QUARTERMASTER

OPEN SOURCE COMPLIANCE TOOLING

Sept 18, 2018

@fosscompliance (Quartermaster)
@mirkoboehm

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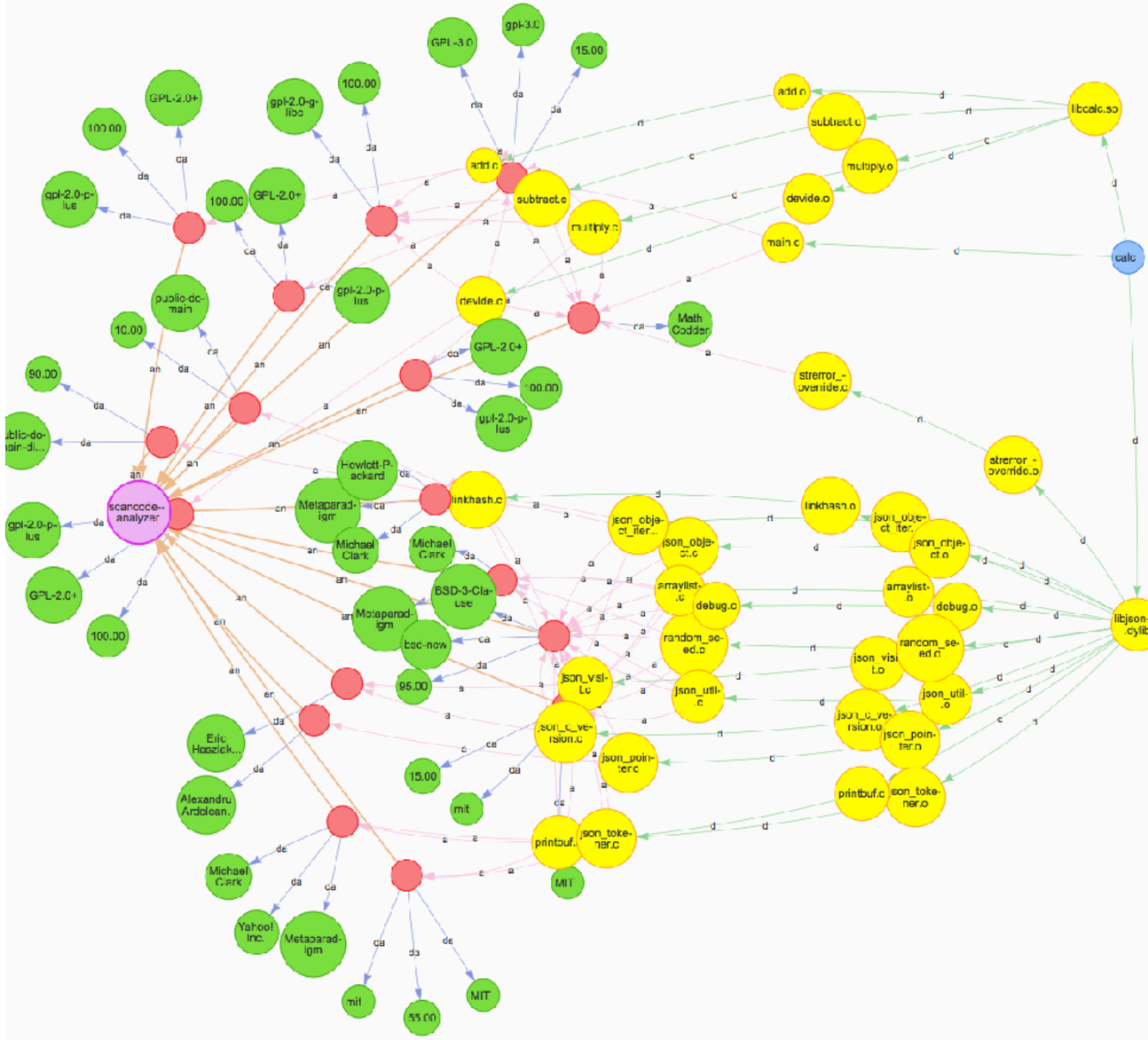
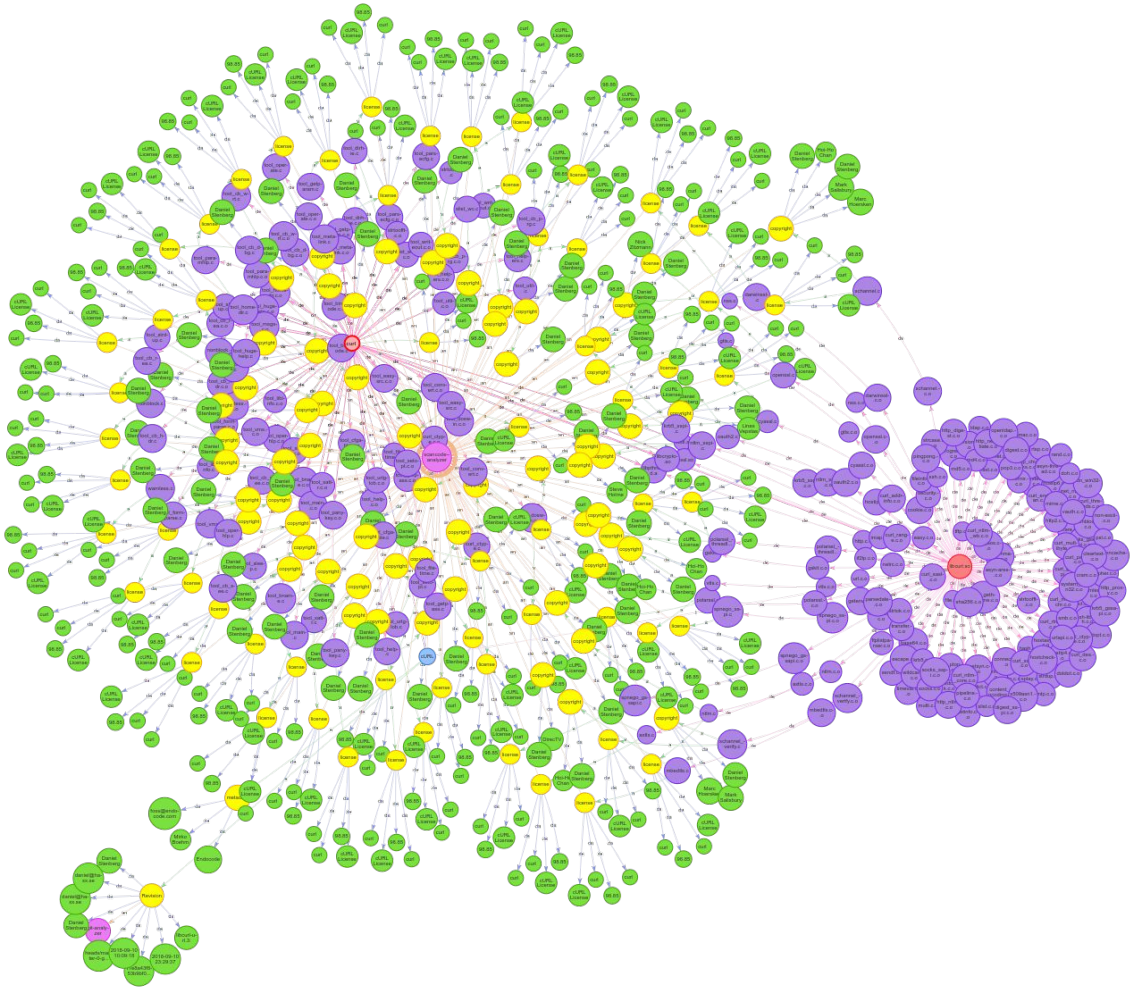
What is Quartermaster?

