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OSPO ALLIANCE On Ramp

“Setting up an institutional OSPO: lessons from the field at Grenoble Alpes University”

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May
29
10:30am CET

Violaine Louvet, Research engineer

Lucie Albaret, Librarian

Guillaume Comparato, PhD

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Grenoble Alpes University

Grenoble Alpes University

Science ouverte Grenoble Alpes

- **Students**
  - 57,000 students, including 11,000 international students
  - 150 nationalities
- **Staff**
  - 10,500 employees including 2,550 from national research organizations

UGA Université Grenoble Alpes

Grenoble Alpes University Research

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- 69 research laboratories and 1 university hospital
- **Multi-disciplinary: sciences, engineering, health, social sciences, humanities**
- 2,900 doctoral students
- **Ranked among France's top universities in research**
- **Shanghai Ranking**: UGA ranks among the top 150 universities worldwide
- 684 **patents** filed annually
- 20 to 49 **startups** launched each year

- **Synergies between research and industry**
  - **International laboratories and instruments** : ESRF, ILL, EMBL, GHMFL, IRAM
  - **National research organizations** : CNRS, CEA, Inria, Inserm, INRAE, CRSSA, IRD, CHU Grenoble Alpes
  - **Major companies** : Sun Microsystems, HP, Orange, STMicroelectronics, Schneider Electric, Alstom, Xerox, Thales…

UGA Université Grenoble Alpes

Selected Scientific Breakthroughs

- **Artificial Intelligence & Digital Sciences**
  - UGA researchers contribute to major advances in AI, machine learning, signal processing, and data-intensive computing, with applications in healthcare, energy, and autonomous systems.
- **Quantum Technologies & Physics**
  - Grenoble is one of Europe's leading hubs for quantum research, microelectronics, and nanotechnologies, supported by world-class infrastructures and advanced computational modeling.
- **Climate, Environment & Earth Sciences**
  - UGA is internationally recognized for research on climate change, glaciers, natural hazards, and Earth system modeling, using large-scale simulations and data analysis.
- **Biomedical & Health Research**
  - Breakthroughs in neuroscience, medical imaging, and precision medicine are driven by strong interdisciplinary collaborations between clinicians, engineers, and computational scientists.
- **Energy Transition & Sustainable Technologies**
  - UGA researchers develop innovative solutions in renewable energy, smart grids, batteries, and low-carbon technologies through advanced simulation and engineering approaches.
- **Humanities & Social Sciences**
  - Digital humanities and computational linguistics drive new approaches to cultural heritage, text analysis, and social understanding, supported by advanced digital tools and methods.
  -

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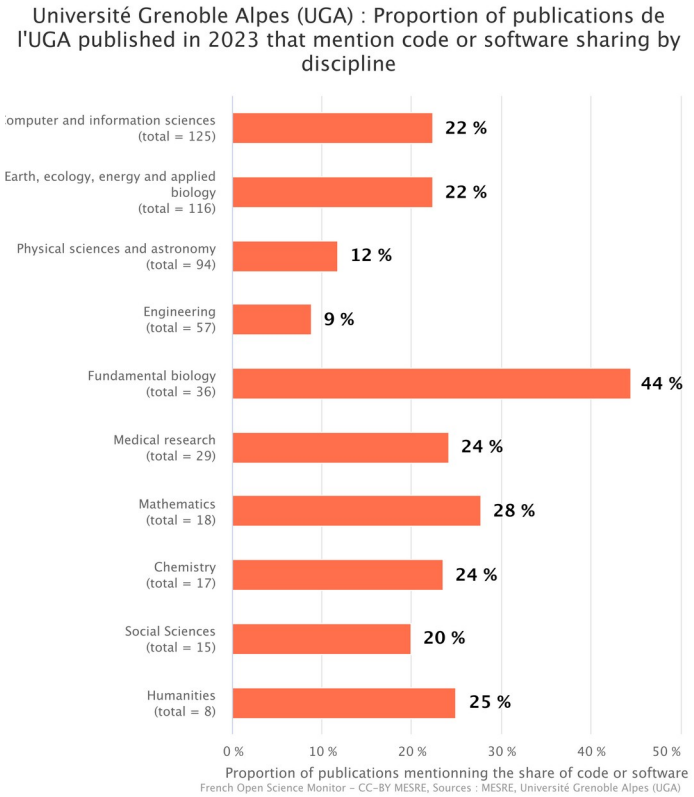
Research Software

Research Software: what are we talking about?

- **Definition**
  - Software written to **conduct, support, or validate research**
  - Created by researchers, research engineers, or engineers in research institutions
  - Core purpose: advance scientific discovery, analyze data, simulate phenomena
- **Scope: From Small to Large**
  - Small tools: scripts, notebooks, data processing pipelines
  - Medium projects: domain-specific solvers, analysis frameworks
  - Large infrastructure: simulation platforms, data management systems, visualization tools
  - Spans all scientific disciplines: physics, biology, chemistry, mathematics, social sciences, humanities
- **Key Characteristics**
  - Often developed with limited resources (small teams, short-term funding)
  - Heterogeneous quality: ranges from prototype code to robust, production-ready software
  - Created for reuse (within research groups, labs, communities) but often undiscovered or invisible



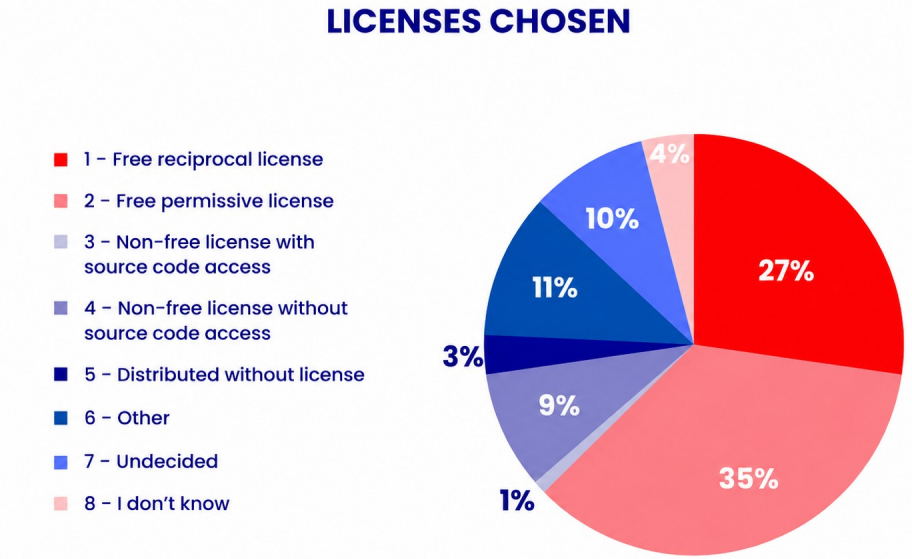
Open Science Barometer of UGA

Research Software & Open Source

- **Why This Matters**
  - Research software is a **critical pillar for science**
  - Often underfunded and unsustainable - lacks documentation, testing, long-term maintenai
  - Hidden from discovery - rarely published as standalone outputs, not cited in publications
  - Researchers trained as domain experts, not software engineers

- **Open Source: Essential for Research**
  - Reproducibility & transparency: open code enables verification and builds trust in results
  - Collaboration: researchers worldwide can build on, improve, and extend existing tools
  - Knowledge sharing: code becomes a form of scientific communication
  - Sustainability: community-driven development extends software lifetime beyond individual projects
  - Research independence depends on access to source code

- **The Challenge**
  - How to ensure research software is reliable, reusable, sustainable?
  - How to incentivize open source contribution alongside traditional research outputs?
  - How to build institutional capacity in open source practices and governance?



Source : Enquête nationale, Juin 2023 (MESR) - Calcul S&R

Free and open source software was born in academic collaboration and remains deeply rooted in research communities - it is how researchers naturally work together.

