

SOVEREIGN TECH FUND

Feasibility Study to Examine a Funding Program for Open Digital Base Technologies as the Foundation for Innovation and Digital Sovereignty.



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Definitions

OPEN DIGITAL BASE TECHNOLOGIES (ODBTs):

This term refers to digital technologies that enable the creation and execution of software on operating and networked communications systems in the context of this study. The focus here is particularly on Open Digital Base Technologies which are required for operating the Internet and other communications media, security tools such as certificates, and also critical components for software development such as compilers and libraries.

OPEN-SOURCE SOFTWARE (OSS):

This term refers to the fact that the source code of a software program is open. The source code is thus verifiable in terms of functionality and security. Developers can adapt, improve and further develop the source code according to their needs.

OPEN-SOURCE ECOSYSTEM:

The term ecosystem describes a decentralized system of independent actors who cooperate in various roles, such as developer, user, maintainer, and develop interdependencies in the process. Open-source software is jointly written, operated, maintained, exchanged and reused, is freely available to all interested parties and can be optimized by all (high innovation potential).

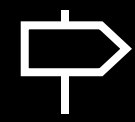
COMMUNITY:

The term community encompasses the stakeholders of the open-source ecosystem and, in particular, actors who provide and/or use open-source software, participate in building the ecosystem, or are to be networked within its framework. Community members include employees from companies and administrative staff as well as committed individuals or those responsible at universities and research institutions.

DIGITAL SOVEREIGNTY:

The term digital sovereignty refers to the independent and self-determined use and design of digital technologies and systems by the state, private organizations and individuals.

Management Summary: Initial Situation

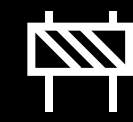


Status quo

High importance and use of open-source software (OSS)

No "growing along" of Open Digital Base Technologies; maintenance is often done by individuals

The increasing fragility of the Open Source ecosystem; growing risk of security-related vulnerabilities



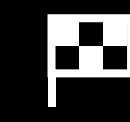
Obstacles

Lack of knowledge about Open Digital Base Technologies (ODBTs)

The dominance of innovation discourse; neglect of maintenance and scaling

Lack of a funding instruments for the development of Open Digital Base Technologies

Lack of exchange between funders and (volunteer) tech communities.



Target state

A secure, resilient OSS ecosystem
[digital sovereignty]

Critical open digital base technologies are identified and maintained early **[knowledge hub]**

There is trusted collaboration with tech communities **[community building]**

Secure and scalable open digital base technologies help drive innovation
[innovation]

Management Summary: Solution Approach

ESTABLISHING A FUNDING PROGRAM: SOVEREIGN TECH FUND (STF)

Mission statement

"The development, improvement and maintenance of Open Digital Base Technologies should be supported by a Sovereign Tech Fund. The goal is to sustainably strengthen the Open Source ecosystem, with a focus on security, resilience, technological diversity, and the people behind the projects."

What should be supported?

Fundamental technologies of the Internet

(e.g. protocols such as TLS/DNS/NTP/BGP, security certificates, content delivery networks, DNS servers and operating systems)

Foundational technologies for software development

(e.g. compilers, software repositories, knowledge bases)

Societal fundamental technologies

(e.g. server management software, module integration)

Who should be supported?

1. Individuals and small teams
2. SMEs, large collaborative projects and communities
3. Agencies and coaches (for non-monetary support services)

How would this support be provided?

1. Strong connection to the community
2. High level of flexibility in funding modalities
3. Low-threshold access and few application steps

Management Summary: An Innovative Funding Approach

SCOUTING

Pull mechanism: active identification of projects by means of a list of criteria, quantitative methods and expert advice
Push mechanism: open application process (ongoing)

MATCHING

At the core of the STF lies the innovative analysis and matching mechanism:

- A central database for eligible software components will be established
- Suitable implementation partners are sought in collaboration with industry and civil society

These goals are achieved with the matching mechanism:

- Better fit of the funding
- Higher sustainability of the funding
- Involvement of industry and civil society in the funding process

FUNDING

Removing barriers to entry and promoting agile
Consulting and support
Evaluation and feedback loops

Management Summary: Implementation

KEY DATA OF THE SOVEREIGN TECH FUND

Funding amount per project	€50,000-500,000
Project duration	6-24 months
Number of projects p. a.	approx. 30 p. a.
Financial volume (total)	approx. €10 million p. a.
Additional support	Coaching, audits, consulting, etc.
Recipients of funding	no/few restrictions

One-Stop-Shop

3 models of implementation were examined in terms of grant law:

1. **One-Stop-Shop**
2. **Classic funding competition**
3. **Incubator/Companybuilder**

It is recommended to choose the **One-Stop-Shop** model. This model combines different instruments for different target groups under one roof (e.g. forwarding of funding by one grantee to various last recipients) and is therefore particularly suitable for the Sovereign Tech Fund and its diverse funding target groups (individuals, organizations, SMEs, companies).

Next steps

Pre-launch

Verification of assumptions, validation of planned measures, outreach strategy
Identification of a suitable carrier for the launch phase

Launch

Pilot phase to test assumptions in practice (legal form, governance, activities, budget, application situation, etc.), with a reduced test budget and reduced number of projects; preparation for spin-off.

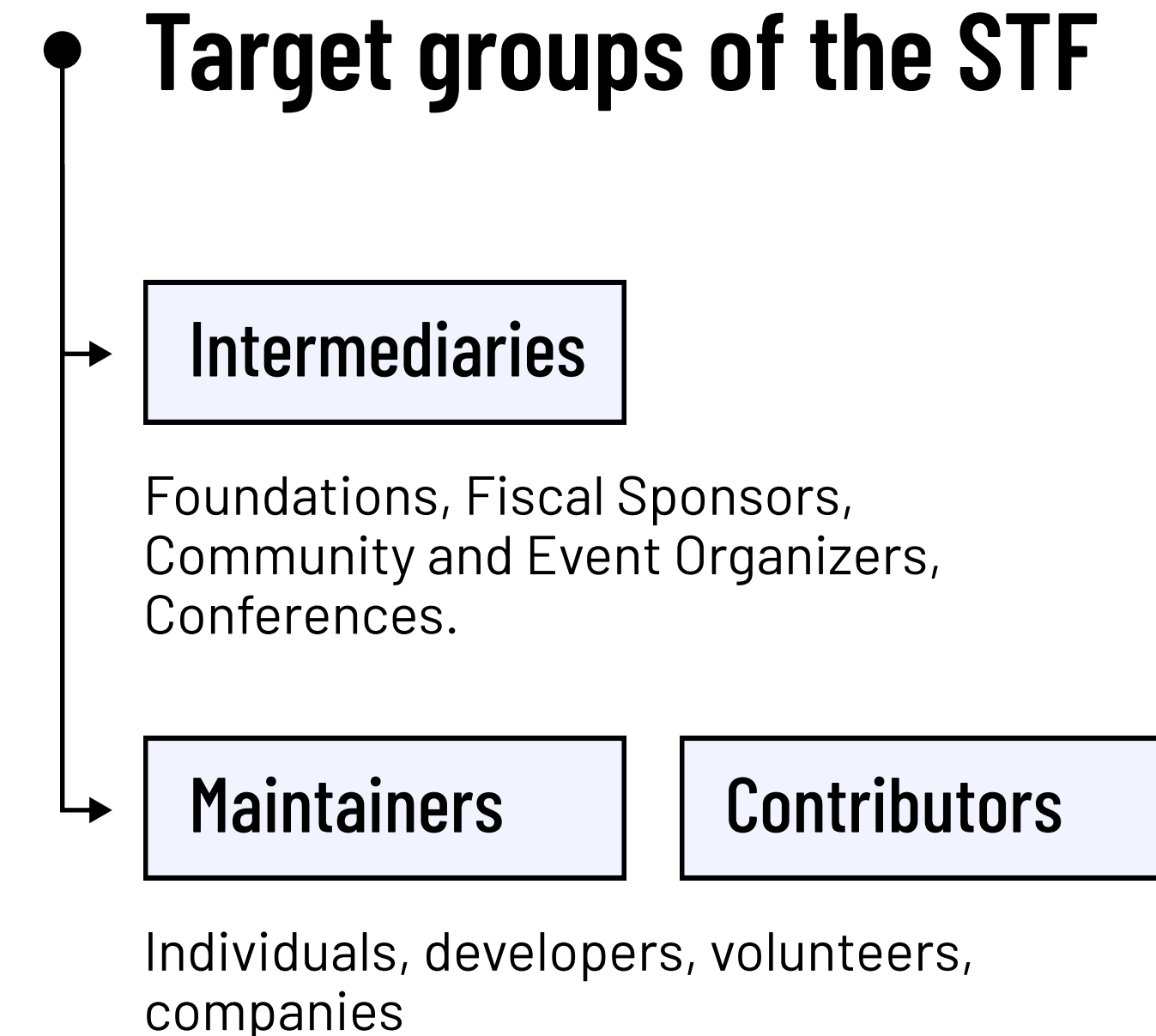
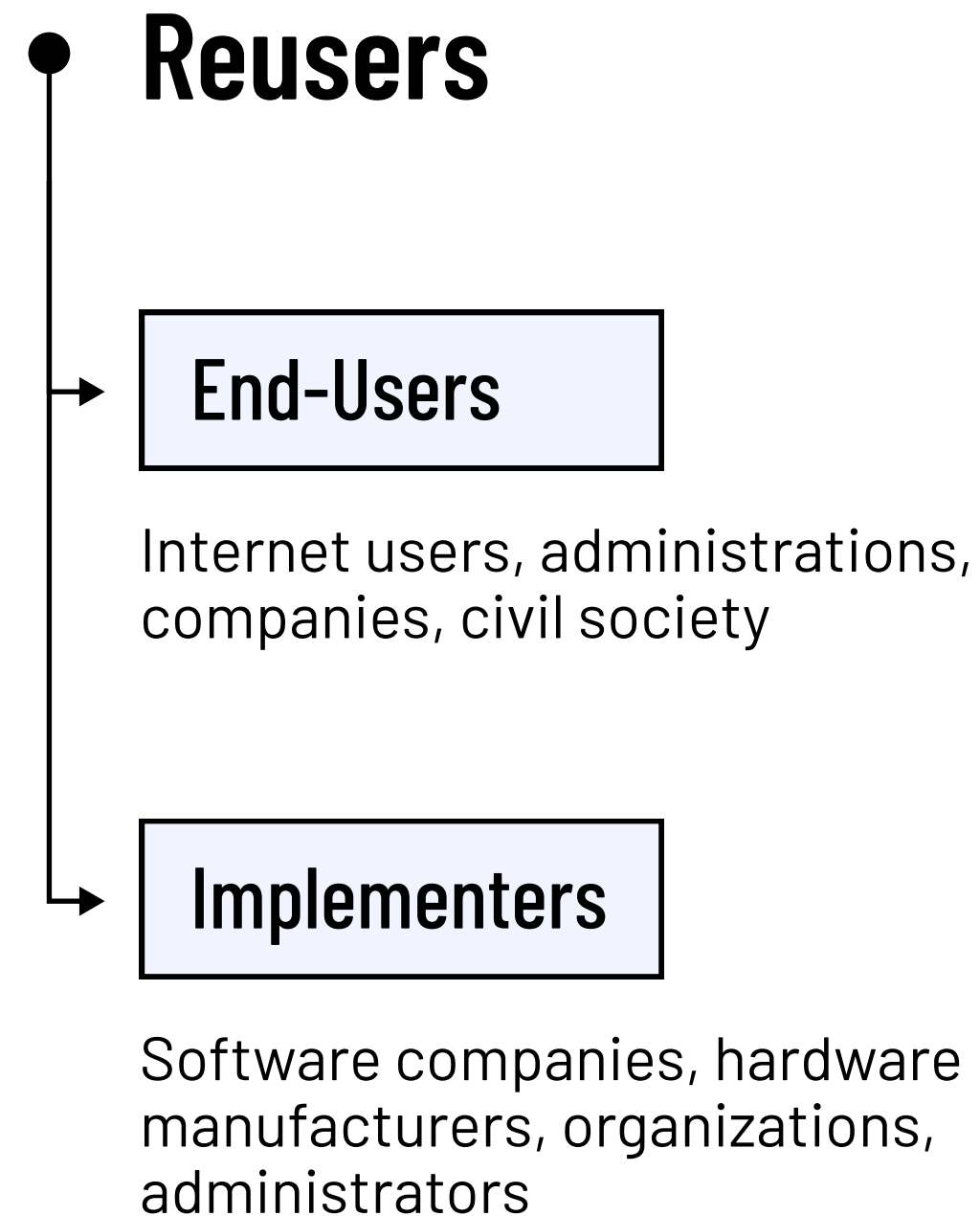
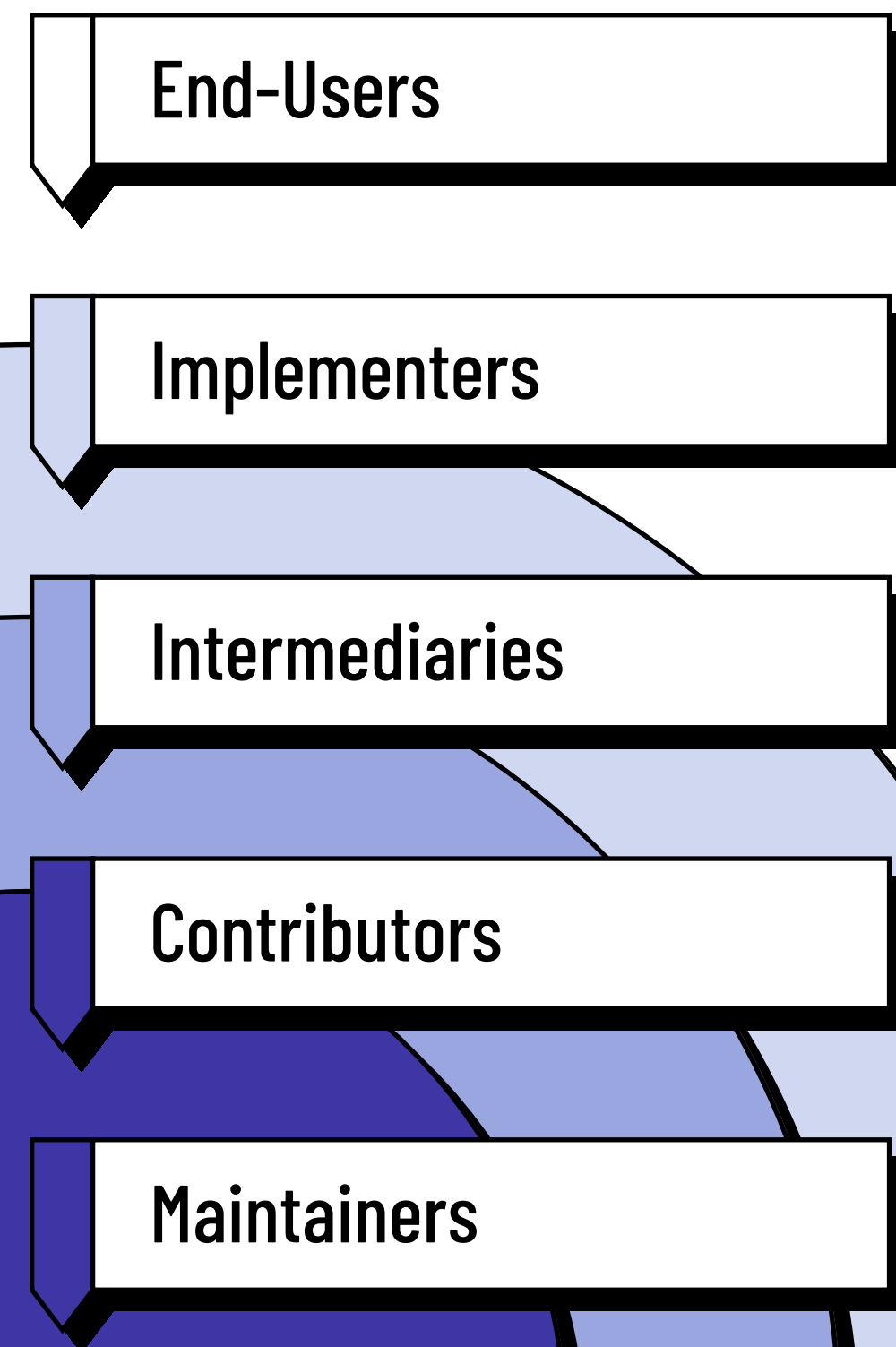
Post-launch