- Quartermaster is an integrated FOSS toolchain that implements industry best practises of license compliance management.
- Quartermaster runs adjacent to a software build in CI or development environments. It collects build graphs, performs analysis and generates compliance reports (to developers, reviewers, upstream).
- Quartermaster focuses on fact finding and accurate, complete and up-to-date compliance documentation.
- Quartermaster is FOSS and developed under a collaborative model.





There is still **no industry standard** for FOSS compliance tooling. The management of software copyright and license compliance in FOSS **needs to improve**.

Consensus

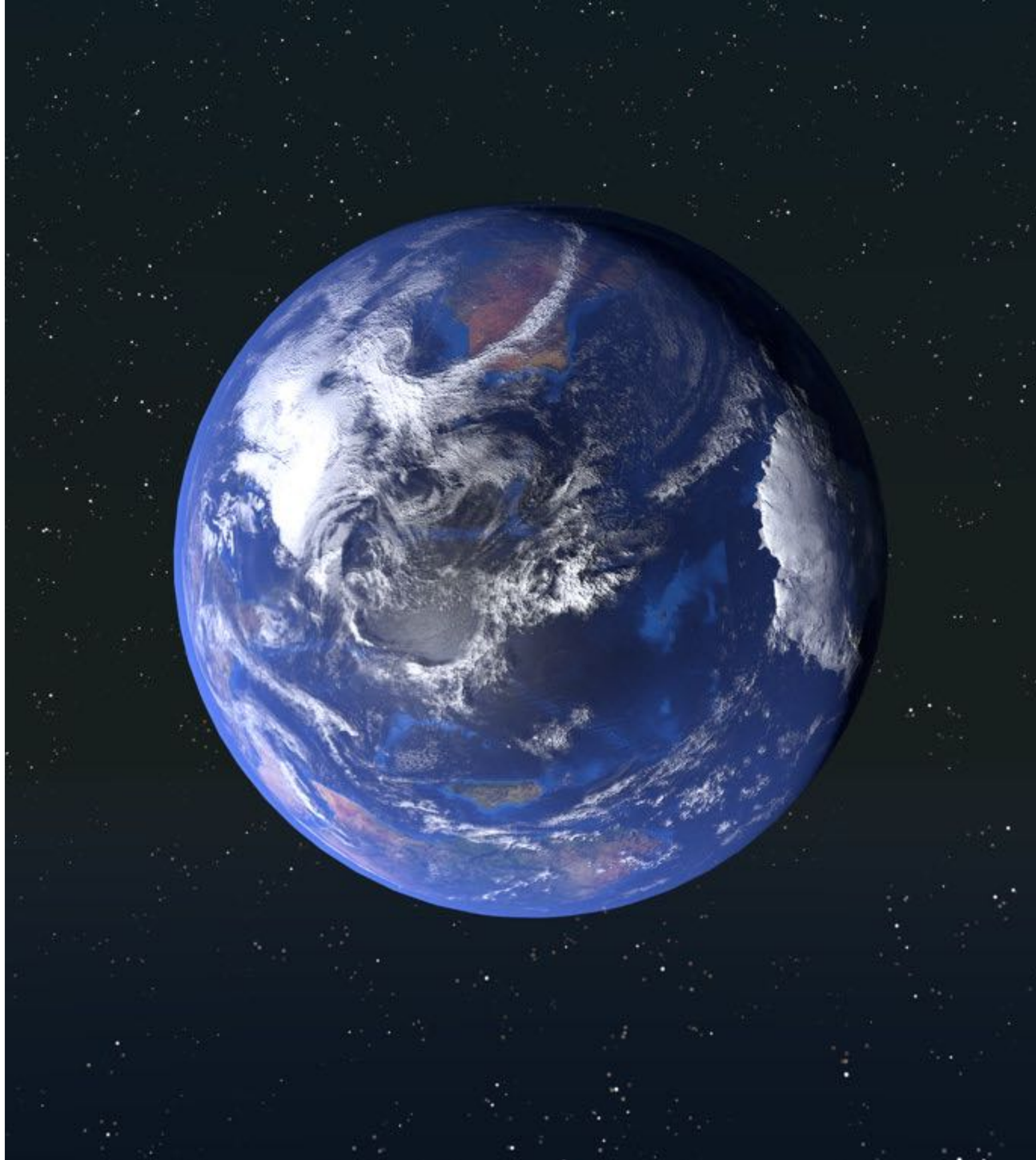
“**Hygiene factors** … do not give positive satisfaction or lead to higher motivation, though **dissatisfaction** results from their absence.”

–Two-factor theory (Wikipedia)

FOSS Compliance is a **hygiene factor**.
Uncertainty and litigation **undermines** the fabric of Open Source.

For whom?

- FOSS Communities: Deliver compliance documentation with your packages.
- Software vendors: Certify own compliance checks along the supply chain (see OpenChain spec).
- Distribution channels: Verify compliance documentation for products in your store/ on your distribution/…

