



# Mach-21

National Spaceflight Education Conference and CanSat Competition

# About the Event



The **Mach** events bring under-graduates from multiple universities in the UK and beyond to a spaceport setting to participate in a world-class event from a unique national facility.

The event is delivered through a partnership between Machrihanish Airbase Community Company (MACC) and UKLSL. Raptor Aerospace will provide the launch systems for the inaugural event. This will see student groups design and build CanSats, then see them launched from the airbase, providing an event of similar scale to the [US](#), but from this amazing setting.

This will be an annual event, scaling up to a combined CanSat and Rocket competition:

Mach-21 (2021) – Simple and Advanced **CanSats**

Mach-22 (2022) – Advanced **CanSats** and **Rockets** (example [Video](#))

Mach-23 (2023) – Advanced CanSats and **Rockets**

Our unique event will span 3 days of activity at Machrihanish Airbase; including:

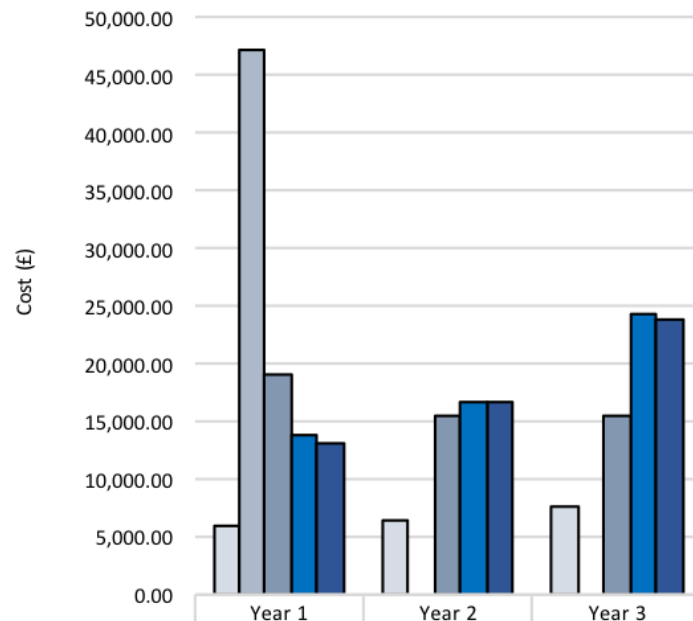
- Setup, pre-flight checks and last minute fixes / upgrades from a specialist assembly facility.
- Fast-track 1-day CanSat build programme for local schools / colleges.
- Conference-style talks and workshops with industry representatives; providing an opportunity for participants to make early career inroads.
- Launch of CanSat's on our own launch platform (from 2021).
- Launch of small-sounding rockets up to 10km (2022 and beyond).



# Costs and Funding



3-Year Cost Model



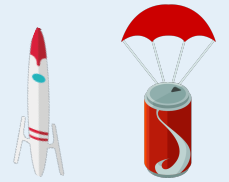
Cost Group	Cost Item	2021	2022	2023	Potential Source
Travel	Travel for Universities/Staff	£20,140	£20,140	£20,140	Universities
	Glasgow → Machrihanish	£4,050	£4,050	£4,050	MACC
Accommodation	Accommodation	£23,760	£23,760	£23,760	MACC
Operations	Labour	£18,950	£11,350	£11,350	UKLSL
	Insurance	£4,000	£4,000	£4,000	MACC
Equipment (Non-Recurring)	Rockets	£2,500	-	-	TBC
	Ground Support	£26,500	-	-	TBC
	Workshop Materials	£8,750	-	-	TBC
	Workshop Fit-out	£25,000	-	-	TBC
	CanSat Build-kits	£1,540	-	-	TBC
	AV Equipment	£8,000	-	-	TBC
Equipment (Recurring)	Rocket Propellant	£2,180	£2,180	£2,180	Industry Sponsor
	License Fees	£1,680	£1,680	£1,680	TBC
	Marketing	£300	£300	£300	UKSEDS
	Catering	£5,000	£5,000	£5,00	TBC
<b>Total</b>		<b>£147,350</b>	<b>£56,110</b>	<b>£56,110</b>	
<b>Funding</b>	<b>Universities</b>	<b>£20,440</b>	<b>£20,440</b>	<b>£20,440</b>	
	<b>Industry</b>	<b>£52,940</b>	<b>£33,990</b>	<b>£33,990</b>	
	<b>Public</b>	<b>£73,970</b>	<b>£1,680</b>	<b>£1,680</b>	

# Summary



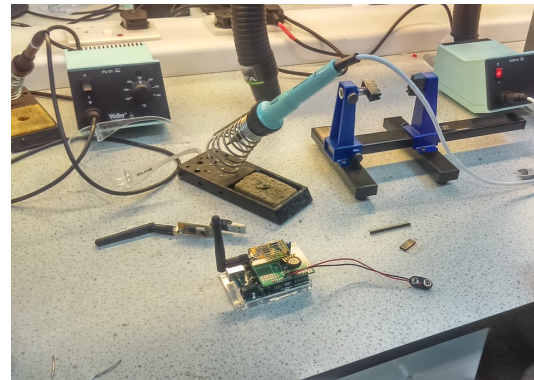
The **Mach** events will:

- Provide an opportunity for universities to launch CanSats and sounding rockets in the UK, up to 10km.
- Encourage the local and regional community in Machrihanish and Campbeltown to take part via school workshops and attendee options.
- Feed the curiosity of students considering a career in the space industry, providing workshops and opportunities to speak to industry representatives.
- Bring numerous visitors to the local area and region, particularly those involved or interested in STEM Further and Higher Education.



Our vision is to provide an inclusive nationwide opportunity irrespective of resources and therefore we want to see Mach events be free-to-participate. Without further investment the fee per team will be **£4,874**.

With investment of **£48,740** we will be able to offer the event for free in 2021 and substantially reduce the cost of future events through the acquisition of capital equipment.



Commercial in Confidence

info@uklsl.com



+44 (0) 20 7193 2021