Regular operation, parallel:
mapping ecosystem, further development of metrics, sustainability strategy

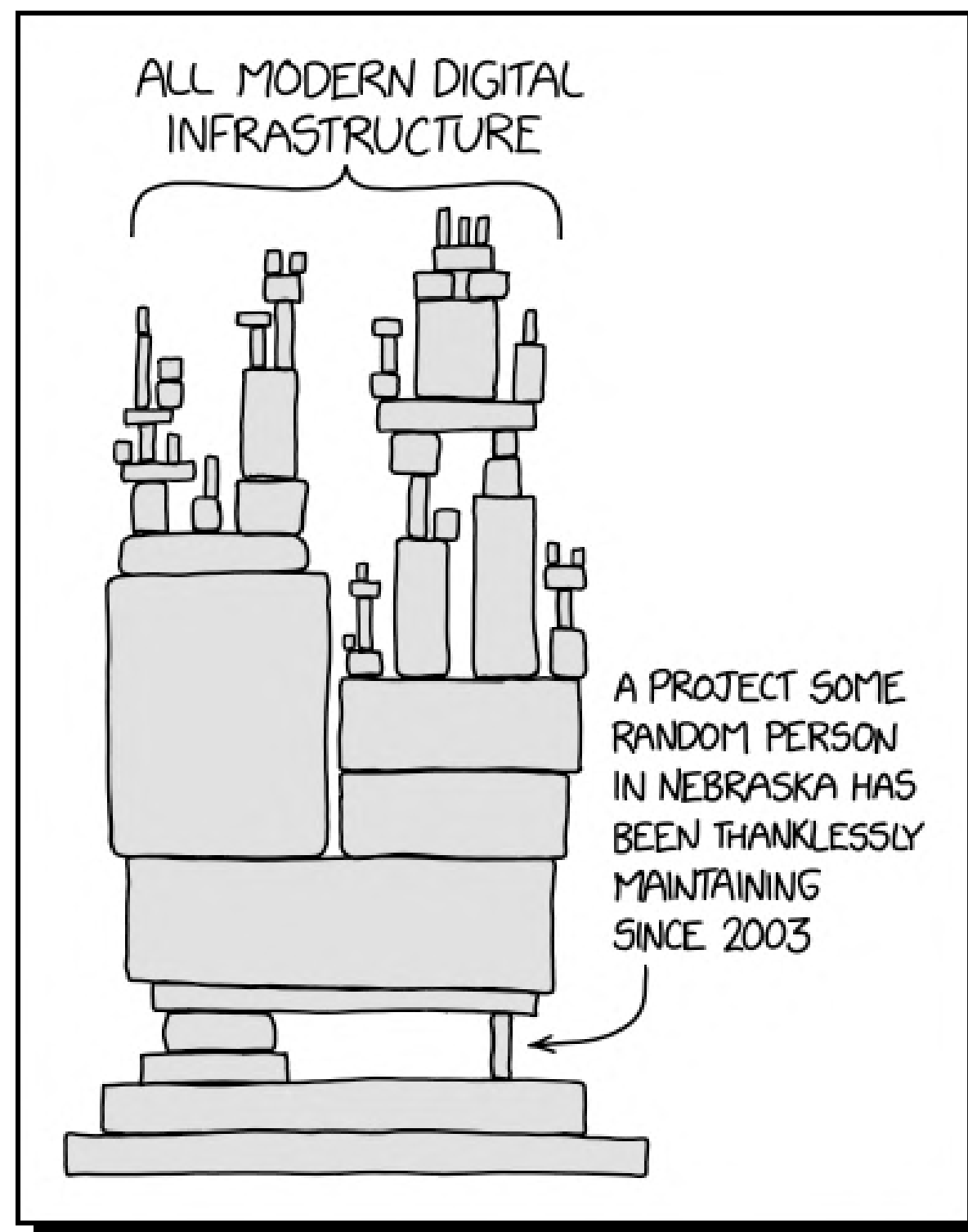
Introduction

Open Digital Base Technologies (ODBTs)

Who uses them and who creates them?



Relevance of the Promotion of ODBTs



xkcd "Dependency" CC BY-NC 2.5

Open Digital Base Technologies are used in large numbers in networked systems since they are available in good quality via public repositories and via permissive licenses for further use. Open source architectures account for significant shares in the area of basic ICT infrastructure, and free and proprietary components are combined in numerous companies. As a result, open source elements become an **integral part of critical digital infrastructures** and their scaling is often more extensive than the resources of the developers of the original code allow.

The success story of open source codes thus becomes increasingly fragile: while many commercial users in particular are using the software, there are so far too few of these implementers who are checking the functionality and up-to-dateness of the codes and feeding back improvements to the ecosystem. **Each and every user assumes that someone else will take care of continuing to make the open software components available in sufficient quality or maintaining them.**

The development and maintenance of ODBTs is underproduced although the normative co-creation of (open) technologies is firmly in European hands: 42.5 percent of the Internet Engineering Task Force documents are (co-)authored by European authors and Germany holds 19 percent of the International Electrotechnical Commission secretariats, 29 percent of the chairmanships and 18 percent of the International Organization for Standardization secretariats [1].

The great economic potential of OSS in Germany and Europe cannot be exploited without the stabilization of the Open Digital Base Technologies. This requires investments to compensate for a possible market failure caused by structural factors, as is often the case with common goods.

ODBTs as a Foundation for Business and Innovation

The use of OSS in business is growing rapidly [2]



99% of Fortune 500 companies currently use open-source software



Over 56 million developers contribute to open-source projects



80% of IT departments will have increased open-source usage in 2021



Over 140 million open-source projects listed on GitHub



35% of all enterprise software is based on open-source code



10,000 lines of code are contributed to Linux every day

Estimates state that EU-based companies already invested around **€1 billion** in OSS in 2018, impacting the European economy to the tune of **€65-95 billion**. However, the level of European (financial) institutional engagement in OSS is disproportionately lower than the value created by OSS.[2]

Open-source code is used in the majority of technological subsystems.

Linux accounted for 75% of the public cloud workload in 2020, and its share is expected to increase to 85% by 2024. Some of the most popular software development stacks - such as the LAMP (Linux, Apache, MySQL, and PHP) and MEAN stacks (MongoDB, Express.js, AngularJS, and Node.js) - are open-source software. In 2019, about 85% of the world's smartphones ran on Android, the open-source operating system built on the open Linux kernel.[3]

In the latest Statista figures (2019) for Germany, 69 percent of the companies surveyed state that they use open-source software. [4] Companies in the retail, automotive, banking & insurance, IT & telecommunications and transport & logistics sectors were surveyed. There are even significantly higher percentages for specific sectors: In the automotive industry, 79 percent of the German companies surveyed use open-source software, while in retail the figure was 76 percent at the time of the survey. Further insights are provided, for example, by Bitkom's Open Source Monitor (2019)[5] and reports by the Linux Foundation [6], BCG [2] and McKinsey [7].

The analysis of the DG Connect study [8] estimates a cost-benefit ratio of investments in OSS software of more than **1:4** and predicts that a **10 percent increase in OSS contributions would generate an additional 0.4 percent to 0.6 percent of GDP annually and more than 600 additional ICT start-ups in the EU.**

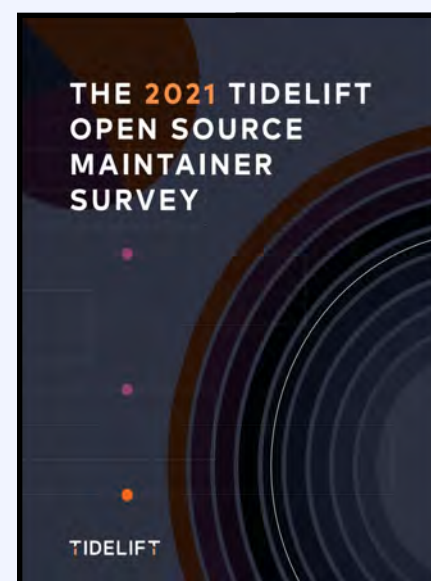
Empirical Findings



According to the DG Connect study[9], **a special feature of the contributors to open source in Europe is their diversity**: The development and maintenance of basic open-source technologies is often the work of individual developers for their inception and successful operation as "one-person stores", in the context of voluntary work or working time provided by employers. In contrast to the United States, for example, where "commits" in projects of commercial significance are most often made by employees of global ICT companies, in the EU the next most common group to contribute to basic code stacks alongside individual developers are employees of small and very small companies.



The auditing service "BlackDuck" from Synopsys points out the risks in open commercial stacks in an annual report[10]. Its current findings are the late consequences of a lack of responsibility on the part of the OSS-using industry: **75 percent of all audited commercial codebases already have security weaknesses, and 91 percent of all analyzed codebases contain software components that have not been maintained for four or more years**. These vulnerabilities are also caused by the undersupply of critical projects and lack of exchange with free developer communities. Financial participation in the stabilization of the ecosystem should develop in line with the spread of open components - but there is a contrary trend here.



Digital infrastructure is created in special ecosystems and involves special activity profiles. **So far, actual development work in open contexts has overemphasized innovation work**. In fact, however, this accounts for only about a quarter of the tasks on software projects. In order to be able to build on OSS code, many project-supporting activities occur that go beyond pure programming: Bug reports, review, documentation, security updates, or writing grant proposals, for example, take up about $\frac{3}{4}$ of the work time of core developers of ODBs and other OSS projects. Much of the work is social, not exclusively technical. (Source: Tidelift Open Source Maintainer Study 2021).[11]

Concluding the Need for Action

ODBTs are developed in specific ecosystems and composed of community projects, public (for example, university-based), entrepreneurial, and private (individual) productions. **The hybridity of these ecosystems has potential for innovation and collaborative maintenance.** However, so-called peer production, which in theory (Ostrom 1990) is supposed to compensate for "collective action" problems, does not correspond in large part to the reality of coding. Increasingly, **individual project developers** are responsible for **managing the operation and maintenance of ODBTs with their own resources.** This poses a high risk to development ecosystems (Hill 2013; O'Neil et al. 2020).

Permissive licenses regulate the dynamic between collaborative production and market interests in open-source development and **are the reason for the success of OSS.** While many commercial users deploy the software, too few check the functionality and up-to-dateness and feedback code improvements.

For OSS to deliver on the **potential of security gains** through regular code reviews and hardening against attacks from the digital space, the **Open Source ecosystem needs to be monitored and supported.** What is required is funding that flows back to host organizations and maintainers, and the dissemination of expertise not only in technical maintenance and scaling, but also as part of recognizing the primarily social, rather than exclusively technical, production mechanisms of OSS (e.g., Benthall et al. 2016).

The size of the group of core maintainers tells little about how and on what dependency level corresponding projects are built into the entire software supply chain. Conflicts between the commercial logic of commercial enterprises and the often more public good-oriented logic of scientific or privately founded software community projects become clear here. Currently, **external effects can be observed** in the ecosystem that lead to suboptimal resource allocation: **There is an undersupply in sub-areas of ODBTs,** and the quality of digital public goods (in the form of software-based ICT infrastructure) is impaired.

Developers of critical ODBTs have to compete globally and especially in Germany and Europe for a few **funding pools** or are completely overlooked by fundings mechanisms. If only a few of the existing projects for the promotion of OSS expire or unexpectedly lose their funding, the resources for relevant OSS projects quickly become dramatically scarce.