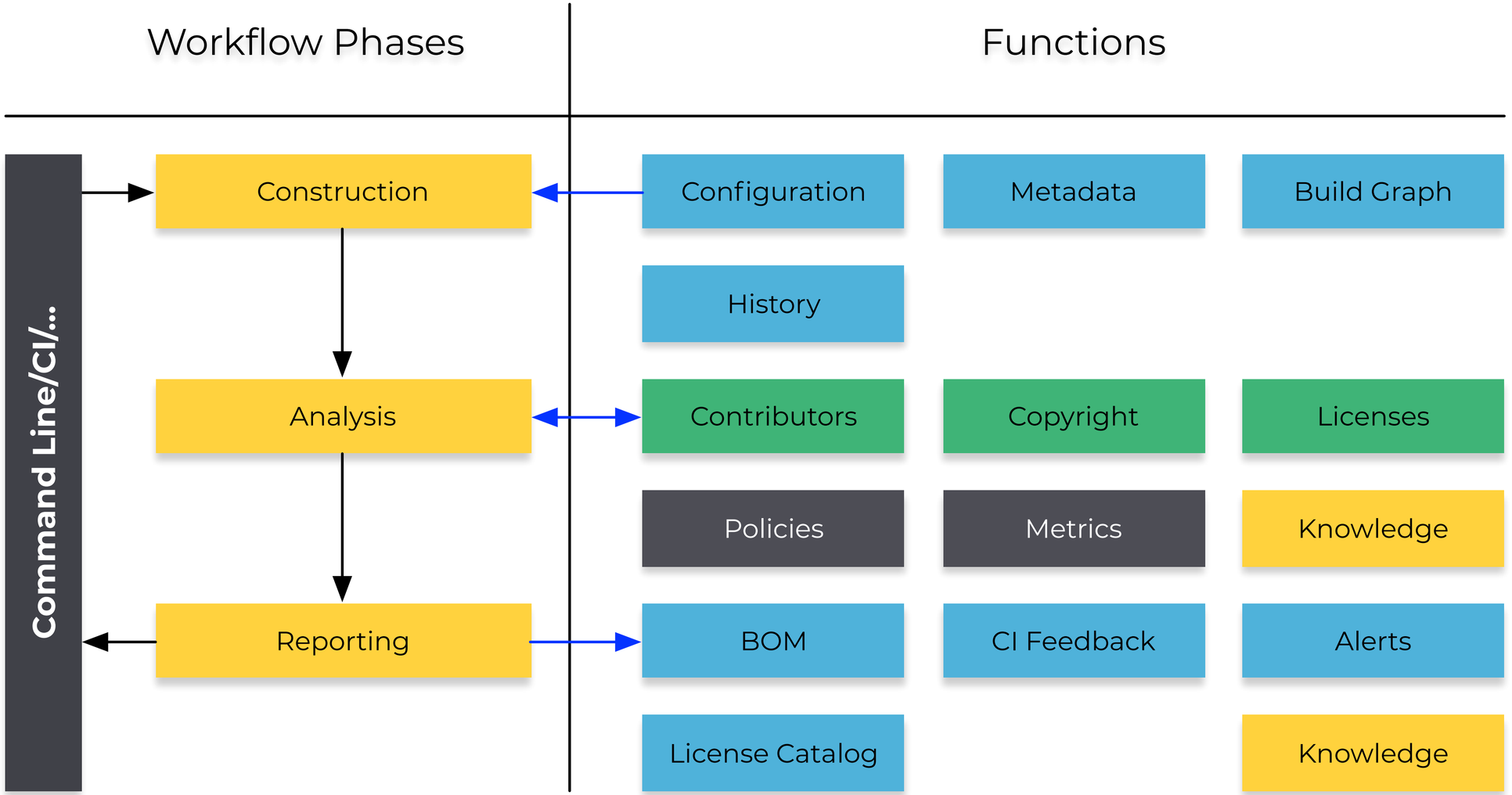


Who makes it?

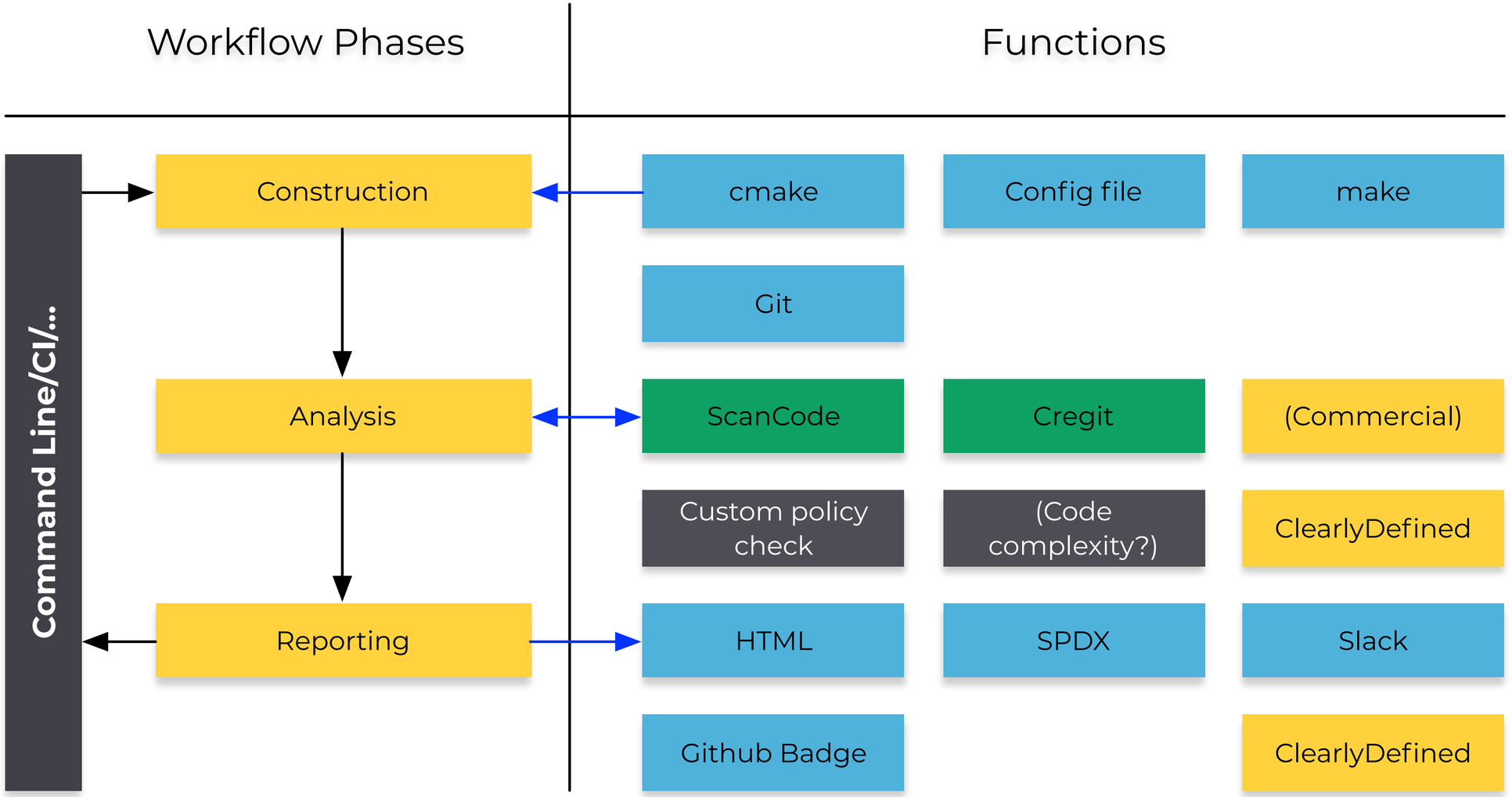
- Quartermaster is an Open Source project by licensing and governance.
- Endocode is currently driving it.
- Siemens, Google support it.
- Quartermaster should become an independent project under a neutral umbrella (LF?)


