

German Spin-Off Framework

Advancing European Deep Tech Innovation

A Guide to Fair and Efficient Technology Transfer between Research Organizations, Founders, and Investors

Foreword 4

Endorsers 7

Motivation 10

Scope of the GSOF 13

1 Key Stakeholders 14

Founding Team 15
Research Organizations and Technology Transfer Offices (TTOs) 16
Investors 17

2 Guiding Principles 18

Fairness 19
Long-term Thinking 19
Clarity and Practicality 20
High Process Speed 20
Professional Management 20
Universality 21

3 Terms — Defining the Landing Zone 22

Navigating the Landing Zones 24

Licensing 24

General Principles 25
Sector-Specific Considerations: Pharmaceuticals and Life Sciences 26
Sector-Specific Considerations: Software & Data 26
Specific Provisions 27

Equity Types 28

Equity Levels 30
Case: Pharmaceuticals and Biotechnology 31
Case: Software 31
Case: Data-Driven Spin-offs 31

4 Process 32

Preconditions for Negotiation Process 33
Risks Arising from Unclear Preconditions 34

5 Good Practices 36

Max Planck Society (MPG) 37
Technische Universität München (TUM) 38
Fraunhofer 38
RWTH Aachen University 39
Framework Resources 40

Authors and Contributors 41

Appendix 42
Example 1: Lower Royalty Range (~1 %) 42
Example 2: Upper Royalty Range (~5 %) 43

Foreword

Germany is home to one of the world's strongest research ecosystems. It has world-class universities, leading non-university research organizations, a growing venture capital market, and an increasingly experienced generation of founders who want to build globally relevant companies from science and technology.

And yet, for many years, we have lived with a paradox: the stakeholders who all need spin-offs to succeed have often lacked a shared basis for making them happen. Discussions between research organizations, technology transfer offices, founders, angel investors, and venture capital firms have too frequently been shaped by assumptions, isolated experiences, and institutional constraints rather than by structured dialogue.

The German Spin-off Framework was created to help change that.

From the outset, the purpose of this initiative was not to impose a single model on a highly diverse ecosystem. It was to bring key stakeholders to one table, create trust and a more transparent, practical, and founder-compatible basis for negotiations. The working group deliberately brought together technology transfer, investment, founder, legal and ecosystem perspectives because successful spin-offs need fair recognition of the contribution made by different parties, deal structures that allow ambitious companies to raise capital, attract talent, and scale internationally, and a tech transfer process that is fast and focused.

This framework should therefore be read in the spirit in which it was developed: as an orientation tool; as a contribution to better negotiations; and as the first version of a process that must continue.

The "landing zones" described in this document are reference points for negotiations. They are meant to create transparency around deal structures that experienced practitioners have seen work in real transactions. They should help reduce avoidable friction, not increase transaction costs. They should help parties find balanced outcomes faster.

The same applies to speed and process. Economic terms are only one part of a successful spin-off. Long, unpredictable, or overly complex negotiations can be just as harmful as poorly calibrated financial terms. A good framework must therefore also encourage professional, time-efficient, and transparent processes. The ambition should be clear: fewer months spent negotiating, fewer surprises for all parties, and more time spent building the company.

The GSOF is intentionally a version 1.0. It is the result of a structured process involving experienced key stakeholders who are central to any spin-off. It does not claim to be the final word. The ultimate test of the GSOF is whether it helps more founders turn excellent research into excellent companies.

My sincere thanks go to the Joachim Herz Foundation for supporting and accompanying this initiative. Their commitment to entrepreneurship, technology transfer, and the commercialization of research has been instrumental throughout this process.

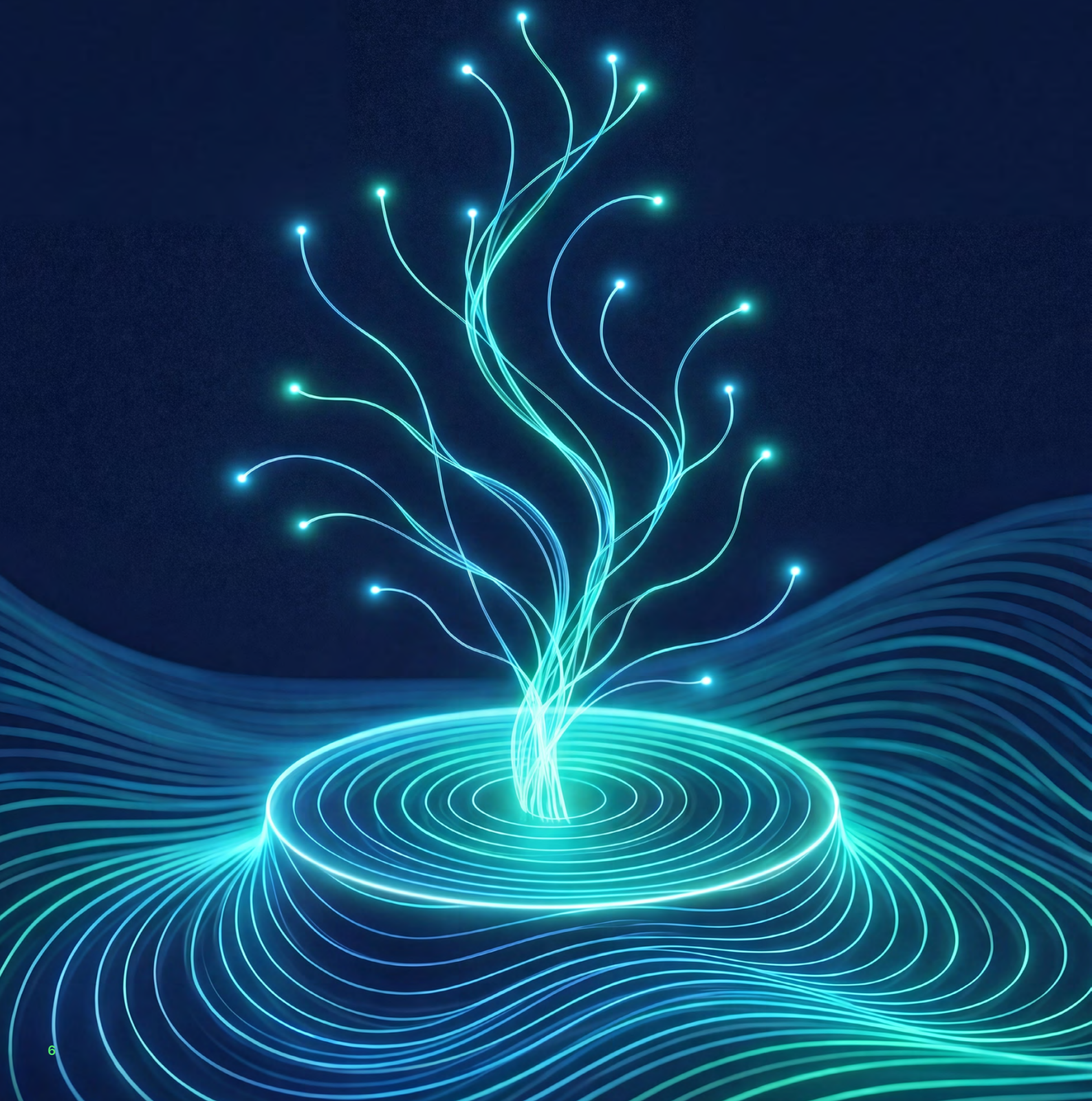
I would also like to thank the many practitioners who contributed their expertise, perspectives, and constructive criticism. Their willingness to engage openly across institutional boundaries has made this framework possible.

If the German Spin-off Framework helps reduce unnecessary debate, creates greater transparency, accelerates negotiations, and enables more founders to build successful companies based on world-class research, then it will have achieved its purpose.

Dr. Thorsten Lambertus
Managing Director, Institute for Deep Tech Innovation (DEEP),
ESMT Berlin

Endorsers

The following institutions have formally endorsed the German Spin-Off Framework and committed to applying its principles. By signing the GSOF, each organization affirms its dedication to fair, transparent, and efficient technology transfer, and to building companies that create lasting societal and economic impact.



Venture Capital Firms & Angel Communities





































Research Organizations & Technology Transfer Offices

ascenion

BIH Berlin Institute of Health at Charité

CHARITÉ UNIVERSITÄTSMEDIZIN BERLIN

BAYPAT

CAU Christian-Albrechts-Universität zu Kiel

DESY.

dkfz.

Fraunhofer

HZDR

KIT Karlsruher Institut für Technologie

LMU KLINIKUM DER UNIVERSITÄT MÜNCHEN

MAX Planck INNOVATION

MHH Medizinische Hochschule Hannover

RWTH AACHEN UNIVERSITY

Technische Universität Dresden

TLB Technologie-Lizenz-Büro der Baden-Württembergischen Hochschulen GmbH

TUM

triathlon

UNIVERSITÄT DES SAARLANDES

Universität Stuttgart

DEUTSCHE HOCHSCHULMEDIZIN E.V.

