From Code to Ecosystem
Growing Research Software with Open Source Foundations

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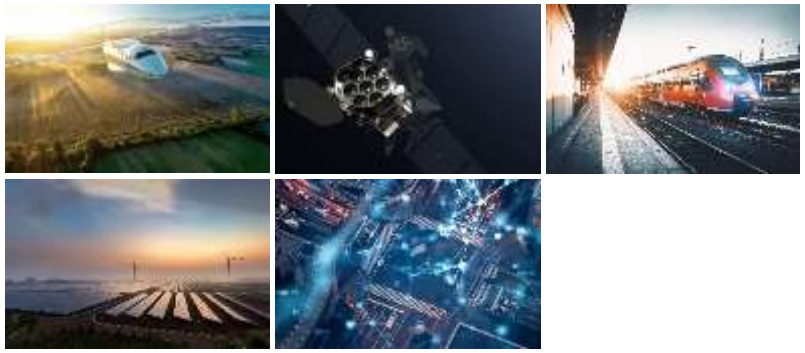
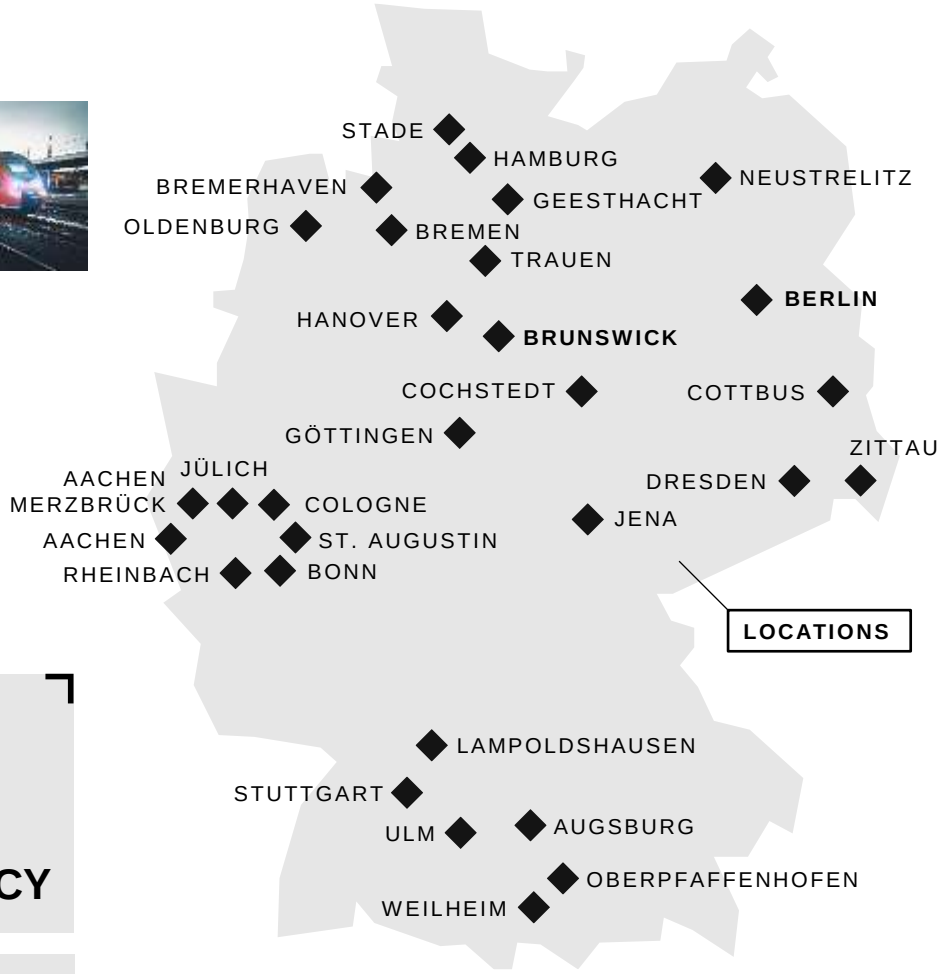
The German Aerospace Center (DLR) e.V.