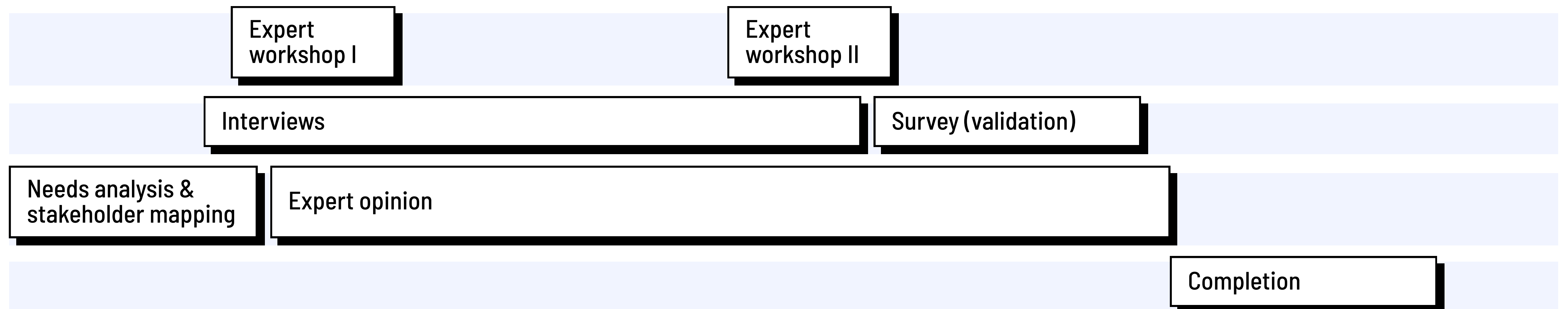
The ecosystem of ODBTs and its "Communities of Practice" contributes to its strong values-based nature and focus on commons and can stand for the **third, European path of values-driven digitization.**

Results of the Feasibility Study

Methodology of the Study

In the course of the feasibility study, the idea and underlying assumptions of a funding program for Open Digital Base Technologies were to be examined. In addition to in-depth **desk research**, key questions were discussed in **workshops with experts** and feedback was gathered from the open-source community. In addition, individual experts were consulted to provide **reports on currently relevant technical challenges in the ecosystem**. A mapping of **existing funding programs** was performed and a **demand analysis** was conducted to determine which criteria a funding program would have to fulfill, why a corresponding funding program does not yet exist, and where the obstacles and opportunities lie in the existing field. Furthermore, **core aspects for a successful implementation** were developed and the **fundamental legal and economic requirements** for the implementation of such a funding program were examined. Based on this, a **novel funding approach** was designed and the specific processes were outlined. To support the analysis, governance and funding models were obtained. Finally, a time schedule and a cost breakdown were outlined and recommendations for implementation and next steps were prepared.

APPROACHCONTENT ORIENTATION



Questions

THE FOLLOWING QUESTIONS WERE ANSWERED IN THE FEASIBILITY STUDY:

- What are the objectives of supporting Open Digital Base Technologies? [\(page 17\)](#)
- How do **Open Digital Base Technologies** emerge and what are the rationales of production behind their development? [\(page 18-19\)](#)
- What suitable funding programs already exist and what **gaps** are there in the funding landscape in Germany? [\(page 20\)](#)
- What specific **support and funding needs** can be derived from the findings? [\(page 21\)](#)
- What **funding modalities** (eligibility criteria, objects, recipients, scope, terms, eligible organizational forms) result from the analyses? [\(page 22-26\)](#)
- What are the success criteria for implementing the Sovereign Tech Fund? [\(page 27\)](#)
- How does the funding work? (Legal forms of the Sovereign Tech Fund) [\(page 28-30\)](#)

NOT COVERED BY THE SCOPE OF THE STUDY:

- Detailed implementation planning for the establishment of the Sovereign Tech Fund.
- Definition and implementation description of methods
- Establishment of a final list of criteria for the selection of eligible software components
- Detailed determination of personnel requirements and budget planning
- Final analysis and determination of the legal form of the Sovereign Tech Fund
- Preparation of a detailed economic feasibility study as a budget justifying document

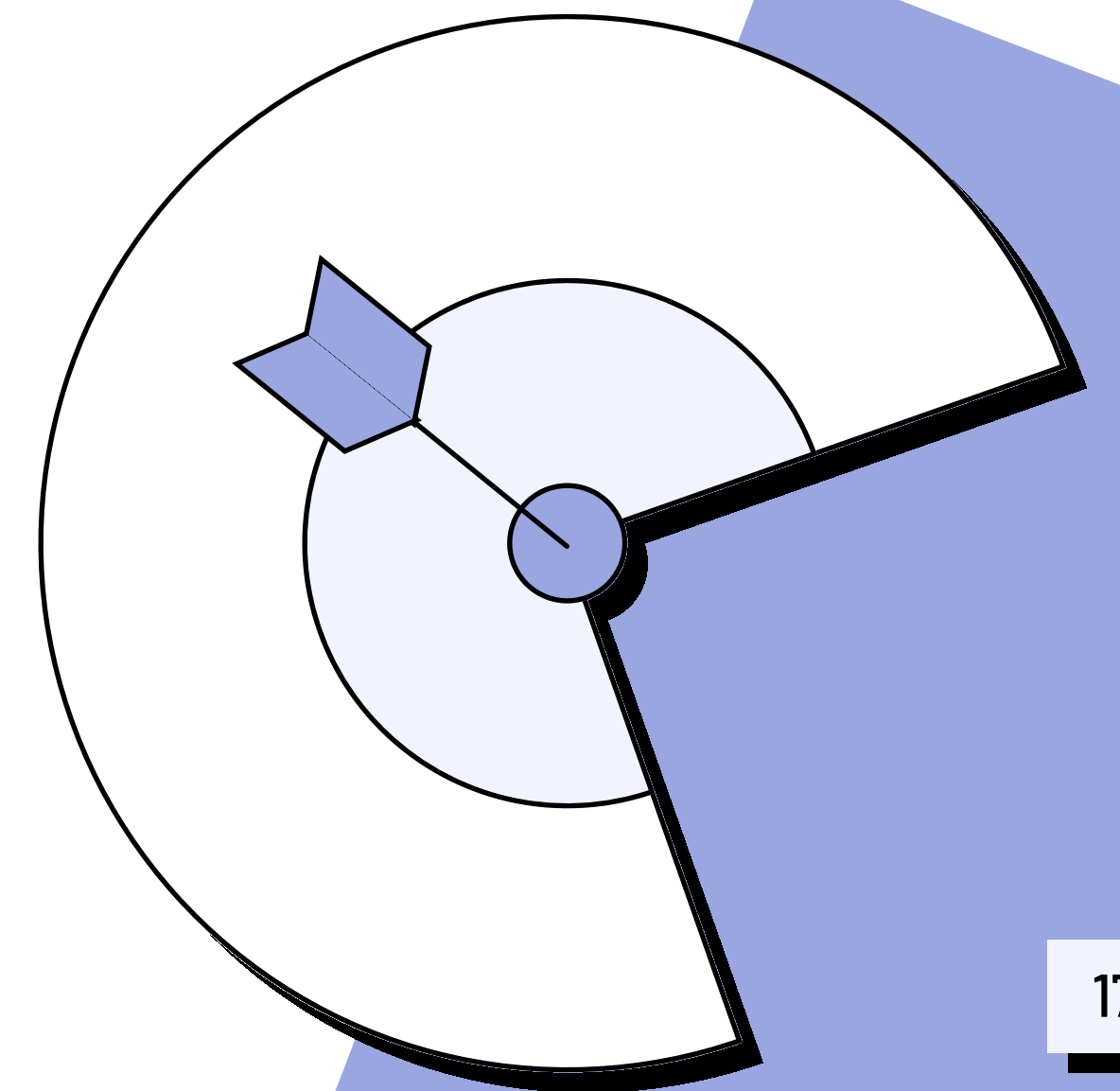
The open points should be specified in the course of a pre-launch. As part of this, a Minimal Viable Product (MVP) of the funding program should also be launched, which can be used to test the basics for operation and adapt them in an agile way. With this approach, details and improvements can be readjusted in operation in a lightweight manner, which enables an optimal funding design.

Objective

Open Digital Base Technologies (ODBTs) are essential for a strong and competitive economy in Germany, for a functioning administration and for the general goals of the German government's digitization strategy because they form the basis of everything digital. The **advantages** of strengthening the **Open Source ecosystem** as a whole are, in particular, the associated support for **decentralization and independence** in software development, the preparation of a "breeding ground" for innovations, the stimulation of **further training and quality standards** in the community, and the increase in the **attractiveness of Germany as a strong player in the digital realm**. Permanently updated and secure ODBTs thus enable innovation, digital sovereignty, data protection, and fair market conditions, as well as resilience to international market and trade conflicts.

A FUNDING PROGRAM IS INTENDED TO ACHIEVE THE FOLLOWING GOALS:

- **Open Digital Base Technologies** are secured and enhanced by providing resources to identified actors and new audiences in the Open Source ecosystem.
- **The Open Source ecosystem** will be strengthened by focusing on security, resilience and critical open software components at the infrastructure level.
- **Interoperability** as a fundamental principle in technological architectures is promoted.
- **The innovative power** of companies and public institutions is increased through better digital foundations for further development and new development.
- **A knowledge hub** for networking and knowledge transfer between research, users, providers and the various software communities will be created.



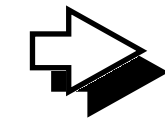
Existing Funding Programs

CATEGORIZATION

40 funding programs were identified as in remit within the research with regard to their funding focus, access to funding, and funding modalities in order to map those offerings that explicitly promote Open Digital Base Technologies, i.e., targeting developers and implementers and not primarily at end users.

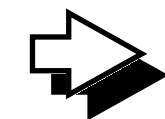
The first category includes **programs that specifically support the development of Open Source Digital Infrastructure technologies**, such as the Open Technology Fund's Core Infrastructure Fund, which explicitly supports "the development, maintenance, and improvement of fundamental, building block technologies."

Furthermore, there are **programs that also promote basic infrastructure** such as the Prototype Fund which is basically geared towards innovation but also promotes basic technologies.



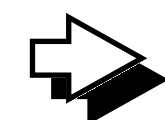
CONTENT ORIENTATION

Most of the funding pools have a thematic focus, respectively their funding is limited to a certain (technical) area of software projects or aimed at a certain impact / sectors



TYPE OF SUPPORT

How is the funding distributed - as a direct fee to developers, via donation systems such as OpenCollective, or as grants to companies and organizations? Is there an open application or are projects specifically selected?



REGIONALITY

Can a programme support developers internationally or only in a specific region? Do grantees have to hail from a specific region or address challenges in specific regions?

Existing Funding Programs: Mapping

DATA SITUATION

For the market and needs analysis, a broad secondary research was conducted on existing funding programs and supporting offers for software projects.

A total of 40 programs were identified and analyzed by reviewing and evaluating relevant scientific publications and materials provided by existing funding programs, as well as by supplementary online research.

40 FUNDING PROGRAMS IN TOTAL

40 funding programs for software were considered in total. Of these, 13 programs were excluded from closer evaluation because they do not support ODBTs. For the sake of completeness, they are nevertheless listed in the mapping (cf. Appendix).

27 OUT OF 40 PROMOTE ODBTs

27 programs promote ODBTs, but 22 of these are classified as programs that also promote ODBTs. This means that their funding modalities and content orientation also permit the promotion of ODBTs, but this is not explicitly formulated as an objective. For the majority - 21 programs - funding recipients from the EU or Germany are eligible.

5 OF 27 EXPLICITLY PROMOTE ODBTs

5 of the 27 programs explicitly support ODBTs, i.e., they refer to these technologies separately in their funding objectives. Worth mentioning in this area is the ARDC/AMPR Fund, a program whose core objective is Internet-based amateur radio, but ODBTs and its maintenance are additionally mentioned as eligible for funding. However, one of these programs funds research only, while the other serves as a fiscal sponsor.

2 OF 5 OFFER FINANCIAL SUPPORT

Only 2 projects that explicitly support ODBTs provide financial support: the Open Technology Fund from the USA and NLnet from the Netherlands. NLnet will be phased out for the foreseeable future as the NGI lines are restructured under Horizon Europe. The OTF, funded by the U.S. Congress, is subject to political fluctuations and was already temporarily shut down in 2020.

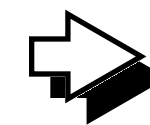
→ The funding landscape is therefore not sufficiently broad and resilient. An additional funding instrument is needed that provides long-term, sustainable and reliable support for ODBTs, tailored to the specific needs of developers, organizations and communities.

Existing Funding Programs: Needs Analysis

The results of the **analysis of existing funding programs** show that either the maintenance and safeguarding of existing software components are not covered by funding or, if the **maintenance of basic technologies** is eligible for funding, the funding design of the programs **does not fit the needs of the target group and the funding areas**. Often, the programs provide more information about the nominal goals of the funders **than about the needs within the ecosystem**:

GAPS

- There is little support for open software components, which in critical areas are primarily developed and maintained by individual (volunteer) developers and communities.
- Innovation funding does not cover the needs of open digital base technologies in terms of security and scaling, not at least in supporting activities and aspects not directly related to writing code (e.g., certificates, governance processes).
- Existing funding programs are to a large extent not appropriately designed (Funding amount, payment modalities, etc.) for the needs of open digital base technologies or are too restrictive in their content focus.
- The majority of funding programs are located in the USA - as an alternative, there is no European program with a sustainable approach as a normative project to support digital sovereignty.
- Lack of sustainability strategy for permanent maintenance of open software components.
- There is no or no suitable funding for community building, communication and other non-monetary forms of funding.



RISKS

- Security-relevant vulnerabilities in ODBTs
- Insufficient basis for innovative software development
- Market consolidation and dependencies
- Lack of software quality standards and automation processes (DevOps) are both obstacles to scaling and a compliance risk

There is a **need for a novel type of funding program** to provide targeted and sustainable support to Open Digital Base Technology projects that are critical to security, innovation, and digital sovereignty.

Funding Design

Deriving from the analysis of existing funding programs, approaches and **best practices** can be adopted and a funding design outlined that closes a critical gap in the German and European funding landscape. The assumptions made for the design were evaluated in workshops and interviews **with the target group** - experts from the community, individual developers, representatives of companies and public authorities, and researchers in the field of software security - **and tailored to their needs**. Through human-centered research, a better understanding of the **structural challenges, needs, and desires of the target group was gained**. It is indispensable for the **success and impact orientation** of a funding program for Open Digital Base Technologies to correspond to the **rationale of production in the development of the software components**.