VERBAND DER UNIVERSITÄTSKLINIKA DEUTSCHLANDS

medizinischer fakultätentag

Law Firms

NOERR

WIPIT VENTURE & TECH

Media

VentureCapital MAGAZIN

Deep-Tech Enablers

BIO DEUTSCHLAND

BioM

bioRN Life Science Cluster

DEEP An institute of ESMT Berlin

Joachim Herz Stiftung

LifeScience Stiftung

POTSDAM SCIENCE PARK

southwestX THE BRIDGE TO INNOVATION

Motivation

Universities and research institutions (Research Organizations), **technology transfer offices** (TTOs), and **venture capital/angel investors** (Investors) share a common goal with founders, and entrepreneurs: They aim to bring innovative technologies to market to create societal impact and economic value. However, a shared objective alone is not sufficient to build successful startups. The commercialization of early-stage research and new technologies is a complex journey. It is particularly challenging to transform a technology that is not yet fully developed — without customers, without revenue, and with a market that is difficult to assess — into a fast-growing, commercially successful company.

When founding and growing companies, there are many stakeholders who, in the event of economic success, should all benefit fairly and appropriately: inventors, founders, key employees, research organizations, and investors. Beyond the founders, two stakeholder groups have a particularly strong influence on shaping both the founding process and subsequent success: (a) Research Organizations as IP (intellectual property) owners and their TTOs, which facilitate the transfer of IP, and (b) Investors, who provide the necessary venture capital.

Unfortunately, the perspectives of these two stakeholder groups often differ on the terms under which technology transfers to a newly founded spin-off should take place. The path to an agreement can be time- and cost-intensive. A successful outcome requires that all parties feel valued, that their needs are considered, and that they ultimately collaborate to significantly increase the chances of success for the new company.

The German Spin-off Framework (GSOF) enables fair and efficient commercialization of research through spin-offs. It provides planning certainty, trust, and transparency. The GSOF defines a "landing zone" for the IP deal and demonstrates what a functioning process should look like to accelerate negotiations towards a successful conclusion.

Above all, the publication of the GSOF demonstrates a shared commitment from both the Research Organizations, represented by their TTOs, and Investors to pull in the same direction to found companies that can change the world.

The GSOF consolidates extensive experience and lessons learned from negotiating significant and complex spin-off deals. It provides a reliable and efficient reference to best practices for structuring contentious issues such as equity form and level, license fees, payment targets, and milestones. The GSOF draws on decades of experience from nationally and internationally active organizations that have completed hundreds of such deals across numerous industries, making their valuable expertise accessible to all interested stakeholders.

The GSOF is specifically designed for growth-oriented deep-tech spin-offs which, based on a disruptive business model or technology, aim to scale rapidly and are typically financed through venture capital. It therefore focuses on cases where companies are built under high uncertainty, require significant upfront investment, and depend on strong alignment between founders, Research Organizations, and Investors to unlock substantial long-term value.

The guideline covers the full spectrum of deep tech, while defining specific recommendations for technology areas and industries that follow their own distinct dynamics: life sciences, software, and the engineering-heavy fields.

We invite everyone involved in the founding, financing, and further development of spin-offs to embrace these recommendations in good faith and integrate them into their own practice. Use the GSOF to facilitate technology transfer processes, accelerate spin-offs, secure returns for Investors, and ensure that public Research Organizations participate appropriately in economic success. Use it to build successful companies that can become the backbone of our future economy.

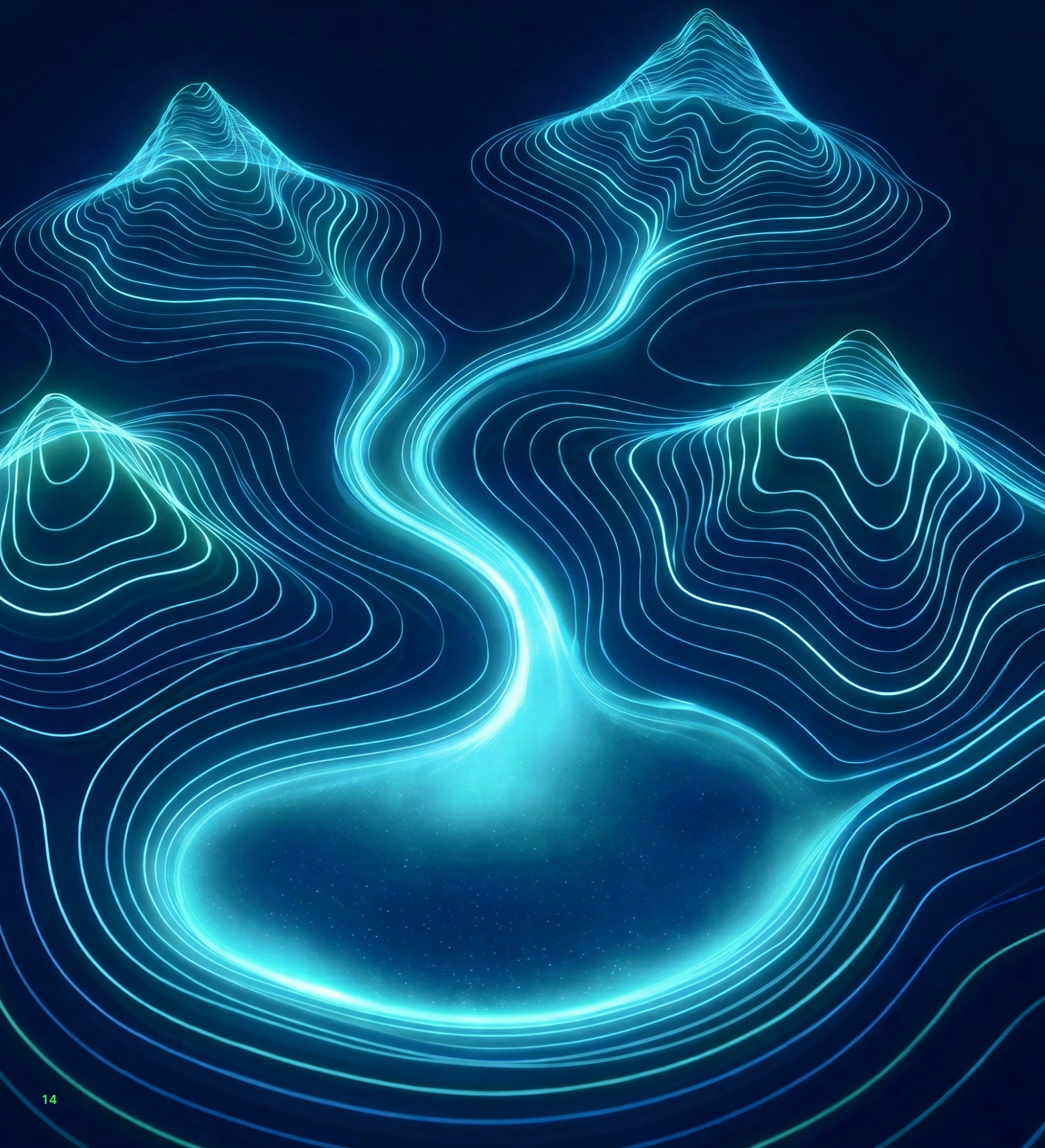
Scope of the GSOF

The GSOF focuses on IP-based spin-offs. Activities that typically need to be addressed in parallel — such as cooperation agreements with Research Organizations, fundraising, shareholder agreements — are critical but fall outside the scope of this framework.

The GSOF does not cover “lifestyle” businesses or purely consulting-driven ventures. It also does not address licensing models to established companies or approaches centered on the resale of licensed IP.

The GSOF is designed for founder-driven approaches and does not cover alternative models such as venture building or company creation. Venture building refers to the systematic creation, development, and scaling of startups within an organization by providing ideas, resources, capital, and operational support.

Key Stakeholders



The key stakeholders in a spin-off process are the future founders, the TTO representing the research organization, and early-stage investors. All share an interest in optimizing the success of the spin-off. However, they contribute to this success at different stages, with different risk profiles, and with different expectations of how they themselves will benefit.

Founding Team

Spin-offs are often founded by technologically skilled but entrepreneurially inexperienced individuals. Motivations for founding can vary widely, ranging from purely commercial interests to the desire for broad application of new technologies to the benefit of society. The founding team may, but does not have to, be the inventors of the underlying technology and therefore does not always benefit from inventor compensation. Furthermore, it should be considered that there are often additional inventors who do not transition into the startup. These individuals benefit solely from their share of potential future revenues based on income from technology transfer projects (inventors' compensation). The IP owner is the Research Organization (see Arbeitnehmererfindergesetz).

