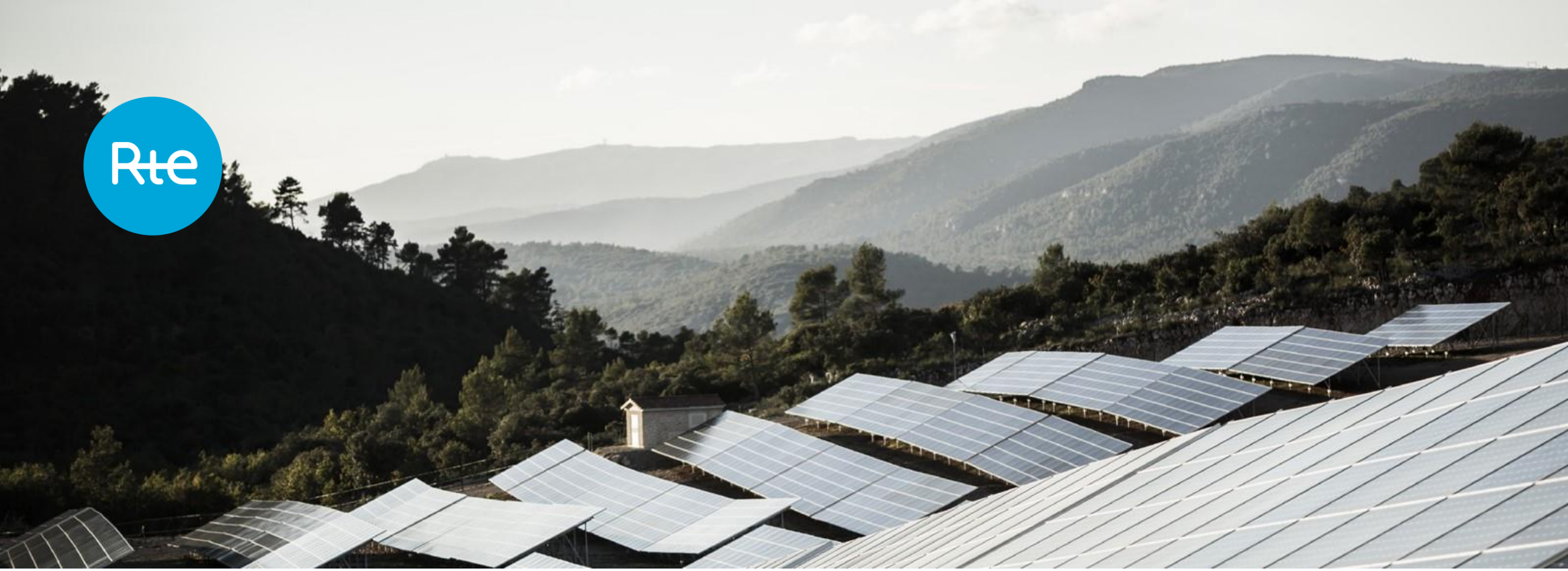


Setting up an OSPO at a power utility

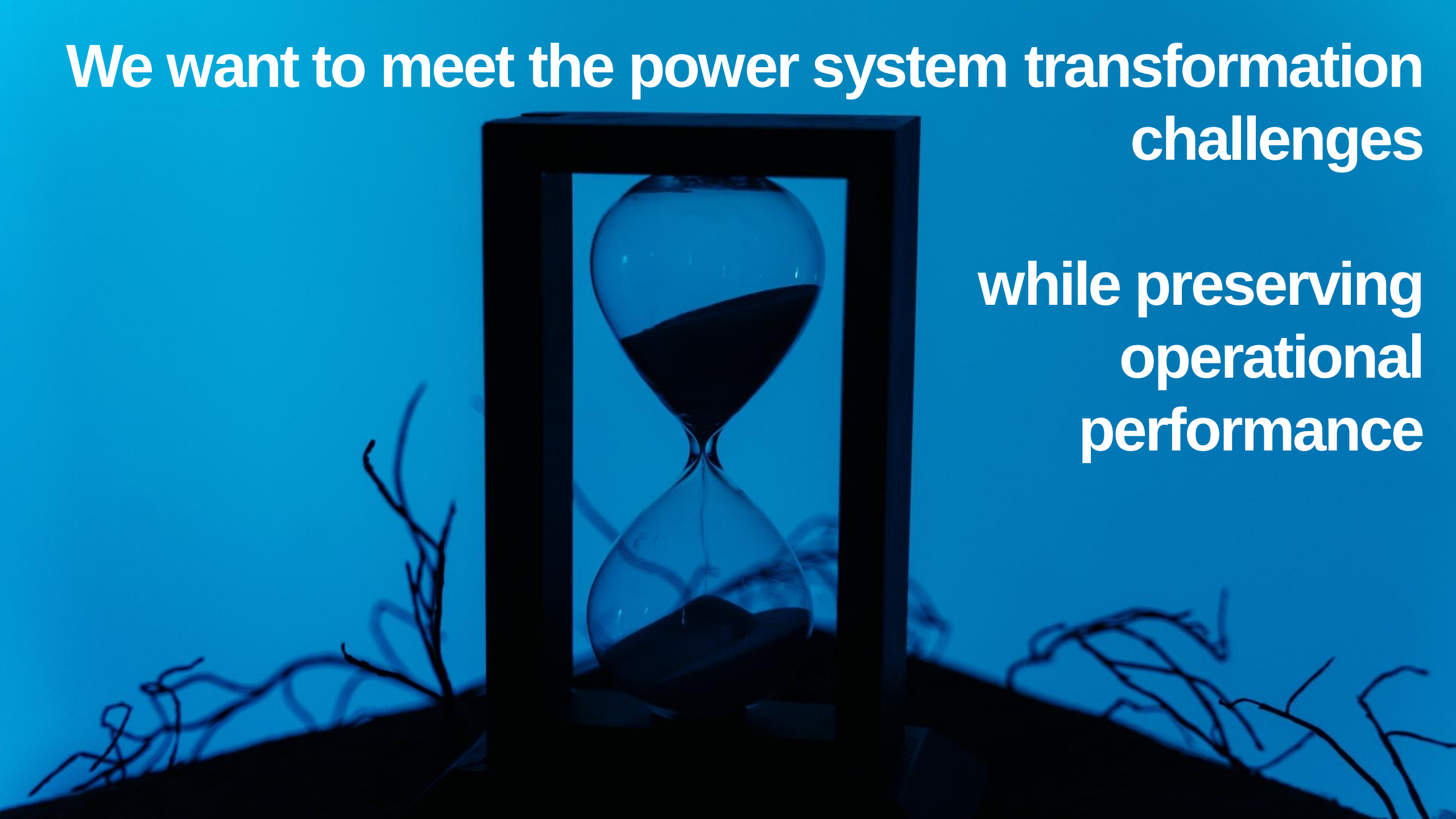
Lucian Balea, OnRamp Meeting, 17 June 2022