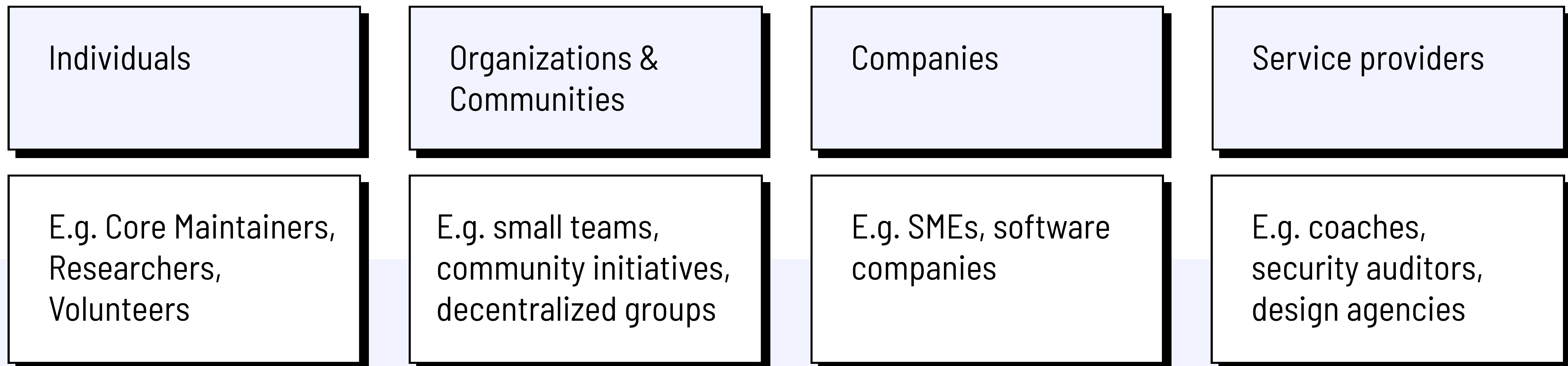
Therefore, the funding program must be as accessible as possible, both in its formal funding conditions, which address the broadest possible target group as potential applicants and through an efficient application process, which drastically reduces the effort for applicants and reviewers. A robust selection process is guaranteed by multi-stage application procedure, adaptation, and iteration as well as the high professional competence of the program team and the advisory board.

WHAT THIS MEANS:

- Implementing communities through independence and transparency in the organizational culture as well as through adapted communication.
- Accessibility for individuals as well as for partnerships (e.g. civil law partnerships, cooperatives and associations) and companies (ideally including international production communities)
- Close support in the application process
- Involvement of expertise from the community and multipliers in the application and selection process; collaborative grantmaking where appropriate, strict adherence in prioritisation to research findings in the field
- No exclusionary focus on digital innovations, but also coverage of validation, maintenance, scaling as well as assurance of software quality
- Flexibility in the design and disbursement of funding, to suit the individual beneficiaries.
- Offering of non-monetary support in the form of community building, consulting on sustainability (if necessary, development of a business model), communication, or design
- Openness to different technologies, i.e., not (exclusively) tied to a specific technology, such as AI, in the call for proposals
- Incentivizing openness in a targeted way, i.e., mandating license compliance and promoting open standards & interoperability
- Using final reports to continuously improve the funding program, i.e., incorporating feedback from grantees into the funding design in an iterative process

Funding Recipients

The decentralized rationale of production ([page 9](#)) of Open Digital Base Technologies makes it necessary to allow for a high degree of diversity in the funding program's target group.






In all these different groups, open digital base technologies are maintained and further developed. There are often reciprocal relationships within and between the individual groups. Individual software components each have their own rationale of production, which result from the development history and determine by whom these components can (primarily) be secured and further developed.

Excluding community initiatives, for example, could therefore lead to safety-critical and industry-relevant software components remaining under-supplied. The high diversity of funding recipients also means that funding must be disbursed in a wide variety of ways and that non-monetary funding, for example in the form of coaching, community building and communication via service providers, can also be useful for funding recipients.

Funding Areas

The funding program is intended to invest specifically in **Open Digital Base Technologies**. With the assistance of metrics, software components that are **highly critical and relevant** to the goals of innovative strength and digital sovereignty are to be (specifically) identified and supported accordingly. These software components must be developed adhering to an **open-source license** which not only follows the public money, public code approach but also increases the **security, reusability, and independence** of the funded software.

THE FOLLOWING THREE CATEGORIES OF OPEN SOFTWARE COMPONENTS SHOULD BE PROMOTED:

 BASIC INFRASTRUCTURE OF THE INTERNET	 BASIC INFRASTRUCTURE FOR SOFTWARE DEVELOPMENT	 SOCIETAL FUNDAMENTAL TECHNOLOGIES
Open software components that are urgently required for the operation of the Internet and other communication media, e.g. protocols (TLS/DNS/NTP/BGP), security certificates, content delivery networks, DNS servers and operating systems.	Open-source projects in the form of f.i. compilers, software repositories, knowledge bases, etc. They are used by developers; consumers do not interact with them. Software components become critical in the sense of undersupply if they are used a lot and maintained by a few.	Open-source projects that enable and simplify the deployment of independently operated infrastructures and thus increase decentralization and independence, e.g. server management software, integration of modules.

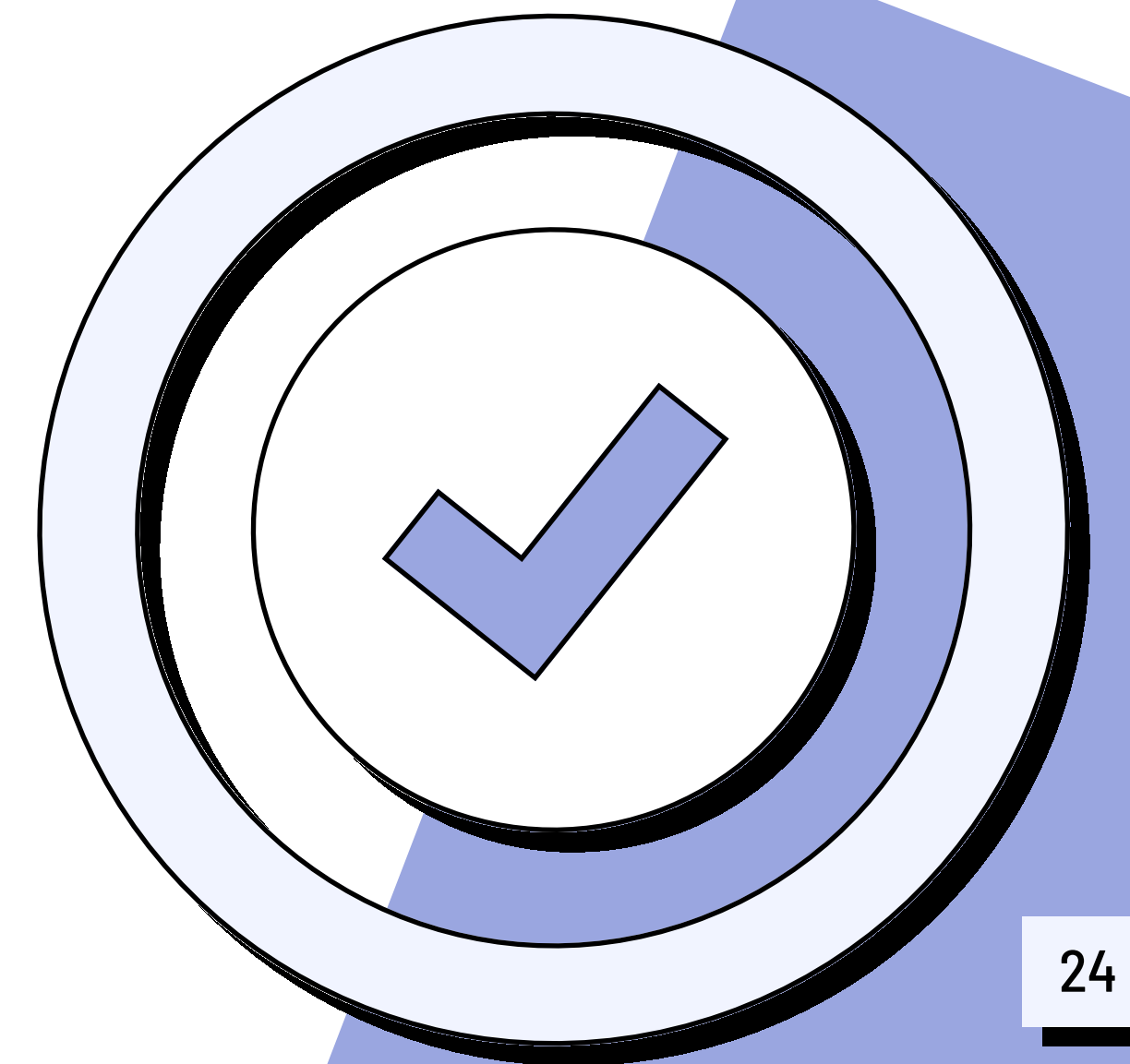
Ultimately, all of these funding areas are also about the **people behind the code**. Regardless of the contexts in which these developers work (SMEs, initiatives, or as individual volunteers), strengthening the **social production bases of open basic infrastructure**, e.g., through networking, **further training** in DevOps, moderation of processes, etc., plays a very important role in impact orientation.

Therefore, these factors must also be understood as funding objects, as the long-term success of digital basic infrastructure depends on them.

Funding Criteria

A **catalog of criteria** is to be developed for **selecting Open Digital Base Technologies** eligible for funding. In this catalog, the criteria for identifying critical and relevant software components will be determined on the **basis of existing research results** and **continuously evaluated**. In this way, the funding program will be linked to the work of international research groups and other funding bodies, and will also contribute to new findings through its own work. The following initial proposals for the list of criteria incorporate success factors in software development and social development environments to lay a good foundation for **sustainability and impact orientation**:

- **CRITICALITY AND REACH**
Determined on the basis of a scale consisting of usage or dependencies, domain, and supplementary qualitative metrics.
- **UNDERSUPPLY AND RESILIENCE**
Determined in accordance with existing batch programs for project health and future potential
- **INTEROPERABILITY AND DYNAMIZATION**
The social dimensions in ODBTs development, as well as its governance through multistakeholder bodies and implicit social development environments, will be included in the selection process.
- **DEVELOPMENT POTENTIAL**
Forecasts by experts on the development potential of a project are also weighted.
- **IF APPLICABLE, PREPAREDNESS TO CO-DESIGN AND BE CONSULTED**
The openness of applicants to receive consultation services, e.g. from coaches and the funding program team, and to jointly develop a funding plan are included in the selection process.



Funding Modalities

Funding amount (individual)	€50,000-500,000	A high level of flexibility and a wide range of funding amounts make it possible to adapt to the diversity of actors and projects active in the field. Here, the sizing is based on experiences from the Prototype Fund, which provides €47,500 for 6 months, and the Core Infrastructure Fund of the OTF, which provides up to \$500,000. The majority of projects will be in the middle range but exceptions should not be structurally excluded.
Duration	6-24 months	The duration must also be adapted to the needs of a wide range of actors. Learnings from the Prototype Fund shows that a short term is ideal for certain cases, for example for employees who want to work independently on a project for a short period of time. A longer funding period, on the other hand, allows projects to plan long-term, beyond the funding period and not having to suspend the work on the project with submitting grant proposals.
Financial volume (total)	Approx. €10 million per year	The considerations above result in an approximate funding amount of €7.5 -10 million in funding per year. The calculation is based on the empirical value of other programs and shows that an average funding amount of €250,000 will be required for a maximum of 30 projects per year. Added to this are expenses for additional support measures and the implementation of the program.
Additional support	Coaching, audits, consulting, etc.	Furthermore, non-monetary support measures shall be available. These include, for example, legal advice, security audits conducted by selected partners, advice on the development of a sustainability strategy, communication, etc. The portfolio must be geared to the needs of the projects and regularly adapted.
Recipients of funding	No or few restrictions	As demonstrated in the previous points, the utmost level possible flexibility is sought among potential funding recipients. From the individual to the company, the diversity of the actors should also be taken into account here. Furthermore, the aim is to be able to fund supra-regionally in order to be able to correspond to the decentralized rationales of production in the development of ODBTs.

Implementation Criteria

To gain support and to successfully implement a funding program for Open Digital Base Technologies, various criteria must be taken into account in its design. **Experience and evaluation reports** from other comparable programs have shown that three criteria are of particular importance: **strong links with the community, a high level of flexibility,** and **appropriate accessibility of the program.**

COMMUNITY

Strong links with the community of developers working on ODBTs. The expertise of the community is needed for the selection of eligible projects and their **trust** in the acquisition of potential applicants. This is best done by building on existing networks and employ a selection of **suitable team members** in the funding program who combine a high level of domain-specific expertise. Indispensable for high **acceptance** is also a high degree of independence of the program.

FLEXIBILITY

High level of flexibility in the funding modalities. The more flexible the model is in terms of potential grantees, the more critical software components can be included in the selection. ODBTs are developed in a **variety of formats** - by individuals, by teams, by nonprofit organizations, and by commercial enterprises. This diversity must be accommodated in a successful funding program. The funding program must also be developed in an **agile manner** based on feedback and evaluation so that funding does not miss needs over time.

ACCESSIBILITY

Low-threshold access and few application steps to enable organizations and individuals with comparatively few resources to receive funding. In practice, this means approving applications as quickly as possible, especially in the context of open applications, and **reducing bureaucratic intermediate steps** in the development of projects for funding. Accessibility is also achieved through communication that is **adapted to the target group** and **an authentic external image.**

Success Criteria

In order to **measure the success, i.e. the achievement of the intended goals**, of a funding program for open basal digital infrastructures, an **ongoing evaluation of the program is to be carried out**. Qualitative and quantitative accompanying research will be used to measure **how well the program is designed** (page 17). With the criterion of sustainability, particular attention will be paid to the resilience of the Open Source ecosystem and the long-term development of knowledge and skills in the community as well as in the economy. This is intended to incentivize a **positive impact** beyond the funding period.

