Intellectual Property Commercialisation Policy – Stage Gate Process

The University supports the commercialisation of intellectual property (IP) through a structured stage gate process. This approach ensures that appropriate resources are allocated at the right time and provides a shared understanding of the commercialisation pathway for all stakeholders. The two most common outcomes are:

- Licensing IP to third parties
- Formation of a spin-out company

Progression through the process requires successful completion of five gates.

Gate 0 (TRL 1–2) – Idea Capture

Gate 0 is the entry point to the innovation pipeline. It focuses on systematically capturing and recording all ideas, invention disclosures, and concept notes arising from research and creative activity.

At this stage, staff and students are encouraged to submit potentially novel findings, even if they are preliminary. This enables the University to recognise, safeguard, and map emerging IP for possible future commercial, academic, or collaborative development.

Criteria for Gate 0

- **Idea completeness**: Sufficient detail for reviewers to understand the concept.
- **Novelty**: Evidence that the idea is distinct from existing knowledge or technology.
- **Potential impact**: Indication of possible market, technical, or societal value.
- **Ownership and confidentiality**: Contributors identified, and IP/publication considerations recorded.

Gate 0 fosters open sharing, early triage, and collaborative refinement to ensure promising innovations can be developed further.

Gate 1 (TRL 3–4) – Initial Roadmap

Gate 1 requires a high-level assessment of the innovation and the approval of a commercialisation roadmap.

The commercialisation lead will seek approval once the commercial rationale is clear.

Criteria for Gate 1

- Invention disclosure completed.
- Due diligence check passed.

- Commercialisation and academic leads identified.
- Initial roadmap completed, including:
  - IP strategy
  - Defined initial market(s) and benefits
  - Next steps, timelines, milestones, and ownership

Decision Process

Assessment is undertaken by the Technology Transfer Centre (TTC). Decisions are signed off by the Head of TTC (or delegated where appropriate).

Approval at Gate 1 enables relevant IP registration filings and continuation of the project as an opportunity for commercialisation.

Gate 2 (TRL 4–6) – Feasibility and Market Definition

Gate 2 assesses the opportunity in greater detail. The commercialisation lead manages timing, with a nine-month deadline from either priority IP filing or Gate 1 completion.

Criteria for Gate 2

- IP position understood; initial filings secured where applicable.
- Potential freedom-to-operate issues identified and manageable.
- Target market sectors defined and sized at a high level.
- Updated roadmap with milestones agreed with the academic lead.

Decision Process

An internal review panel (Enterprise, TTC, SI-CEO or others as appropriate) assesses the case. Decisions are signed off by the Head of TTC (with delegated authority as required).

Gate 3 (TRL 6–9) – Spin-out or Licence Pathway

At Gate 3, the innovation must progress down one of two pathways: spin-out formation or licensing.

Option 1: Spin-out

Pre-Submission Requirements

1. **Institutional Approval**
   a. Written approval from relevant Head(s) of School/Unit.
   b. Confirmation of staff time commitments and resources.
2. **Commercial Validation**
   a. Identification of a commercial champion.
   b. Market validation through at least 20 substantive customer engagements.
   c. Clear articulation of funding requirements.

Submission Package

St Andrews Innovation Ltd is a wholly-owned subsidiary company of the University of St Andrews, registered in Scotland (Registration Number SC391905).

Eden Campus, Guardbridge, St Andrews KY16 0US
/ innovation.st-andrews.ac.uk

- Executive summary (max 2 pages) and business plan (max 5 pages).
- Market analysis and validation evidence.
- IP strategy and status.
- Team composition and roles.
- Two-year financial forecast.
- Milestones and timeline to Gate 4.
- Three-minute pitch presentation.

Evaluation Criteria

- Defined, validated market opportunity with routes to entry.
- Named key personnel or clear recruitment plan.
- Confirmed academic commitments.
- Defined resource needs (e.g., space, equipment).
- Secured external funding to support progress.
- Structured plan to progress to Gate 4 with milestones, deliverables, and risk mitigations.

Decision Process

- Panel review, with written decision within 10 working days.
- Positive outcomes unlock commercialisation support.
- Conditional or negative outcomes may require resubmission or redirection to Gate 2.

Option 2: Licence

If licensing is deemed more appropriate, the opportunity is reviewed within the timescale of Gate 2.

Criteria for Gate 3 (Licence)

- Evidence of technical and/or commercial progress since Gate 1.
- Continued academic engagement.
- Clear development plan if further work is needed.
- Minimum six months of external promotion and engagement feedback reviewed.

Decision Process
 An internal review panel assesses the opportunity, with sign-off by the Head of TTC (or delegated authority).

Gate 4 – Final Commitment

Spin-out (TRL 9)

At this stage, a full business case is submitted for review by the Chief Executive of St Andrews Innovation, with referral to the SI Board for approval.

Required Criteria

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- Full founding team identified, with biographies and commitment statements.
- Defined trading location and facility agreements.
- Finalised University IP access terms.
- Summary of University resources invested to date.
- Conditions and dependencies listed.