Research Software only

- Software created to conduct, support, or analyze research. For example:
  - ✅ Simulation & numerical modeling tools
  - ✅ Data processing & statistical analysis software
  - ✅ Computational frameworks (Julia packages, Python libraries)
  - ✅ Laboratory instrument control & data collection software
  - ✅ Visualization & visualization libraries
  - ⚠️ **Open and inner source software**
- **NOT included:**
  - ❌ Administrative/institutional software
  - ❌ Educational software (teaching tools, learning platforms, course content)
  - ❌ General infrastructure tools (unless research-specific)
- **Teaching and administrative tools are essentials but operate under different constraints and governance**

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Research Software@UGA

UGA's Open Science & Open Source Policy

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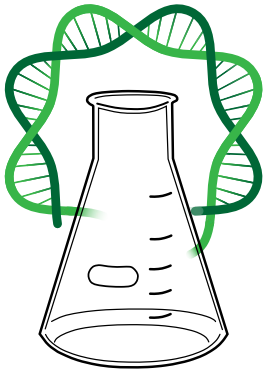
- **Definition & Scope**
  - **Open Science** = free dissemination of research results, methods, and products, accessible to everyone. It applies to publications, data, and codes.
- **Institutional Commitment**
  - UGA implements an **open access policy** across all three pillars: publications, data, and research software.
  - **National alignment**: UGA embraces the National Open Science Plan (PNOS), France's strategic framework for establishing open science as a common practice across the higher education, research, and innovation ecosystem
  - **International positioning**: in line with the positions of UNESCO and Europe
  - Institutional priority: Open science is embedded in UGA's research governance and strategic vision - not an add-on, but a core institutional value
- **Underlying Principle**
  - **Open science** is fundamental to research quality, reproducibility, transparency, and long-term sustainability. UGA recognizes that research independence and credibility depend on open access to knowledge.



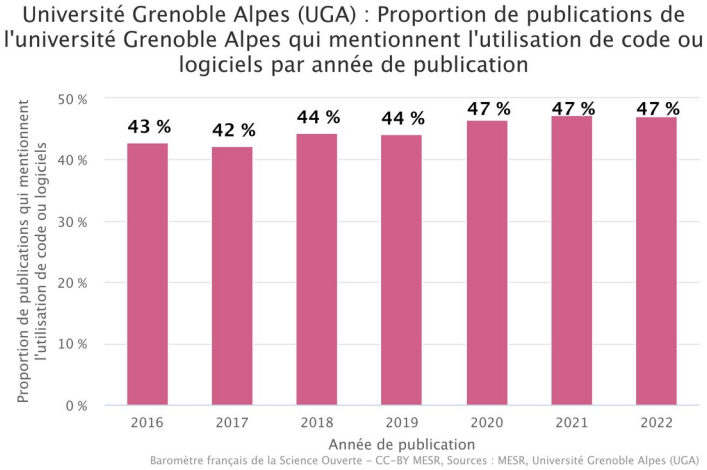
Research Software Landscape @UGA - Snapshot

- **The Scale of Software Development**

  - 11,000 users on UGA's institutional GitLab forge
  - 20,000 projects hosted, 2,600 of them public
  - 197 software notices formally registered in UGA's Open Archive Portal
  - Nearly 50% of all publications mention software use - yet most software remains invisible

- **Critical Gap: What We Actually Know vs. What Exists**

  - The 197 software notices represent a tiny fraction of what is developed in UGA’s labs. This is not a comprehensive picture - it reflects only formally referenced and archived software. The real research software ecosystem at UGA is far larger and far more fragmented.



Open Science Barometer of UGA

Research Software Landscape @UGA – challenges

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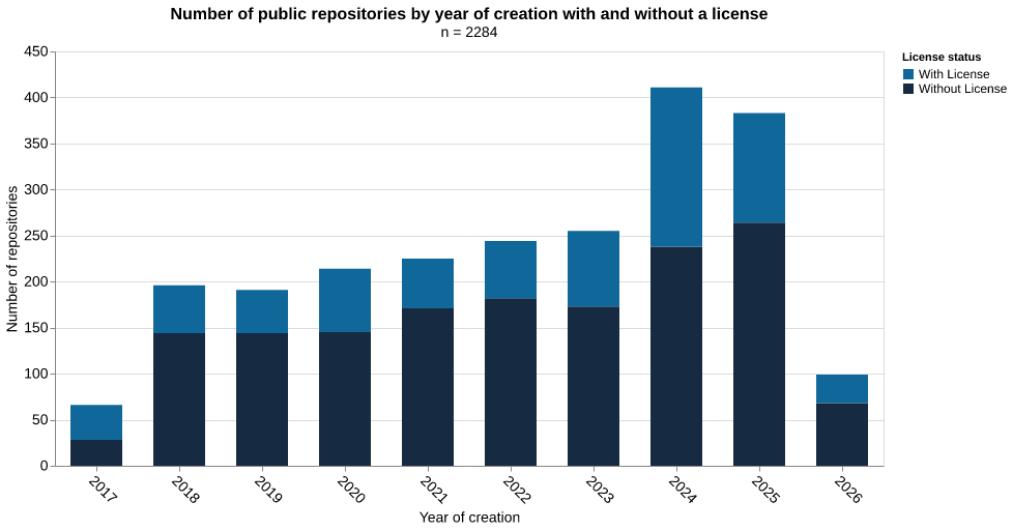
- **The Challenge of Licensing**
  - Only ~40% of public repositories on the GitLab forge have an explicit open source licence
  - 60% of public software projects lack any license statement - leaving IP status unclear, reuse impossible, reproducibility compromised

- **Underlying Problem**
  - Researchers have the will to share code openly, but lack institutional guidance on:
    - Which license to choose and why
    - How to structure and document software properly



Open Research Software Monitor at UGA

Researchers are not (most of the time) developers

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Most research software is developed by domain experts - scientists, not software engineers.

Reality:

- PhD students, postdocs, researchers are primary developers
- Goal: publish results → code quality is secondary
- Limited formal training in software engineering
- Often working alone, under time pressure

Consequences:

- Code prioritizes scientific correctness over sustainability
- Minimal documentation, inconsistent practices, reinvention
- Knowledge concentrated in individuals
- "Good enough to publish" ≠ sustainable for research community

Needs of scientific communities

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Diverse and Recurring Needs

- Frequently raised in discussions (mailing lists, workshops, conferences, professional networks ...)
- ⚖️ **Legal concerns**: which license to choose, who to contact, etc.
- 🏛️ Support needs **for software valorisation**: APP (European organization for the protection of authors and publishers of digital creations) registration, consortium building, etc.
- 💻 **Technical challenges**: which forge to use, where to host private runners, etc.
- 👥 **Community building**: supporting the creation and animation of software communities, governance setup, IP guidance
- 📩 Need for **institutional contact points** and resource persons
- ⚙️ **Tools and services** with related training: static code analysis, license identification for included pieces of software, etc.
- 🔓 A **clear and strong institutional position** on open-source software

Needs of university

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The Problem: Research software can be **invisible, unmanaged, and lost** when researchers leave.

What UGA Needs:

- 🔍 Identify & Inventory - Discover what's developed across labs
- 🏷️ Reference & Make Discoverable
- 📊 Evaluate Impact - Assess sustainability, measure research outcomes
- 🚀 Foster Innovation & Reuse - Enable knowledge transfer, encourage collaboration across labs, accelerate innovation
- 🗃️ Preserve & Archive - Long-term preservation (Software Heritage)
- 🤝 Support & Enable - Training, infrastructure, recognition in career advancement

Goal: Transform research software from invisible byproduct to **managed institutional asset**.

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How do we address this needs?

At UGA: A virtual structure to help scientists 🔗

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The Constraints:

- Constrained human resources - no budget for new positions
- Fragile university budget - no funding for new permanent positions
- Competing institutional priorities - research, teaching

The Solution: A Virtual structure build on existing skills

- No new organization
- Leverage existing expertise across the institution
- Coordinate without centralizing
- Build networks & collaboration models

Build on existing skills 🧠

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We Already Have the Talent:

Across UGA's labs & departments, there are skilled professionals:

- **Research engineers** - writing, maintaining code daily
- **Data scientists** - reproducibility, data management
- **Devops** - HPC, infrastructure, tools
- **Librarians & documentalists** - metadata, preservation, discovery
- **Legal people** - licensing, governance

Result: A distributed network of committed people working toward shared research software goals.

