# Eclipse in Motion

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**FOUNDATION**

Ralph Mueller
August, 2019

Wikipedia: Hauptburg Burghausen

# Free Software Movement

- Launched 1983

- GNU project, FSF

- Copyleft - GNU Public License (GPL)

- Ethics based

- Protect the 4 rights of the end-user
  (use, investigate, modify, distribute)



Richard Stallman, Wikipedia
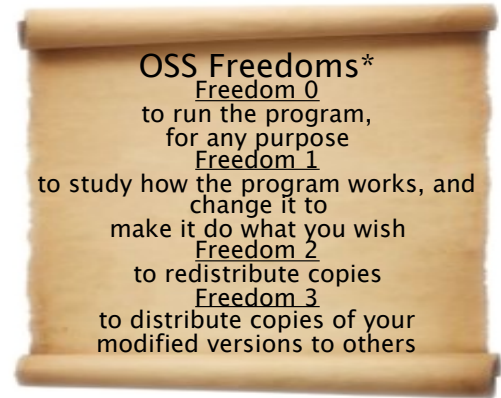
# Open Source Software

- 1997 - Cathedral and Bazaar

- 1998 - Netscape code becomes Mozilla

- 1998 - Open Source Initiative

- pragmatic approach to solving software problems
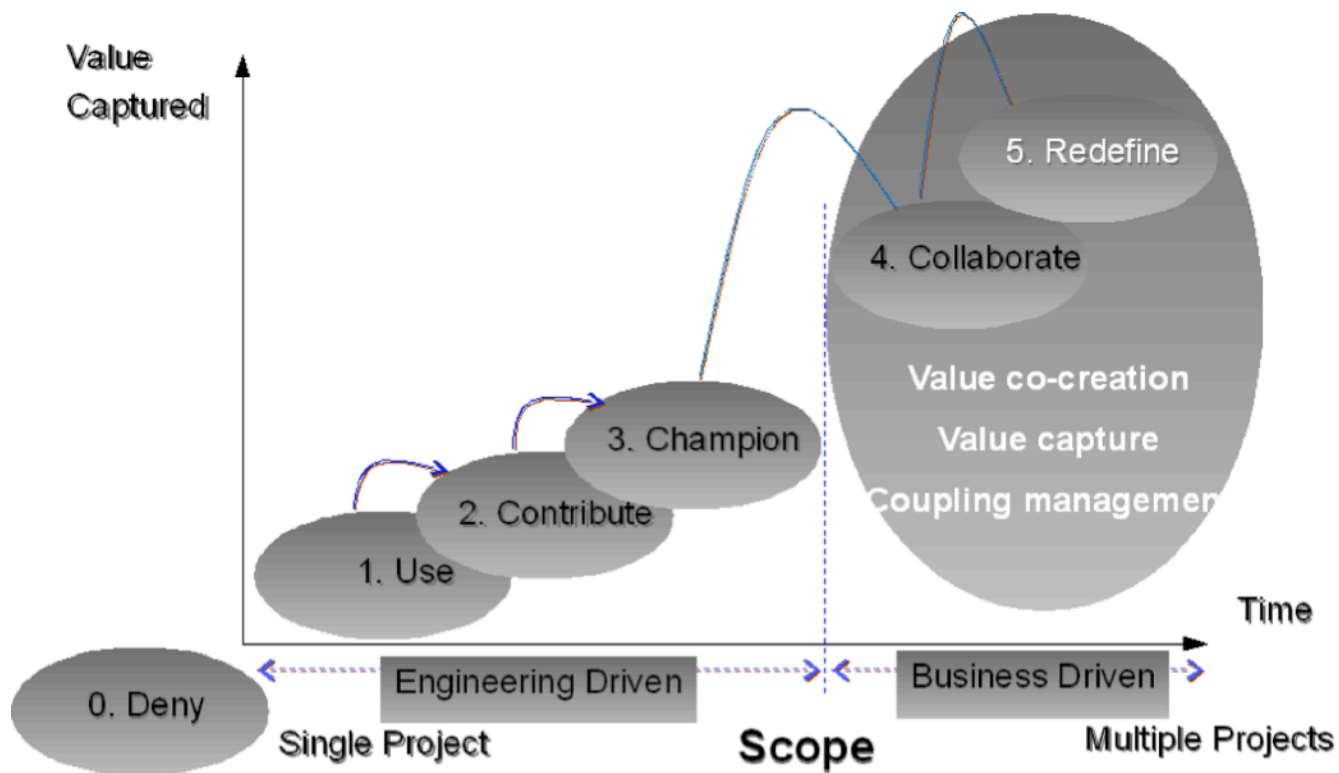
- Free as in free beer
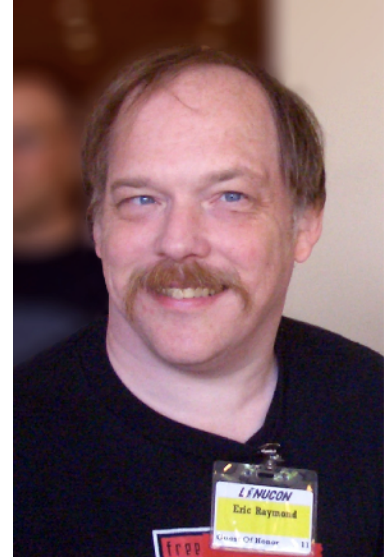