HOW

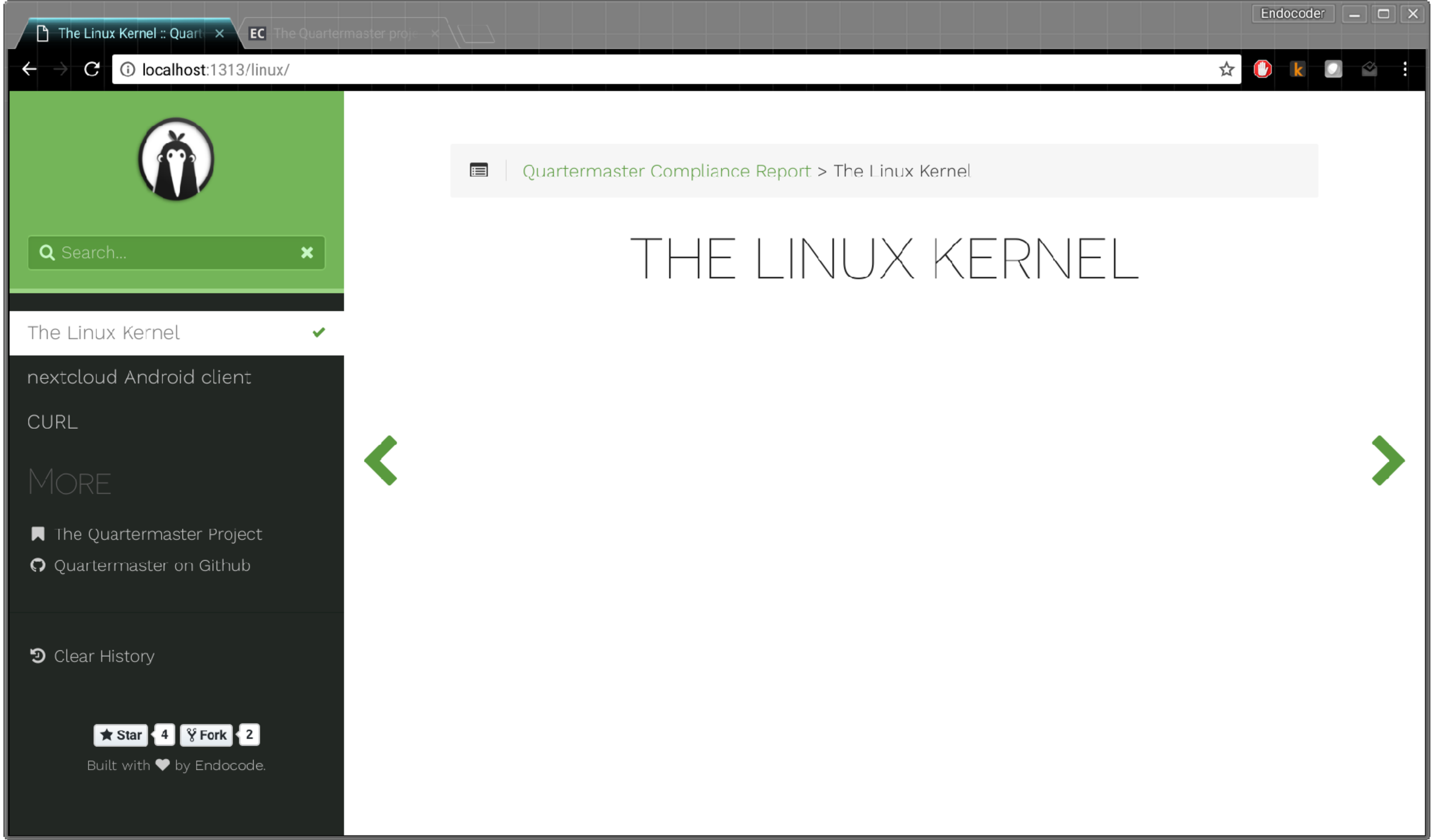
Workflow (Phases and Tasks)