Something like an OSPO ?

What is an academic OSPO?

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- **CURIOSS** (Community for University and Research Institution OSPOs) Definition:

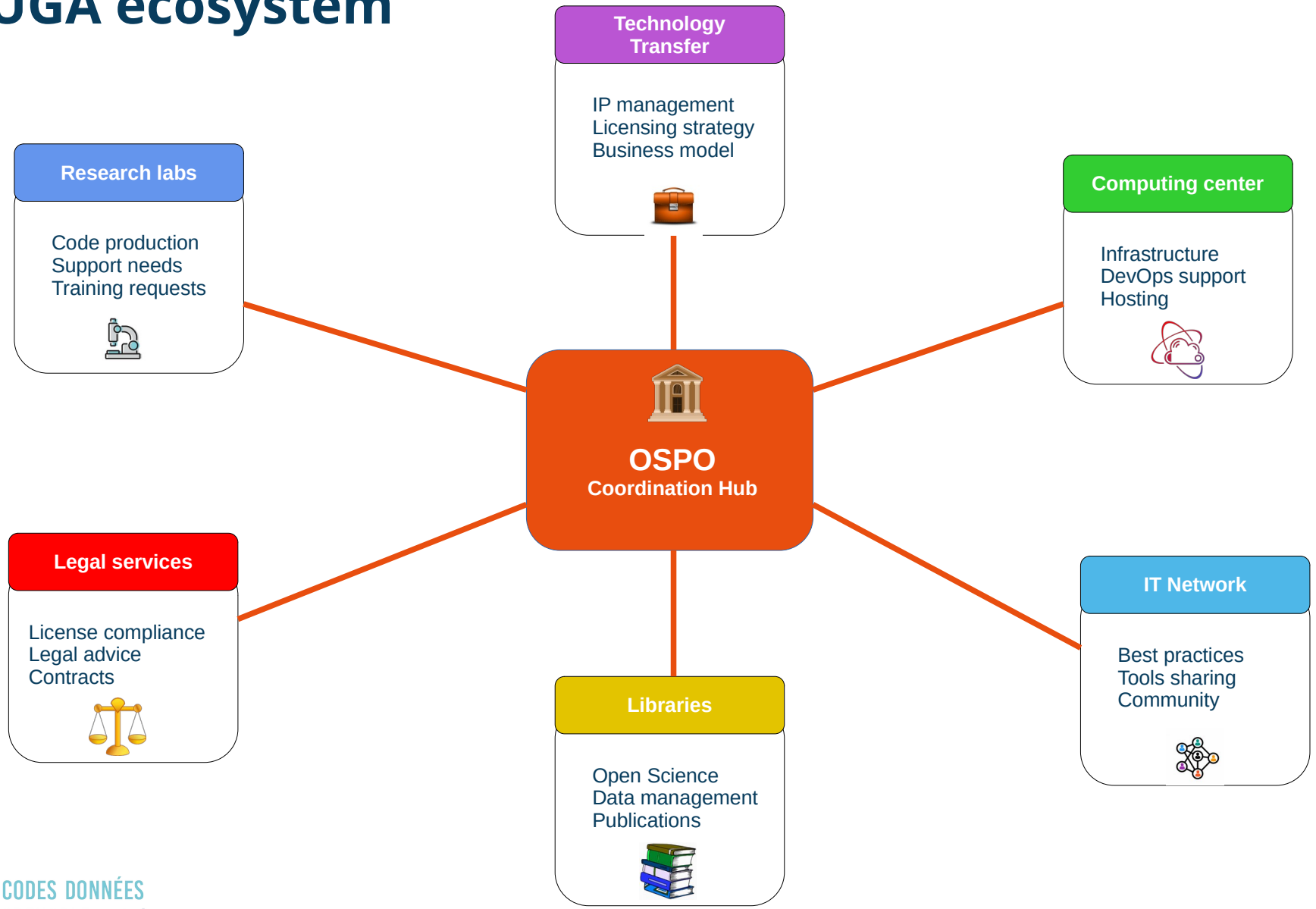
  An academic OSPO is defined as an organizational construct, situated in an academic research institution, supported by one or more individuals that acts as a convener, community steward, and center of competency for open source software.

- OSPOs are quite common in **large companies**, and also increasingly so in public administrations.

- But **emerging in academic area**.

- **@UGA**: Support for the software has been available for many years, particularly within the framework of the supercomputing centre.

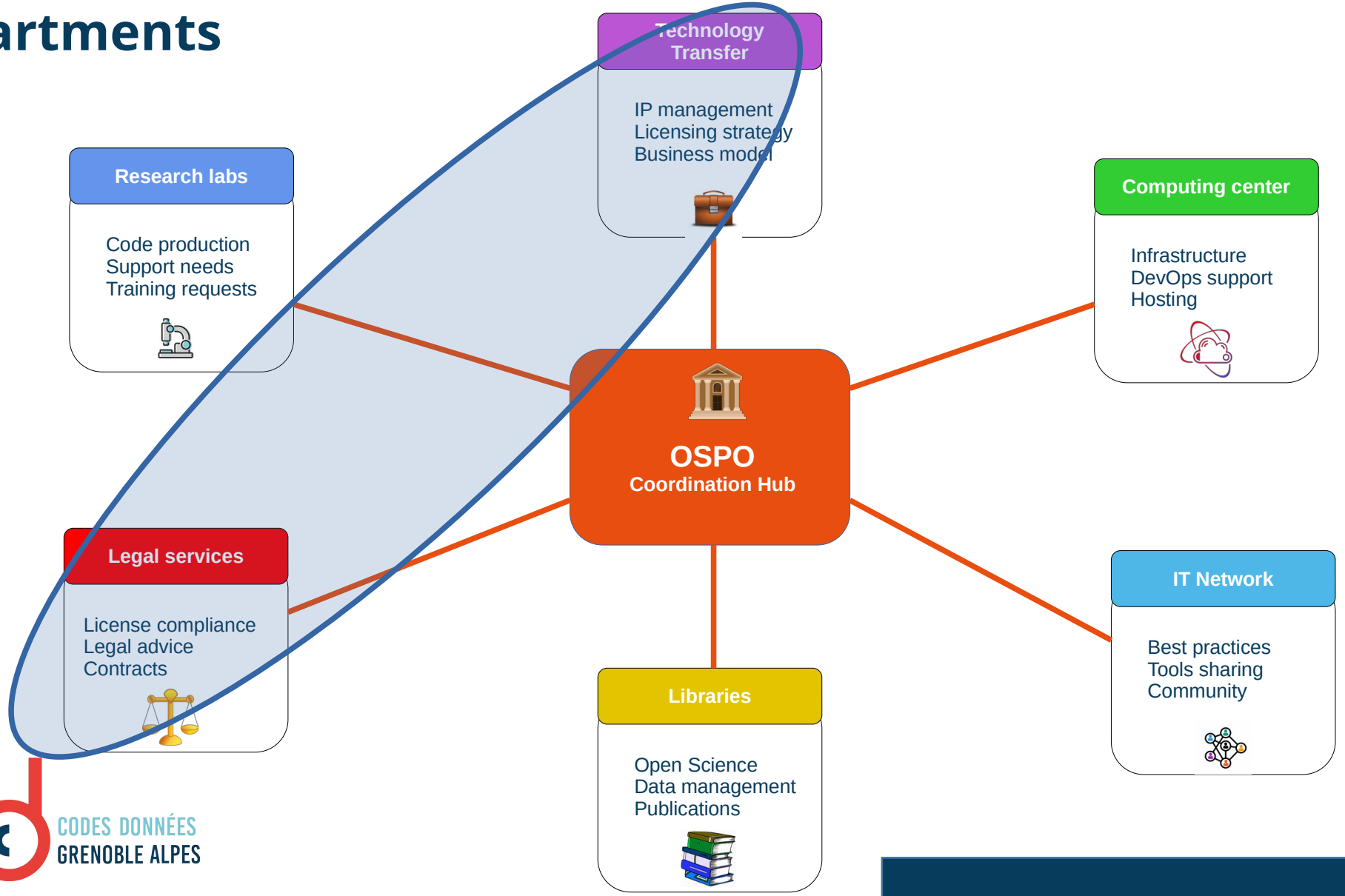
OSPO UGA ecosystem



OSPO@UGA : implementation

- The **Code Data Grenoble Alpes unit (== OSPO UGA)** brings together all services related to research data and research software.
  - It is made up of members from the computing center (called GRICAD), the university libraries, and some research laboratories
  - It combines both **technical and documentation expertise**.
- A joint group with members from the **legal and technology transfer departments** of the institutions on the site
- Another key stakeholder play an important role:
  - The **professional network** of IT specialists on the site (SARI)