Eric S. Raymond, Wikipedia

# The 10 Commandments

1. Free redistribution

2. Include source code

3. Modifications and derived works

4. Integrity of author's source code

5. No discrimination against person and groups

6. No discrimination against fields of endeavors

7.  Distribution of license

8. License not specific to a product

9. License not restricting other software

OSS Freedoms*
Freedom 0
to run the program,
for any purpose
Freedom 1
to study how the program works, and
change it to
make it do what you wish
Freedom 2
to redistribute copies
Freedom 3
to distribute copies of your
modified versions to others

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# Open Source and Business

# The Eclipse Foundation

> Independent, not-for profit

> Founded in 2004, IBM e.a.

> Industry consortium of the software industry

> Initial goals: build the ubiquitous tooling platform for the Java developer community

> Eclipse Foundation Europe GmbH 2013

# Strategic Members

# All Member Classes

# The Eclipse Way

> Open

> Transparent

> Meritocratic

> Business-friendly

# By the Numbers

**360+**
**Projects**

**275+**
**Members**

**1550+**
**Committers**

**195M+**
**Lines of Code**

**30**
**Staff Members**

**10+**
**Working Groups**

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# Strategic Focus Areas

## Cloud Native Java

We provide a collaborative environment for the world's leading Java ecosystem players to advance open source enterprise Java technologies for the cloud.

## IoT & Edge

We enable industry leaders to collaborate on an end-to-end IoT architecture that is secure, flexible, and fully based on open source and open standards.

## Automotive

We provide leading automotive OEMs, their suppliers, and partners with a sustainable, transparent, and vendor-neutral platform to collaborate on open technologies and standards.

## Tools

The Eclipse IDE is the critical development environment for more than 4 million active users. Our community is innovating on the next generation of cloud native developer tools.

# Validated by Industry Leaders

*"No company can realize the IoT on its own… Within the Eclipse Community, through the contribution of many IoT developers, tools and standards are created on an open platform that many companies can benefit from for their IoT applications."*

**Stefan Ferber**
CEO, Bosch Software Innovations

**Governance & Process**

**IP Management & Licensing**

**Community Development**

**Infrastructure**

**BOSCH**
Invented for life

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# Enabling Collaboration

> Governance and Processes

> Infrastructure

> IP Management and Licensing

> Marketing and Community Development

# Working Groups

> Joint Governance

> Co-Funding

> IP Management

> Openness and Transparency

> Time-to-Market

> Branding

> Specifications and Certification

# Governance at Work

> Bylaws / WG Charter

> Eclipse Public License

> Intellectual Property Policy

> Development Process

> Anti-Trust Policy

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**Elinor Ostrom** (born **Elinor Claire Awan** August 7, 1933 – June 12, 2012) was an American political economist.