Context

About RTE

RTE operates, maintains & develops the French electricity transmission network

1st European network with 105,000 km of high and extra-high voltage lines,
this vital infrastructure guarantees everyone, 24 hours a day, a safe, economical and environmentally friendly power supply.


We want to meet the power system transformation challenges
while preserving operational performance

Building an Open Source capacity aiming at…

- an acceleration by reusing what exists and sharing efforts, allowing to build faster and cheaper software,
- improved modularity, interoperability, evolutivity and shorter release time cycles,
- cutting-edge technological and business model innovation,
- access, through collaboration, to wider and more diverse skills and to a diversity of viewpoints,
- reduced vendor lock-in or customer-specific approaches that impede velocity, cost-efficiency and innovation.

The OSPO

The OSPO

Learning from more advanced industries: a successful open source strategy requires a structured organization, i.e. an Open Source Program Office

An OSPO has been set up at RTE since 2019 with the following missions:

- Understand open source (compliance, governance, business models) and educate internally
- Promote an open source ambition, monitor objectives and milestones
- Promote adaptations of internal business processes (development practices, procurement) in accordance with the open source strategy
- Disseminate best practices, implement learning loops, support projects to go open source
- Coordinate the interaction with external stakeholders, contribute to community building
- Manage the specific compliance and trust challenges of open source

The OSPO

Structured in a lean way

- 1 full time Open Source Program Officer (access to C-level management is a key enabler)
- A network of (part-time) contributors disseminated in the existing organization: 2 enterprise architects, 1 dev team manager, community/tech leads of open source projects, lawyer

Rationale:

- Limited resources
- Disseminate open source practices withing the regular software activities

Main achievements
(what we are proud of)

Gaining executive support

The main stakes of open source collaborations lie in core-business applications of the industry

Managing the frictions between internal and external roadmaps can become a tricky balancing act

- Successful community building requires credibility, engagement, consistency
- While internal business stakeholders may have shorter term expectations and other priorities

➔ **Executive support was an essential milestone of our open source journey!**

Industry strategy and community building

Imagining and triggering a shift at corporate and even industry levels following the path of other industries (applying proven best practices and avoiding reinventing the wheel)

LF ENERGY

Providing a 21st century plan of action to decarbonization through open source, open frameworks, reference architectures, and a support ecosystem of complementary projects.

Community growth 2018 - 2022

Strategic

alliander · Google · Microsoft · Rte Le réseau de transport d'électricité

General

AVEVA · BTP · Cleartrace · CloudBees · electricityMap · ENERGINET · FLEXIDAO · FUTUREWEI · GE · HITACHI Inspire the Next · indra · M-RETS · MISSION DATA · PIONIX · RECURVE · Savoir-faire LINUX · REPLY SENSE · Statnett · TenneT · UTILITYAPI · VATTENFALL · WattCarbon · ZEDEDA

Associate

Carbon Co-op · TU Delft · Elaad nl · EPRI · ENACCESS · Energy Foundation · EnergyAi.Berlin · entsoe · EPFL · FIWARE · Fraunhofer IEE · FREEDM Systems Center · FAU · Iowa State University · KTH Vetenskap och Konst · Hochschule Luzern · Monash University · NREL · OpenEarth Foundation · openADR · Open UK · Pecan Street · Project Haystack · RWTH Aachen University · Stanford · The Alan Turing Institute · The Energy Coalition · Universität Kassel · Vanderbilt University · Washington State University