The essential role of legal and technology transfert departments



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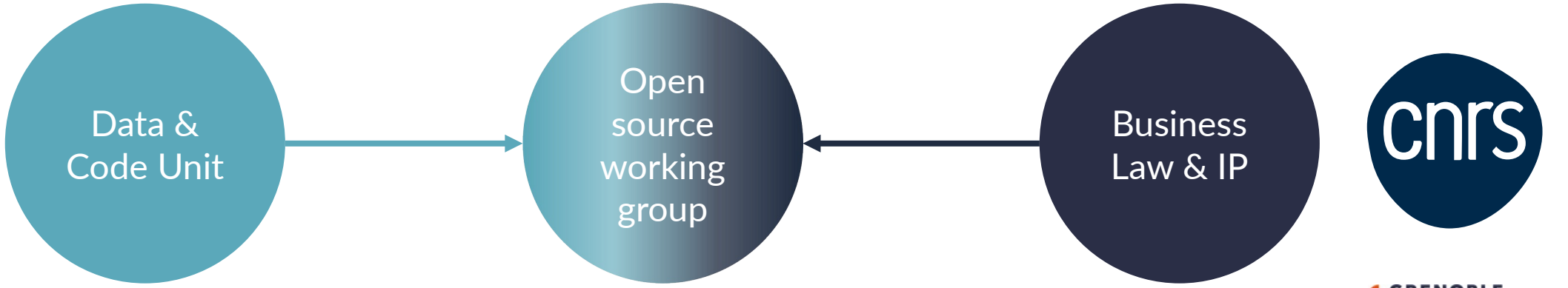
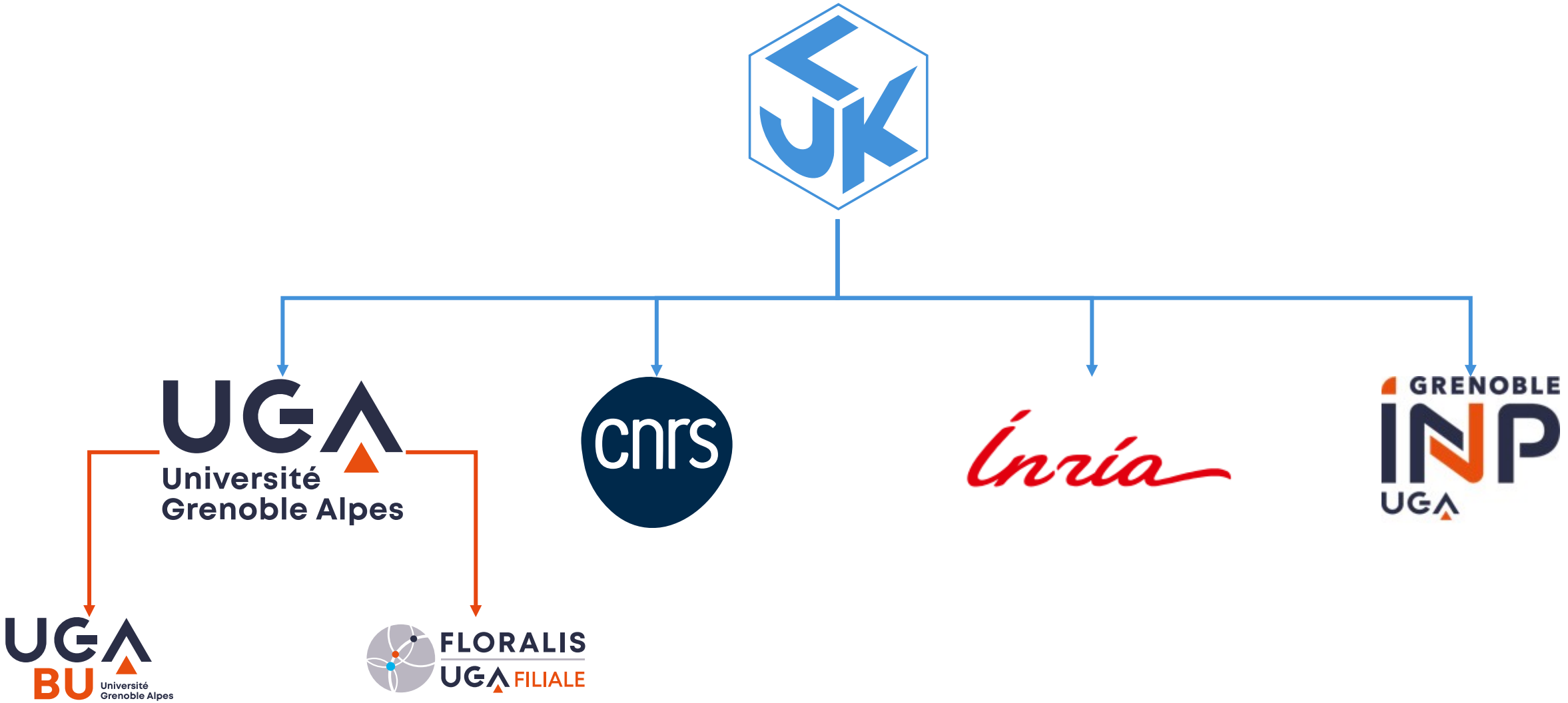
CODES DONNÉES GRENOBLE ALPES

A multi scientific site initiative



A French lab, how does it works ?!