For the purpose of this framework, founders are defined as individuals who commit to building the company through substantial, long-term operational involvement. This typically implies full-time engagement and active responsibility for the development and execution of the business. Founder equity is granted in return for this future contribution and risk-taking. The relative shareholding between founders should reflect their expected level of operational involvement.

To keep the shareholder structure from an investor's perspective "investable," founders (or any other contributing individuals) who cannot commit to ongoing operational involvement are instead highly recommended to receive other forms of success-oriented participation, such as a VSOP, ESOP, or equity-like Profit Participation Rights. Shares granted to non-operational founders need to be clearly justified by their future importance and contribution to the venture. Otherwise, investors will treat them as "dead equity," which reduces the likelihood of a successful financing round.

Founders assume significant personal and professional risk. They typically contribute their know-how, commitment, and—to a limited extent—their own capital. While their negotiating position can vary depending on the specific context, founders often have less experience in structuring complex transactions and may therefore rely on other stakeholders during the process. Given the inherent uncertainty of the spin-off's commercial success and limited short-term monetary incentives, sufficient long-term upside through equity participation remains an important factor in motivating founders to pursue this path.

Research Organizations and Technology Transfer Offices (TTOs)

As part of the Research Organization, or in some cases a closely affiliated external entity, the TTO represents the Research Organization in commercializing IP, including through spin-offs, and negotiates the transfer of technology into them. The Research Organization itself is a key stakeholder, contributing the underlying IP, research infrastructure, and often the results of years of publicly funded work.

In Germany, most Research Organizations are publicly funded and therefore subject to public law and budgetary regulations. Accordingly, TTOs are generally not structured as profit-maximizing entities. Their mandate is to transfer research results into practical application in line with their public mission—i. e., to create societal and economic impact—while ensuring compliance with state aid law ("Beihilferecht") and budget law ("Haushaltsrecht"). At the same time, fair and appropriate participation in the economic success of spin-offs is an important prerequisite for sustaining effective technology transfer activities and a sustainable innovation ecosystem. If commercialization systematically fails to generate sufficient returns to cover costs and reinvest in future transfer efforts, the ability of institutions to support spin-offs at scale may be constrained.

Technology transfer into spin-offs in Germany typically follows three principal models:

1. Licensing the IP to the startup, usually on an exclusive basis within a defined field of use. In this case, ownership of the IP remains with the academic institution (common standard worldwide).
2. Assignment (transfer) of the IP to the start-up, whereby ownership is transferred to the company.
3. Combination of both models, in which ownership rights are transferred at a later point in time (e.g., upon exit).

All three models can generate financial returns for the institution, but they differ significantly in terms of timing, risk allocation, and legal complexity. Because Research Organizations bear substantial upfront costs (particularly patent filing, prosecution, and maintenance), commercialization decisions must balance economic considerations with their public mission and regulatory obligations. The objective is therefore not short-term revenue maximization, but a balanced approach that enables long-term societal and economic impact while ensuring sustainable participation in the value created.

Investors

Investors in spin-offs include a range of archetypes such as business angels, state funds, and institutional venture capital (VC) investors. They invest capital in exchange for equity and seek significant long-term value appreciation, typically over several years. Early-stage Investors assume particularly high risks, knowing that only a small number of portfolio companies will succeed. Each investment must therefore offer sufficient return potential to compensate for losses in other ventures and generate overall portfolio returns in line with their respective mandates. For institutional VCs, this also reflects fiduciary obligations toward their Limited Partners, which can render certain deal structures — including cap table compositions — uninvestable regardless of the underlying technological potential.

Beyond capital, Investors often play an active role in value creation. This includes strategic guidance, board participation, support in hiring key personnel, facilitating commercial partnerships, and enabling access to follow-on financing through their networks. Business angels and early-stage Investors, in particular, frequently contribute domain expertise, technical validation, and initial market access, thereby playing a critical role in the early development of spin-offs.

Investors recognize that, for growth-oriented spin-offs, the ultimate realization of value typically occurs through a liquidity event, which in most cases constitutes a strategic transaction. Investors will therefore aim that the structure and substance of licensing and IP-related terms are consistent with international market standards and do not constitute a material impediment to future strategic transactions. They will resist licensing arrangements that would reasonably be expected to impair the company's strategic optionality, refinancing/transaction certainty, or valuation at exit.

For Investors, the founding team is an essential part of the venture, as its success heavily depends on the performance of the founders. Investors are therefore fully aware that founders must remain incentivized. They therefore concede significant ownership levels for founders, even after several rounds of dilution through financing rounds.

Guiding Principles



To ensure that the spin-off process functions as smoothly and effectively as possible, we propose the following guiding principles as a common basis for all stakeholders:

Fairness

A "fair deal" is not defined by the perspective of any single stakeholder, but by whether it creates a balanced and incentive-compatible outcome for all parties involved. In practice, this requires aligning risk, contribution, and potential upside in a way that enables the long-term success of the spin-off. Internationally established de facto standards — shaped by decades of technology transfer and venture financing practice — provide a reliable reference point for such alignment.

Fairness therefore implies not only appropriate economic participation for each stakeholder, but also a structure that remains "investable" for Investors and sufficiently attractive for founders to commit to the venture. Outcomes that disproportionately favor one party at the expense of others may appear justified from an individual standpoint but often reduce the overall probability of success. A fair deal, by contrast, increases the likelihood that all stakeholders remain committed and that the company can attract the capital and talent required to scale.

Long-term Thinking

From an economic perspective, long-term success is decisive. In the early stages of a spin-off, capital is scarce, expensive, and primarily allocated to building product-market fit, validating the technology, and scaling the business. Any unnecessary financial burden at this stage — such as excessive license payments or upfront patent cost reimbursements — directly reduces the company's ability to invest in value-creating activities and thereby lowers its probability of success.

Justified economic interests of stakeholders should therefore be structured in a way that is predominantly backloaded and aligned with the company's success. Mechanisms such as equity participation or success-based payments allow stakeholders to participate in upside without constraining early-stage liquidity. This approach reflects a shared economic rationale: maximizing the long-term value and success of the company including its stakeholders and licensors rather than extracting short-term returns. Aligning on this principle should be the common denominator for founders, Research Organizations, TTOs, and Investors, as it increases both the likelihood and the scale of eventual outcomes for all parties involved.

Clarity and Practicality

Spin-off processes are inherently complex, involving multiple stakeholders, legal frameworks, and economic considerations. This complexity should be actively managed and reduced to what is essential for a successful outcome. Overly complex structures, excessive optionality, or highly individualized arrangements increase transaction costs, prolong negotiations, and create uncertainty — often without adding corresponding value.

Wherever possible, stakeholders should therefore aim for clear, focused, and pragmatic solutions that are easy to understand, implement, and communicate. Established structures, standardized terms, and proven templates can help reduce unnecessary complexity and enable faster, more efficient processes. The goal is not to oversimplify, but to focus on what truly matters for the success of the spin-off and to avoid avoidable sources of friction.

High Process Speed

It is in the interest of all parties to conclude negotiations without unnecessary delay. Every additional day spent in prolonged negotiations postpones value creation for the spin-off and its stakeholders. Redundancies, extended response times, and the reconsideration of previously agreed positions consume resources and undermine momentum.

Communication should be respectful, fact-based, transparent, and solution-oriented, ensuring that negotiations are conducted on equal footing and with a shared focus on long-term success. As a guiding benchmark, agreements should be reached through a fast and well-structured process, provided that all parties have prepared diligently — for example, through clear internal alignment, defined negotiation mandates, and the use of checklists or term sheets.

Professional Management

Professional management requires clearly defined processes, roles, responsibilities, and competencies across all stakeholders involved. It implies market-standard response times, clearly specified deadlines, and efficient internal coordination to ensure both predictability and speed throughout the process.

If a TTO chooses to take equity as part of the spin-off agreement, a robust and professional equity management is essential. This ensures that the ongoing exercise of shareholder rights is handled efficiently and does not become a bottleneck, while enabling the institution to contribute constructively to the long-term development of the company.

Within the framework of professional portfolio management, the Research Organization shall ensure that the unit responsible for portfolio management is appropriately structured and equipped to manage shareholdings in a professional manner. This includes, inter alia, ensuring that the designated individuals possess the requisite economic expertise and relevant experience to oversee and manage shareholdings. Such individuals shall be supported by suitably qualified internal or external legal counsel.

Furthermore, it shall be ensured that investment-related decisions can be taken and implemented without undue delay. The organization's structures and processes must therefore support and facilitate fast decision-making. As a general rule, the execution of decisions should be completely as effective as the decision-making processes of professional venture capital firms.