Workflow (Sample Modules)



(Demo Time…)


Endocoder
The Linux Kernel :: Quart
EC
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CURL
MORE
The Quartermaster Project
Quartermaster on Github
Clear History
Star 4 Fork 2
Built with ♥ by Endocode.
Quartermaster Compliance Report > The Linux Kernel
THE LINUX KERNEL

Architecture

- Master process
- Toolchain specific build system instrumentation (gcc, clang, go build, …)
- gRPC/protobuf module APIs
- No file formats
- Modular command line toolchain
- Integration API in master
- Linux/OSX/(Windows) client side, master runs in container

License Model

- Data Model: Open Data License
- Core Toolchain: GPL3
- Modules: separate processes, communicating with the master
- Paradigm: Toolchain is FOSS. Core QMSTR modules are FOSS. Proprietary integrations possible, all relevant data becomes part of Open Data model.

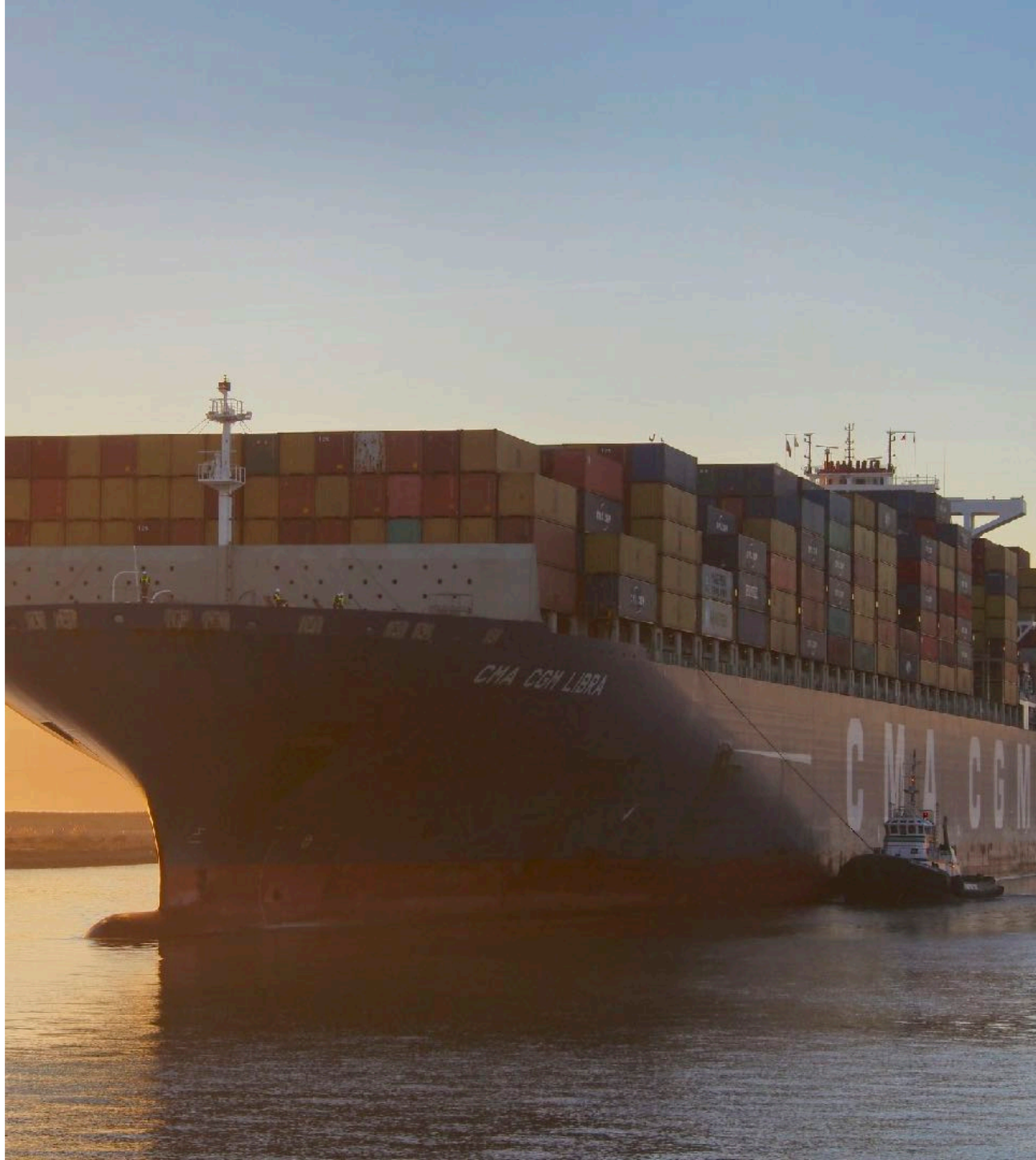
Take-aways: **Lessons learned** from the Quartermaster prototype

Facts vs Opinions

- Compliance Documentation:
  - Authors, copyright, license information is project metadata and belongs into the “package” (repository and commit history).
- Approval, Guidance, Supply Chain:
  - Approvals, reviews, judgement calls are business-specific and belong into a knowledge base.

