



Advancing UK Aerospace Research through University Collaboration

ICAS 2022, Stockholm
Professor Iain Gray, Director of Aerospace,
Cranfield University

The 11 founding member universities:



UK-ARC Aims



Supported by the UK's Engineering and Physical Sciences Research Council (EPSRC) with the aim to provide:

1. A single **point of contact** into aerospace and aviation research.
2. Development and **delivery of excellent research**, aligned with the sector.
3. Strengthened **international collaborative research** relationships.
4. Coordination for development of **world-class university strategic facilities**.
5. Nurture the **future aerospace technology skills**.

A growing network of experts working across aviation and aerospace



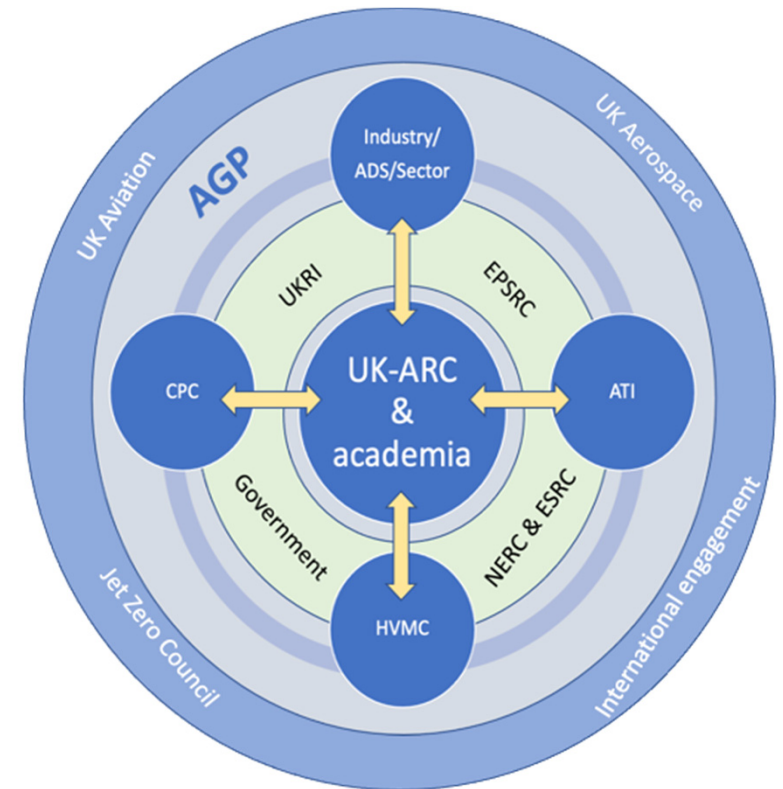
Academia – at the heart of UK aviation



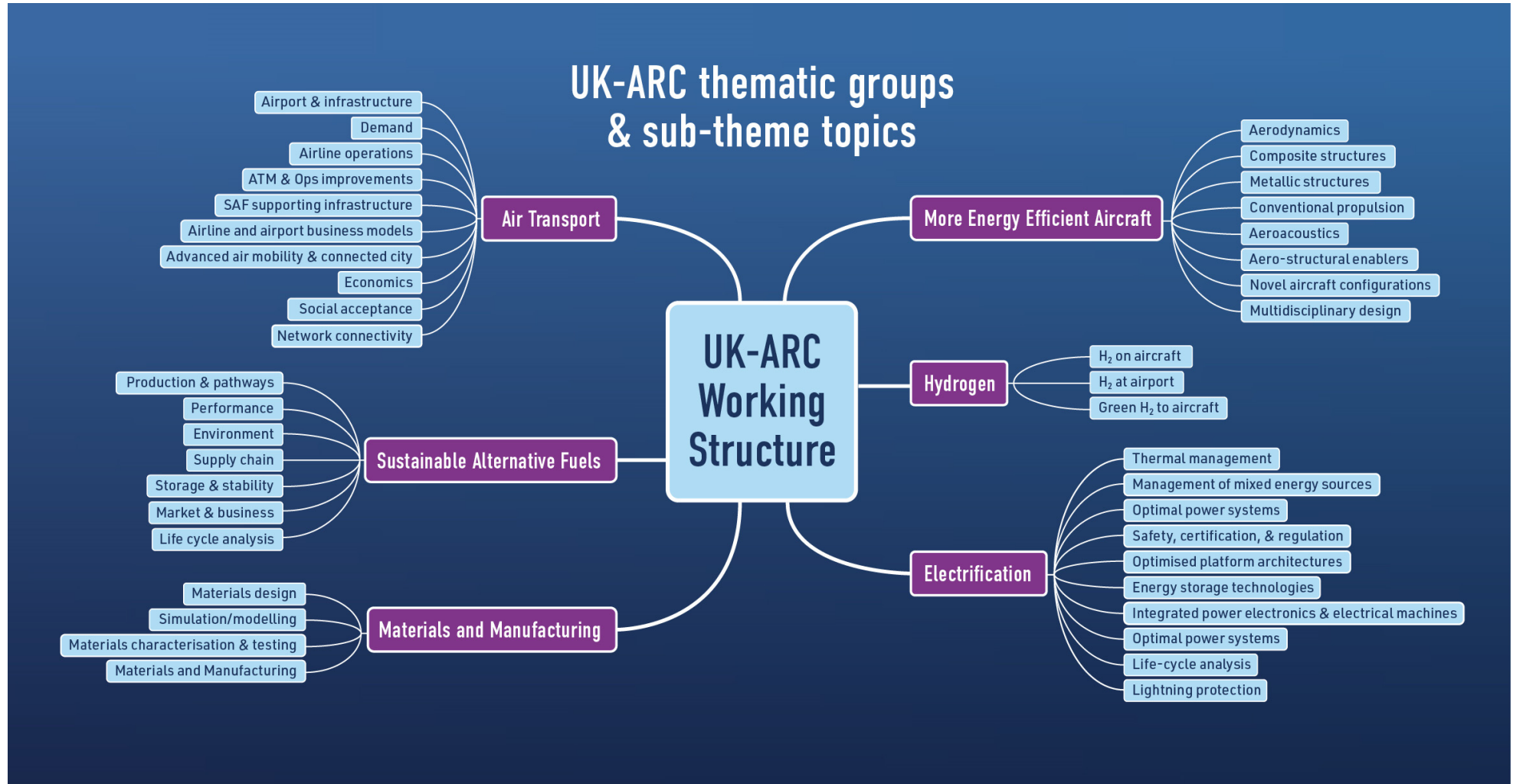
UK Aerospace Research Consortium

UK Aerospace Research Consortium will work in partnership with industry, the Aerospace Technology Institute, research councils and the government to seek to create a UK-wide infrastructure of accessible, integrated and world-class university strategic facilities that align with industry's priorities.

- UK-ARC was established with Government support to maximise the value of university expertise.
- UK-ARC addresses technology, operations and infrastructure. It is also building connection with the science community.



A strong net zero focus, linking with industry



Research facilities

- Access to labs and facilities
- A national resource
- Joint working with industry and academic partners
- Responding to the challenges of tomorrow
- Drawing through future engineering talent



Support to the sector and government



Courtesy of the ATI

UK-ARC universities have undertaken 16 FlyZero studies examining technology, materials and operational aspects of a 2030s EIS zero emission aircraft



Consortium members are contributing to JZC work strands to enable technology, SAF and infrastructure advances



BETTER COMMUNICATION



Strategic Aerospace Research Forum (SARF)