To ensure a spin-off-friendly process, the TTO should act as the central point of contact for founders and be responsible for coordinating the technology transfer process internally across various stakeholders at the Research Organization. Clear ownership of the process reduces complexity and avoids misalignment. Where necessary — particularly if negotiations stall or key terms remain unresolved — direct involvement of Investors in communication with the TTO can help accelerate alignment and facilitate timely decision-making.

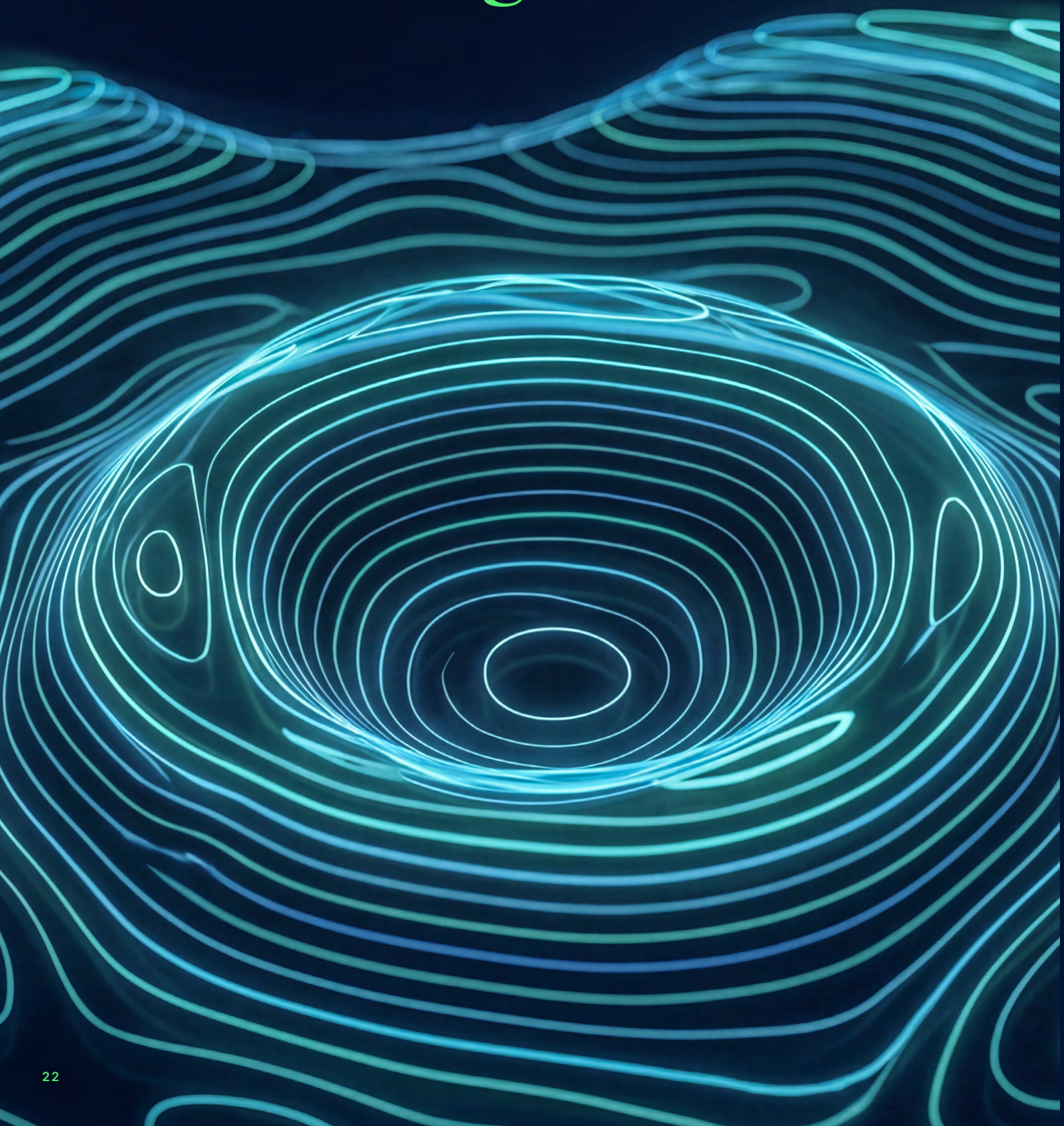
Universality

We seek to meaningfully narrow the range of structural options by defining a practical solution space — a "landing zone" — that is applicable to the vast majority of cases. At the same time, we aim to provide transparency on the underlying logic and reasoning that lead stakeholders to different positions within this spectrum.

A substantial part of this variation can be explained by differences in the technological depth, maturity, and commercialization pathways of spin-offs. These factors materially influence risk allocation, capital requirements, and ultimately the appropriate structuring of agreements.

The framework therefore establishes a structured yet flexible reference point for the vast majority of cases, while acknowledging that individual deviations may be justified in specific circumstances. At the same time, it should be understood that spin-off terms are not static: they evolve with market developments, financing environments, and international best practices. The GSOF should therefore be seen as a dynamic framework that reflects current market standards and may require periodic adaptation.

Terms— Defining the Landing Zone



When it comes to money, things become serious.

The differing starting positions of key stakeholders create negotiation dynamics around technology transfer. A significant number of spin-off processes experience friction when negotiations turn to the financial terms of the technology transfer agreement. The GSOF brings transparency to this critical area by outlining what market-standard and fair structures, for example, equity participation and licensing agreements typically look like. The GSOF defines a clear "landing zone" between founders, TTOs, and Investors — providing practical guidance and guardrails, particularly for less experienced stakeholders.

At the core of these considerations lies a balanced relationship between contribution and consideration ("Leistungs-Gegenleistungs-Prinzip"), ensuring that the allocation of economic value reflects both the input of the Research Organization and the needs of the spin-off. In this context, licensing terms should follow the guiding principle of being liquidity-preserving, particularly in the early stages of company development.

The recommended allocation of economic rights reflects not only economic rationale, but also the regulatory framework under which Research Organizations operate, including state aid law and public budgetary requirements. Non-compliance with these constraints may result in the invalidity of the technology transfer agreement. The structures proposed in this framework are designed to minimize such risks while enabling efficient and fair outcomes.

We recommend an open or virtual minority equity participation and/or a license agreement on market-standard, spin-off-friendly terms. In case of a combination of equity and license — and in return for liquidity-preserving and spin-off friendly licensing conditions — the Research Organizations receive a non-preferential minority equity stake, open or virtual and subject to dilution, in the spin-off. Equity thereby serves as an additional or alternative instrument for IP remuneration and participation in long-term upside, while reducing the immediate financial burden on the company.

Please note that this framework does not consider the effects of taxation on licensing income, dividends, or exit proceeds. These are highly individual for each party, and the type of participation chosen — ask your tax consultant!

Navigating the Landing Zones

We will define two distinct landing zones: one for licensing (royalties) and one for equity participation. Where both mechanisms are combined, they are negatively correlated to the extent that the equity participation is granted in exchange for the licensing—a higher equity stake will generally result in lower royalties, and vice versa.

To identify the appropriate position within these landing zones, a limited set of variables should guide the discussions in an effective and pragmatic manner. Relevant considerations include:

- the industry (IPC class),
- the scope, scale, and strength of the IP package,
- its relevance to the overall value proposition,
- the market potential of the underlying technology,
- the expected time to market (development stage/TRL),
- and applicable regulatory requirements.

Accordingly, the value contribution of IP transferred or licensed to a spin-off is highly individual and must therefore be assessed on a case-by-case basis.

For example, is the spin-off built around a TRL 9 technology—a proven, market-ready product that essentially defines the company? Or does the IP merely address a smaller, non-core aspect of the venture while still being at a comparatively low TRL?

