundation](#)



# Get to know our ongoing ideation topics



## **Driver App**

Implementation of a white-label driver application focused on the spot market, running in parallel with the company's own applications.



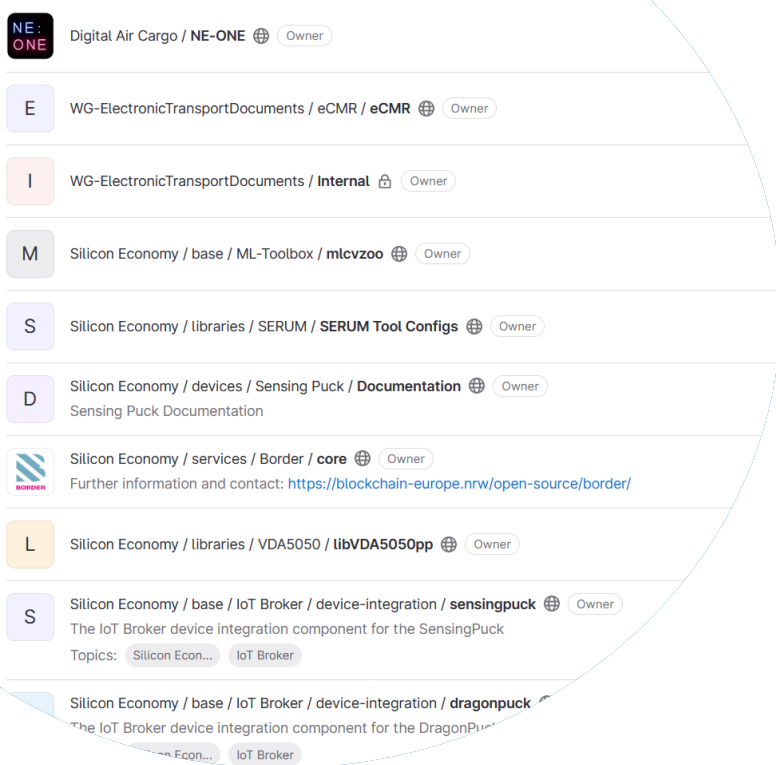
## **Train & Wagon**

Developing uniform interfaces and processes for recording and transmission of train and wagon information.



## **Emissions Reporting**

Developing a standardised data framework for the seamless exchange of emissions-related transport data across the supply chain.



# Explore our Repository

Developers can get directly involved with the projects in the Open Logistics Repository.

All software components developed by the Innovation Community are accommodated in the [Open Logistics Repository](#) and available for companies to use, develop further, and/or commercialise.

Discover projects, groups and snippets.  
Share your projects with others.



# Open Logistics Foundation License 1.3

- The Open Logistics Foundation Licence (OLFL-1.3) is a permissive licence
  - Based on the essential principles of the Apache v2 license (free license, no copyleft, granting of rights by all authors).
  - But with adaptations regarding the applicability of European law.
  - Approved by the Open Source Initiative to meet existing community norms and expectations for open source.
- The Contributor License Agreement (CLA) clarifies the transfer of rights from the contributors to the Foundation.
- Both documents are based on best practices of existing and successful open source initiatives:  
<https://openlogisticsfoundation.org/licenses/>



# Who we are: clearing misconceptions

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## Who we are

- We are a non-profit organisation hosting free and accessible open source solutions.
- We are a neutral European initiative focusing on global supply chains and logistics.
- Anyone (also non-members) can use our components free of charge.



## Who we are not

- We are not a commercial platform offering commercial solutions.
- We are not focusing on individual interests.
- We are not after commercial interests.





# How we work: clearing misconceptions

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## What we do

- We moderate or facilitate the development of open source code.
- We focus on non-market-differentiating commodities.
- All members can bring in their own ideas.



## What we do not do

- We do not develop software; this is done by our member companies.
- We do not create individual market-differentiating solutions.
- Decision-making and agenda-setting are not pre-defined.





Get involved and join our  
community





## Become a member and join us

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You have different options for getting involved:

- Become a [Strategic Member](#) and create standards for the entire industry.
- Become a [Solution Member](#) and push projects for the benefit of your company.
- Stay external and become an observer, no membership is needed.

The method is open ideation,  
and the tool is open source.