RESEARCH INSTITUTION

SPACE AGENCY

PROJECT MANAGEMENT AGENCY

Member of the Helmholtz-Association

RESEARCH FIELDS

Aeronautics
Space
Energy
Transport
Security
Digitalisation

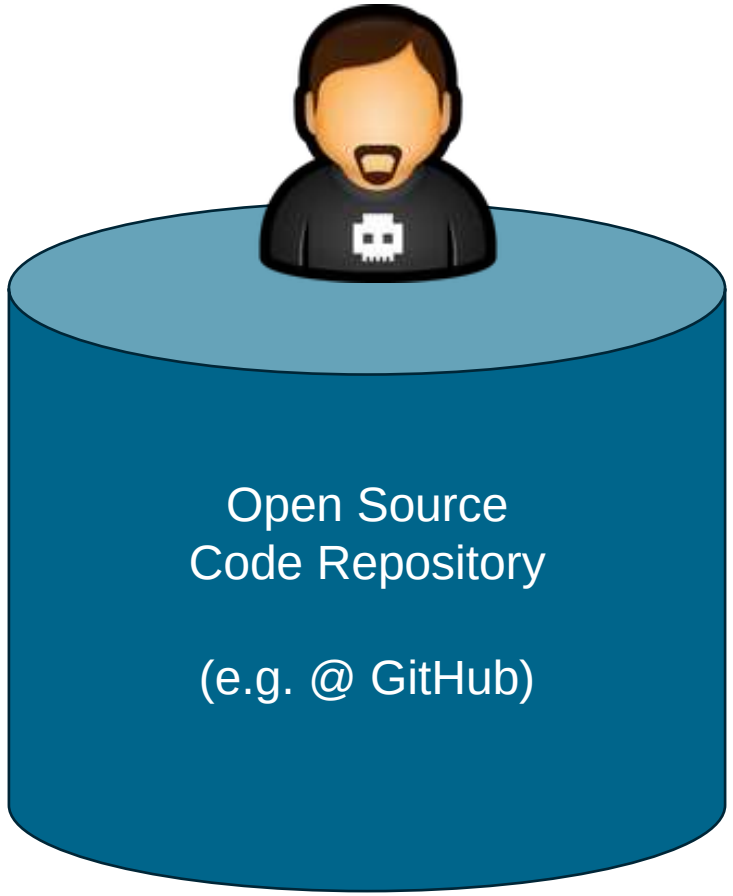
FACTS AND FIGURES

About 10.000 employees

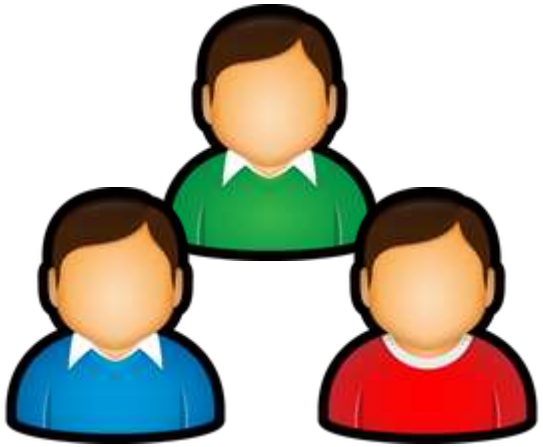
55 institutes/facilities at 30 locations

Offices in Brussels, Paris, Tokyo and Washington

Starting Point

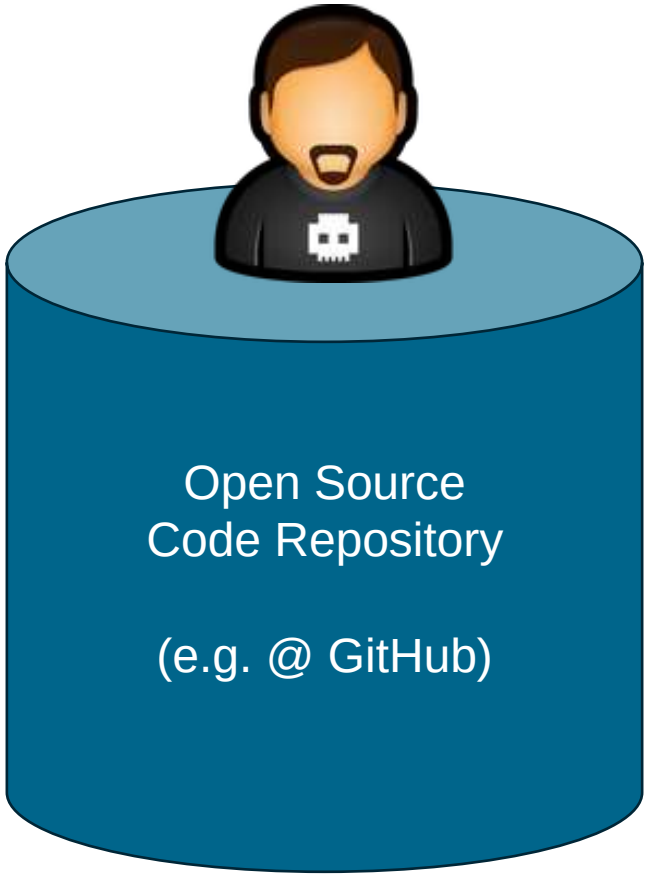


Growing the Community



- New features?
- Support, coaching and consulting?
- Funding?
- Contributions from users?