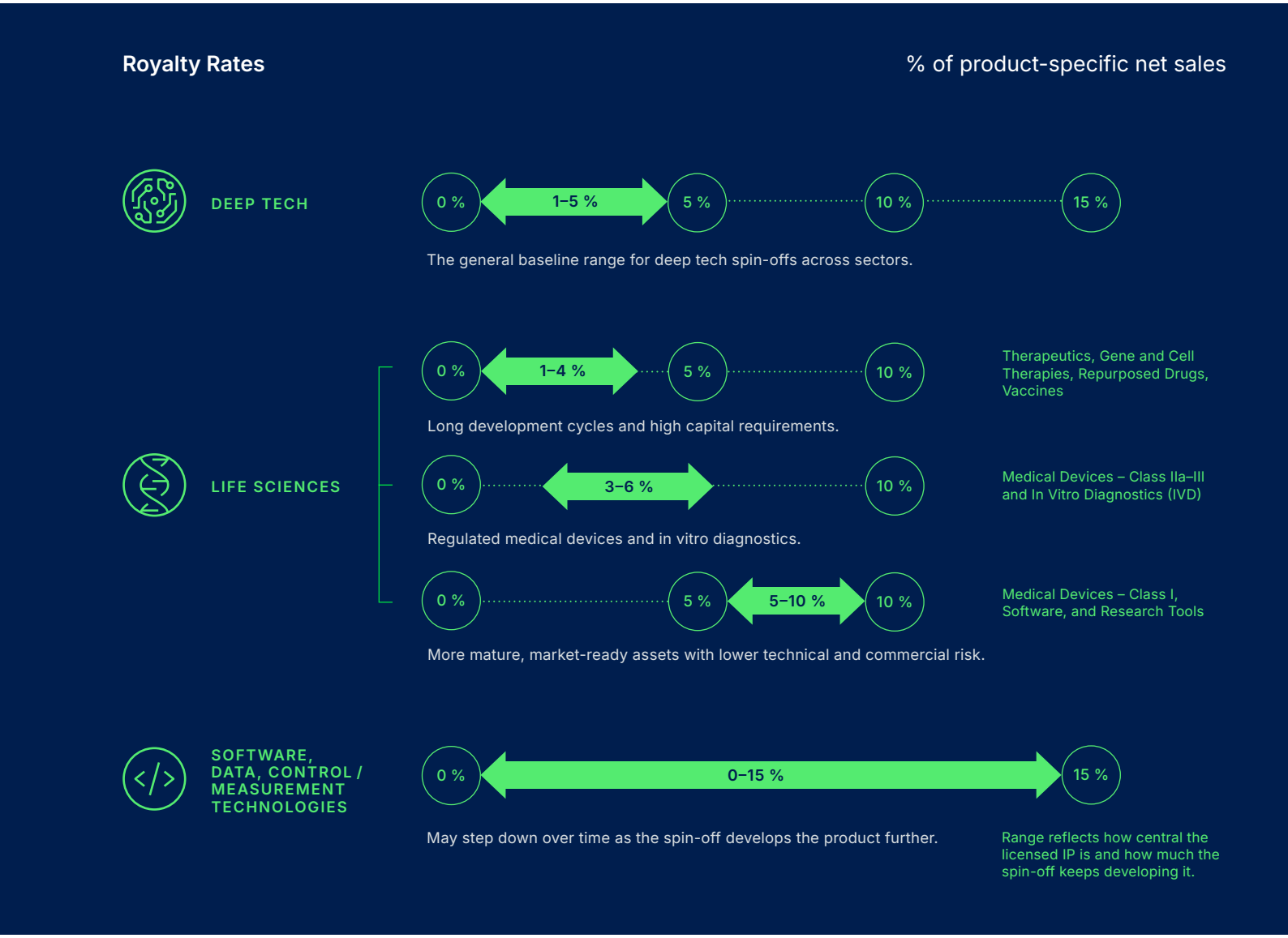
See the **Appendix** for examples.

Licensing

License fees and milestone payments should be agreed on market- standard and spin-off-friendly terms. License conditions and equity level for licensing are inversely coupled: a higher equity stake enables more favorable licensing terms, and vice versa. Individually tailored anti-stacking clauses and, where relevant, "combination product" provisions may also play an important role.

General Principles

Generally, core IP should be licensed on an exclusive basis (to the extent legally permissible and if/as far as it is in line with the strategic objective/mission of the Research Organization as the IP owner). Given that the exclusivity of know-how cannot be fully guaranteed in practice, core know-how should likewise be licensed on a non-exclusive basis, including a commitment not to license such know-how to other parties (for the same field of use, if appropriate).



Final positioning within each range depends on the industry (IPC class), the scope, scale, and strength of the IP package, its relevance to the value proposition, market potential, the expected time to market (TRL), and applicable regulatory requirements.

Typical running royalty rates for spin-offs — discounted compared to established companies — generally

range between 1 % and 5 % of product-specific net sales.

For know-how, this range starts at 0.5 %.

Sector-Specific Considerations: Pharmaceuticals and Life Sciences

1–4 %

Therapeutics, gene and cell therapies, repurposed drugs, vaccines.

3–6 %

Medical devices Class IIa–III (including software), in vitro diagnostics (IVD)

5–10 %

Medical devices Class I, software, research tools. For particularly advanced and market-ready technologies, such as research tools, royalty rates may be higher.

Sector-Specific Considerations: Software & Data

IP may be licensed on spin-off-friendly terms, especially where development is still at an early stage and the commercial risk remains high.

For software, data and certain control or measurement technologies, royalty rates may be higher. However, where the relative contribution or value of the licensed software decreases over time—particularly due to further development by the spin-off—a stepwise reduction of royalties, potentially down to zero, may be appropriate.

For fully developed, market-ready software products: in such cases, royalty rates may be higher, reflecting the reduced technical and commercial risk as well as the immediate usability of the asset. As an alternative, a transfer of the software to the spin-off against full cost reimbursement may be considered.

Specific Provisions

- **Milestone payments:** They should be structured in a market-standard and liquidity-preserving ("backloaded") manner.
- **Upfront payments:** They should generally be avoided. Minimum annual fees, if agreed at all, should be deferred and creditable against running royalties.
- **Sublicensing income:** For traditional sublicensing models (i.e., not merely acting as a contract research extension or pure IP monetization vehicle), a sublicensing revenue share in the range of 5–25 % is common, depending on the development stage at the time the sublicense is granted. In case of sublicensing without substantial development effort of the spin-off, it might be higher.
- **Anti-stacking clause:** Royalties payable to multiple licensors should not be cumulative in a way that leads to excessive royalty burdens. A "combination product" clause may also be appropriate. A "stacking floor" of 50 % of the initial royalty rates should be included.
- **Patent costs:** From the date of contract execution, the spin-off bears patent-related costs proportionally for the licensed field of use. Some research organizations may also require reimbursement of patent costs incurred prior to contract execution; however, such costs should be reimbursed only to a reasonable extent within a reasonable period following incorporation.
- **Retention of use rights:** The Research Organization retains rights to use the IP for research and teaching purposes and, where appropriate, for publicly funded or contract research activities (excluding sublicensing to third parties or commercial partners).
- **Option to negotiate the purchase of the IP:** A future option to acquire the IP in the context of an exit process may be agreed. Alternatively, the agreement may provide for the continuation of royalty payments. Without equity participation, a one-time purchase price is often difficult to justify from an economic perspective. A full transfer should therefore generally be considered only as a secondary option, for example to avoid scenarios — particularly in the life sciences — where payment is made despite the technology not being further developed or commercialized.
- **Patent prosecution and enforcement:** Patent prosecution is usually managed by the licensor. In the case of an exclusive license, filing, validation, maintenance, and enforcement actions — as well as responses to third-party challenges — should be coordinated with the licensee. The exclusive licensee bears the costs.

Equity Types

Equity participation of Research Organizations in spin-offs can be structured either as **ownership-based participation** or as **contractual participation rights.** Both approaches enable participation in the economic success of the company but differ in their legal nature, governance implications, and operational requirements.

1. Ownership-Based Participation

Direct Equity Participation

A direct equity participation means ownership of shares of the spin-off. The Research Organization (or a subsidiary, or proxy) holds shares which typically have the same rights and characteristics as founder or common shares.

As a shareholder, the institution participates directly and proportionally in the company's value creation and growth. Its economic outcome is aligned with the overall performance and exit of the company.

The institution becomes part of the formal governance structure of the company, including participation in shareholder resolutions and, where applicable, the exercise of information and voting rights. Preemption rights may be included, which can be relevant for institutions with the capacity to participate in follow-on financing rounds as well as further preferential rights which may be provided in a separate shareholder agreement.

However, this form of participation requires that the institution has — or has access to — professional and effective shareholding management capabilities, including clearly defined internal decision-making processes, responsibilities, and the ability to respond within market-standard timelines.

2. Contractual Participation Rights

Virtual Equity Participation

A virtual equity participation replicates the economic effects of an equity stake through a contractual arrangement between the spin-off and the Research Organization. Upon the occurrence of predefined events — such as distributions or an exit — the Research Organization is entitled to receive a cash payment corresponding to its agreed virtual interest. The virtual interest is defined and calculated as if the Research Organization had received a certain percentage of common shares.

The institution does not hold legal ownership and is therefore not a shareholder. As a result, it has no voting, or formal governance rights and is not reflected in the shareholder list/cap table. Information and consent rights to certain extraordinary measures of the spin-off may be contractually agreed, though.

The absence of formal shareholder status means that the institution is typically not involved in future financing rounds and does not need to exercise shareholder rights. This may in some cases reduce administrative and governance efforts but is also connected to a forfeit of influence.

Virtual equity structures can offer a high degree of operational flexibility from the spin-offs' perspective, as they do not introduce additional governance layers at shareholder level. They also typically do not require notarial form and may involve fewer formal regulatory requirements on the TTO's side, depending on its structure.