SUSTAINABILITY

Sustainability will only be achieved through a diversified support portfolio. Core funding, organizational development and **non-monetary support services** such as legal advice and networking support the organizations and developers in their **long-term development**. This ensures a sustainable impact of the funding program that extends beyond the actual funding period.

INNOVATIVE STRENGTH

Upholding innovative abilities through investments in Open Digital Base Technologies. By securing, maintaining and expanding open software components, a **"breeding ground"** is prepared on which many innovations and new services can be built. After all, open software components **are of central importance for the German economy**, especially for SMEs, because they are frequently built into the entire supply chain and innovations are developed to a large extent from existing code as building blocks.

DIGITAL SOVEREIGNTY

Achieving Digital Sovereignty through secure Open Digital Base Technologies. Their use enables (direct and indirect) users to make **self-determined decisions**; it increases **security** and **control over technologies**; and it allows **technical development** to be shaped according to **European values and interests**, especially with regard to data protection and accessibility.

Legal Forms

For the realization of a funding program for Open Digital Base Technologies, **three different models were examined with regard to the criteria developed in the feasibility study:**

1 One-stop-shop model that combines various instruments for different target groups under one roof, e.g. transfer of funds from an initial grantee to a various set of end recipients

2 Classic funding competition with corresponding funding announcement

3 Incubator/company builder in the capacity of a funder, in particular in the form of consulting services for projects, e.g. forwarding of subsidies

TESTING WAS PERFORMED FOR ALL THREE

- Boundary conditions and differences for the diverse group of grant recipients (associations, SMEs, natural entity, etc.)
- Possible type of funding (project funding or institutional funding, if applicable)
- Scope of funding (eligible expenses/costs) and conceivable types of funding (partial funding: e.g., share funding, fixed-amount funding/full funding) depending on the grantee, especially to encompassing the full or maximum possible scope of funding of eligible expenses/costs, e.g., for SMEs
- Admissibility and possibilities of transferring of funds from an initial grantee to a various set of end recipients
- Alternative: Possibilities of contracting for the initial recipient to draft contracts with third parties to secure services
- Possible forms of financing (non-repayable or contingently repayable grants/loans)
- General conditions under subsidy and state aid law for commercial enterprises in accordance with Art. 107 TFEU (de minimis, SGEI, GBER, notified subsidy directive), here brief comparison of the possibilities from the point of view of low threshold subsidies for commercial enterprises. Compatibility of the grant with EU state aid law must be ensured

According to the problem description (page 13), the provision of resources cannot be assumed to be purely a matter of meeting the public sector's own needs. The classic exchange of services in the form of public contracts is ruled out in principle. However, it must be assumed that there is a substantial public interest that cannot be satisfied or cannot be satisfied sufficiently without subsidies. Subsidies pursuant to Sections 23 and 44 of the Federal Budget Code (BHO) are thus conceivable as instruments for satisfying the substantial public interest and achieving overriding objectives, in particular as part of the state's provision of services of general interest. This applies to all three models, be it the classic funding announcement, the "One-Stop-Shop" or the "incubator/company builder".

FUNDING GUIDELINE / FUNDING ANNOUNCEMENT / FUNDING COMPETITION

	Funding type	Type of financing (VV No. 2.1 to § 44 BHO)			Auxiliary provisions	1-stop-shop a) grantee for forwarding b) Coordinator cooperation	Incubator / Companybuilder c) part of the eligible expenses / costs and financing d) outside of the grant	
		Partial financing (principle)		Full funding (exception)				
		Partial financing	Austerity funding					Fixed amount funding
Legal basis	VV No. 2 to § 23 BHO	VV Nr. 2.2.1 zu § 44 BHO	VV No. 2.2.2 to § 44 BHO	VV No. 2.2.3 to § 44 BHO	VV No. 2.4 to § 44 BHO	VV No. 5 to § 44 BHO	VV No. 12 to § 44 BHO	
General remarks			Probably not an option, since the grantee would first have to use its own resources.	Possible, if defined in funding guideline, e.g. for administrative simplification	In funding guideline already specify for whom 100% shall apply	Specify in the funding guideline which general ancillary provisions apply to which grantee.	Special provisions in funding guideline: a) Determine procedure for forwarding b) regulate cooperation agreement	Special provisions in funding guideline, whether c) or d)
Grantee								
Companies	Project funding	50% cost price VV No. 13a to § 44 BHO				AnBest-P-costs	a) no b) yes	c) critical, third party funds reduce funding d) yes
SME	Project funding	> 50 % plus bonuses (2) Cost price VV No. 13a to §44 BHO General ancillary provisions No. 6 ANBest-P-K				AnBest-P-costs	a) no b) yes	c) critical, third party funds reduce funding d) yes
Non-profit organizations	Project funding				up to 100 % expenses	AnBest-P	a) yes, if fully funded b) yes	c) yes d) yes
Individuals	Project funding				up to 100 % expenses	AnBest-P	a) yes, if fully funded b) yes	c) yes d) yes
Public institutions (1)	Project funding				up to 100 % expenses	AnBest-P	a) yes, if fully funded b) yes	c) yes d) yes
Municipalities	Project funding	> = 50% expenses			rarely	AnBest-GK	a) yes, but critical in case of partial financing b) yes	c) yes, but critical in case of partial financing d) yes

(1) Corporations, foundations, institutions under public law (e.g. universities)

(2) SME definitions and bonuses according to EU state aid regulations

One-Stop-Shop Implementation

In view of the results of the feasibility study, designing a funding program for Open Digital Base Technologies as a "**One-Stop-Shop**" appears to be the **most promising approach**, as the implementation and success criteria of the funding program can best be combined in this model. The one-stop store can be **designed flexibly**, e.g. as an agency or as part of a federal subsidiary.

A project executing agency model would be conceivable: **A project executing agency** would, for example, take over the handling of the funding in the name of and on behalf of the Federal Government within the framework of a fiduciary relationship (cf. Section 44 (2) BHO and VV No. 16 to Section 44 BHO) or, if it is not entrusted and thus has no authority to act as a sovereign, it would prepare this for the Federal Government as the direct provider of funds. Potential recipients of funding, such as individuals, SMEs and companies, would receive individual approvals. There would then be a 1:1 relationship between the grantor and the grantee.

Alternatively, the One-Stop-Shop could be understood as a **coordinator** that brings together many individual grant recipients thematically via a cooperation agreement. It coordinates the preparation of the individual applications for funding, e.g., via a joint project description. Each partner applies for a grant on its own, has its own financial plan tailored to it and receives the individual grant. The overall project and the shares of the respective partners are coordinated and based on a common project description. For example, the coordinator would also combine the evidence to be provided, especially the factual reports, into a joint report. The coordinator would be the contact point for the funding agency in all technical matters. Nevertheless, the Zuwendungsgeber Bund (federal funding agency) would have a direct relationship with each individual partner in terms of funding law.

For the project coordinator, an expense item for the additional administrative work (additional staff, higher business needs) could be provided for in the grant if necessary.

In principle, each of the variants of the One-Stop-Shop amounts to **individual approvals** for the actual project-executing actors such as SMEs, individuals or non-profit institutions, which take into account the respective individual case of the applicant. Hiring and promoting developers, for example, via the project at a company is a question of the structure of the preliminary costing, the choice of the type of financing and associated deductibles, and ultimately part of the discretionary decision in the approval process. Ideal, in order to also avoid the complicated calculations of own contributions, would be a One-Stop-Shop with **full funding**.

In the case of a One-Stop-Shop as the initial recipient and a forwarding of the grant in accordance with VV No. 12 BHO, forwarding is possible in principle on both an expenditure and a cost basis. For companies, full financing is to be ruled out due to the economic interest. Proportionate funding is common here, although the funding rate/aid intensity may be higher for SMEs. In the case of the one-stop store model and the acceptance of a forwarding of a grant in accordance with VV No. 12 to Section 44 of the Federal Budget Code (BHO), the first recipient must not be a commercial enterprise. For these, forwarding of grants is excluded.

Sovereign Tech Fund Draft

Support Program Sovereign Tech Fund (STF)

Based on the results of the feasibility study, the **concrete draft of the Sovereign Tech Fund (STF) funding program** to promote Open Digital Base Technologies is presented below. This funding is intended to contribute to the goals of innovation, security and digital sovereignty ([page 27](#)). To this end, particular attention will be paid to a novel, flexible and sustainable design of the funding program, and the implementation will focus on the community and accessibility of the program ([pages 21 and 30](#)).

The STF should provide the best possible support for the funding items developed in the feasibility study ([page 23](#)), while taking into account and supporting the funding modalities and implementation criteria ([pages 25 and 26](#)). This can best be done in a funding program as a One-Stop Shop. In this model, funding can be made available for various funding recipients ([page 22](#)) through a diverse set of channels. Particular attention was paid to a sustainable form of support including individual funding, pro-rata funding in companies as well as non-monetary support, all offered in a meaningful way. Eligible open software components are to be identified via an innovative **scouting mechanism** and recorded in a **database**.

This ongoing analysis mechanism, which combines both quantitative and qualitative criteria, is intended to provide reactive support while also proactively supporting critical areas of software development. Thus, the database can serve not only as a basis for identifying relevant eligible software components, but also as an "early warning system" for future critical software developments.

The **sustainable impact** of the funding program is ensured both by the flexible and accessible funding design and by continuous **accompanying research**. Evaluating the program qualitatively and quantitatively and incorporating feedback from grantees ensures that one is doing justice to the rapidly evolving Open Source ecosystem and not funding past needs.

The following slides ([33 to 41](#)) outline the design of a Sovereign Tech Fund. The innovative funding approach and the three phases of funding - scouting, matching and funding - are discussed in detail.

Mission Statement of the STF

"The development, improvement, and maintenance of open basic digital space be supported by a Sovereign Tech Fund. The goal is to sustainably strengthen the Open Source ecosystem, with a focus on security, resilience, technological diversity, and the people behind the projects."

The development, improvement, and maintenance ...

Contrary to traditional funding logics, the STF focuses not only on the development of new technologies, but also on the maintenance and improvement of existing software and standards.

... of Open Digital Base Technologies will be supported by a Sovereign Tech Fund.

Basic infrastructure (of the Internet) is understood to be those software components on the basis of which (new) applications are developed and which are highly relevant.

The goal is to sustainably strengthen the Open Source ecosystem ...

The aim is to provide sustainable funding that supports not only projects but also entire ecosystems beyond funding periods, thus achieving a long-term impact.

... with a focus on security, resilience, technological diversity...

Sustained support for Open Digital Base Technologies aims to increase the resilience of funded projects, enhance the security of the open-source ecosystem, create technological diversity through interoperability, and contribute to the goal of digital sovereignty.

... and the people behind the projects.

Individuals and their individual development as well as organizational development and the needs of communities are factors that must be taken into account in the funding design. The social layer of open, decentrally organized software development is both USP and potential.

Innovative Funding Approach

Multidimensional process for project identification and selection

There is a push and pull mechanism for selecting ODBTs that are worthy of support: metrics are used in an analysis process to enable the selection of suitable software components. In addition, experts from the community, business and administration are consulted in a committee. Projects can be submitted via an open and low-threshold application platform.

- Push and pull mechanism allows both targeted scouting and tapping of unknown potential
- Decision-making power is shared with the field for broad expertise and legitimacy

Ongoing analysis of critical and relevant software components

A relevant component of the STF is the accumulation and analysis of knowledge about the field, which has been little researched and penetrated. The knowledge is continuously processed in a database and in the analysis process. This allows not only reactive funding, but also proactive investment in relevant ODBTs to strengthen the economy, innovation and digital sovereignty.

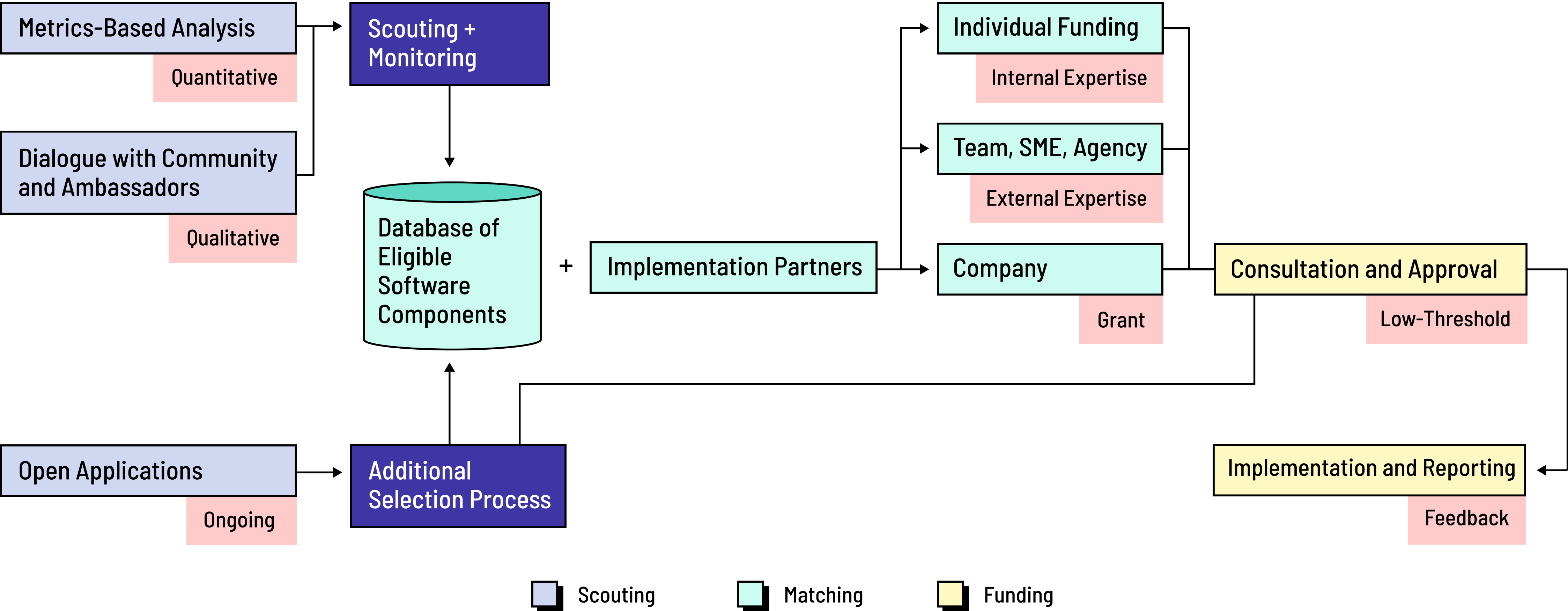
- Metrics for determining the criticality and relevance of ODBTs are developed
- More knowledge and a better understanding of future-relevant software components are created

Targeted investment in digital sovereignty

The STF explicitly funds software components that are necessary for the digital sovereignty of business, administration and individuals. The STF thus invests in technological diversity, independence and innovative strength and thus has a unique selling point in the European funding landscape.