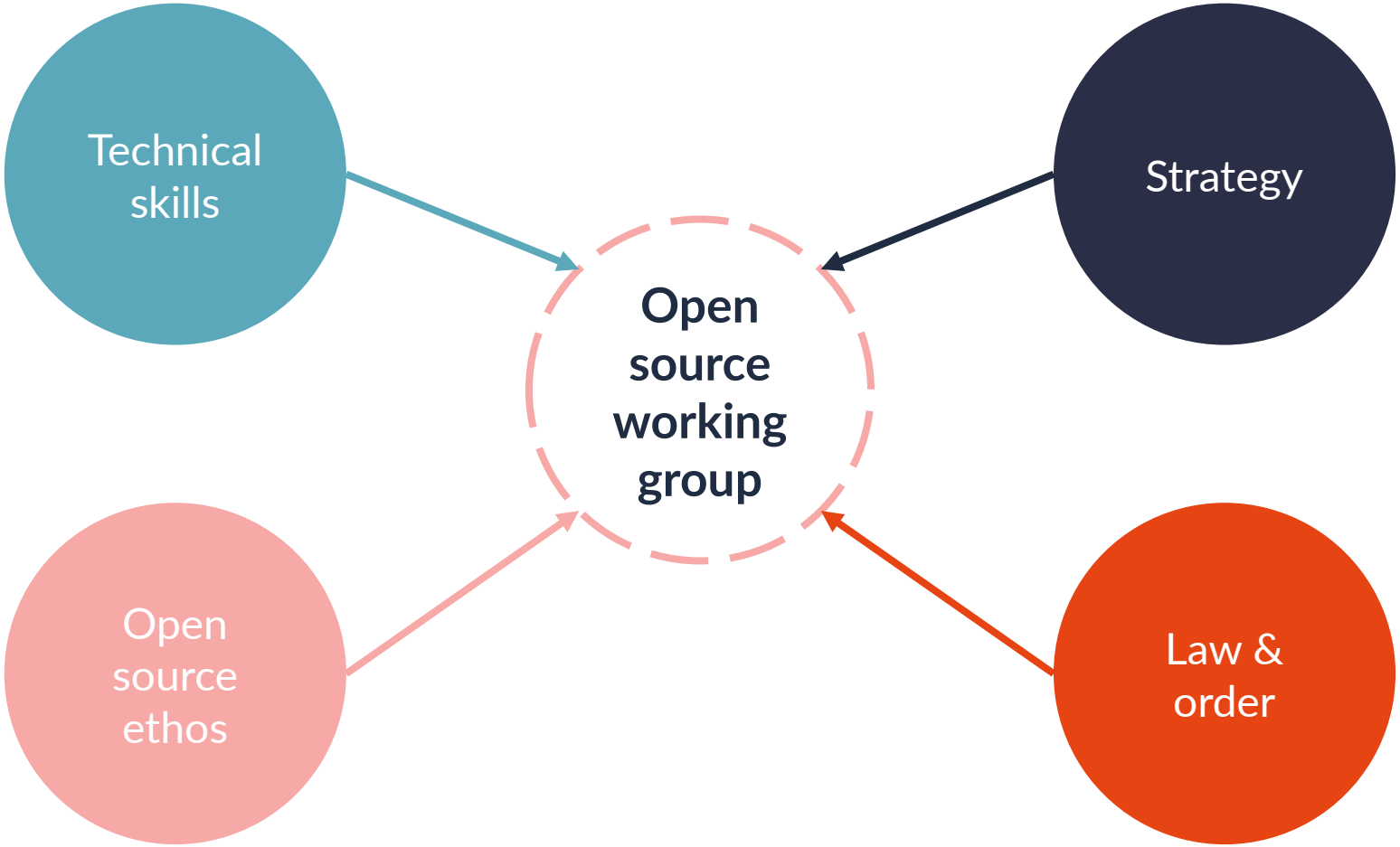
At national level ?

RÉSEAU C.U.R.I.E.

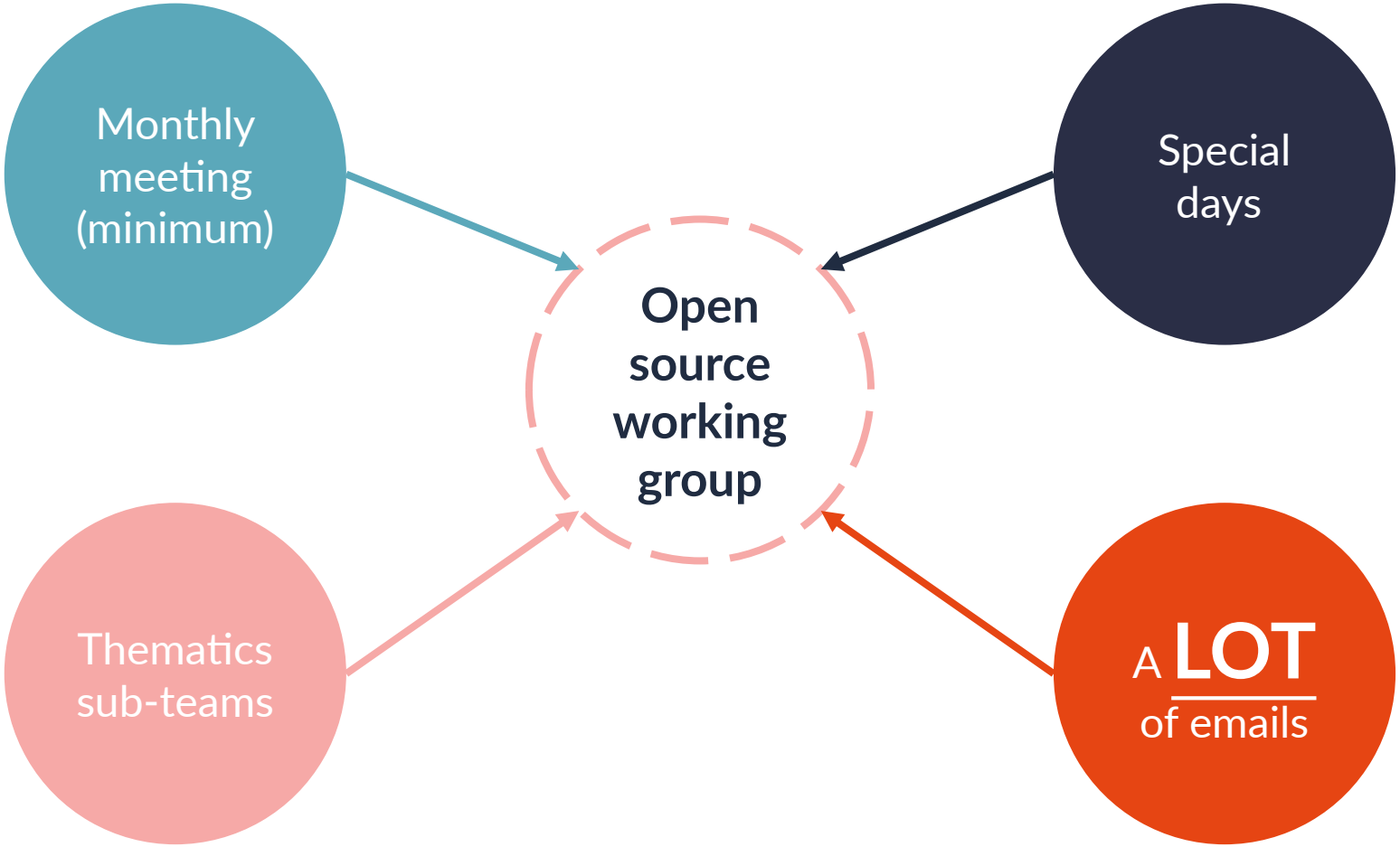
- Legal Committee
- Communication Committee
- Entreprenarship Committee
- SHS Committee
- MedTech innovation Committee

- Universities
- Reseach centers
- Hospitals
- Subsidiaries & SATT
- Actors of innovation