At the same time, the participation is purely contractual and depends on the design and enforceability of the agreement. This may introduce additional complexity in legal structuring, including potential tax implications.

Virtual equity may be particularly suitable for institutions without professional equity management capabilities.

Exit Fee (as part of a licensing agreement)

An exit fee is — like virtual equity participation — a contractual mechanism with the difference that it is embedded in the licensing agreement. It entitles the Research Organization to a predefined payment upon a liquidity event, such as a sale of the company.

It does not grant any shareholder or governance rights. The participation is purely economic and event-driven.

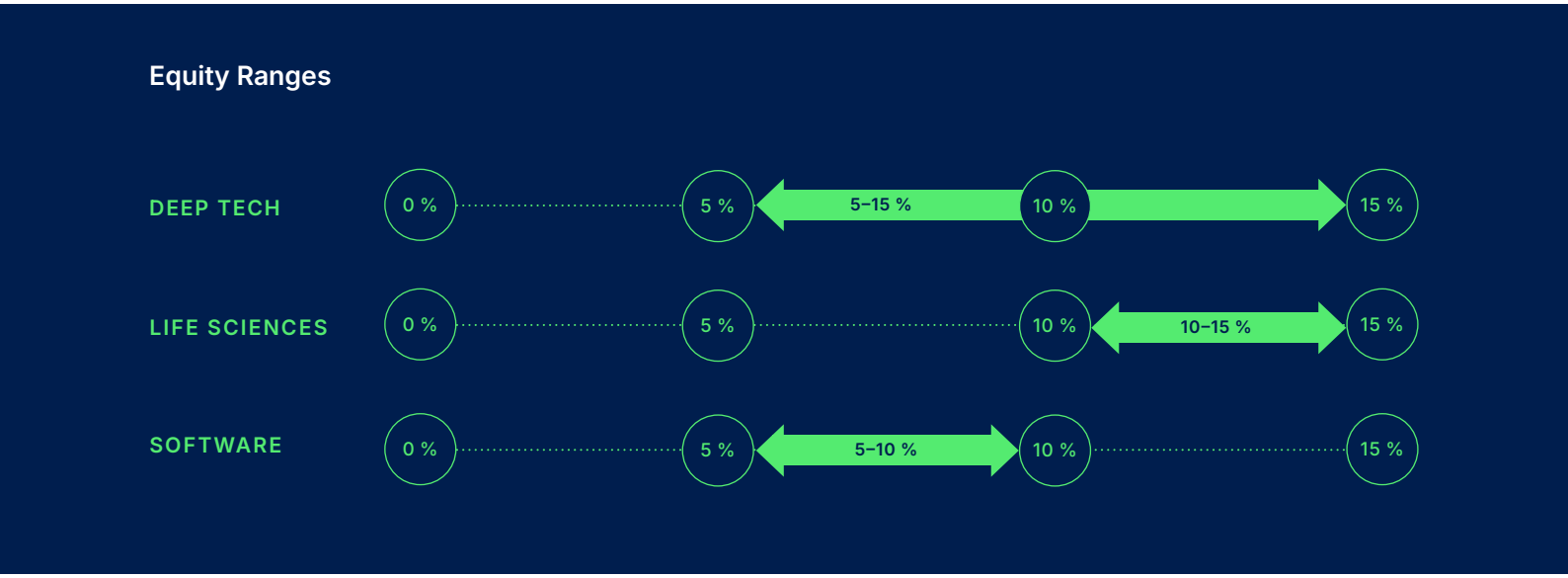
This structure is typically simple to implement, as it can be integrated as a single clause within the licensing agreement without requiring additional corporate or shareholder arrangements.

Exit fees are generally structured as a certain fixed percentage of exit proceeds. They are strongly backloaded and do not impact the company's liquidity during early development phases. As a non-dilutable claim, the economic entitlement remains fixed regardless of future financing rounds (different to dilutable (virtual) equity participations).

In practice, such arrangements are less common as they often meet resistance by VCs. In the following, direct equity and virtual equity are jointly referred to as "equity", unless stated otherwise.

Equity Levels

In addition to agreeing on the form of participation, the level of equity granted to the Research Organization is often a source of friction among stakeholders in the spin-off process and can significantly slow down negotiations. The illustration below outlines the proposed range — or "landing zone."



As a general rule, minority equity stakes in the range of 5–15 %, subject to dilution in subsequent financing rounds and typically combined with an exclusive license agreement, are internationally common, spin-off-friendly, and liquidity-preserving. In the life sciences sector, equity levels are between 10-15 %.

These figures reflect fully diluted, post-formation ownership, including the ESOP, and represent the expected range in the vast majority of cases. In certain situations, TTOs may instead request a lower initial equity stake that is structured as non-dilutable until a predefined threshold — such as a specified financing volume or company valuation — is reached (for example a 5 % equity stake that is non-dilutable until a post money company valuation of €10 million).

Across all scenarios described above, the equity levels are structured to ensure that, at the time of company formation, the founding team retains generally at least 85 % fully-diluted ownership thereby preserving control over key decisions and maintaining appropriate entrepreneurial incentives. Individuals who are not part of the operational management team (like directors of a research department, professors or group leaders) may receive a higher equity stake in the spin-off if they commit to a substantial contribution to future development of the company.

An institutional equity stake not only safeguards the interests of the Research Organization and the public sector; it can also create tangible benefits for the spin-off. These include enhanced reputation and credibility, improved access to networks and infrastructure, a strengthened position of the founders in negotiations with Investors, the facilitation of a “backloaded” economic structure, and additional forms of institutional support. From the perspective of founders and Investors, the institutional stake can be viewed as analogous to an incubator participation, compensating the institution for the early-stage risk and contribution it has undertaken.

Case: Pharmaceuticals and Biotechnology

Product development cycles in pharmaceuticals, biotechnology, and diagnostics are particularly long—often exceeding 10 years and in many cases extending to 12–15 years. Development costs are substantially higher than in most other industries; the development of a new drug is commonly estimated at well above €1 billion. As a result, intellectual property—particularly patent protection—plays a critical role. These structural characteristics materially affect financing structures. Startups in this sector typically undergo at least three to four financing rounds. Revenue generation often does not occur prior to exit, and market launch may still be several years—frequently five or more—after exit. Consequently, market-standard royalty rates often have only a limited impact on net present value calculations. These sector-specific dynamics must therefore be carefully reflected in deal structuring.

Case: Software

Software-based spin-offs may vary in technological sophistication, but on average they are characterized by significantly lower development costs and shorter development timelines. For this reason, intellectual property is often licensed, particularly in the case of mature software.