Outcome

- Company formally incorporated.
- University secures an equity stake per IP policy (at post-seed funding level).

Licence

Approval for licensing is governed by the University's Scheme of Delegation.

Required Criteria

- Due diligence on licensee(s), including entity list checks via Trusted Research.
- Licensing terms agreed in advance.
- Summary of agreement with risk assessment submitted by commercialisation lead.

Appendices

Appendix A

TRL Levels

TRL 1: Basic principles observed and reported.

At TRL 1, researchers translate scientific principles into applied research and development (R&D). They observe and report basic principles, but do not yet conduct experiments or detailed analysis.

Criteria:

- Observed and reported basic scientific principles.
- No practical application envisioned.

TRL 2: Technology concept or application formulated.

At TRL 2, researchers explore basic concepts and identify potential applications. This stage involves speculative, theoretical research without experimental evidence.

Criteria:

- Proposed basic principles for practical applications.
- Formed hypotheses based on initial observations.

TRL 3: Analytical and experimental proof-of-concept for critical functions or characteristics.

- In TRL 3, active R&D begins. Analytical and laboratory-based studies validate the feasibility of the technology concept.

Criteria:

- Demonstrated initial proof of concept through analytical and experimental work.
- Integrated basic technological components to verify they work together.

TRL 4: Technology validation in a laboratory environment.

At TRL 4, researchers integrate basic technological components to establish their compatibility. Validation occurs in a laboratory environment.

Criteria:

- Tested components in a laboratory to validate performance and feasibility.
- Integrated basic technological components.

TRL 5: Technology validation in a relevant environment.

In TRL 5, testing moves beyond the lab to a relevant environment. Researchers use a higher fidelity prototype compared to TRL 4.

Criteria:

- Integrated components with realistic supporting elements to demonstrate performance in a simulated operational environment.
- Conducted testing in an environment simulating real-world conditions.

TRL 6: Technology model or prototype demonstration in a relevant environment.

TRL 6 involves demonstrating a prototype system in an environment closely resembling the intended operational setting.

Criteria:

- Demonstrated a system/subsystem model or prototype in a relevant environment.
- Demonstrated a nearly complete system with an operational environment interface.

TRL 7: Technology prototype demonstration in an operational environment.

In TRL 7, a system prototype undergoes demonstration in an operational environment. Researchers integrate all system components at this stage.

Criteria:

- Developed a prototype near the planned operational system.
- Demonstrated the prototype in an operational environment, such as a pilot plant.

TRL 8: Actual technology completed and qualified through test and demonstration.

At TRL 8, the technology proves its functionality in its final form and under expected conditions. This phase involves end-to-end system testing and validation in an operational environment.

Criteria:

- Tested and validated the technology in its final form under expected conditions.
- Achieved full system integration.

TRL 9: Actual technology qualified through successful mission operations.

At TRL 9, the actual system, tested and qualified, operates in the intended environment. The technology reaches readiness for full-scale deployment.

Criteria:

- Successfully tested and proven the actual system in an operational environment.
- Deployed and operational system.

Appendix B

So how do I move through the levels?

Progressing innovations through TRLs requires a systematic approach, clear objectives, and continuous feedback. By following these steps, researchers and businesses can effectively advance their technologies from basic principles to fully operational systems, ready for market deployment.

TRL 1 to TRL 2: From Basic Principles to Concept Formulation

Define the Problem: Identify and articulate the specific problem or challenge the technology aims to address. Clear problem statements guide focused research.

Literature Review: Conduct a comprehensive review of existing literature. This helps build a foundation for understanding the current state of technology and identifying gaps.

Initial Hypothesis: Formulate hypotheses based on observed principles. This guides early experimental designs and conceptual work.

TRL 2 to TRL 3: From Concept Formulation to Proof of Concept

Preliminary Modelling: Develop theoretical models to predict the behaviour of the technology. Use simulations to validate these models.

Experimental Setup: Design and conduct small-scale experiments to test the hypotheses. Use controlled environments to isolate variables and gather initial data.

Data Analysis: Analyse experimental data to confirm or refute the initial hypotheses. Document findings and adjust models as necessary.

TRL 3 to TRL 4: From Proof of Concept to Lab Validation

Prototype Development: Build a basic prototype of the technology. Focus on core functionalities to test the essential components.

Lab Testing: Perform rigorous testing of the prototype in a laboratory setting. Measure performance against predefined benchmarks.

Iterative Refinement: Refine the prototype based on test results. Implement changes and re-test to ensure improvements.

TRL 4 to TRL 5: From Lab Validation to Relevant Environment Testing

Enhanced Prototyping: Develop a more advanced prototype that includes additional features. Ensure the prototype can operate in conditions similar to the intended operational environment.

Simulated Environment Testing: Test the advanced prototype in a simulated environment that closely mimics real-world conditions. Identify any operational issues and address them.

Stakeholder Feedback: Engage with stakeholders (e.g., potential users, industry experts) to gather feedback on the prototype's performance and applicability.

TRL 5 to TRL 6: From Relevant Environment Testing to Demonstration

Field Testing: Conduct field tests in environments that closely resemble the actual operational conditions. Monitor the prototype's performance under real-world stressors.

