

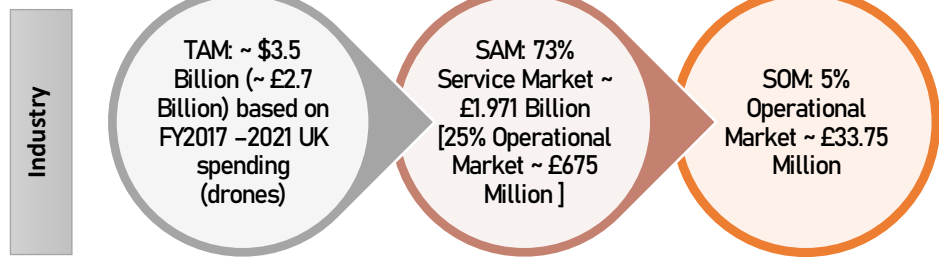


# Rogue behaviour detection in the drone swarms using digital twins

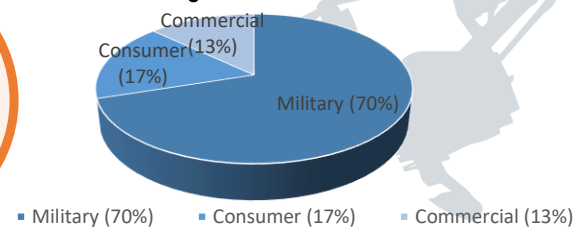


Stage: Pre-Seed  
Location: Queen's University Belfast

Direction: Previous experience in drone security  
No third parties



Market Segmentation and sectors

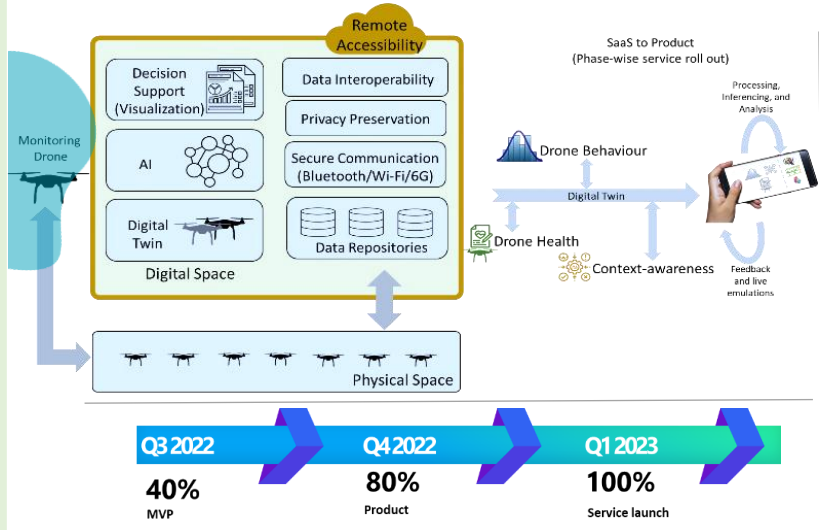


Drone sector is expected to create 628K jobs by 2030 with an impact of 1.89% on the UK's GDP. By 2027, global drone market is expected to reach \$40.90 Billion.

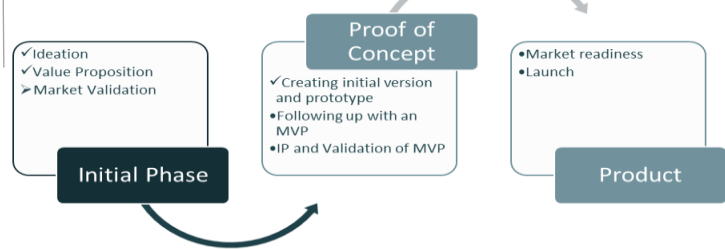
Need	Needs					Features
	Low false positives	Faster response time	Observation and reporting	Cross-platform deployment	Safety system	Swarm movement detection
						Individual movement tracking of drones
						Pattern tracing
	Wants					Peer to peer observations
	Easy usage	Non-vulnerable platform	Cost-effectiveness	Future-upgrades	Insights to detection	Group Authentication
						Self-checking logic
	Fears					First-person view (FPV)
	Behaviour Insights	Hardware dependence	Scalability	Mode of deployment	Detection accuracy	Low-cost and resilient solution
						Software as a Service (SaaS)

**Solution:** SaaS leveraging AI and digital Twin

**Stage:** Company and Product

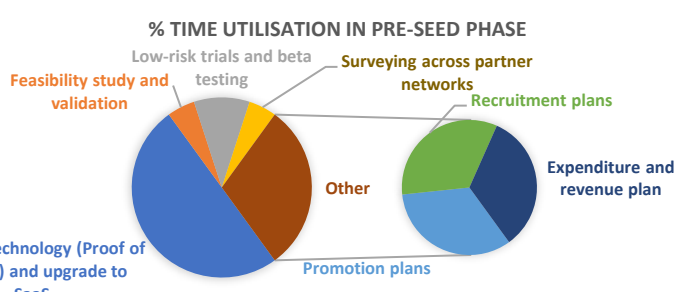


Ideation → Complete  
Value Proposition Phase → April and May 2022  
Market Validation Phase → June and July 2022  
Initial Version (Baseline) → Ready  
R & D → Initial phase complete  
Next Phase → MVP  
Specifications and features → Discussed with stakeholders  
Final costing → In process



Use of funds and expectations

- Phase: Proof of Concept
- Validation, Low-risk trials, and beta testing
- Feasibility study
- Surveying across partner
- Promotion plans, IPR filling, recruitment plans
- Expenditure and revenue plan



Dr Vishal Sharma  
Lead (PI) || Leading expert in drone and security (Lecturer at QUB)



Prof. Trung Q. Duong  
Co-I || World leading expert in drone, digital twin, and physical layer security (Chair Professor of Telecommunication at QUB)



Dr Antonino Masaracchia  
Researcher || Experience in drone enabled networks (Research Fellow at QUB)



Queen's University Belfast (QUB)  
1st in Entrepreneurial Impact Ranking (UK) and vast experience in commercialisation  
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