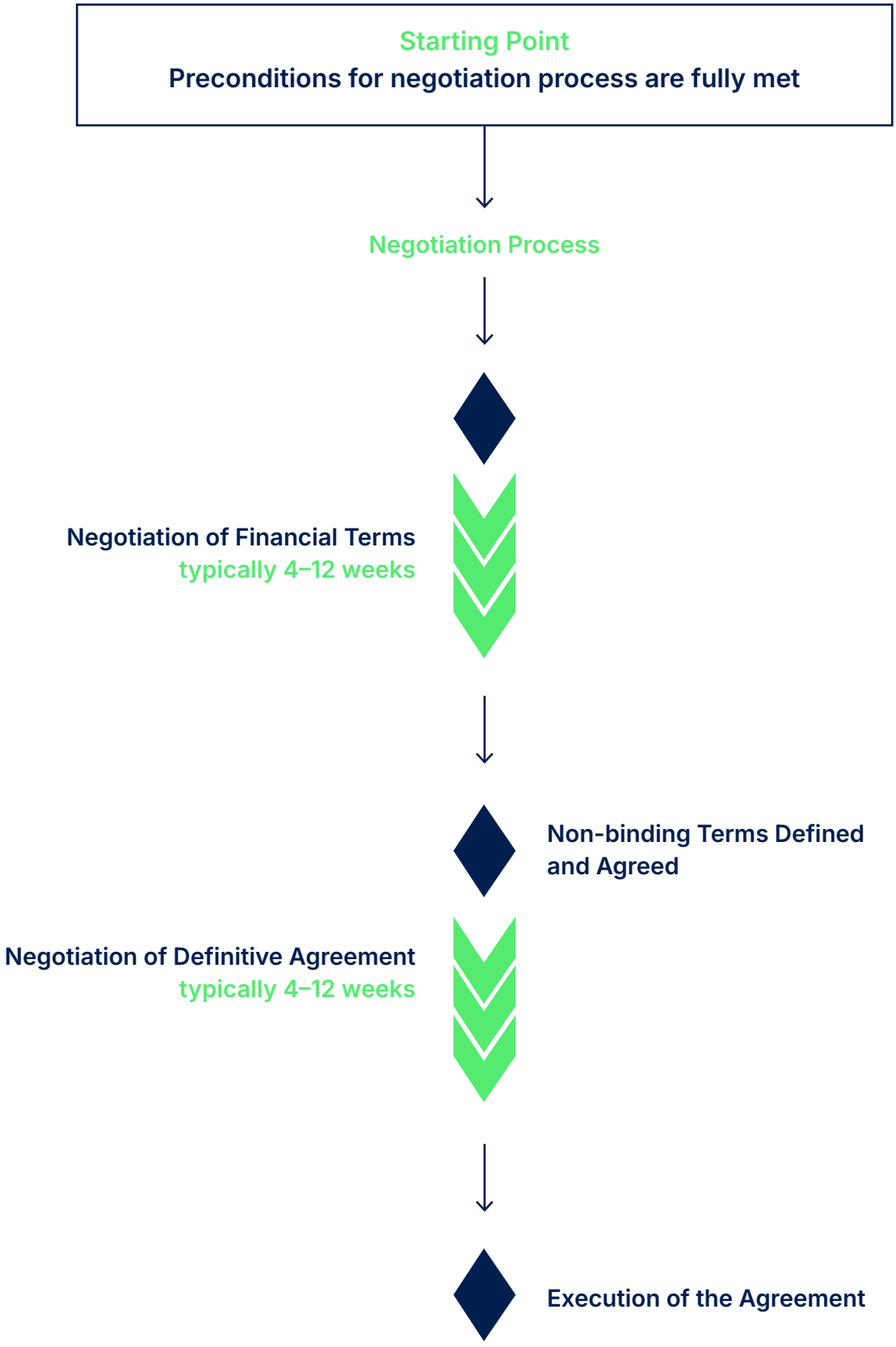
Case: Data Driven spin-offs

Data-driven spin-offs, particularly in the field of artificial intelligence, are becoming increasingly significant and are often treated similarly to software spin-offs (see the Case: Software). Additional regulatory requirements, such as those related to information security and data protection, must be met to make business models based on these data commercially viable. Compensation currently consists mostly of one-time payments or data annotation/retrieval cost. Another approach involves participation in the commercial benefits derived from the use of the data, such as the commercialization of artificial intelligence trained using the data.



Process

Our objective is to outline a process that, once the fundamental preconditions have been clarified, leads efficiently to the conclusion of the commercialization agreements.



Preconditions for negotiation process

A streamlined and successful negotiation process requires clarity on the following foundational aspects. As a best practice, any broader cooperation between the Research Organization and the spin-off — such as use of facilities, contract research, or general collaboration — should be negotiated and concluded in a separate process:

- **Initial advice:** Prospective founders should consult the Research Organizations, relevant office responsible for startup support (compliance, funding programs, founding advisory, etc.) at the earliest opportunity, so that these spin-off related activities can be run in parallel to the actual spin-off negotiations.

- **Clarity of subject matter and internal IP due diligence:** The relevant IP must be clearly identified and defined. In addition, early and precise clarification of IP availability (i.e., the absence of conflicting contractual or funding obligations) is crucial.

- **Clarity of representation:** The founding team and the designated representatives within the TTO must be formally identified and consistently available throughout the process.

- **Clarity of business model:** A business plan must be available, outlining the business model, target products and fields of application, revenue model, and financial planning.

- **Clarity of deal structure:** The preferred transaction structure (e.g., license, assignment, or hybrid model) must be agreed upon in principle before entering into substantive negotiations.

- **Clarity of IP relevance:** All parties must share a common understanding of the importance of the licensed IP to the spin-off, its core business and whether it constitutes a foundational asset.

Risks Arising from Unclear Preconditions

Failure to establish these preconditions may significantly delay or derail the process.

Unclear IP definition: If the scope of the IP is not clearly defined, the process may need to restart if additional IP (e.g., new inventions, proprietary know-how, or related rights) emerges during negotiations.

Note: IP review within Research Organizations is often time-intensive. The TTO must verify whether the IP has been contributed as background to funded projects or originates from collaborations with third parties. Existing contractual obligations must be assessed to avoid conflicts. Particularly in the case of software, comprehensive due diligence may be required to confirm that the institution has the legal right to commercialize the IP.

Changes within the founding team: Substantial changes in the composition of the founding team may require negotiations to restart. New representatives may not consider themselves bound by prior negotiation outcomes.

Note: The founding team is critical to the success of the venture. Potential conflicts of interest arising from team composition should be identified and addressed at an early stage.

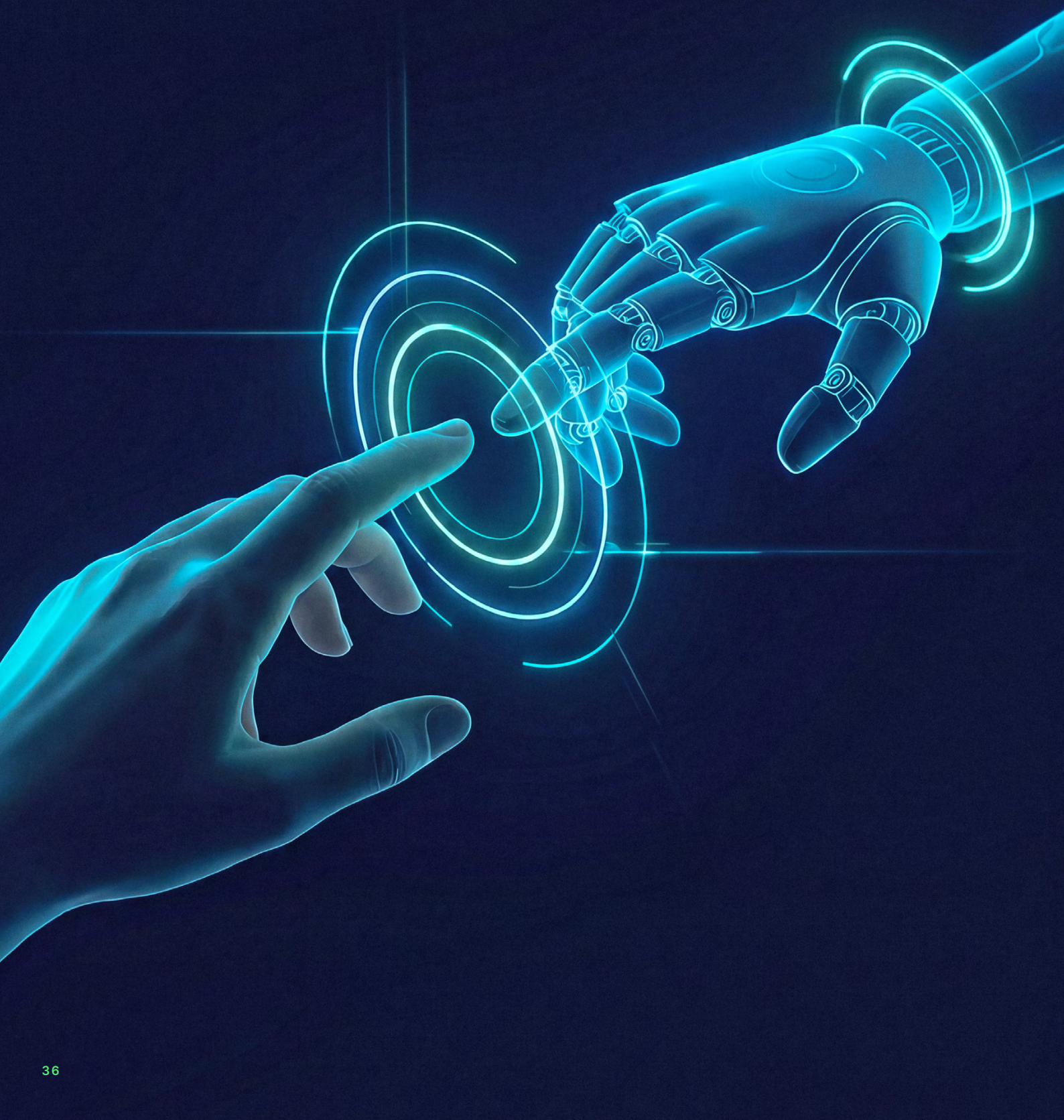
Changes in the deal structure: If the chosen deal structure changes, previously agreed financial terms may need to be renegotiated.

Note: Royalty rates, milestone payments, and related terms depend on the technical field and the intended use of the IP within the spin-off. For example, if a company shifts from internal product development to granting research licenses to third parties, this must be reflected in the agreement, including appropriate performance or field-of-use clauses.

Lack of a business plan: Especially in early-stage spin-offs, a high-level business plan is essential as a negotiation basis. It clarifies which markets and technological areas are targeted and whether the IP constitutes a “nice to have” or an essential asset for the venture.

