

AERALIS is a flagship project for the UK aerospace industry

An Interview with Luca Leone,
AERALIS Head of Programme



Luca is responsible for developing the engineering, programme and supply chain capability for the AERALIS aircraft and training system programme. Luca is an experienced Programme Manager having worked on a range of UK MoD and international defence programmes including programme and business development roles with Morgan Advanced Materials, as Chairman of the Defence Export Focus Group for the UK's aerospace & defence trade body and leading a range of collaborative defence projects for Team Defence Information. Since 2017 Luca has been running the AERALIS design and engineering programme with a team of talented and innovative engineers from across the UK aerospace, defence and Formula 1 sectors.

Luca is also a Non-Executive Director for the Alan Turing Trust Charity and Team Defence Information, an advisor to the MoD on better exploitation of supply chain capabilities, and a Member of the Institute of Directors and the Royal Aeronautical Society.

Q: How is AERALIS contributing to aerospace capabilities in the UK?

A: AERALIS is building an entirely new high performance jet aircraft from scratch, something which hasn't been done in the UK for a number of years now, particularly in the military space. The UK has been integral to several successful collaborative projects such as the Eurofighter Typhoon and, more recently, the F35, but this is the first time in quite a few years that the UK has come together and created its own military aircraft. So, AERALIS is pulling together a lot of the skills that already exist in the UK but into an exciting new fast jet programme.



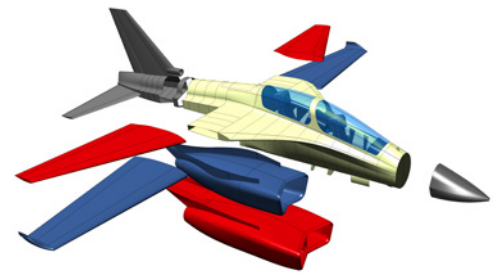
Q: How does AERALIS maintain UK sovereign skills and contribute to the STEM agenda?

A: Well, as I said, AERALIS is designing a whole new aircraft which is drawing in a lot of the skills that already exist in the UK but aren't being used on some of the projects going on at the moment. So that's helping engineers in all sorts of different disciplines - from aerodynamics to software engineering to powerplant engineering - to all come together and work on a new platform.

Some of this experience and skills are unique and across the world, there aren't many countries that can design whole aircraft using sovereign skills. It's important that these skills are exercised often to maintain them and bring new engineers and other disciplines direct from schools and universities and

into the supply chain. AERALIS is engaged and very excited about the next generation of engineers and people working in these sorts of projects coming through and we're focused very closely on advertising and showing off aerospace's potential career path for those young people coming up through the education system at the moment.

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Q: How are you partnering with other engineering organisations? And what are you partnering with them on?

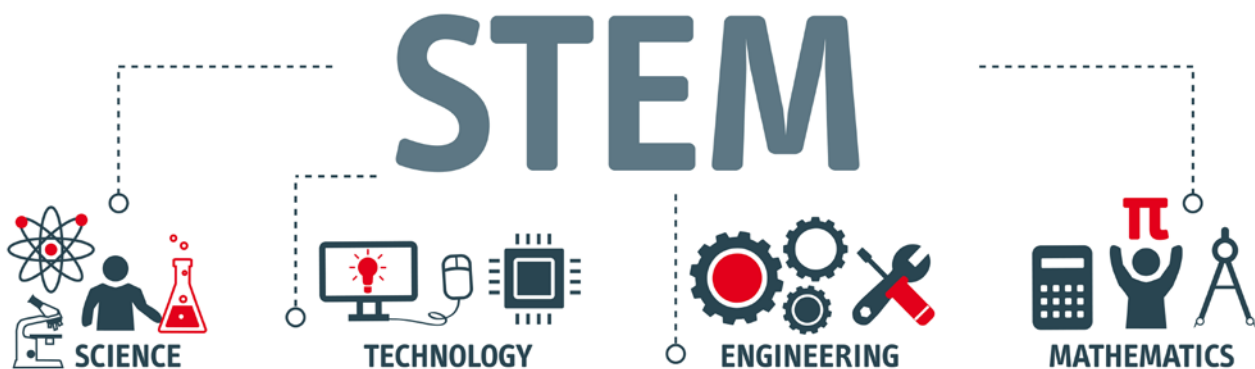
A: AERALIS is working with a lot of well-known aerospace organisations, some of whom we are allowed to talk about and some of whom we can't yet.

So, we've already launched and publicised our MOU, Memorandum of Understanding, with Thales who are well-known across the defence and aerospace industries and have capabilities in all sorts of areas. With us, the focus is on training and simulation as well as avionics and information assurance, we have been working with them for a while and have a really strong relationship.

We're also working with Atkins, the well-known engineering design consultancy, who are supporting us with a lot of very good engineering know-how, especially drawing on lessons learned in the civil aerospace sector. The third organisation we have announced an MOU with is KBR, who intimately understand the service provision market, how to buy and then operate aircraft on behalf of customers, so they are bringing a lot of learning to the table from that point of view.

Alongside those three very large organizations, we're tapping into a fantastic breadth of experience from UK SMEs who often have specialist skills in certain areas. So, people like Stirling Dynamics who are strong in landing gear and flight control systems, TFD Europe & Aspire with supportability and through life planning. As well as these well-established businesses we are in discussions with a host of other technology organisations to apply digital twin technologies to bring down the cost of design, certification and through-life management, artificial intelligence to drive better understanding from the vast amount of data we are already generating, as well as additive manufacturing to reduce assembly and support costs.

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Q: How is AERALIS enabling global air forces to save money?

A: Well, the AERALIS family of aircraft isn't just one or two aircraft, it's a whole family all enabled through a common core fuselage. This offers potentially very large savings to air forces and also operators in their training regimes whether the aircraft is bought and operated by an air force on its own or is bought by a service provider who will then operate it for them. We've worked through the numbers in some detail with a team of organizations, including Price Systems, Frazer Nash, TFD Europe and Aspire Consulting, all of whom have a lot of international experience in this area.

When an air force operates a family of very different aircraft from different manufacturers, they have to maintain a lot of different skills in each of those specific aircraft areas, along with large amount in inventory. However, when they operate one family of aircraft, as is considered business as usual in the civil sector, it rationalizes the support needed to run those aircraft. It also allows for the provision of spares and support chains to be rationalized as well. The numbers tell us that that can represent a saving more than 30%, very important as defence budgets are squeezed and the money is diverted towards frontline requirements.

Using a family of aircraft with a Common Core Fuselage will rationalise training, logistic support and supply chains, representing a lifecycle cost saving of over 30%