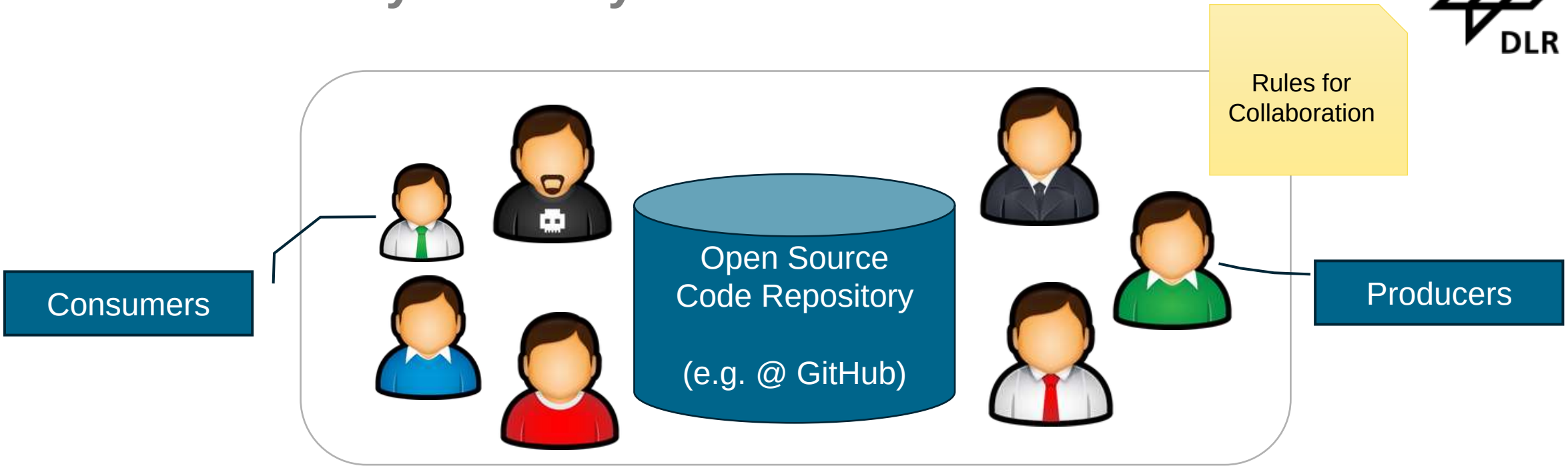
- Trust?
- Sustainable?



- License management?
- Quality assurance?
- Legal issues: Cyber Resiliency Act
- Long term vision and availability?

- Trust?

From Community to Ecosystem



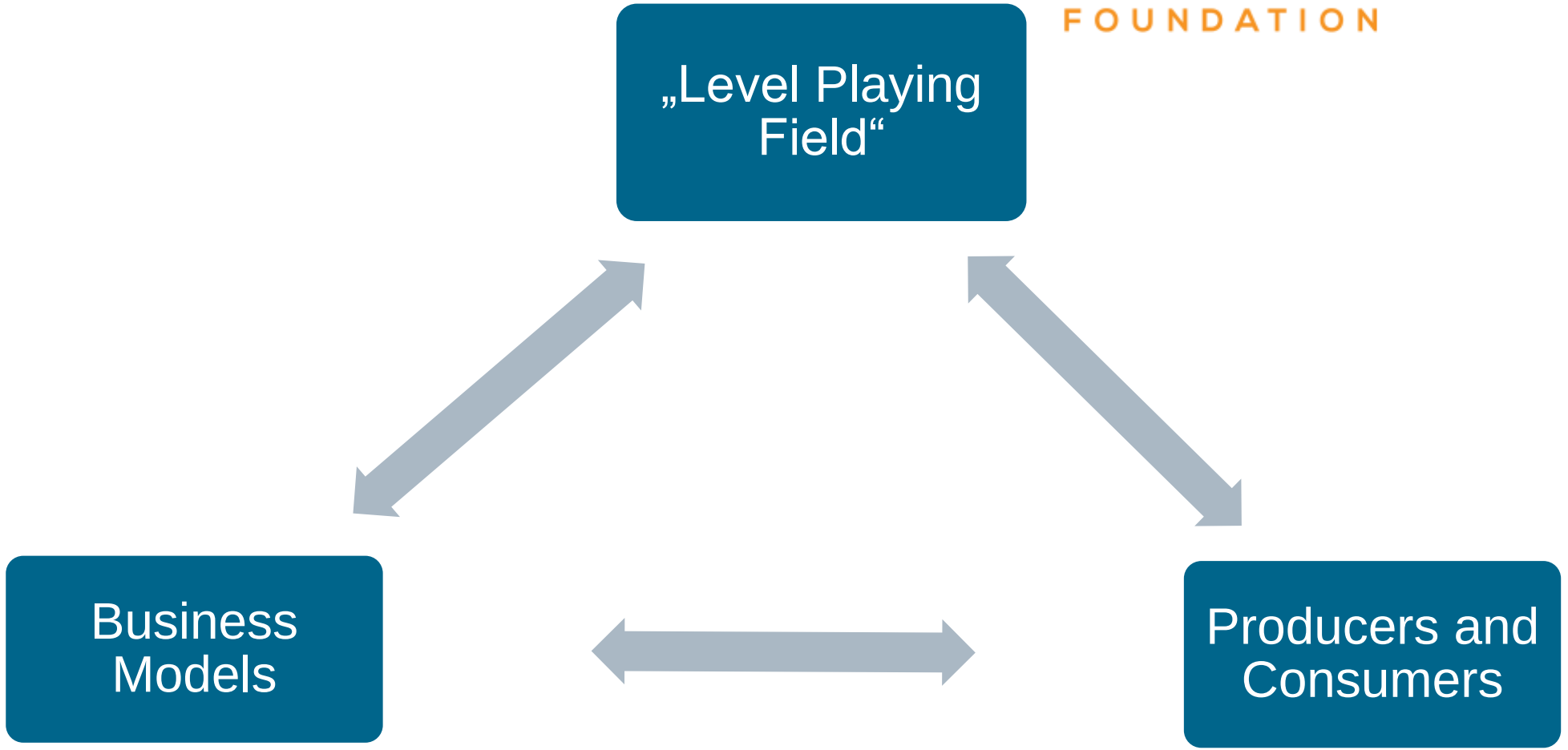
Community:

- A group of people connected by a shared interest, goal, or practice.
- Focus: **exchange, belonging, support,** and identity

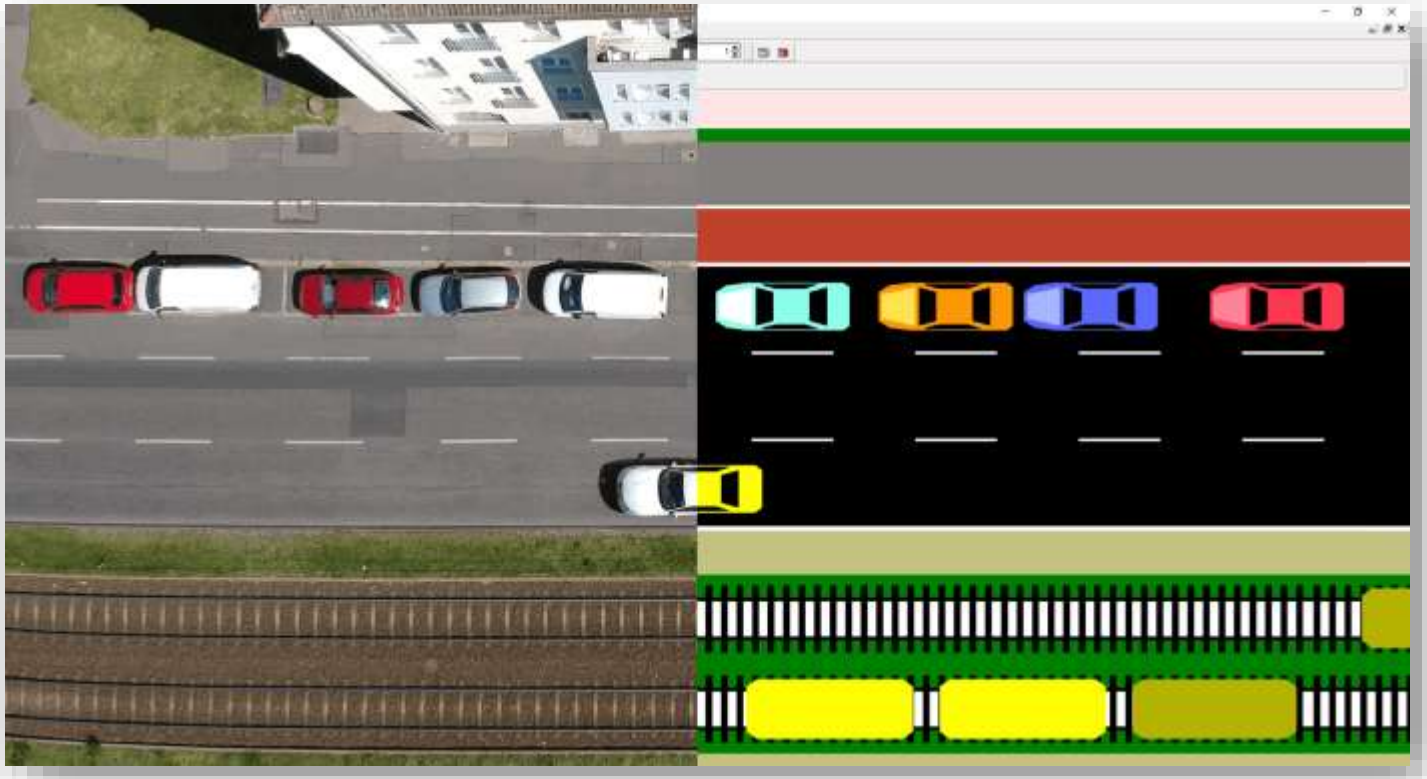
Ecosystem:

- A network of actors (producers, consumers, intermediaries) in mutual interdependence.
- Focus: **creation and exchange of value**, not just belonging

Cornerstones of a Sustainable Ecosystem Development

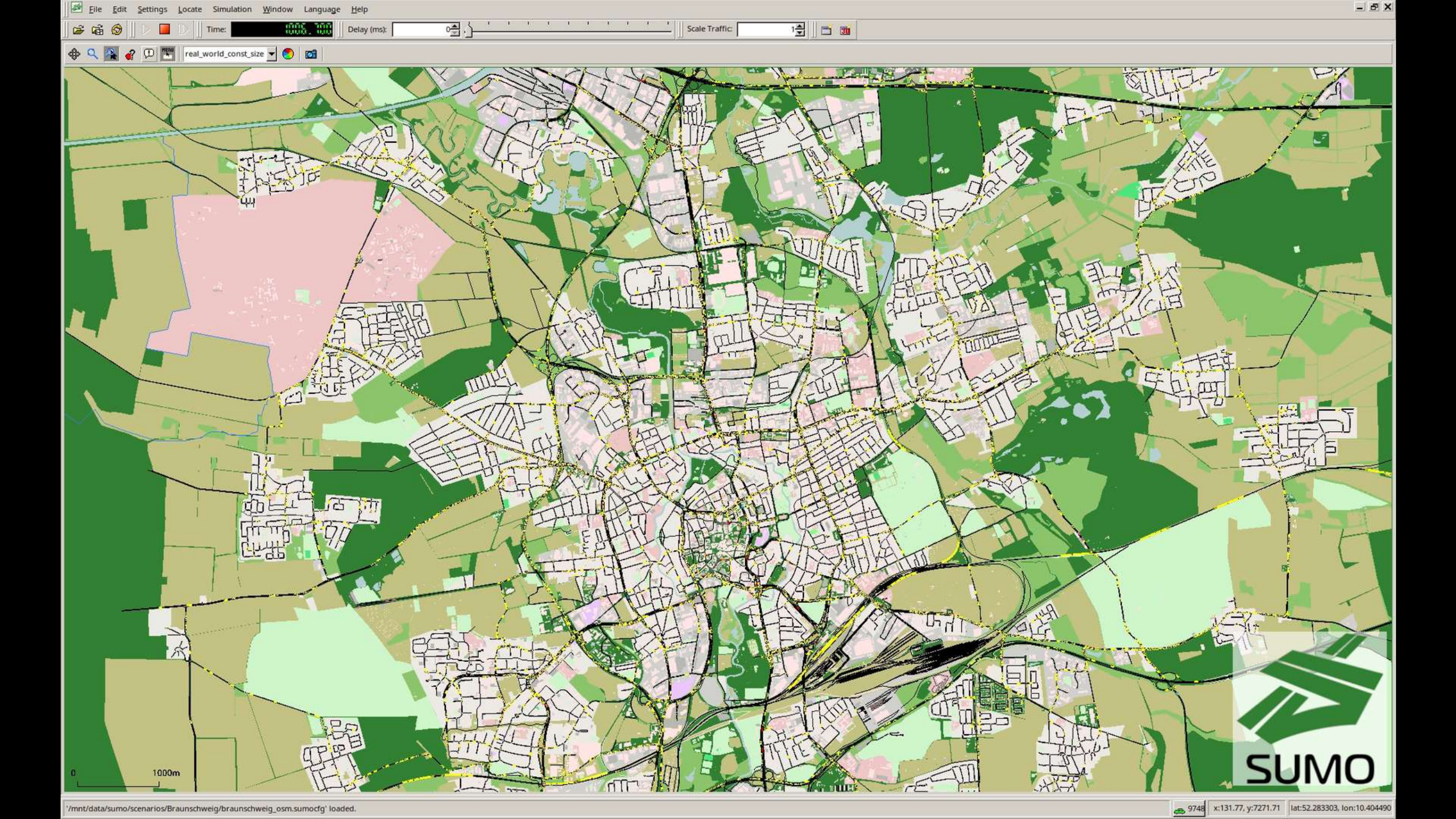


Our Experiences with SUMO



… the most popular open source software project of the German Aerospace Center (DLR)

https://sumo.dlr.de


File
Edit
Settings
Locate
Simulation
Window
Language
Help
Time:
Delay (ms):
Scale Traffic:
real_world_const_size
0
1000m
SUMO
'/mnt/data/sumo/scenarios/Braunschweig/braunschweig_osm.sumocfg' loaded.
9748
x:131.77, y:7271.71
lat:52.283303, lon:10.404490