She was awarded the 2009 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel, which she shared with Oliver E. Williamson, for "her analysis of economic governance, especially the commons".

She was the first, and to date, the only woman to win the prize in this category. Her work was associated with the new institutional economics and the resurgence of political economy.

## Design Principles for CPR Institutions

Ostrom identified eight "design principles" of stable local common pool resource management:

1. **Clearly defined boundaries** (effective exclusion of external un-entitled parties);
2. **Rules regarding the appropriation and provision** of common resources that are adapted to local conditions;
3. **Collective-choice arrangements** that allow most resource appropriators to participate in the decision-making process;
4. **Effective monitoring** by monitors who are part of or accountable to the appropriators;
5. A scale of **graduated sanctions** for resource appropriators who violate community rules;
6. **Mechanisms of conflict resolution** that are cheap and of easy access;
7. **Self-determination of the community** recognized by higher-level authorities;
8. In the case of larger common-pool resources, **organization in the form of multiple layers of nested enterprises, with small local CPRs at the base level**.

Source: https://en.wikipedia.org/wiki/Elinor_Ostrom

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# Eclipse in Motion

**openMDM** (Measured Data Management)

Tools and systems for the **standardized management of measurement data**

AUDI, TATA, BMW, DAIMLER, SIEMENS, MÜLLER-BBM VibroAkustik Systeme

**openPASS**

Frameworks and modules for simulating **advanced driver assistance systems and partially automated driving functions**

DAIMLER, BOSCH Invented for life, TOYOTA, TÜV SÜD, BMW, VOLKSWAGEN GROUP OF AMERICA

**openMobility**

Framework for the detailed simulation of the **movement of vehicles, people, and their communications**

BOSCH Invented for life, DLR, Fraunhofer, VECTOR

**OpenADx**

Accelerating **Automated Driving (AD) tool chain development** through open collaboration.

JCIM JC Information Management, Red Hat, SIEMENS, IBM, BOSCH Invented for life, itemis, AVL, eteration

**openGenesis**

**Methods** and tools for the assessment of **artificial intelligence (AI) used for autonomous driving**

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# openMDM: From Inhouse to OSS
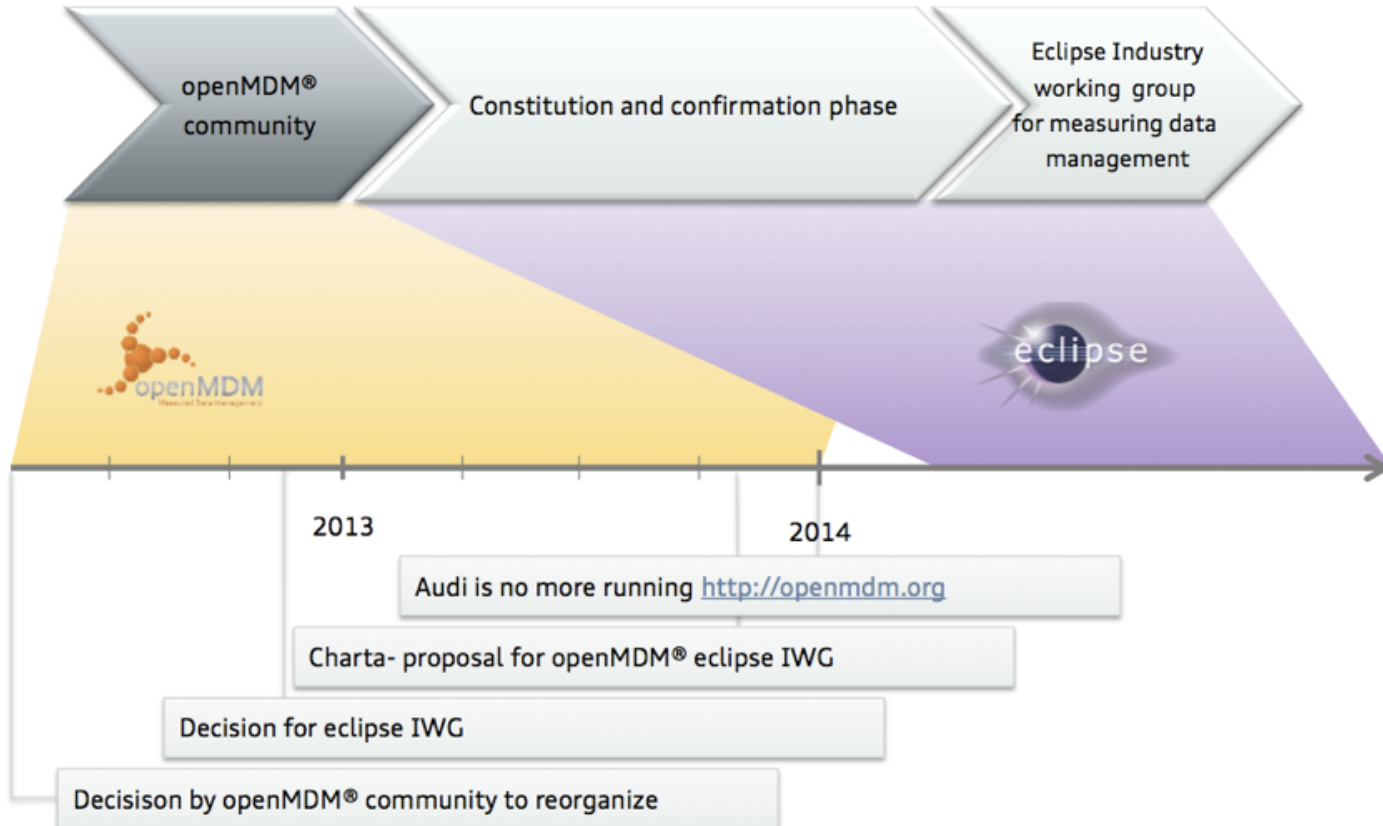
# openMDM