Inbound vs Outbound Licenses

- Source package SPDX files document *inbound licenses*.
- Outbound license **cannot be deduced**.
- If outbound license is specified by vendor, license compatibility can be **algorithmically evaluated**.



Upstream vs Data Pools

- FOSS compliance **data** belongs upstream.
  - Default: The inbound licenses of a module are deduced from the content of the repository.
- **Opinions** (reviews, approvals, …) are not generic.
  - In-house “Open Source Handbook”.
- Relevant metadata not available upstream should be curated and centralised.
  - **ClearlyDefined**.

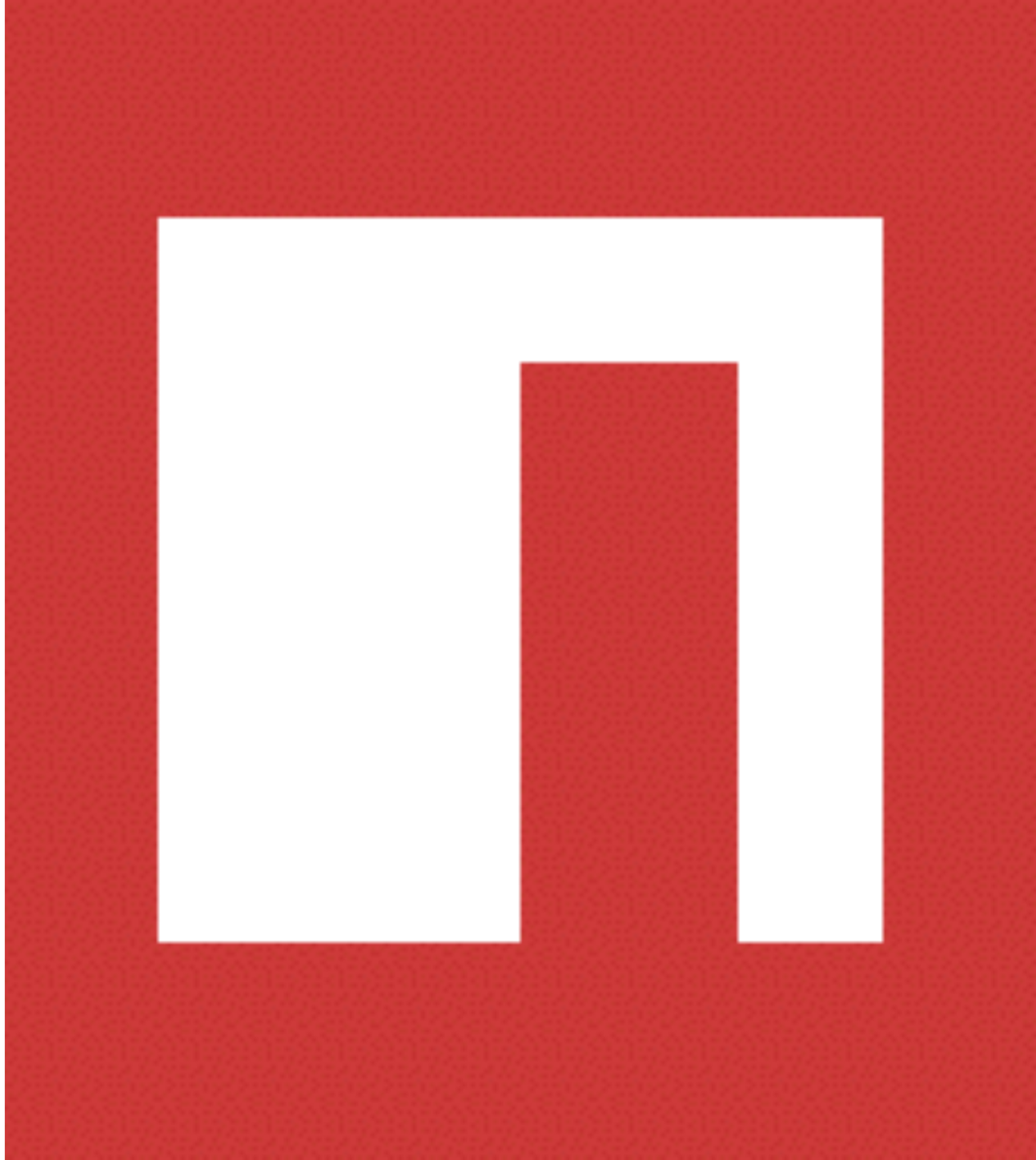
Build time is the **right** time.