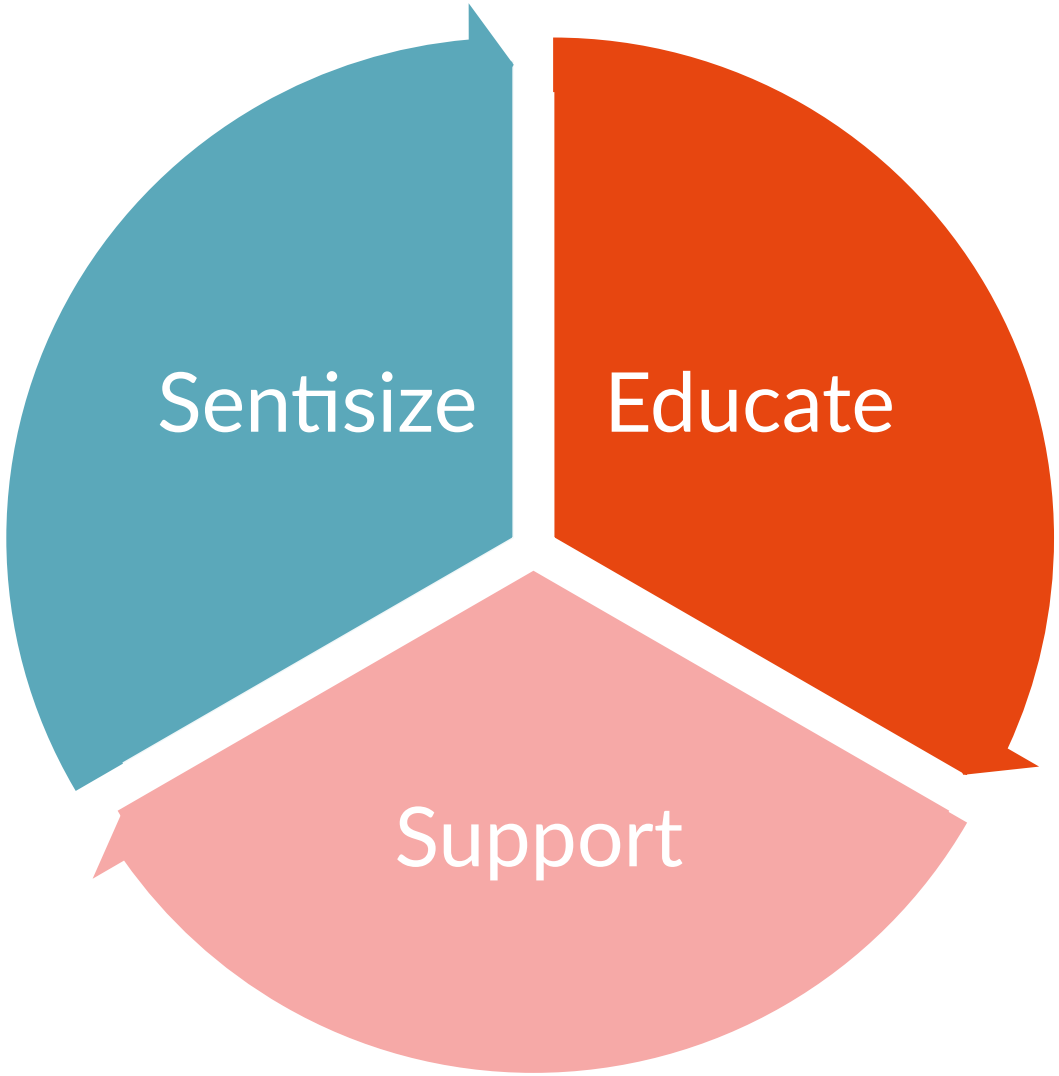
Our Philosophy



How we operate ?



Our objectives

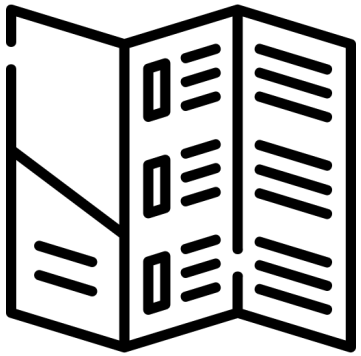


The toolbox project

Sentisize

Brochure for newcomers

- Fundamentals
- Guidelines
- Best practices
- Point of Contact



Training

Educate

Thematic school of OSS
20/05/2025 – 22/05/2025 – 3 days
Poët-Laval (Drôme)

The objective is to understand the challenges of Open Source Software (OSS) in both national and international contexts, as well as technology transfer, associated business models, and communities.

Discovering technology transfer and innovation ecosystem - 26/05/2025 – 1 day
IMAG

A day to discover technology transfer, IP protection, contract law, and the people who work in these fields.

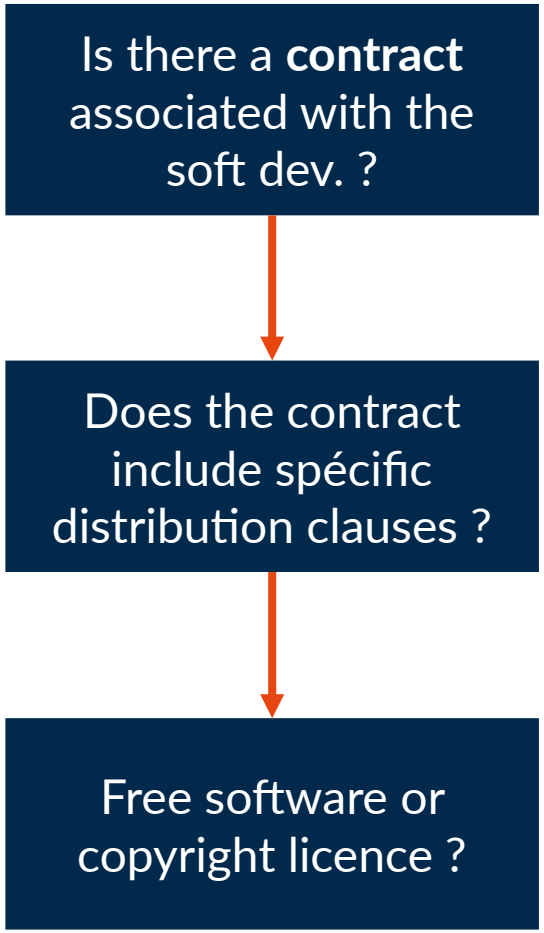
Open Science Days
25/11/2025 – 1 day « posters »
IMAG

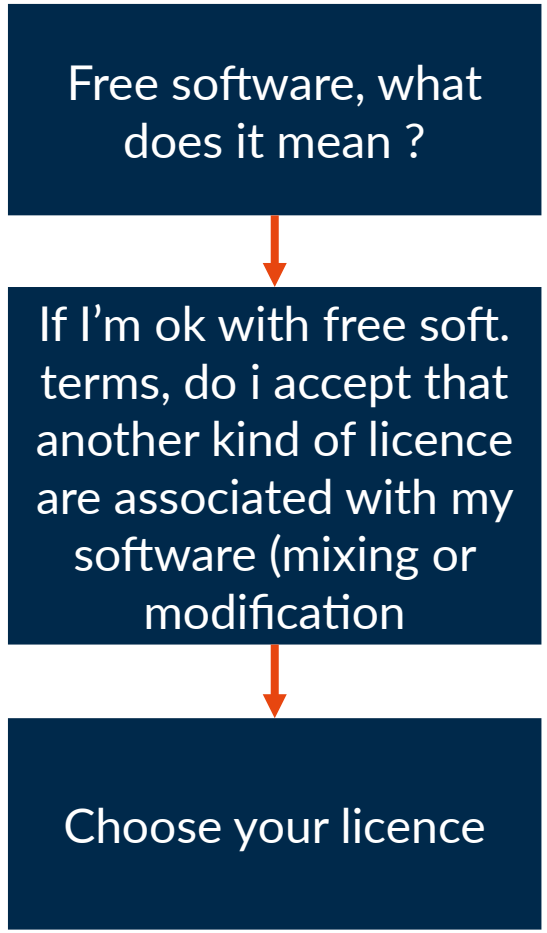
Workshops & open science expo.

How to choose a licence?