- A new field and a new target group are opened up for and with promotion
- Digital sovereignty is effectively strengthened

Design of the Sovereign Tech Fund



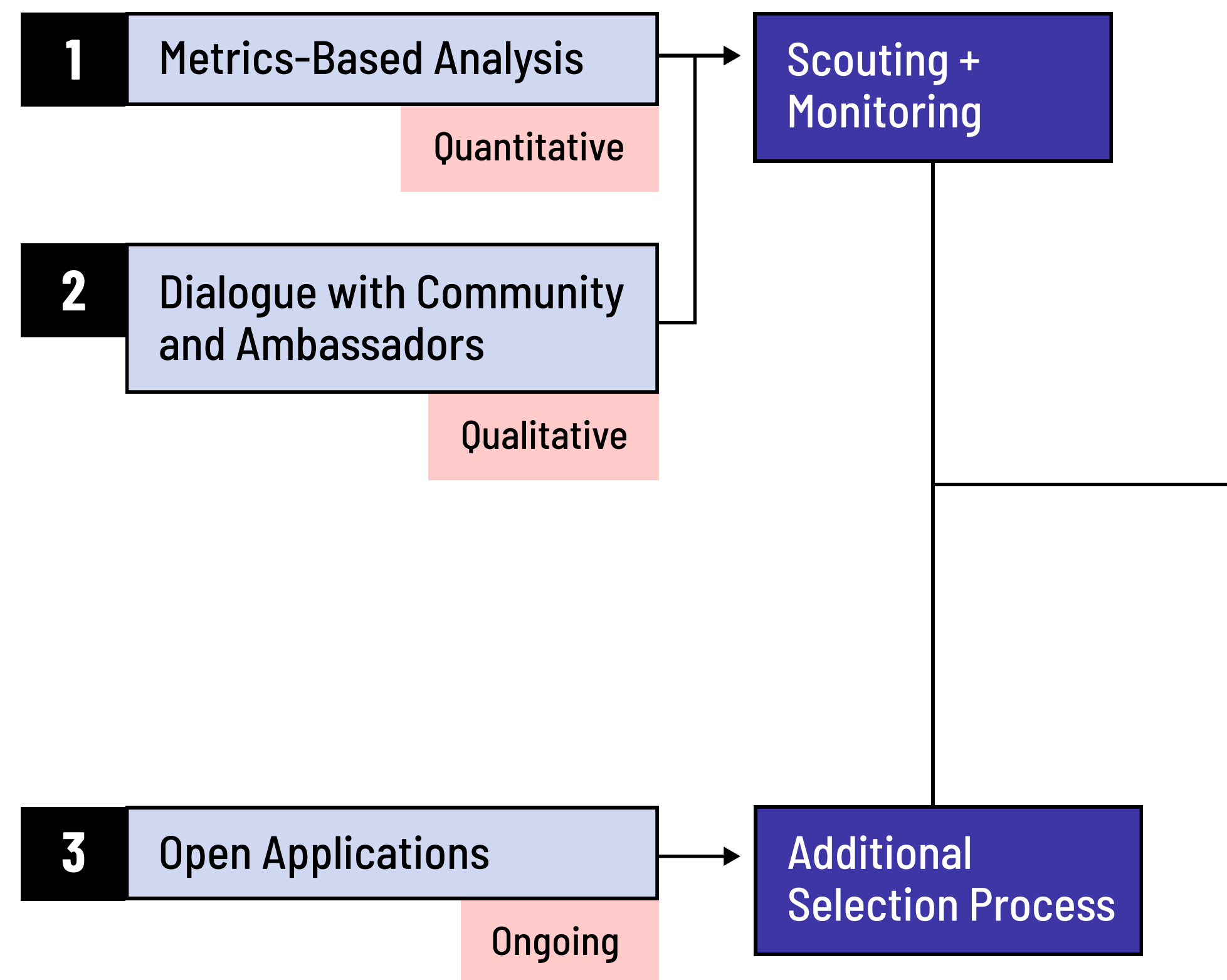
SCOUTING

APPROACH

1. Quantitative scouting relying on a metrics-based analysis mechanism (pull)
2. Qualitative scouting employing ambassadors and a proactive jury (pull)
3. Continuously application opportunity for self-nomination (push)

GOAL

- Higher reach through differentiated information channels
- Strategic selection and decision support by in-house analysis unit
- Participative decision-making processes making use of the practical knowledge of the community and experts



SELECTION AND ANALYSIS MECHANISM

The STF intends to establish an analysis mechanism that will feed its findings from research on eligible Open Digital Base Technologies into a database. For the analysis, it deploys two basic mechanisms: a pull mechanism, in which the analysis unit of the Fund actively identifies projects with the help of a catalog of criteria and proven experts, and a push mechanism in the form of an open application process, through which project applications, including those not discovered by the analysis, can self-nominate for further scrutiny. Here, the STF is deliberately breaking new ground in order to take a more active role in the identification of relevant actors and projects beyond the traditional path of an application process.

PULL: SCOUTING AND MONITORING

Two different mechanisms are to be used to identify suitable actors and relevant open software components: First, an analysis based on scientific criteria, for example on the number of dependencies between different software components, and second, recommendations from ambassadors from the community and the expertise of a proven jury of experts. The former enables the connection to an international network of researchers in the field of software security and emerging technologies, the latter fosters trust and responsiveness in the relationship between funders and grantees.

PUSH: OPEN APPLICATION PROCESS

Scouting and monitoring is complemented by an open application process that provides visibility to additional projects, talent and ideas. The complementary pull process ensures that additional projects can be identified beyond the knowledge of the jury and the analysis mechanism.

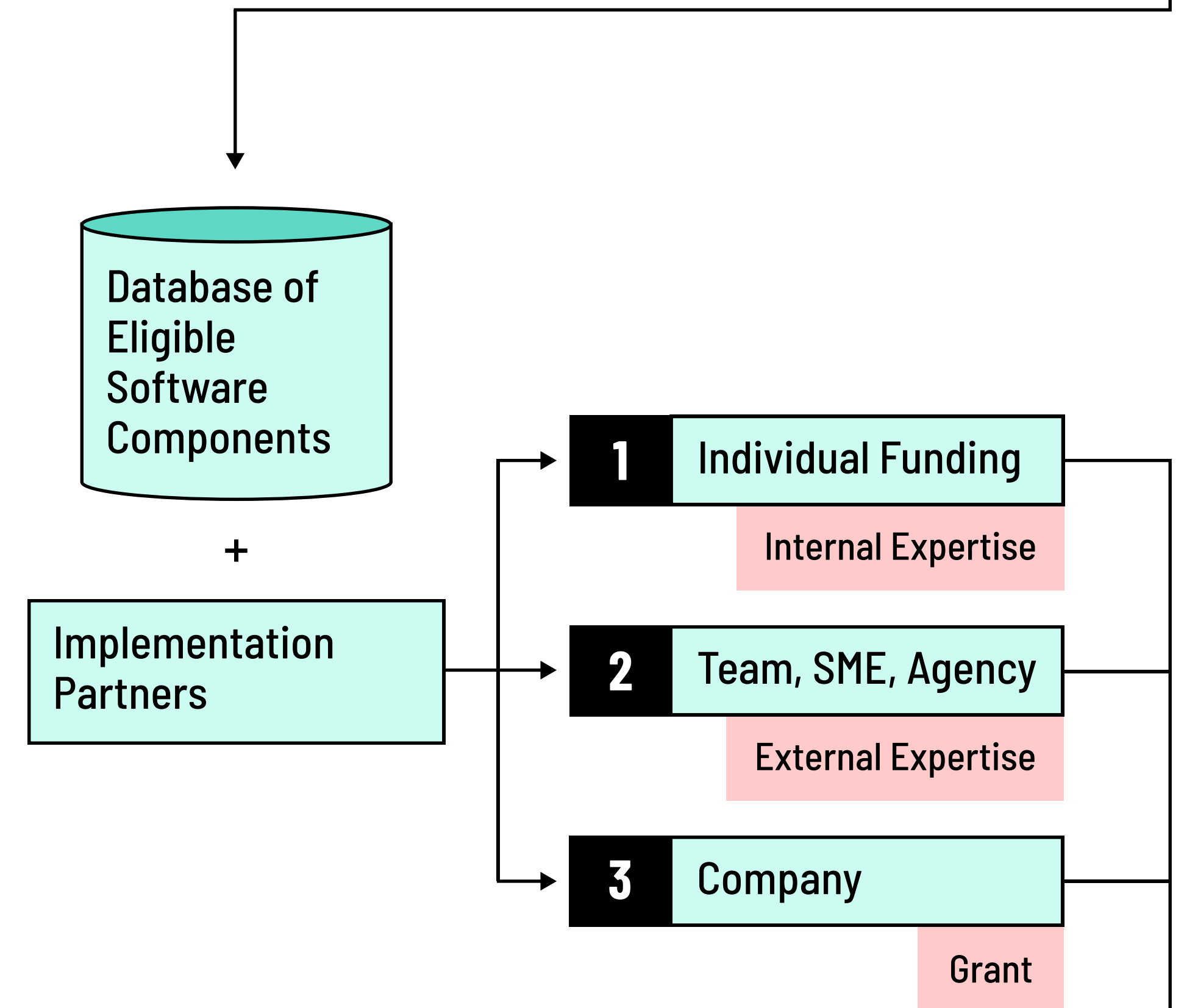
MATCHING

APPROACH

1. Provide funding to individual organizations or developers who are core maintainers of extremely relevant projects
2. Select partners from corporate-, coaching- or design agencies for non-monetary funding of appropriate projects
3. Empower organizations to build a sustainable long-term open source strategy and maintain critical ODBTs

GOAL

- Increased sustainability of funding through targeted matching of selected software developments with suitable implementation partners
- Better fit of funding for decentrally developed and maintained software components
- Involvement of business and civil society in funding



COLLECT AND SAVE - A CENTRAL DATABASE FOR ELIGIBLE PROJECTS

Beyond the funding instrument, the STF also sees itself as a structure within which knowledge about critical software components can be generated. To date, there is not yet a sufficiently extensive database on critical Open Digital Base Technologies that could systematically support funding decisions. Through its internal selection mechanisms, the Sovereign Tech Fund will structure relevant information and make it available to itself, other funders, or for research purposes. For this purpose, information will be collected from all three funding mechanisms: from analysis, from input from experts and the community, and from the open application process.

IMPLEMENTATION PARTNERS - CLOSE COOPERATION WITH INDUSTRY AND CIVIL SOCIETY

For software components that have been identified as eligible for support, suitable implementation partners will then be sought to develop a project proposal. If a project is deemed critical and relevant, appropriate partners will be selected, which may be individuals, groups, or even SMEs or agencies. For larger-scale projects with higher proximity levels to industrial products and companies, partial funding is offered that can be used for additional positions and building organizational knowledge and open-source strategies. In the case of projects that enter the database via the open application mechanism, no implementation partners need to be identified in case of doubt, since a supervising organization or individual developers have already initiated the application.

DIVERSITY OF PROBLEMS, SOLUTIONS AND PARTNERS

The matching process described here enables a broad number of potential funding recipients and thus also the greatest possible diversity of projects that can be supported via the Sovereign Tech Fund. It should be possible to support individuals for comparatively small-scale and up-and-coming projects as well as mature ones with grown governance structures.