Build Time vs Static Code Analysis

- A **Concrete Build Dependency Graph** associates referenced source files and dependencies to a (binary) target.
- Source code analysis (code scanning) detects attributes of source files (licenses, authors, copyright holders).
- The **combination of build time and static code analysis** allows reasoning about outbound licenses.

Quality Issues with Unmanaged Code Repositories

- Environments that assemble programs clients-side from unknown sources defeat quality assurance mechanisms.
- FOSS Compliance documentation is possible, but unreliable and costly until this quality problem is resolved.



Improving FOSS Compliance is a **process**.

We need to **improve all aspects over time**: Supply chain management, up to date and accurate documentation, reliable knowledge bases, …

Community and Business

Open Governance

- Public Website: qmstr.org
- Public sprint and milestone planning (see blog).
- Regular development updates
- Collaborative requirements development
- Show me the code: github.com/QMSTR
- Open Slack channel: qmstr.slack.com
- Follow **@fosscompliance** :-)
- Legal Advisory Committee (collaboration with REUSE? FSFE Legal Network?)

QMSTR is commercially supported FOSS

- Separation of product and services.
- Endocode is offering professional services since the release of QMSTR v0.1.
  - Support Contracts
  - Training
  - Custom Development
  - Consulting
- No Open Core: 100% FOSS.

Summary

QMSTR creates an **integrated Open Source toolchain** that implements industry best practises of license compliance management.

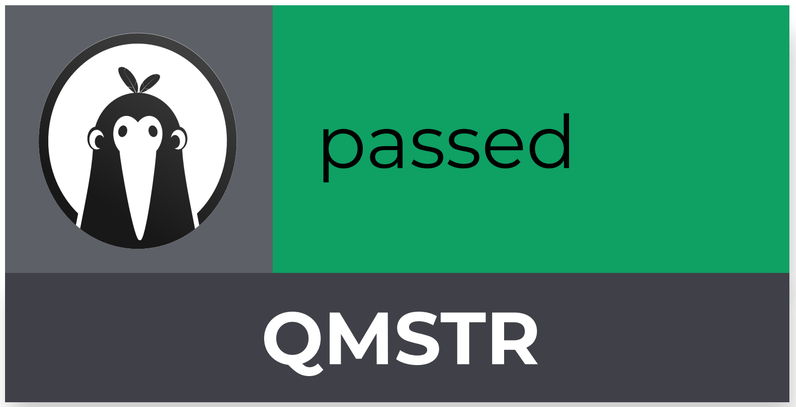
Mission

Project Roadmap

- Q2/2017: Proof of Concept. (✅ check)
- Q4/2017: Minimum viable prototype. (✅ check)
- Jan 17, 2018: QMSTR 0.1 requirements workshop (✅ check)
- April 2018 (LLW 2018): QMSTR v0.1 release. (✅ check)
- July 2018: QMSTR v0.2 release. (✅ check)
  - New features: Git analyser, SPDX parser, Python QMSTR modules, …
- Ongoing: A major release every three months.

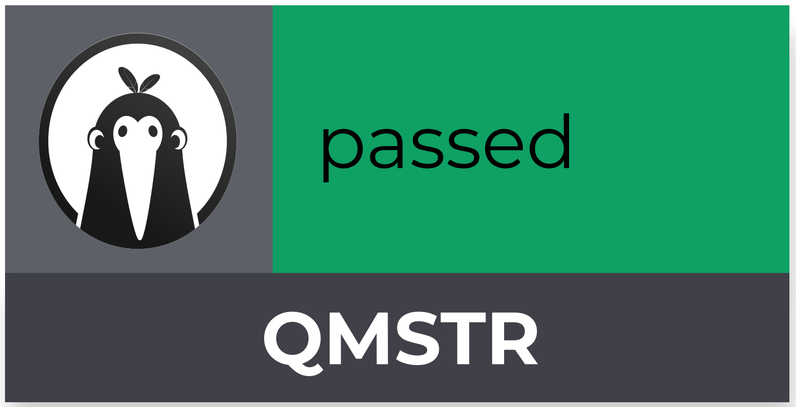
What could the industry community do?

- Contribute to language and toolkits and workflow support.
- Adopt Quartermaster for releases, packaging, checks, …
- …?



Next opportunities to get involved!

- Next sprint community hangout: September 5
- Q4 milestone planning workshop October 2018 (possibly co-located with Open Source Summit Europe)
- We need: coding. feedback. knowledge. adoption. funding.



Questions?

Quartermaster
Open Source ComplianceTooling

August 2018

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