> Building an open source, vendor-independent, and server-based application for the management of ASAM ODS compliant measurement data

> Investigate future needs (e.g., big data) and fields of application (e.g., autonomous driving)

## Members

**Project: Eclipse MDMIBL**

# openPASS

> Specifies virtual simulation environments for advanced driver assistance systems, partially automated driving functions and assessment of safety effects in traffic
> Builds an open source platform containing various methods and tools for prospective evaluation of safety systems
> Foster exchanges between academics, standardization organizations, industry partners and community

**openPASS**

**Project:
sim@openPASS**

## Members

BMW · DAIMLER · VOLKSWAGEN GROUP OF AMERICA · TOYOTA

TÜV SÜD · BOSCH Invented for life · itk ENGINEERING

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# openMobility

> Advancing simulation environments for transport applications

> Drive evolution & brand adoption of mobility modelling and simulation technologies

> Foster the development of a framework for the detailed simulation

openMobility

Members

BOSCH

DLR

Fraunhofer
FOKUS

VECTOR >

Project:
Eclipse SUMO

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# OpenADx

> Industry-wide accepted definition of the AD toolchain
> Foundation for reference architecture
> Key to ensure efficient implementation and interoperability
> Results: Testbeds, Open Source Projects Standardization


OpenADx

## Members

BOSCH

SIEMENS

IBM

eteration

JCIM
JC Information Management

AVL

Red Hat

itemis

**Project Proposal: Eclipse Cloe**

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# openGENESIS

> Drive and support the investigation of a verifiable, understandable and certifiable artificial intelligence (AI) used for autonomous driving

> Support a global collaboration and drive a common understanding of quality of AI

> Establish an open accessible platform for AI training and validation data sets

> Supply public / regulation authorities with necessary approaches to deal with the challenges of approval and certification of AI