History

SUMO

2001

SourceForge SVN
GPL License

SUMO
SIMULATION OF URBAN MOBILITY

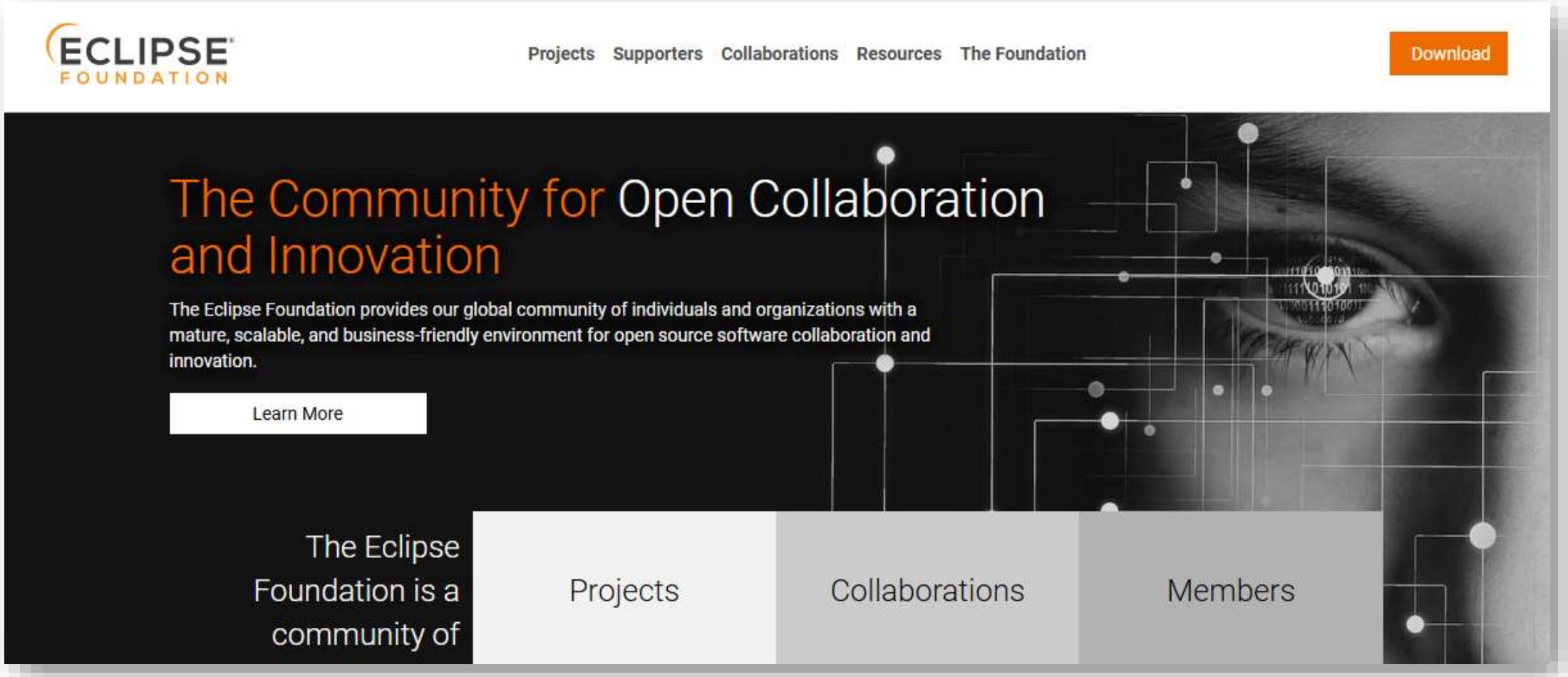
GitHub
EPLv2 License

GPL License

"SUMO is **owned** by DLR"

"DLR is a **contributor** to SUMO"

Eclipse Foundation



https://www.eclipse.org

- **European** infrastructure and governance for an open and sustainable ecosystem development
- Trustworthy, sustainable and industry-friendly „**level playing field**“