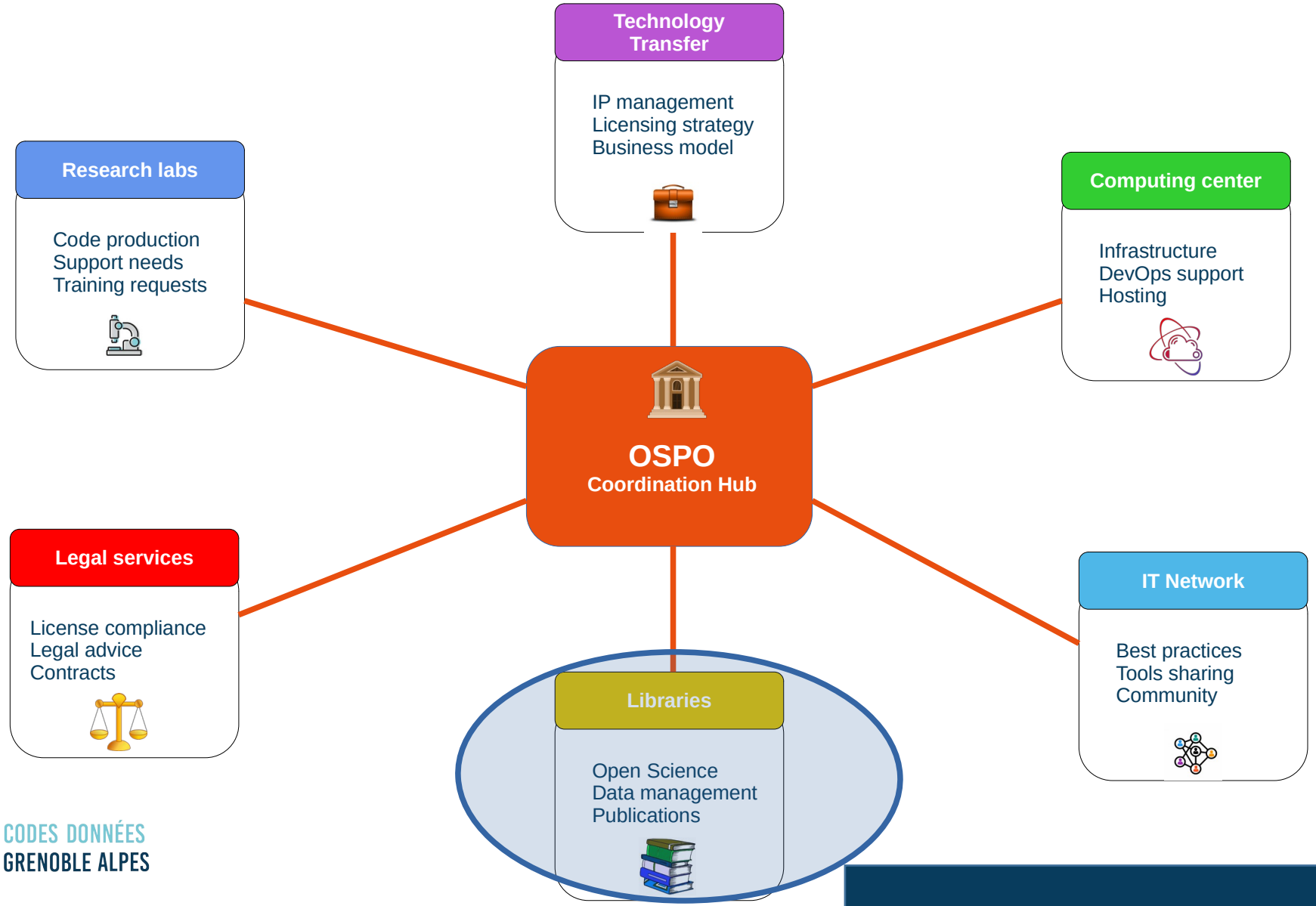
Support

Flowcharts to help you choose your licence : in simpler terms





The essential role of libraries



Librarians in the OSPO

Core Role: Transform research software from invisible to discoverable, documented, and preserved.

- **Key Responsibilities:**
  - Identify & catalog research software across labs
  - Describe with metadata using standards (based on CodeMeta)
  - Archive & preserve using Software Heritage
  - Link ecosystems - connect code to publications and datasets

- **Why Librarians Matter:**
  - Expertise in metadata, standards
  - Deep knowledge of author & institutional referentiels (ORCID, ROR, etc.)
  - Experience managing long-term preservation and archiving

Discovering UGA Research Software: SoftParser4Research

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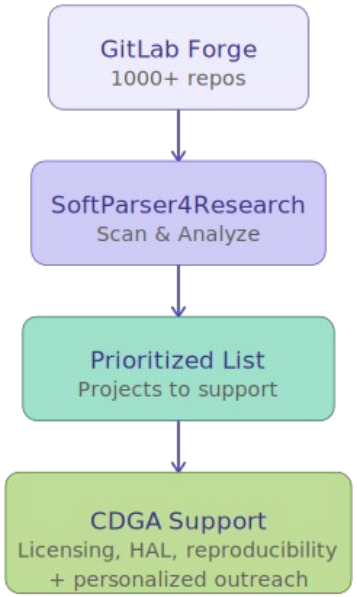
The Challenge: UGA's GitLab forge contains thousands of repositories. Which ones are research software? What needs support? How to prioritize? Which ones need visibility?

- SoftParser4Research: An **automated analysis tool** developed by CDGA (UGA OSPO) that:
  - Scans all repositories on UGA's GitLab forge
  - Identifies & characterizes research software projects
  - Extracts metadata to assess maturity, activity, and support needs
  - Generates prioritized lists for targeted accompaniment



- **From Analysis to Support**: the CDGA uses SP4R outputs to:
  - Identify research software needing guidance
  - Contact authors proactively with tailored support
  - Support referencing (on open french archive HAL) & publication linking
  - Advise on licensing, legal compliance, reproducibility

- **The Impact**: Transforms passive discovery into active, personalized support - ensuring UGA's research software is preserved, shared, and valued.

Persistent Identifiers - Building Trust in Research

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The Problem: Who did this work? Which institution?

When research software is published without clear author & institutional attribution:

- Credit is lost or disputed
- Software is hard to trace back to its creators
- Impact is invisible

The Solution: Persistent Identifiers

- **ORCID** - Unique researcher identifier
  - Like a social security number for researchers
  - Links a person across all their work (publications, code, datasets)
  - Prevents confusion (e.g., 50 people named "Jean Dupont")

- **ROR** - Unique institutional identifier
  - Identifies an organization uniquely (UGA, CNRS, CEA, etc.)
  - Establishes institutional copyright & intellectual property rights
  - Links software to its source institution

Why This is important:

- Researchers get credit for their code
- Institutions get visibility for their research output
- Funders can track return on investment
- Software is traceable & trustworthy

Librarians ensure research software is registered with ORCID & ROR, and that copyright is properly documented and preserved at institutional level - creating a transparent, legally sound chain of attribution and ownership.

Reproducibility - Making Research Trustworthy & Accessible

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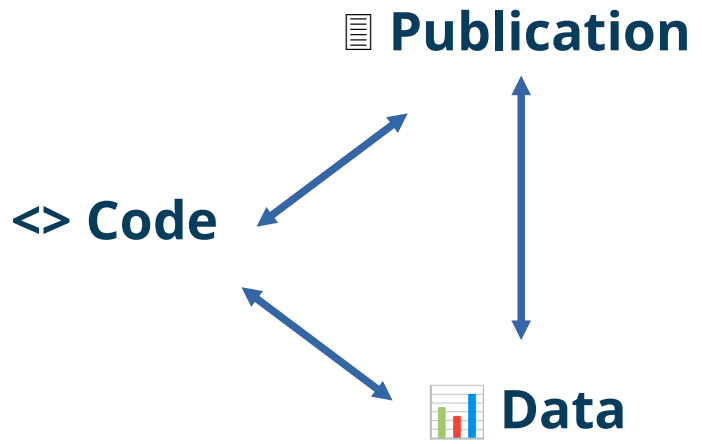
One discovery, three products: Publication / Data / Code

The Problem:

- These three are often scattered, disconnected, sometimes lost or inaccessible.



The Solution:

- Link them together. Make them accessible. Keep them permanent.
- Then anyone can verify the results
- Others can build on the work
- Research becomes trustworthy

Librarians connect & preserve publications, data, and code as one accessible, linked research record

Software Heritage - Preserving Research Code Forever

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Code disappears. Repositories are deleted. Links die. GitHub goes down. Researchers leave. Research software vanishes - along with the research it represents.

Software Heritage: The Internet Archive for Code

- A non-profit organization that crawls the web (code hosting platforms, package managers ...) and archives all publicly accessible software source code.
- Think of it as a permanent, searchable backup of humanity's code.

Benefits for Research:

- Code is never lost, even if GitHub (or another hosting platform) disappears
- Results remain reproducible decades later
- Attribution & credit are permanently recorded

Librarians ensure research software is deposited to Software Heritage, properly tagged with metadata. They transform scattered code into preserved, discoverable institutional assets.

