



Commercial UAV Market

M&A Update - H1 2019



Key Takeaways

Commercial UAV M&A highlights - H1 2019

- 1 Huge backlog of M&A activity to happen**
 - The commercial UAV¹ hardware, software and services space has seen \$3.2bn of VC investment since 2014 across 300+ firms – but only 64 M&A transactions/IPOs in that period
- 2 Early indications of VC firms realising investments**
 - H1 2019 saw Scottish Equity Partners sell inspection services and software player **Cyberhawk** to Magnesium and MMC-backed Sky Futures sell to **ICR Integrity** – both UK deals
- 3 Significant activity in the services space in H1 2019**
 - The landmark deal was medical drone delivery operator **Zipline's** \$190m fundraising
 - Kespry** (AI, analytics and drones-as-a-service) raised funds led by Salesforce Ventures, **Robotic Skies** (UAV maintenance services) raised funds from Boeing's Horizon X Ventures and there were two notable 'drone-in-a-box' deals involving **Percepto** and **American Robotics**
 - Terra Drone** continued its global expansion announcing services deals in Brazil and Russia
- 4 Major deal in the hardware space**
 - FLIR announced the \$200m acquisition of **Aeryon Labs**, a developer of small UAV, payloads and sensors for public safety, industrial and defence customers
 - There was activity involving two VTOL² platform developers, with **Wingtra** raising \$10m and AeroVironment acquiring **Pulse Aerospace**
 - Autonomous indoor industrial drone developer **VTRUS** announced a \$3m fund raise and Terra Drone acquired a fixed wing UAV developer, **C-Astral**
- 5 Limited pure-play software activity**
 - The most high profile software deal was Temasek's investment in **AirMap**, a UTM³ platform provider
 - We note that many services businesses in the UAV sector provide an end-to-end solution including proprietary software
- 6 Outlook for H2 2019**
 - Despite some major deals already announced in H2 2019, we do not expect a wave of VC-backed UAV exits in the 2nd half of 2019
 - We do anticipate a continued flow of high profile deals in the next 12-24 months as successful VC investments are sold to private equity firms, trade buyers and the IPO market

About Acuity Advisors

- Acuity is a technology-focussed M&A advisor with offices in London, Munich, Silicon Valley and Shanghai
- In H1 2019, Acuity's Industrial Technology team advised on the sale of Cyberhawk, a provider of UAV inspection services and asset visualisation software, to Magnesium Capital



Source: Acuity research, Tracxn

Terms: 1. UAV – unmanned aerial vehicle, 2. VTOL – vertical take-off and landing, 3. UTM – unmanned traffic management

Market Map

Selected commercial UAV industry participants



Software

- Flight, navigation, airspace and fleet management software
- Data capture, mapping, visualisation and analytics
- Many players offer software-as-a-service



Hardware

- UAV platforms
- Sensors, payloads and components
- Counter-UAV equipment



Services

- Inspection, monitoring, surveying, data acquisition, delivery
- Distribution, MRO¹
- Insurance
- Many players offer an end-to-end service including software and hardware





Source: Acuity research

Note: Selected participants only, not intended to be comprehensive. Terms: 1. MRO - Maintenance, repair & overhaul

Deal Activity

Selected H1 2019 M&A and fundraising deals

 **Software**





ACCELERATED DYNAMICS | Aerial Applications
 AIRWORKS | APTONOMY
 AIRMAP | exyn technologies
 RAPTOR MAPS

 **Hardware**



AERYON Labs inc. | C-ASTRAL AEROSPACE LTD.
 ELROY AIR | ENERGYOR
 PULSE AEROSPACE
 an AeroVironment company
 FLYTREX | vtrus
 wingtra

 **Services**



AMERICAN ROBOTICS | AIRCAM Aerial Mapping & Photography | CYBERHAWK Aerial Inspection and Servicing Operations | DRONE BASE | kespry
 PALADIN | PERCEPTO | PLIMSOLL | RoboticSkies
 SKY-FUTURES | Unmanned Technology | VOLANS-i | zipline

Source: Acuity research, Tracxn

Note: Transaction target shown. Selected deals only, not intended to be comprehensive