Projects and Working Groups

Eclipse Projects

Eclipse Working Groups

SUMO – An Open Source Eclipse Project

SUMO

About Documentation Downloads Conference References Support Contact

Simulation of Urban MObility

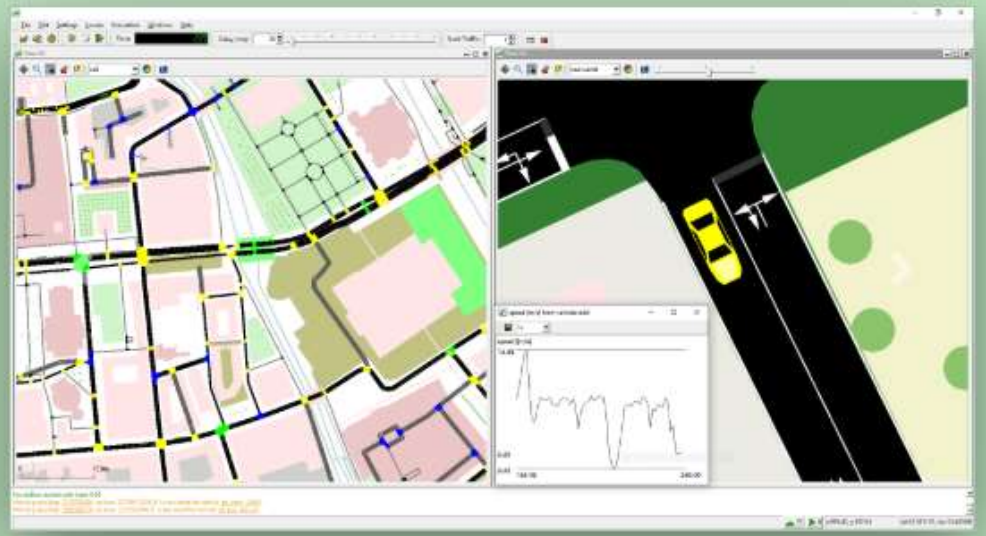
Welcome to Eclipse **SUMO** (Simulation of Urban MObility), an open source, highly portable, microscopic and continuous multi-modal traffic simulation package designed to handle large networks.

SUMO 1.24.0 for Windows 64-bit

Latest Development Version (Nightly Snapshots) >

Older releases >

View on GitHub | Star 3,680 | Fork 1,627



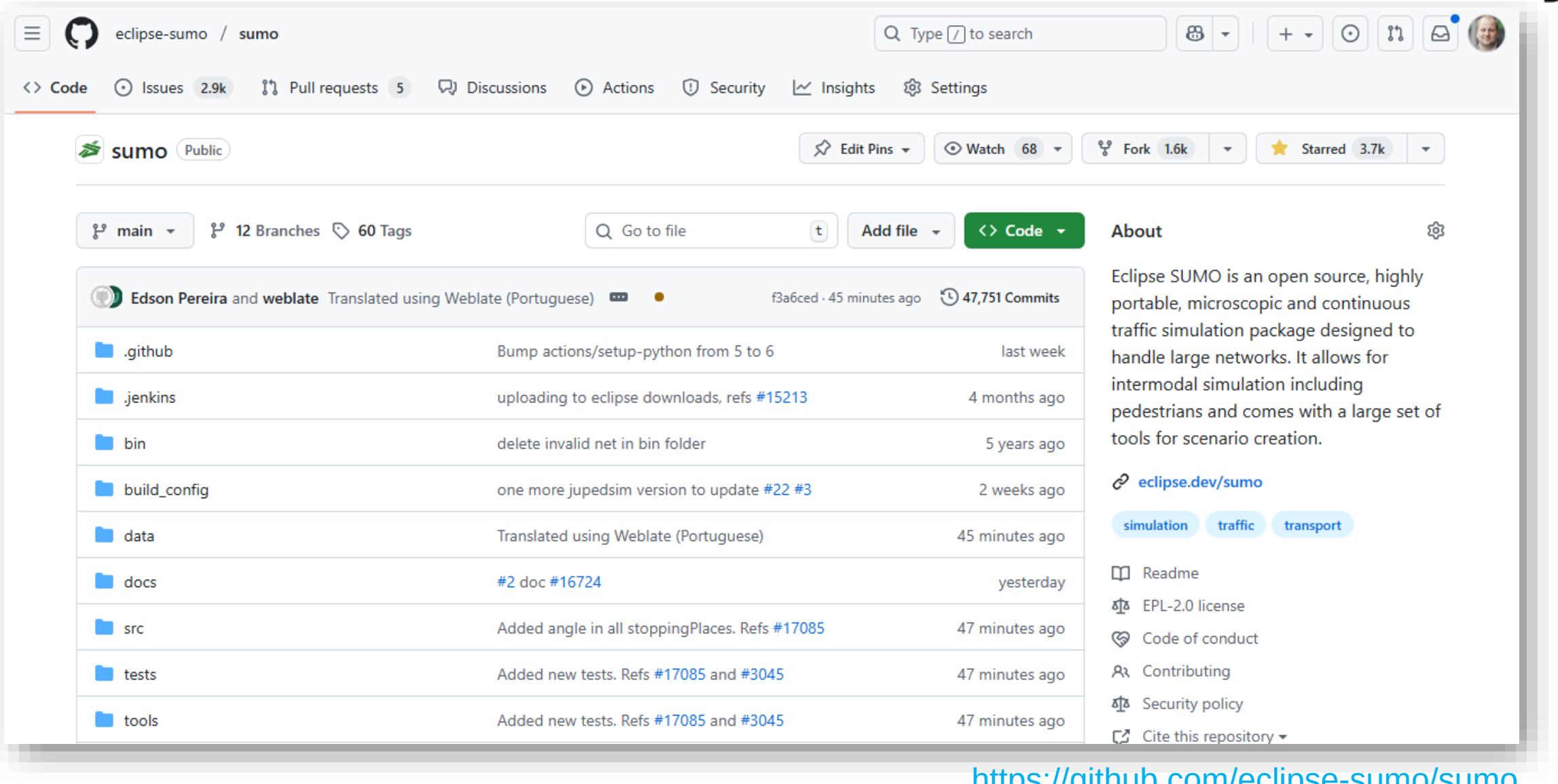
DOI 10.5281/zenodo.16268320 | linux passing | windows passing | macos failing | documentation failing | linkcheck passing | docker passing | linux-wheels failing