# Our Innovation Community includes diverse companies



Logistics service providers



Platform operators



Forwarding companies



IT solution companies



Port/airport operators

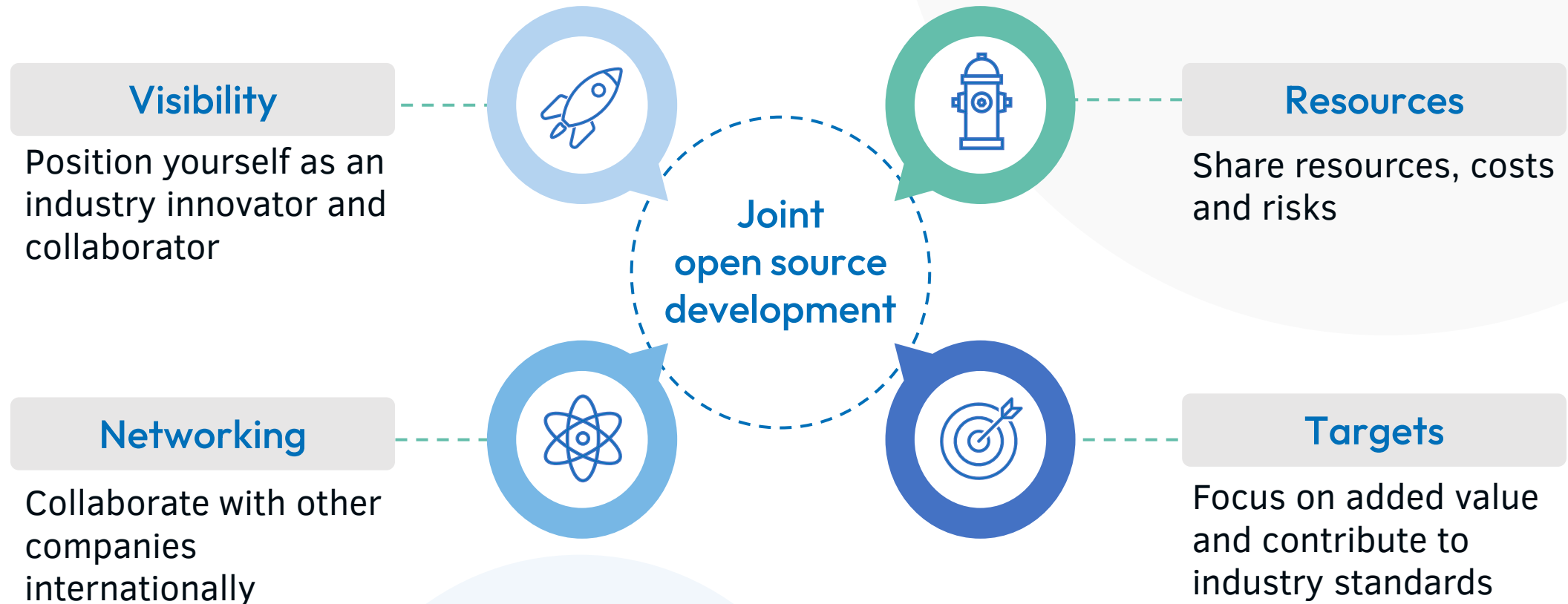


Shipping companies



Equipment service providers

# Joint open source developments is the basis of all perks





# Know the right membership option for you

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## Strategic Member

- Take the lead and set impulses in as many Working Groups as desired.
- Provide maintainer for and participate in unlimited projects.
- Propose candidates for the Boards of Directors, the Board of Trustees and the Steering Committees.
- Participation in the Foundation's network and events.

## Solution Member

- Lead one Working Group and provide maintainer for one project
- Participate in all Working Groups and projects
- Participation in the Foundation's network and events



# Our member categories and annual membership fees

Annual turnover (group-related)	Strategic Member	Solution Member
> €1,000 million	€250,000	€35,000
€250 million - €1,000 million	€125,000	€20,000
€50 million - €250 million	€50,000	€5,000
< €50 million	€25,000	€2,500
Research institutes, universities, associations, natural persons etc.	€25,000	€2,500



# Get to know our partners



Logos arranged in order of membership signing



# Contact us!



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