Performance Metrics: Establish clear metrics to evaluate the prototype's performance. Compare these metrics against industry standards and user expectations.

Technical Documentation: Document all aspects of the prototype's performance, including successes and areas needing improvement. Use this documentation to support further development.

TRL 6 to TRL 7: From Demonstration to Operational Environment

Full System Integration: Integrate the technology with other systems to ensure compatibility and functionality. This includes hardware, software, and operational processes.

Operational Testing: Test the fully integrated system in an operational environment. Identify any integration issues and resolve them promptly.

Regulatory Compliance: Ensure the technology meets all regulatory requirements for its intended use. This may involve obtaining certifications or approvals from relevant authorities.

TRL 7 to TRL 8: From Operational Environment to Complete System

User Training: Provide training for end-users to ensure they can effectively operate the technology. Develop user manuals and support materials.

Pilot Programs: Implement pilot programs to test the technology in real-world scenarios. Collect data on performance, usability, and user satisfaction.

Feedback Loop: Create a feedback loop with users to gather insights and suggestions. Use this feedback to make final adjustments to the technology.

TRL 8 to TRL 9: From Complete System to Proven System

Full Deployment: Deploy the technology in its intended operational environment. Monitor its performance continuously to ensure it meets all expectations.

Performance Monitoring: Establish a system for ongoing performance monitoring and maintenance. Address any issues that arise promptly to maintain operational integrity.

Market Launch: Launch the technology in the market. Develop marketing strategies to promote the technology and educate potential users about its benefits.

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Appendix C

FAQ – Intellectual Property Commercialisation

1. What is the purpose of the stage gate process?

It ensures innovations are assessed systematically, resources are committed appropriately, and risks are managed. It also provides clarity for all stakeholders.

2. Who can submit ideas at Gate 0?

All staff and students are encouraged to submit potential innovations, no matter how early-stage.

3. What outcomes are possible at the end of the process?

Most often, outcomes are either:

A licence agreement with a third party; or

- The creation of a spin-out company.

4. What happens if my project does not pass a Gate?

You will receive feedback. Projects may either be revised and resubmitted or redirected to an earlier stage for further development.

5. How long does the process take?

The duration depends on the stage and the type of opportunity. As a guide:

- Early gates (0–2): 3–9 months.
- Gate 3 (spin-out/licence): up to 12 months.
- Gate 4 (final approval): variable depending on external partners, funding, and negotiations.

6. What support is available for innovators?

Support includes:

- Guidance from the Technology Transfer Centre.
- Access to internal and external funding schemes.
- Support and guidance from Entrepreneurship Centre
- Business mentoring.
- Legal and IP expertise.

7. Do I retain ownership of my idea if I submit it?

Ownership follows the University's Intellectual Property Policy. In general, IP generated through employment or use of University resources is owned by the University. However, revenue-sharing agreements ensure inventors benefit from commercialisation. Cross reference to IP policy.

8. How are conflicts of interest managed?

All staff must declare potential conflicts (e.g., personal investments, consultancy roles). The University has established procedures to manage conflicts transparently. Cross reference to CoI / DoI policy.

9. Can I choose whether my innovation becomes a spin-out or is licensed?

The preferred route is determined collaboratively between the commercialisation lead, academic lead, and University decision-makers. Market conditions, team readiness, and funding availability strongly influence the outcome.

Appendix D

IP Commercialisation Funding Ladder

Stage Gate	TRL Range	Funding Source(s)	Typical Amount	Duration	Purpose
Gate 0 – Idea Capture	TRL 1–2	• Internal Seed/Proof-of-Concept funds • ICURe Discover	£1k–£5k £2.5k	<3 months <3 months	Capture early ideas, assess novelty, log disclosures, basic IP checks
Gate 1 – Initial Roadmap	TRL 3-4	• ICURe Explore • Internal Proof of Concept grants	£35k £5k–£25k	<3 months <6 months	Customer discovery, initial market scoping, invention disclosure, roadmap/IP strategy
Gate 2 – Feasibility & Market Definition	TRL 4-6	• SE Market Exploration • SE Opportunity Qualification • Innovate UK Smart Grants • Translational Funds	£10k £75k £25k–£500k £100k–£1m	<3 months <12 months 6-24 months 12-36 months	Applied feasibility studies, translational R&D, proof of technical & product solution fit
Gate 3a – Spin-Out (Company Creation)	TRL 6-9	• SE Company Creation • ICURe Exploit • Converge Challenge • Angel/Seed Investors	£200k £300k £50k Various	<12 months <3 months <12 months 18-24 months	Team building, commercial validation, spin-out incorporation prep
Gate 3b – Licence	TRL 6-9	• Industry-Sponsored Development • Collaborative R&D (Innovate UK, Horizon Europe)	Various		Develop IP to licensing stage, external partner engagement
Gate 4 – Final Spin-Out or Licence	TRL 9	• Seed/VC Funds • Corporate Ventures/Strategic Partnerships	Various	18-24 months	Scale business, launch to market, secure adoption