Note: If the TTO and the founding team do not share a common understanding of the IP’s strategic importance, reaching contractual agreement becomes highly unlikely. In such cases, a neutral arbitration or advisory mechanism may be necessary.

Good Practices



Many institutions have developed their own frameworks, support systems, policies, and guardrails — all fully compatible with the GSOF. The following examples create greater transparency around high-impact approaches already in practice today and may serve as inspiration for institutions newer to the field of academic spin-offs:

Max Planck Society (MPG)

The Max Planck Society (Max-Planck-Gesellschaft, MPG) has created a streamlined licensing model that licenses rights of its own IP to spin offs quickly, legally securely, and with minimal negotiation efforts.

These licenses follow market standards but apply spin-off-friendly conditions, eliminating upfront payments and avoiding early cash-outs. Instead, MPG receives a share of the venture's future economic success — via equity participation, milestone payments (if they are appropriate and market standard in the single case) and reasonable royalties. These claims are always linked to the commercial performance of the company or products based on the licensed MPG technology.

Deep tech or Life Sciences

- Standard TTOs participation (equity participation (common shares) or virtual shares)
- Right to participate in future equity financing rounds
- Spin-off friendly royalty rates, in case of drug development projects also spin-off friendly milestone payments
- Covering of future patent costs, no reimbursement of historical patent costs
- No assignment of IP

Software

- 3 % to 10 % participation (equity participation or virtual shares), percentage depending on patent vs code only, importance of code for the technology base of the startup and the quality of the code
- Right to participate in future equity financing rounds in case of equity shareholding
- Spin-off friendly royalty rates
- Assignment of the code is not possible according to German copyright law

Technische Universität München

TUM model to license IP to startups:

The TUM Fast Track Model is a structured framework designed to **accelerate and simplify intellectual property (IP) negotiations** between the Technical University of Munich (TUM) and start-ups emerging from its ecosystem. Its overall objective is to enable **fast, transparent, and spin-off friendly commercialization of research results.**

Key Objectives

- Simplify and standardize IP negotiations for start-ups
- Reduce time and administrative complexity
- Provide fair and transparent conditions
- Preserve early-stage liquidity of start-up

The model defines how start-ups access TUM's IP through a **combination** of licensing agreements and virtual share agreement.

A central principle is that the **virtual equity is purely financial** — TUM does not become a shareholder and does not participate in corporate governance.

#Overview #FastTrack

Fraunhofer

Fraunhofer provides comprehensive advisory services and support measures to start-up teams throughout the spin-off process, including expert guidance and access to dedicated transfer and funding programs.

Fraunhofer's licensing policy for spin-offs aims to grant access to relevant Fraunhofer intellectual property under founder-friendly conditions, while ensuring compliance with the legal requirements applicable to a non-profit and partially publicly funded organization.

Licensing agreements are therefore typically structured to preserve the liquidity of spin-offs in their early stages, while ensuring an appropriate participation of Fraunhofer in the venture's commercial success. This is generally achieved through revenue-based royalties; in selected cases, Fraunhofer may additionally consider virtual or direct equity participation in the spin-off.

For further details, please refer to fraunhoferventure.de as well as the Praxisleitfaden für Fraunhofer Ausgründungen.

RWTH Aachen University

The RWTH Aachen model offers as much standardization as possible to provide fair and comparable conditions for all start-ups whilst ensuring maximum process speed, yet allows sufficient individual flexibility to accommodate the specific requirements of the industry, the IP package, the business model and the new company.

In detail, RWTH offers various models:

a) License agreement

- Reservation of IP for the start-up project and pre-financing in the case of patents
- Waiver of initial payment and liquidity-threatening fixed costs
- Staggered repayment of historical costs
- Start-up-friendly revenue-sharing license
- Fixed option for IP transfer at a later date in return for license-like ongoing payments

b) Combination of equity stake and license agreement

In return for an equity stake of 3–12 %, repayments under the license agreement can be significantly reduced. The IP transfer can then also take place at a later date at a price already stipulated in the license agreement.

c) Other models

If the IP consists solely of know-how, source code or data, individual and, where possible, simple solutions are sought jointly.

Further details can be found in the RWTH IP Guide.

BAND: avoiding a “broken” cap table

In line with GSOF’s guiding principles, the shareholder structure (“cap table”) of the spin-off should be designed in a way that all involved parties’ return on investment requirements can be met. Otherwise, investors may consider the cap table to be “broken” and either not invest or require a reorganisation before investing.

Such a reorganisation is highly undesirable, as it slows down the spin-off process, is costly, and may trigger tax payments.

Frequent “broken cap table” scenarios from BAND’s perspective are:

- Founders have given away too much equity too early, losing the incentive to scale the company over the long term. GSOF’s minimum founder equity levels aim at preserving a healthy cap table.
- Too much “dead equity” held by inactive shareholders, such as founders who have left the company or other non-investor shareholders no longer actively involved in building the business. Any such shareholders holding more than 5% are typically considered problematic.
- Blocking stakes, where early shareholders hold individual veto rights which they may use to hold the company hostage for better terms.

Framework Resources

Similar frameworks and guidelines have been developed. The most relevant ones are linked below. Together, they provide broader international context, additional depth, and practical inspiration — and help demonstrate that the deal structures recommended in the GSOF are consistent with international market standards.

- ETH Spinoff Process
- USIT Guides: TenU Publications — TenU
- TransferAllianz: Positionspapier_Spin-off-Terms_Medical_Life_Sciences_TransferAllianz.pdf (Google Drive)
- TransferAllianz: 20251210 Positionspapier_DeepTech.pdf — Google Drive
- Deutsche Hochschulmedizin: Empfehlung_Transfer-v1_4_final-3.pdf
- Forum Gesundheitsforschung: Empfehlungen zur Förderung von akademischen Ausgründungen zur Unterstützung des Transfers in der biomedizinischen Forschung
- Guidelines for IP-based Spin-offs at Helmholtz
- Startup-Policy Uni Basel
- A national blueprint for enabling academic spin-offs in the Netherlands
- AUTM Termsheet Template

Authors and Contributors

The German Spin-off Framework was developed through an open and collaborative process involving practitioners from across the technology transfer, venture capital, and deep tech entrepreneurship communities. The following individuals have actively contributed to the drafting, review, and refinement of this framework—bringing their expertise, experience, and critical perspective to shape a document that reflects the reality of spin-off practice in Germany and beyond. We thank each of them for their commitment and their willingness to engage openly across institutional boundaries.

- Ascenion, Christian Stein
- BAND, Nikolaus D. Bayer
- BayPAT, Sarah Krüger
- Charité & BIH, Thomas Gazlig
- DKFZ, Frieder Kern
- ESMT Berlin, Thorsten Lambertus
- First Momentum, Lena Späth
- Fraunhofer, Johannes Landes
- HTGF, Jörg Traub
- Joachim Herz Stiftung, Dorothea Ringe
- Max-Planck-Innovation, Florian Kirschenhofer
- Noerr, Sebastian Wündisch
- RWTH Aachen, Jörg von Appen
- Sofinnova, Karl Nägler
- TUM, Elke Achhammer
- U2V, Philipp Semmer
- Visionaries, Thong Le Hoang
- WIPIT, Wolfgang Weitnauer



Appendix A

Two examples of the range of royalty rates from the ‘General Principles’ section:

Example 1: Toward the lower end (~1 %)

Industry (IPC class)
Mechanical engineering/industrial manufacturing (IPC B23, machine tools)

IP package

- Single patent, limited scope
- easily designed around
- no supplementary IP (no trademarks, no know-how)

Relevance to the product

- One of many components
- an incremental improvement with no unique selling point

Market potential

- Moderate growth, strong competition, pricing pressure
- the technology is not a key purchase driver

Stage of development

- Early stage/prototype
- technical risk still present

Regulatory requirements

- Low
- no complex approvals

Typical royalty rate

- 1 % of product-specific net sales

Rationale

The IP is neither critical to the product nor well protected, with technical risk and limited market potential.

Example 2: Toward the upper end (~5 %)

Industry (IPC class)
Medical technology/pharmaceuticals (IPC A61, medical devices)

IP package

- Strong portfolio, multiple granted patents in key markets
- high barriers to entry

Relevance to the product

- Core technology, the “heart“ of the product
- without it the product is unmarketable or significantly inferior

Market potential

- High growth, large addressable markets
- clear differentiation and high customer benefit

Stage of development

- Late stage, near or past approval
- clinically validated, lower risk

Regulatory requirements

- High (FDA/EMA), but largely met
- raises the IP‘s value as a barrier to entry

Typical royalty rate

- ~5 % of product-specific net sales

Rationale

- The IP is essential, well protected, and validated
- high market potential and regulatory barriers justify the higher rate.