Participating to open source projects

We followed a "start soon and small, 'fail' fast" approach

- Practicing helps demystifying
- Learning and onboarding from communities

Key milestones:

- Defining a licensing and contribution policy (favoring permissive licenses, contributing upstream)
- Implementing a compliance review process and checklist to push internal code to open source

Learnings

- Engaging with the community is an essential step to get value (the richness of the open source model lies more in the community than in the code)
- While building capacity to develop proprietary software requires significant effort (staffing, know-how), entry barriers are much lower with open source (leverage of existing community)

Articulating open source and procurement

RTE is subject to European public procurement rules as an entity with "special or exclusive rights" operating in the energy sector.

Goal: require specific open source software in public procurement to better articulate software purchases and inhouse developments, in accordance with the open source strategy

Confirmed by a legal analysis: Procuring Open Source Software in European Public Sector (https://www.lfenergy.org/wp-content/uploads/sites/67/2019/10/Note_OpenSource_CompetitionLaw_EN-1.1.pdf)

➔ **Successfully implemented in two recent tenders**

Main principles implemented in procurement templates

- Possibility to require specific open source components to fulfil specific functional needs
- Possibility to require open source (but no prescription on components) to fulfil part or all of the functional needs
- Definition of open source licenses based on Open Source Initiative and Free Software Foundation
- Requirement of permissive or moderate copyleft licenses
- Requirement of open governance for open source components (e.g. Foundations)
- Requirement of a compliance program in accordance with Open Chain specifications 2.0 (https://wiki.linuxfoundation.org/_media/openchain/openchainspec-current.pdf)
- Provisions allowing bespoke developments and documentation to be directly contributed to the corresponding upstream projects
- Possibility for RTE to commit to distribute bespoke developments and documentation under an open source license

Work in progress
(where we are still struggling)

Compliance

Started in 2018 with a few external compliance audits (before opening internal code)

- It enabled building legal understanding of licenses and compliance issues

A roadmap was then identified to set up an internal process based on the following:

- An open source license usage policy established and updated by the OSPO ✓
- Regular (automatic?) scanning of code bases and dependencies by each project and check of compliance with the policy ✗
- OSPO to be consulted by projects in case of deviation from policy (paralegal competence) and performing sporadic checks ✓
- Legal team to be consulted by OSPO in case of new or unclear issues ✓

Compliance

Encountered issues

- Chosen tooling (Fossology) mostly suitable for thorough manual assessment but reveals hard to use in a decentralized way by projects with limited experience (and time availability)
- Rough usage of Fossology would lead to undetected issues (e.g. license issues with dependencies or non-code assets such as images, sounds, etc.)
- Raw scan results were systematically sent back to OSPO for interpretation

Way forward

- Experimentation of OSS Review Toolkit (ORT) to generate SBOMs
- Decision to become a founding partner of Hermine project (https://hermine-foss.org/) that aims at building an overlayer to ORT for compliance management

Cultural transformation

From a “control and forbid” mindset to a “motivate and enable” culture

(unlock control to unleash innovation)

- Learn to work openly with the community / bring internal discussions to the community
- Release soon, release often
- Trust in technical communities
- Acknowledge that sharing brings value (diffusion of information can create unexpected opportunities, diversity of viewpoints mitigates the risk of doing wrong)

Cultural transformation

Challenges faced along the way

- Teams too often work in silos
- Illusion that one can go faster alone
- Misconception that code could not be opened until it is perfect, finalized
- Insufficient time devoted to pair review, documentation
- Ignorance of open source compliance obligations despite large usage

And next?

Several challenges in front of us

- Systematizing SBOM production and exploitation across all open source and internal projects
- Broadening training and education on open source practices and culture
- Onboarding new projects and growing communities
- Improving our consumption of open source
- Collaborating with the community on security

Wrap up

Wrap up

Our open source journey

Usage

- The most challenging part?

Trust

- High focus topic at present
- 2 key projects running: SBOM and Hermine

Culture

- Accelerated learning from communities and foundations (“start soon and small, ‘fail’ fast”)
- Individual coaching of projects still required
- Next step: widening training/education

Engagement

- Executive support is a key enabler
- Accelerated learning from communities and foundations (“start soon and small, ‘fail’ fast”)
- Investment at the start but benefits are materializing now

Strategy

- Our first area of focus / Where we have been most successful
- Mainly focused on LF Energy
- Lesson learned: there is no right sequence, but this goal requires conviction and perseverance

Thank you!

Artwork credits

- Page 1: Copyright RTE
- Page 11, LF Energy logo and image: copyright The Linux Foundation
- Page 24, GGI Goal icons from OW2 Good Governance Initiative (https://gitlab.ow2.org/ggi/ggi), licensed under CC-BY-4.0
- Page 24, weather icons by sivvus from https://openclipart.org/, released into the public domain