## Members

# Research
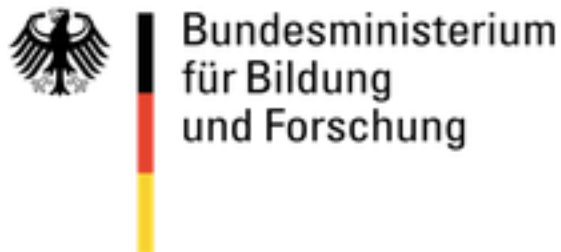
# Eclipse Kuksa



**Eclipse KUKSA**

Providing open platforms for V2X environments
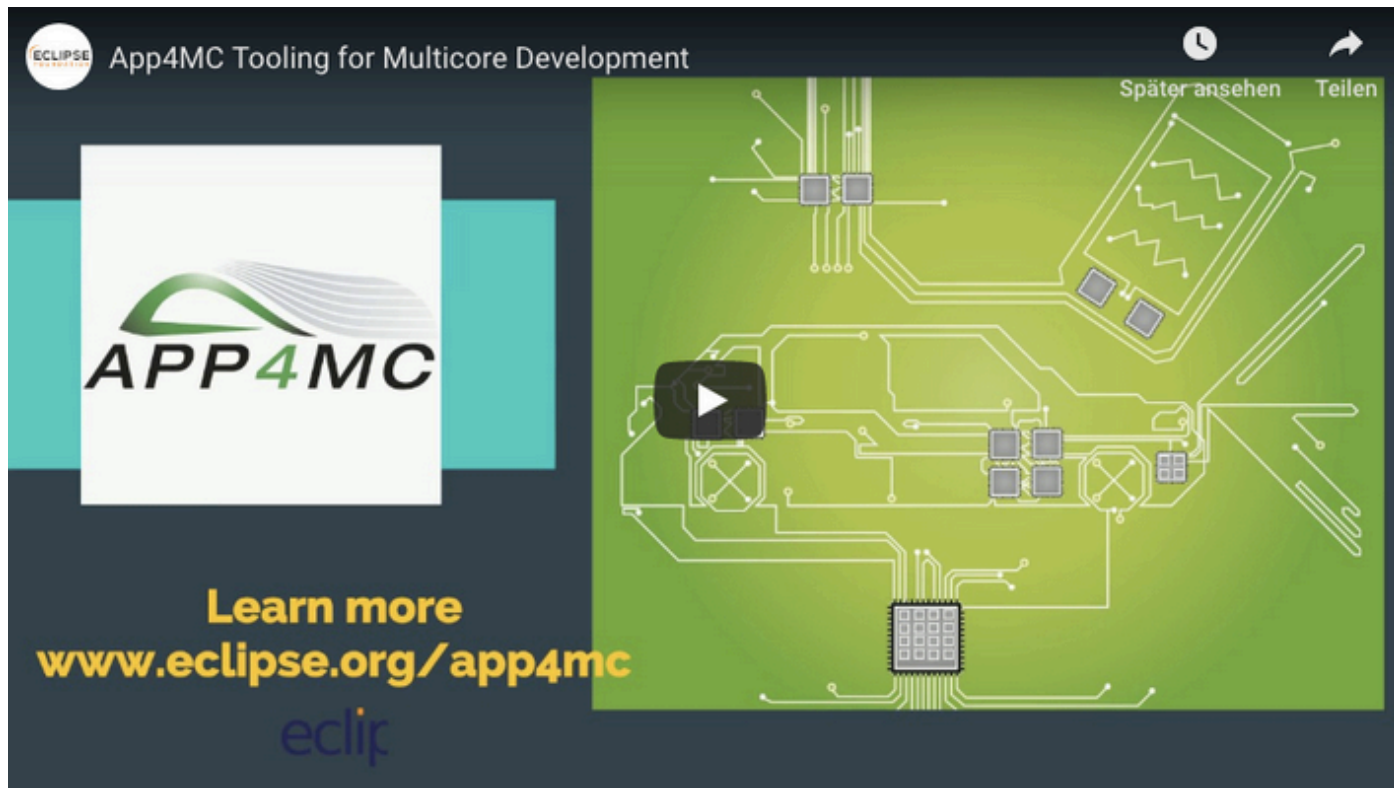
- ❖ In-vehicle platform for execution and deployment
- ❖ IDE for collaborative development
- ❖ Cloud platform

SOS

ITEA3

KUKSA

eclipse.org/kuksa

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# Eclipse APP4MC

# Research Projects

方式就是目標