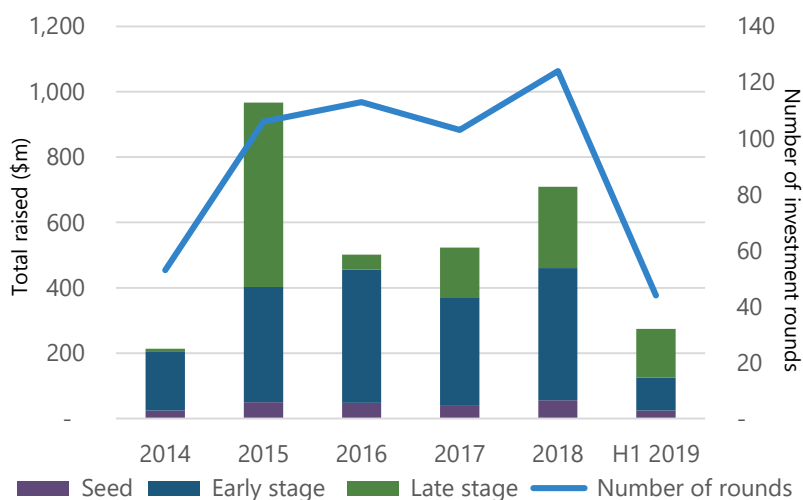
Commercial UAV Market

M&A and funding activity since 2014

Funding activity

- \$274m funds raised in H1 2019 across 44 funding rounds
- If activity continues at the same pace, 2019 is likely to be below 2018's total of \$709m
- Late stage funding in 2018 and 2019 accounts for a larger proportion of total funding than in 2014, 2016 and 2017, suggesting increasing maturity of investee companies
- 2015 is skewed by a major fundraising by Chinese UAV manufacturer DJI

UAV fundraising activity: 2014-2019

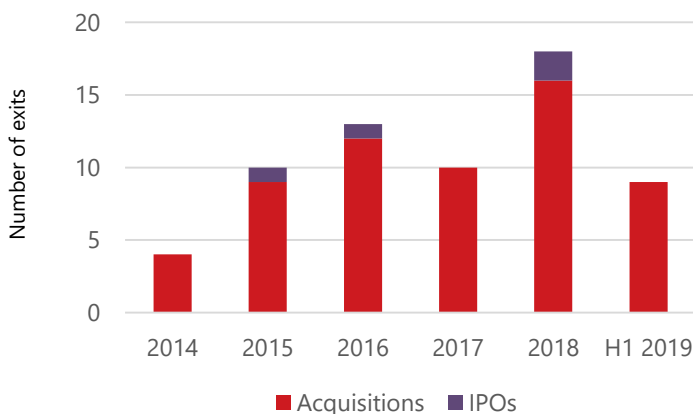


Source: Acuity research, Tracxn

M&A activity

- No IPO activity in 2019 despite high profile listings in the wider technology space
- Only 9 M&A transactions in H1 2019 compared to 16 in 2018, suggesting that full year activity will be broadly in line with 2018
- According to Tracxn, 306 UAV businesses have received funding since 2014 – given that there have only been 64 M&A transactions & IPOs, there is a huge backlog of M&A activity to come

UAV M&A activity: 2014-2019



Source: Acuity research, Tracxn

Deal Data (1/2)