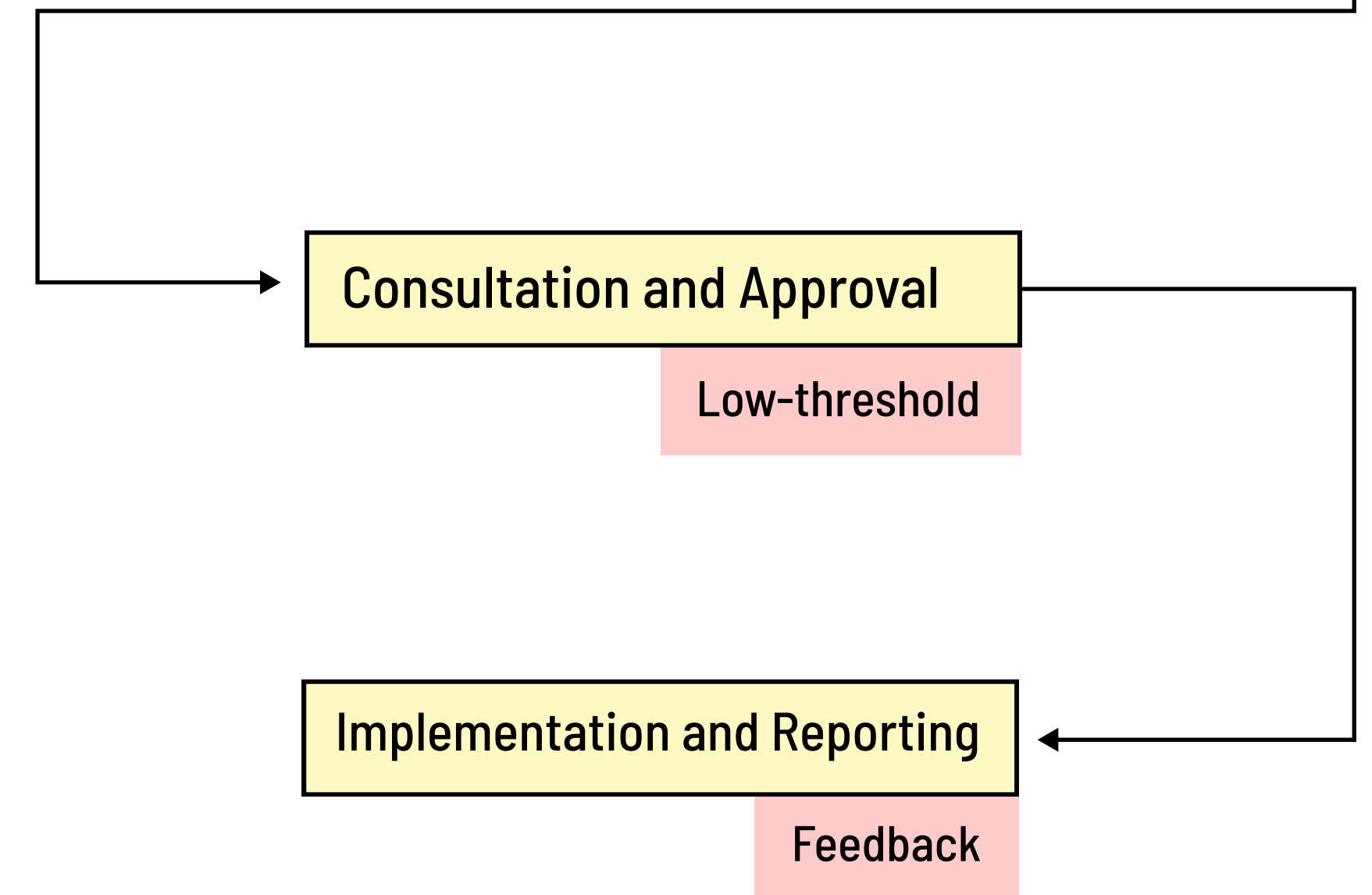
FUNDING

APPROACH

- Low-threshold funding with rapid processing modelled after the Prototype Fund
- Advice and co-design during the preparation of project applications in regard to funding levels and funding periods, based on the model of the Open Technology Fund
- Continuous collection of feedback to improve the funding program and evaluation of the funding reports

GOAL

- Opening up new target groups and areas of impact through tailored funding design (impact-oriented funding).
- Strategic investments in ODBTs in order to support competitiveness, innovative strength and digital sovereignty
- Strengthening the decentralization, security and accessibility of software infrastructure



REMOVAL OF BARRIERS AND AGILE SUPPORT

The STF aims for a low-threshold and speedy application and processing of projects. This means that the time between matching critical software components with implementation partners or applying for projects and the start of funding should not exceed a period of two months. This ensures an agile way of working for the Fund and predictability for the projects. In addition, the STF aims to enable the widest possible range of organizations and companies to receive funding, with funding requirements that are as low-threshold as possible. In this sense, bureaucracy is kept to a minimum and complexity is reduced externally, while a wide variety of organizational forms are supported with a high level of flexibility.

CONSULTATION AND SUPPORT

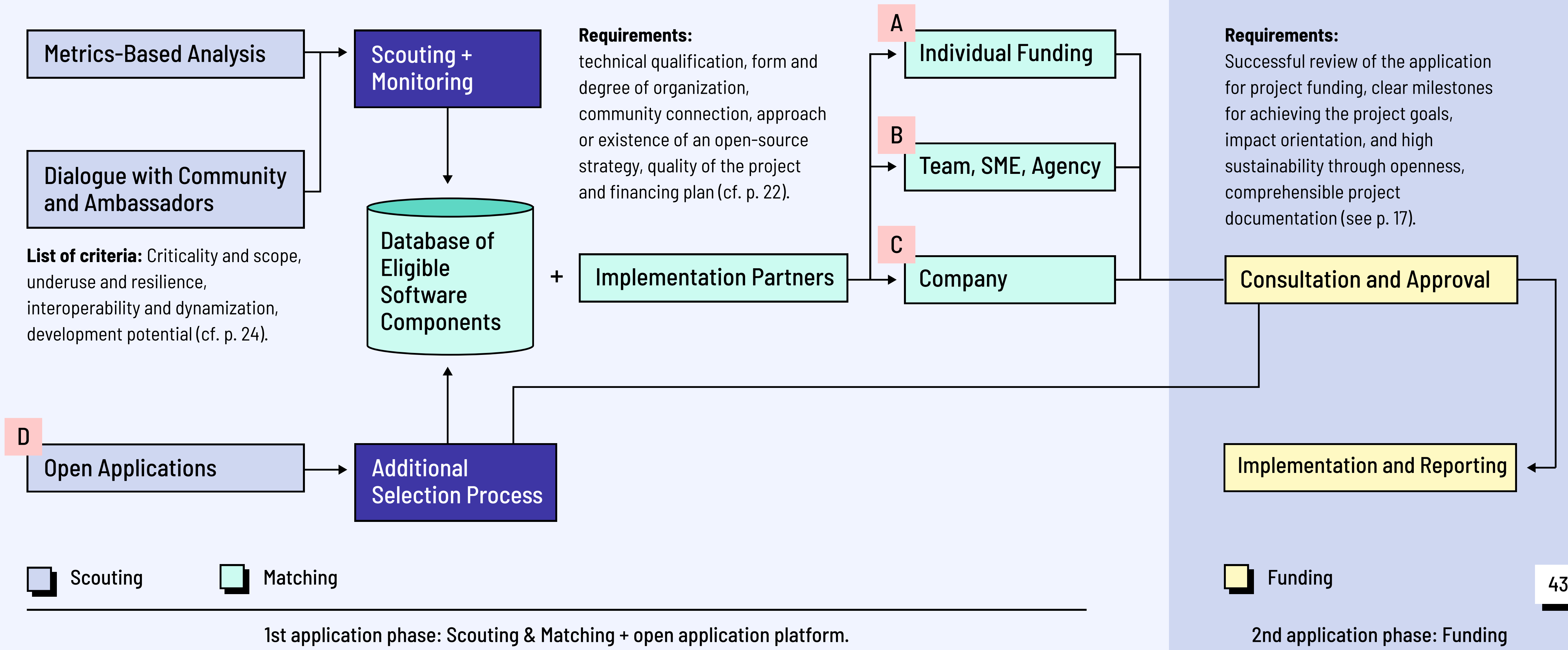
The STF is to include a comprehensive portfolio of non-monetary support offerings to enable sustainable and holistic support for the projects and organizations. Beyond financial support, there shall be a comprehensive range of consulting and support services that address the specific needs of the projects. The portfolio includes, among other things, legal advice from selected partners, support with strategy, usability and start-up issues, or with the development of teams and communities. The design of the consulting services is based on the experience gained from the Prototype Fund and the Open Technology Fund, which also feature extensive additional services.

EVALUATION AND FEEDBACK LOOPS

The monitoring of the funded projects is carried out by team members of the STF. Regular reporting by the grantees enables the accompaniment and monitoring of the projects along defined deliverables and milestones. The feedback is intended to help continuously improve the funding program and serve as a data base for other funding programs and interested parties.

Implementation

Process of the STF: One-Stop-Shop



Process of the STF: One-Stop-Shop

The goal of the Sovereign Tech Fund is to identify and promote critical and underserved Open Digital Base Technologies. It is to be implemented in the form of a funding program with its own funding guidelines, operating through a One-Stop-Shop, in the form of, for example, an agency or as part of a federally owned subsidiary. The federal government provides the One-Stop-Shop with funds budgeted in the federal budget in the form of a grant, which the One-Stop-Shop can in turn pass on as project funding on both an expenditure and a cost basis to promote Open Digital Base Technologies in the public interest.

FUNDING

The funding body (initial recipient) is itself fully funded by the state (on an expenditure basis) and also passes on federal grant funds to a broad target group of recipients under the funding program. Funding for both the sponsor and the grant projects must be budgeted in the federal budget.

FUNDING TYPE

The funds are always forwarded to funded projects in the form of project funding (usually in the form of non-repayable grants). These grants are used to cover expenses (cost basis for commercial enterprises) for individual projects in the area of Open Digital Base Technologies that can be delimited in terms of time and content.

FUNDING SELECTION

The funding projects must contribute to the objectives of significant public interest and are funded via individual grant notifications. The selection criteria for eligibility are defined in the funding guideline via a catalog of criteria. Eligibility is assessed by scouting and monitoring suitable software components using metrics and with the help of expert advice. Eligible software components are processed in a continuously maintained database and further used via this.

FUNDING IMPLEMENTATION

The One-Stop has a two-step application process: 1) Eligible software components are scouted and matched with suitable implementation partners, or submitted via an application platform. After software components are determined eligible and matched, 2) applications can be submitted based on the guideline and implementation partners can be supported via direct individual funding (A), non-monetary funding via service providers (B), or in the case of commercial enterprises, partial funding (C). Via the open application platform, which complements targeted scouting, potential applicants can apply on an ongoing basis as part of the program's call for applications (D) and, after successful selection, subsequently receive funding via one of the three paths (A, B or C).

A FUNDING OF AN INDIVIDUAL, A NON-COMMERCIAL ASSOCIATION OF PERSONS OR A NON-COMMERCIAL LEGAL ENTITY UNDER PUBLIC OR PRIVATE LAW

Based on the list of criteria, an eligible software component is actively identified by the sponsor (scouting). The sponsor searches for a suitable implementation partner for the eligible software component, e.g. an individual or a group of developers (matching). The implementation partner, with advice from the STF, submits an application for funding based on the funding guidelines. This application is reviewed by the funding body and, if all formal criteria are met and the project is prioritized accordingly, a grant notification is issued for project funding. Funding is provided on an expenditure basis in accordance with the relevant regulations. Fixed amount funding could be considered in individual cases for recipients abroad. After completion of the project, proof of use (final report and accounting proof) must be submitted.

B NON-MONETARY SUPPORT VIA PAID SERVICES

Based on the list of criteria, an eligible software component is actively identified by the sponsor (scouting). The sponsor searches for the suitable implementation partner for the eligible software component, e.g., an individual or a nonprofit organization (matching). The implementation partner, with advice from the STF, then submits an application based on the funding guidelines for necessary support services, e.g., consulting or security audits, for work on the identified software component. It is planned to build up a pool of service providers for these project-supporting measures, who will be selected in consideration of a competitive selection process and commissioned with the supporting services.

C PARTIAL FUNDING FOR COMPANIES

Based on the list of criteria, an eligible software component is actively identified by the sponsor (scouting). The sponsor searches for a suitable implementation partner for the eligible software component (matching). If the software component has potential for use and in particular if parts of the market economy depend on it, companies may offer themselves as implementation partners. In this case, there is the possibility of pro-rata funding for a company. The grant to the companies is provided as a real subsidy, i.e. non-repayable (partial funding) and in principle on an expenditure basis. Exceptionally, cost basis can be provided for companies in the commercial sector, provided that they have commercial accounting, an orderly accounting system in accordance with CSP and the assessment by expenses would be unreasonable. Fixed amount funding could be considered in individual cases for recipients abroad. After completion of the project, proof of use (final report and accounting proof) must be submitted.

D CLASSIC PROJECT APPLICATION FOR FUNDING

In addition to scouting, individuals, non-commercial associations of persons, non-commercial legal entities under public or private law, and companies can apply for funding via an open application platform within the framework of the funding guidelines. This is a useful addition to the active scouting and matching of the funding body. Projects are reviewed using the same criteria for selecting eligible software components and, depending on the type of applicant, can be supported via individual funding (A), non-monetary funding via service providers (B), or partial funding of companies (C). For the individual regulations, see procedures A-C.

Task Packages

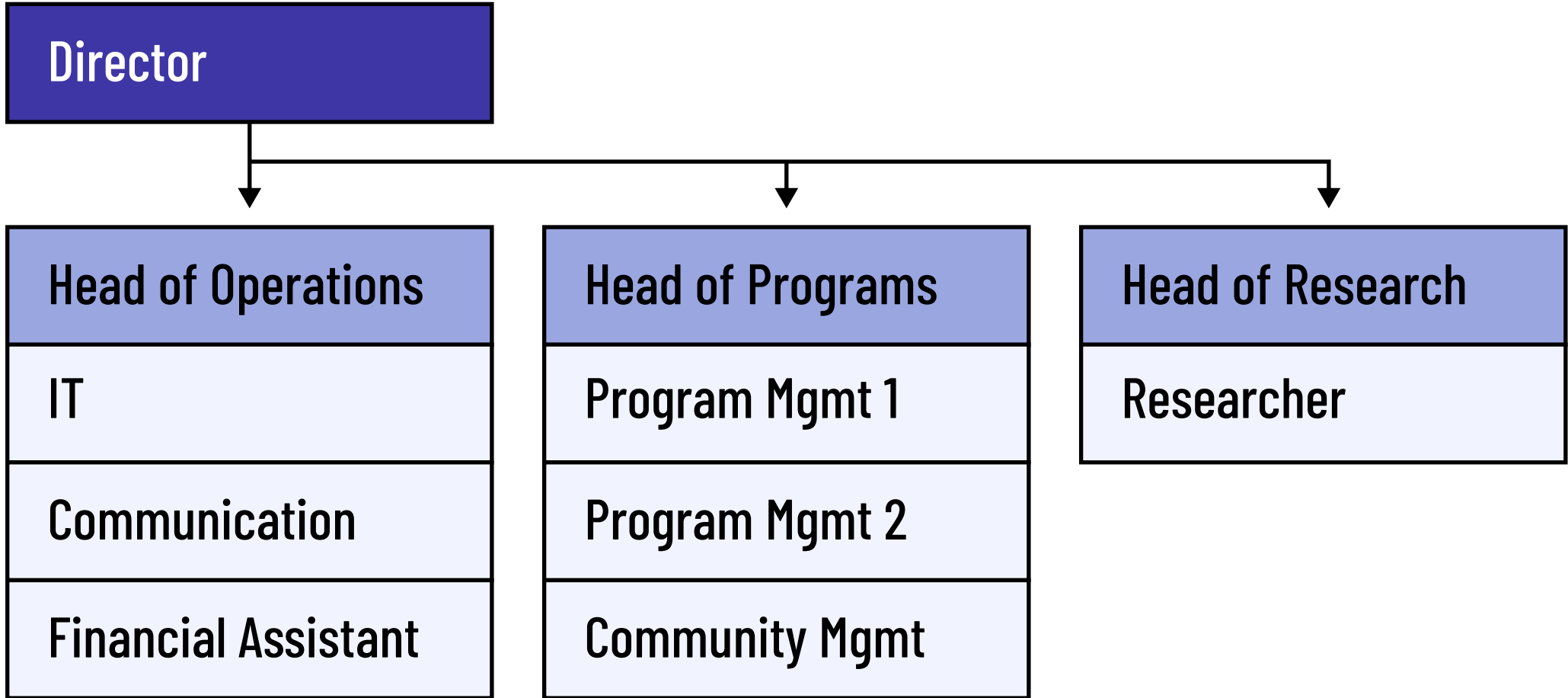
The STF is intended to promote Open Digital Base Technologies of high criticality and security relevance, as outlined. These software components are distributed via open licenses, are publicly available, and are used by individuals, companies, and administrations in Europe and worldwide to improve connectivity, access to information, privacy, and security.