windows-wheels passing | macos-wheels passing | build failing | security A

More tests >

https://eclipse.dev/sumo

… with a GitHub Repository



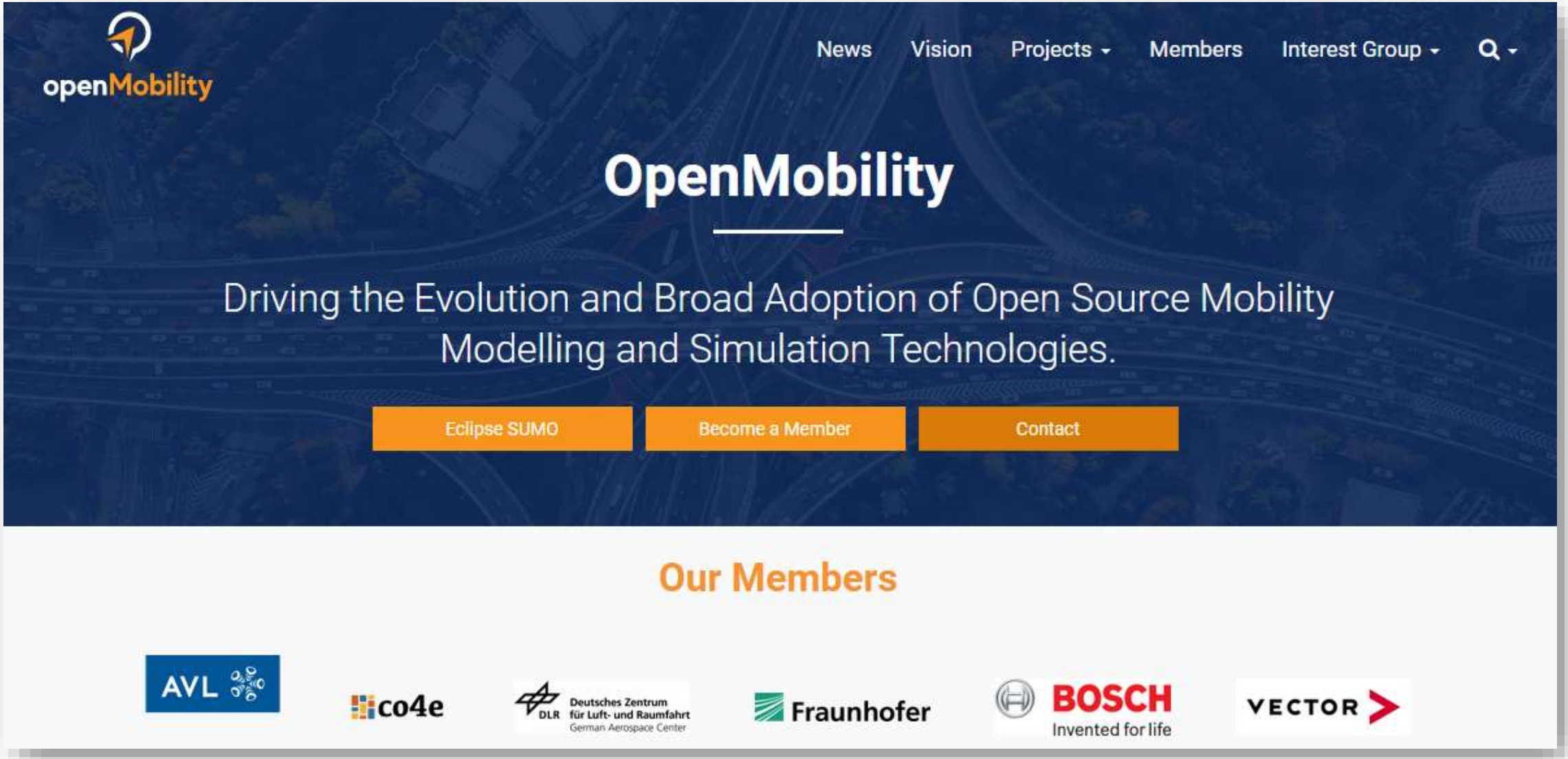
https://github.com/eclipse-sumo/sumo

Projects and Working Groups

Eclipse Projects

Eclipse Working Groups

openMobility Interest Group



https://openMobility.eclipse.org

Q & A

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