Key transactions in H1 2019

Date	Deal	Target	Target country	Target description	UAV subsector	Acquirer	Acquirer country	Deal size
Jun-19	M&A	EnergyOR	Canada	Developer of lightweight and compact fuel cell systems for UAVs	Hardware	Plugpower	USA	n/a
	Funding	Raptor Maps	USA	Provider of AI software enabling solar companies to process aerial inspection imagery	Software	VC - Blue Bear Capital and Congruent Ventures	Various	n/a
	Funding	Exyn Technologies	USA	Developer of autonomous aerial robots for advanced data collection in GPS denied environments	Software	VC - Centricus and others	Various	\$16m round
	Funding	Robotic Skies	USA	Provider of MRO and support services for commercial UAVs through a network of repair stations	Services	VC - Boeing Horizon X Ventures and others	USA	n/a
	M&A	Pulse Aerospace	USA	Developer of small VTOL UAVs for defence and commercial end markets	Hardware	AeroVironment	USA	\$25.7m
May-19	Funding	Paladin Drones	USA	Developer of a system that automatically dispatches a drone and streams live video, providing instant situational awareness to first responders	Services	VC - Khosla Ventures & Paul Buchheit	USA	\$1.3m
	Funding	Percepto	Israel	Drone-in-a-box solution encompassing drone, base station and software suite, focussed on industrial end markets	Services	VC - US Venture Partners and others	USA	\$15m
	Funding	Zipline	USA	Healthcare-focussed drone delivery company with proprietary UAV hardware and an autonomous logistics network	Services	VC - Baillie Gifford, The Rise Fund and others	UK	\$190m
	Funding	Volans-i	USA	Manufacturer and operator of high speed, long range drones for on-demand delivery of time critical shipments	Services	VC - Lightspeed Venture Partners and others	USA	\$20m
	Funding	Aerial Applications	USA	Provider of drone mapping software for utility companies including data, web-based management, processing and AI-image analysis software as a service	Software	VC - Capital Factory and others	USA	\$4.5m
	Funding	Wingtra	Switzerland	Developer of VTOL fixed wing UAVs for mapping and surveying industries	Hardware	VC - Credit Suisse and others	Various	\$10m
	M&A	Sky Futures	UK	Provider of end-to-end drone-based industrial inspection services	Services	ICR Integrity	UK	n/a
April-19	Funding	DroneBase	USA	Asset monitoring and inspection services delivered through a network of drone pilots	Services	FLIR Systems	USA	Undisclosed
	M&A	C-Astral	Slovenia	Manufacturer of fixed wing UAVs with a focus on surveying, security and remote sensing	Hardware	Terra Drone	Japan	n/a

Sources: Acuity Intelligence, CapitalIQ, Tracxn, Crunchbase.

Deal Data (2/2)