Derived from this mission and the STF's funding design are various packages of tasks and the staff positions needed to implement them, which ensure the STF's "regular operation" and long-term achievement of its strategic goals.

THE TASKS TO BE PERFORMED IN THE STF ARE ROUGHLY DIVIDED INTO THE FOLLOWING PACKAGES:

- 1** Outreach and application phase: Eligible open software components, suitable projects and applicants must be continuously discovered and addressed by the analysis mechanism, ambassadors and the STF team. This also includes participation in appropriate conferences and community meetings to make the STF known, to introduce the funding offer and to build trust.
- 2** Analysis and evaluation: according to the criteria from the funding catalog, a funding proposal must be iteratively developed through targeted scouting and matching. The project outlines must be translated into a funding agreement with milestones, administratively recorded and a funding process created.
- 3** Implementation of the funding phase: During the funding period, projects should report regularly. In addition to monetary funding, they receive a specifically tailored support program consisting of coaching and services. The development of competencies strengthens the Open Source ecosystem beyond the funding. In addition to the funding, the effectiveness of the STF will be continuously monitored and improved with feedback from the grantees.
- 4** Networking and sustainability: For the funding to have a sustainable impact, projects need to be constantly accompanied by support in networking with other stakeholders. To this end, conferences as well as networking and working meetings are also organized and attended. The STF also aims to influence effective open-source strategies in the funded organizations.
- 5** Strategic control and administration: The activities of the STF are also supported by open-source tools and managed by the tool "Hypha" [13]. In addition, in-house static code analysis is performed in the ecosystem to evaluate the impact of the funding and perform its own data collection to provide an additional layer of informed funding decision-making. In order to successfully integrate the Fund into the existing Open Source ecosystem, a close exchange with other national and international funders and key stakeholders will be sought, in addition to dialogue with the communities.

Staff Structure and Tasks



For the full operation of the STF, **11 staff positions** are estimated.

For Pre/Launch, the 4 **persons** of the management levels, 1 program manager as well as 1 communication manager are required (**6 persons in total**).

For Pre/Launch, it is recommended to **reserve consulting fees for one-time tasks** of the start-up phase, e.g. legal advice, setting up the infrastructure and design services.

TASK PACKAGES

- Director** → Overall management, strategy, outreach, further development, partnerships
- Head of Operations** → Head of Processes, Finance, HR, IT
- IT** → Consulting, infrastructure, maintenance
- Communication** → Press and public relations
- Financial assistant** → Support accounting, administration
- Head of Programs** → Management of project selection with scouting, matching, funding
- Program Manager** → Support/consulting of the projects
- Community Manager** → Liaison tech communities, topic scouting
- Head of Research** → Conducting research, development metrics
- Researcher** → Database maintenance, topic scouting

Staff Positions

DIRECTOR	HEAD OF PROGRAMS	HEAD OF OPERATIONS	HEAD OF RESEARCH	SCIENTIFIC STAFF
<ul style="list-style-type: none"> • Strategic control of the measure • Coordination of the overall project as well as the team • Implementation of project meetings • Monitoring and controlling of the project • Reporting and communication with the funder • Coordination and communication with the project partners • Development of the measures accompanying the funding • Cultivation of the partner network 	<ul style="list-style-type: none"> • Management of the program team • Development and regular adaptation of the funding strategy • Coordination between program team, research, operations and communications • Design and implementation of application, evaluation and selection processes • Design and adaptation of project management • Further development of the program, adaptation of the funding formats 	<ul style="list-style-type: none"> • Design, implementation and update of processes to organize workflow throughout the organization • Preparation of reports, memos, invoices, and other documents • Drafting of documents for contractual purposes • Organization and management of shared infrastructure • Staff planning 	<ul style="list-style-type: none"> • Selection of content evaluation metrics (qualitative and quantitative). • Coordination of user feedback and iteration loop of the selected approach • Expansion and coordination of the expert panel • Identification and research of overarching technological issues • Evaluation of relevant scientific publications in the area of impact of the funding instrument 	<ul style="list-style-type: none"> • Development and validation of the quantitative and qualitative selection metrics. • Consolidation into a technical tool to generate the database • Technical research, identification of monitoring technologies and ways to deploy them • Monitoring of particularly critical dependencies and security risks of the ecosystem

Staff Positions

PROGRAM MANAGEMENT (2)	COMMUNITY MANAGEMENT	COMMUNICATION	FINANCIAL ASSISTANT	IT/ADMIN
<ul style="list-style-type: none"> • Controlling intervention in project submissions in the form of assistance with adaptation • Supervision of projects during the application and funding period • Administrative support of the funded projects during the implementation phase • Contact person for technical queries (also regarding technologies and licenses) • Feedback coordination for rejected projects 	<ul style="list-style-type: none"> • Outreach and strategic communication of the program • Co-development of the calls for proposals (push mechanism) and the selection criteria (pull mechanism) • Liaison with the individual developer and project communities. • Early identification of technology and governance issues in ODBTs communities. 	<ul style="list-style-type: none"> • Outreach and communicative support of the projects (in cooperation with contractors) and strategic communication of the program • Further development, implementation and content support of the project websites • Content creation for the project website and social media • Creation of media content • Coordination of communication formats, service providers and design measures 	<ul style="list-style-type: none"> • Organizational tasks • Supporting the project management in liquidity planning and ongoing payment transactions • Support of the project teams in the preparation of financing plans, in budget controlling as well as in the administration of funds and proofs of use 	<ul style="list-style-type: none"> • Consulting for the analysis and evaluation of open software components • Software procurement • Maintenance of technical systems and infrastructure • Adaptation of the application platform • Technical consulting of the team • IT security

Staff Positions

ROLE	MANAGEMENT	OUTREACH	IT/ADMIN	RESEARCH	STRATEGY	SUM
Director	0.3	0.2			0.5	1
Head of Programs	0.5	0.1			0.4	1
Head of Operations	0.8		0.2			1
Head of Research	0.2			0.8		1
Researchers			0.5	0.5		1
Program Management	0.5	0.1		0.3	0.1	1
Program Management	0.5	0.1		0.3	0.1	1
Community Management	0.2	0.5			0.3	1
Communication	0.2	0.8				1
Financial Assistant	1					1
IT/Admin			1			1
Total	4.2	1.8	1.7	1.9	1.4	11

Implementation Steps

THE STF IS TO BE IMPLEMENTED IN THREE STEPS:



PRE-LAUNCH

- Identification of and start of work on/with a suitable carrier model
- Development of a list of criteria for the analysis and quantitative identification of relevant Open Digital Base Technologies
- Identification of potential cooperation partners and experts for qualitative scouting of relevant projects and technologies
- Technical set-up of the continuously open application platform
- Activation of a partner network and multipliers for publicizing and launching the funding program
- Start of public relations for the promotion of the funding program and general awareness-raising for the topic
- Development of a concept for monitoring and evaluating the impact and for continuous improvement of the program

LAUNCH

- Funding modalities and design of the program are validated in practice and adapted if necessary
- Go-live of the analysis mechanism and the application platform
- Official appointment of program ambassadors
- Public launch event

POST-LAUNCH

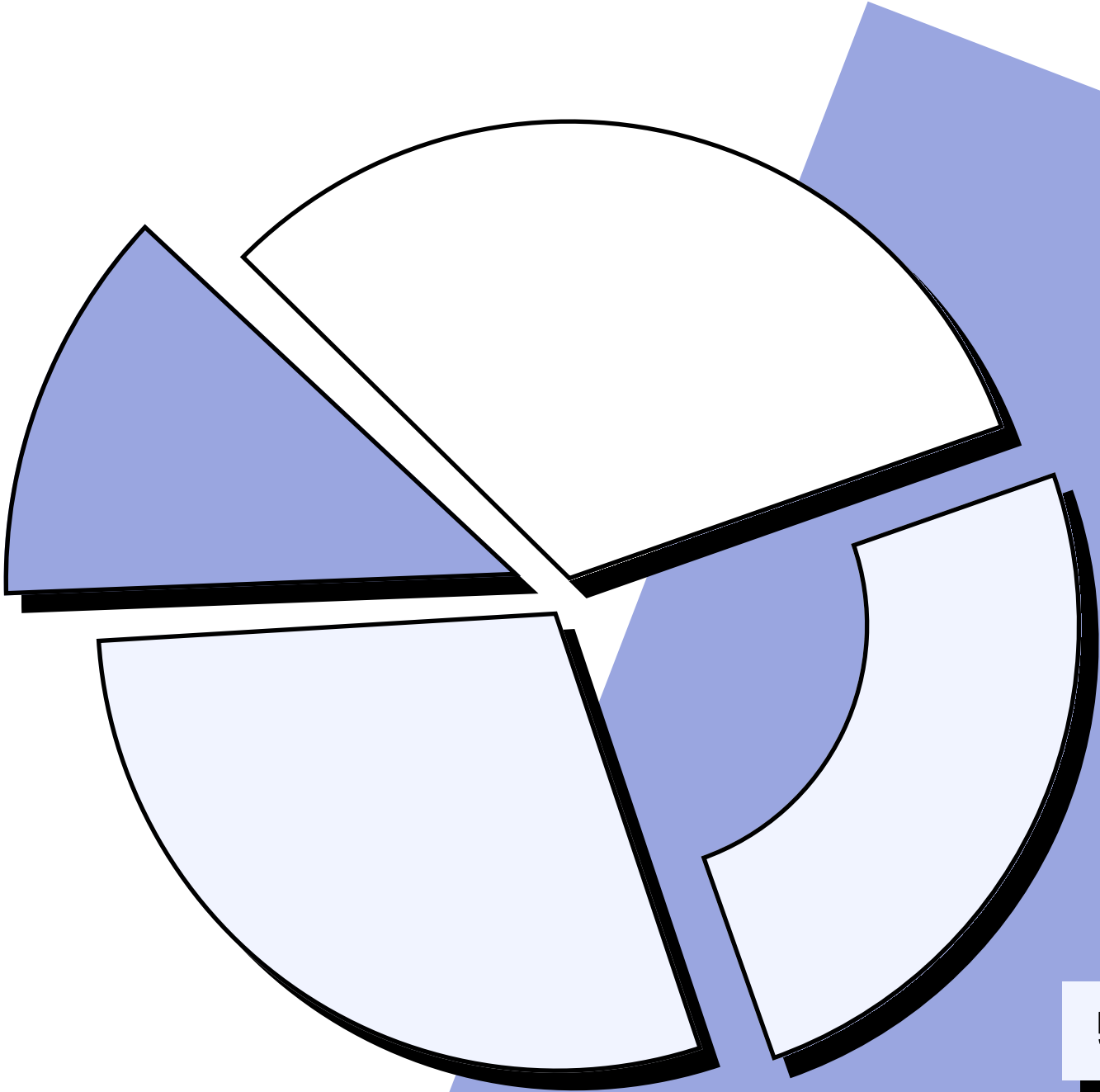
- Ongoing adjustments to regular operations, mapping of the ecosystem, and expansion of the database for eligible software components
- Continuous collection, evaluation and implementation of feedback from the community
- Continuous exchange with multipliers and further public relations work

Budget Plan

EXPENDITURE FOR THE PROMOTION OF OPEN DIGITAL BASE TECHNOLOGIES	
Funding amount	7,500,000 EURO
Material costs for the grant recipients	1,150,000 EURO
EXPENSES FOR THE MANAGEMENT AND OPERATION OF THE STF	
Staff	982,000 EURO
Material costs	174,000 EURO
Administrative costs	173,000 EURO
Total expenditure per year	9,979,000 EURO

There are also **one-off expenses** of EUR 95,000 for the initial purchase of hardware and software, as well as fees for pre-launch services (e.g. legal advice).

Spending on STF management and operations does not increase with higher spending on Open Digital Base Technologies funding.



Conclusion

THE ESTABLISHMENT OF THE SOVEREIGN TECH FUND CAN STRATEGICALLY HELP ACHIEVE THE FOLLOWING IMPORTANT GOALS:

- The maintenance and development of Open Digital Base Technologies are sustainably supported by a specially designed funding program.
- Critical software components are identified and secured at an early stage.
- A knowledge hub on critical basic infrastructures and strategies for their further development, maintenance, security and scaling is created.
- The Open Source ecosystem becomes more resilient: Through trusted collaboration with the tech communities, rationale of production becomes more transparent and can be co-designed before external effects occur.
- Innovation is supported in many ways through low-threshold, needs-based funding that is open to many target groups.
- The innovation power is lifted by secure and scalable open basic infrastructures overall.
- The improved innovation climate and the regulation of signs of market failure strengthen democratic structures in the digital realm.
- The innovative capacity, security and technological sovereignty of companies and public institutions in Germany are secured.
- The establishment of an alternative to US-centric support structures in particular contributes (also normatively) to the digital sovereignty and robustness of technological systems in Germany and Europe.
- Open Digital Base Technologies are developed and made available in the public interest to prevent dominant platform providers from further strengthening their monopoly position by siphoning off data. Thus, in Germany, the business landscape as well as public sector organizations benefit from strong ODBTs.

Credits



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