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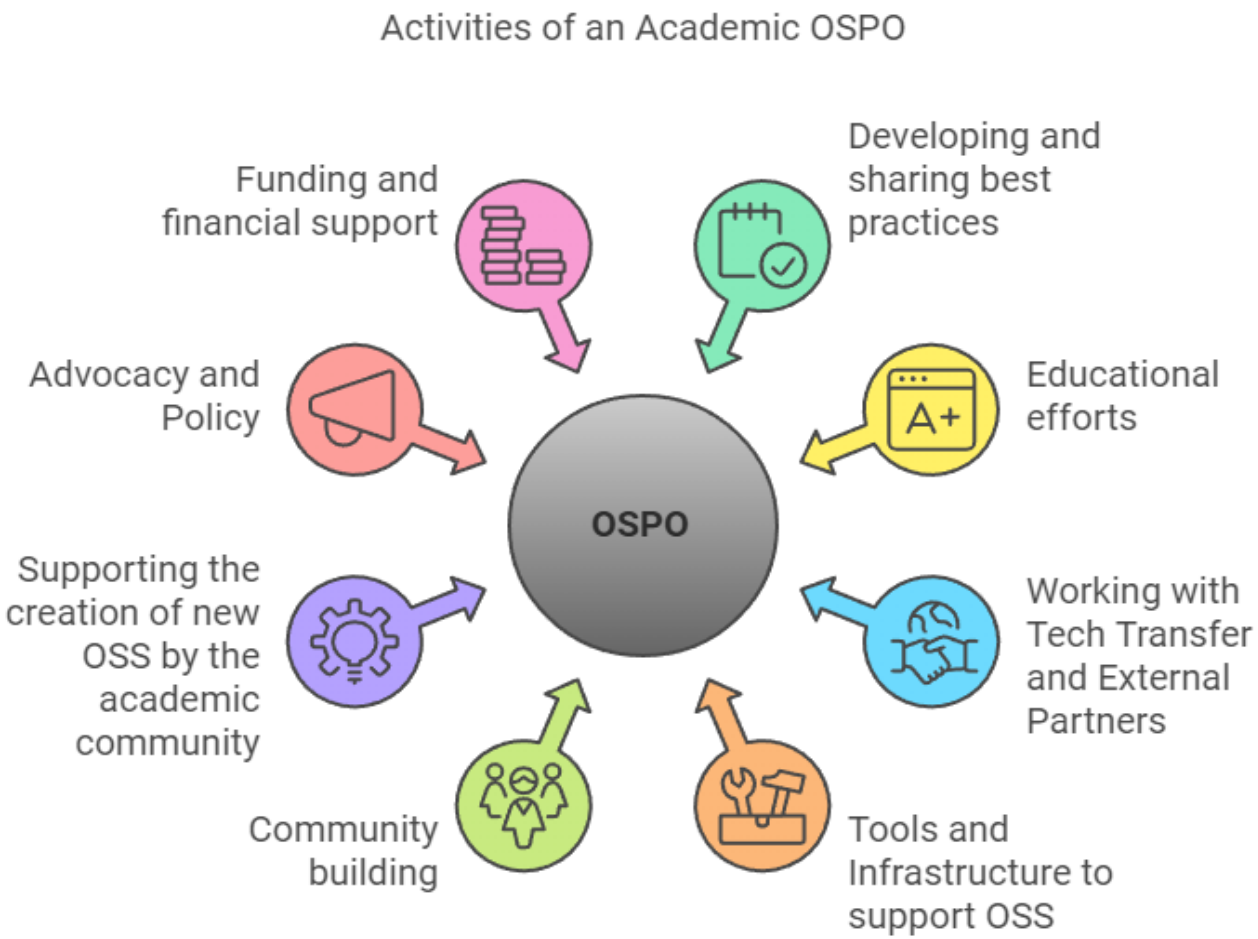
Some examples of the UGA's OSPO activities

Activities of an academic OSPO



Young et al., 2024. A Definition of an Academic OSPO, Version 1.0.1. CURIOSS.org

Activities of OSPO@UGA: let's take some examples

- **Best practices** are a key aspect of open source development.
  - **Support communities,** helpdesk: **sos-codes-recherche@univ-grenoble-alpes.fr**
  - **Exchanges within and between communities:** seminars, webinars, ...

- **Educational efforts**
  - **Training doctoral students ⚠️ The young generation!**
    - Digital module: git, gitlab, cmake, compilation, parallelisation
    - Open science module: software (best practices, dissemination, legal issues, etc.), AI and agent-based programming, reproductibility
  - **Train on a large scale**
    - Floss@UGA: thematic school about open source software

Focus on the thematic school Floss@UGA

Building Community Across Disciplines

- **FLOSS@UGA 2025 - Legal frameworks**
- **FLOSS@UGA 2026 - Building & sustaining research software communities**

When **legal & governance issues** are clarified:

- Credit: Recognize and acknowledge developers and contributors
- Copyright: Clarify rights, protect authors, ensure compliance
- Citation: Recognize software as a research output, enable reproducibility
- Contribution: Build inclusive communities, accelerate innovation

When **communities** form around research software:

- The code doesn't disappear when its original author leaves
- Knowledge is shared & distributed
- Maintenance & evolution become sustainable

Focus: The Importance of Internal and External Partnerships

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- **Working with Tech Transfer**
  - The technological transfert and legal departments play a **key role** in the area of software
  - Some of them have relatively **little overall expertise** in the area of open source software.
  - **Close collaboration with Tech Transfer services** involves an active working groupe on licences, guidelines, training, etc.
- **Working with external partners**
  - UGA's OSPO is part of a **broader ecosystem** - CURIOSS, OW2, OSPO-FR, ...
  - Different scopes, **common issues** - licensing, governance, sustainability across institutions ...
  - **Learning from others' experience** - peer exchanges let us benefit from what has worked (or failed) elsewhere

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Activities of OSPO@UGA: let's take some examples

- **Tools and infrastructures**

  - It is essential to provide tools and infrastructure that are **tailored to the needs** of communities.

  - In particular, access to a **software forge** is crucial.

    - Most-used institutional scientific service
    - Open by design - the forge enables seamless collaboration with national and international partners, breaking down institutional silos
    - Support CI/CD pipelines, container registry, and GitLab Pages for documentation hosting
    - Gateway to archiving - feeds into Software Heritage for long-term preservation of research outputs
    - Shared runners and infrastructure to deploy private runners for specialized computational needs (HPC, sensitive data)

Activities of OSPO@UGA: let's take some examples

- **Community building**

  - **Floss mailing list**: A discussion list for exchanging ideas about free software in Grenoble
  - **Software and open science information:** a dedicated web site compiling information on open science included publications, data and software

    - https://scienceouverte.univ-grenoble-alpes.fr/en/research-software-and-sources-code/

- **Advocacy and policy**

  - Adopting **open science** at an institutional level is an essential first step.

  - In 2022, the University of Grenoble Alpes (UGA) voted on its open science charter and master plan, which included the issue of software alongside data and publications from the outset.

  - The aim is to build on this foundation by promoting recommendations, particularly with regard to theses. The OSPO makes **proposals to the governance** on these subjects.

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Key takeaways

Key Takeaways and Future Outlook

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- Supporting the development of open-source research software on a site like Grenoble is a **multifaceted challenge**.
- We must first be able to address both **technical and legal** questions.
  - The open-source world has its own framework that needs to be understood - and colleagues need guidance to navigate it.
- **Close collaboration** with legal and technology transfer services is essential.
- Strong involvement is also required at the level of **infrastructures and tools**.
- **Training** - as well as **building and sustaining communities** - is at the heart of the effort.
- Finally, **complementary expertise** is key: technical, open-source, legal, librarian, and more

At the national level, what's next?

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- **Academic institutions across France** face similar challenges with research software - sustainability, visibility, governance, legal clarity.
- Good timing to develop dedicated OSPO structures at **institutional level**
- **Coordinate** across institutions - share experiences, align on standards, avoid reinventing wheels
- **Mutualize** where possible
- Work with the CURIE network and promote awareness of open source within **technology transfer departments**
- Several French institutions are actively interested and engaged in this vision. Discussions are ongoing with partners who want to build together.
- UGA's OSPO is not an isolated experiment – it could be a model and catalyst for a coordinated national approach to research software sustainability.

Thanks, questions?

CODES DONNÉES
GRENOBLE ALPES

Contact: **sos-codes-recherche@univ-grenoble-alpes.fr**

https://scienceouverte.univ-grenoble-alpes.fr/en/home/