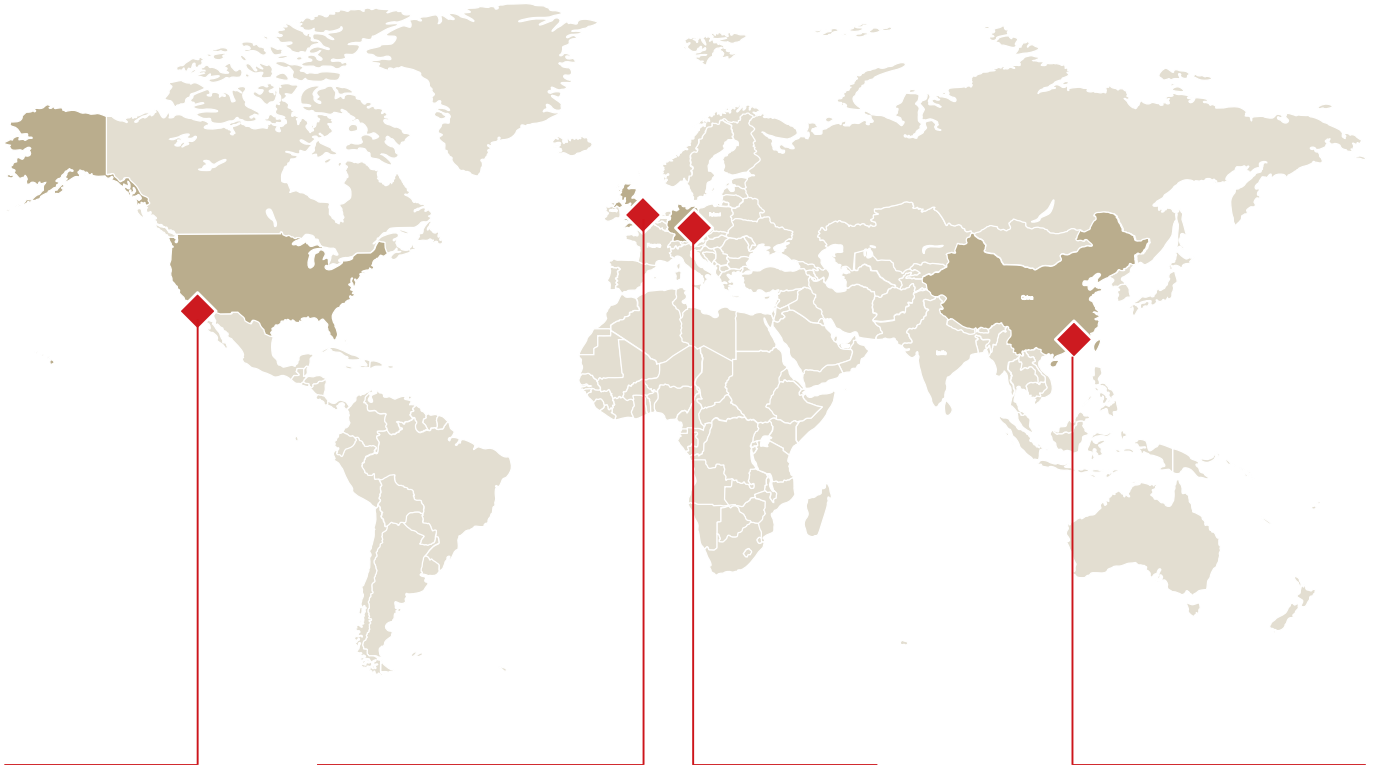
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Apr-19	Funding	Aptomomy	USA	AI solutions for asset tracking, inventory management and anomaly detection relating to UAV captured imagery	Software	DJI	China	Undisclosed
	M&A	Accelerated Dynamics	UK	Developer of an AI-driven robot operating platform that enables the collaboration of fleets for autonomous vehicles such as drones	Software	Animal Dynamics	UK	n/a
Mar-19	Funding	AirMap	USA	Provider of UTM systems for authorities, UAV operation management platforms for drone users and mission planning applications for pilots	Software	VC – Temasek & Honeywell	Singapore	Undisclosed
	Funding	VTRUS	USA	Developer of an autonomous drone for indoor industrial applications	Hardware	Undisclosed	Undisclosed	\$2.9m
	M&A	Cyberhawk	UK	Provider of UAV inspection services and asset visualisation software	Services	Magnesium Capital	UK	n/a
	Funding	Kespry	USA	Provider of an end-to-end hardware and software solution encompassing UAVs, mission planning and autonomous flight analysis	Services	VC - Salesforce Ventures and others	Various	n/a
	Funding	Elroy Air	USA	Developer of an end-to-end aerial cargo delivery system	Hardware	VC - Catapult Ventures and others	UK	\$9.2m
Feb-19	M&A	Unmanned Technology	Russia	Provider of UAV inspection and surveying services to oil and power sector customers	Services	Terra Drone	Japan	N/A
	Funding	AirWorks	USA	A provider of an AI-powered software that autonomously converts 2D and 3D aerial data into CAD models	Software	VC - Innospark Ventures and others	USA	\$2.3m
Jan-2019	Funding	American Robotics	USA	Drone-in-a-box solution encompassing drone, charging station and fleet management / analytics software focussed on the agricultural, energy and security industry	Services	Undisclosed	Undisclosed	\$2.7m
	M&A	Aeryon Labs	Canada	Manufacturer of small UAVs, payloads and sensors for military, public safety and industrial customers	Hardware	FLIR	USA	\$200m
	Funding	Flytrex	Israel	Autonomous drone delivery systems encompassing drones, cloud based drone management systems, insurance and maintenance	Services	VC - Benhamou Global Ventures and others	Various	\$7.5m
	M&A	AIRCAM	China	Distributor of microdrones systems to Chinese survey, mapping, utility and oil & gas customers	Services	Microdrones	Germany	n/a
	JV	Plimsoll UAV	Brazil	Provider of drone services focussing on the inspection of FPSOs in the oil and gas industry	Services	Terra Drone	Japan	n/a

Sources: Acuity Intelligence, CapitalIQ, Tracxn, Crunchbase.



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