In partnership with the Aerospace Growth Partnership (AGP), UK-ARC is launching SARF, a new cross-community forum for identify, drawing through and promoting academic research in support of sector ambitions.

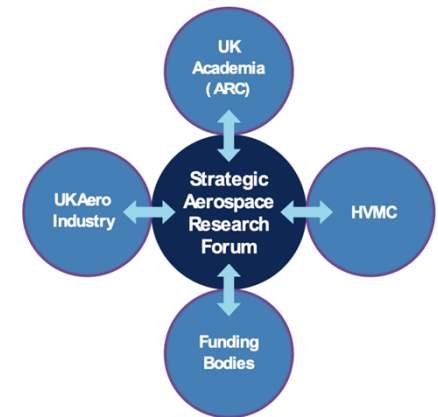
Purpose and objectives

To drive a high level of collaboration between industry, Academia, and the High Value Manufacturing Catapults and other stakeholders across the UK R&D eco-system including the Government to better enable TRL progression across Academia, Industry and the Catapults on key topics of interest to Industry and Government. The objectives are to:

- provide a platform for industry to set out its technology ambitions and requirements to Academia, Catapults and other key stakeholders partners in the research eco-system
- drive better visibility of Academic research on topics relevant to the UK Aerospace industry
- increase visibility and pull through technologies of relevance to aerospace from other sectors
- build collaborative R&D partnerships
- align access to funding streams
- inform funding allocations across the funding landscape
- optimise R&D infrastructure and facilities investments
- drive collective thought leadership on technology pathways including Challenging and stimulating critical thinking on ways forward.

Membership

- R&D and Technology leads from leading Aerospace companies
- High Value Manufacturing Catapults
- UK Aerospace Research Consortium and wider academic representation
- Government departments: Department for Business Energy & Industrial Strategy, Department for Transport
- Funding bodies and agencies: UKRI - Innovate UK, EPSRC, Research England, NERC, Aerospace Technology Institute



Starting autumn 2022, SARF will meet quarterly to build the effectiveness and value of university research.



www.ukarc.ac.uk

Scan to visit the website:



Launched at Farnborough on Tuesday, the **Strategic Aerospace Research Forum** will connect researchers with industry to shape research that supports UK aeronautics leadership





International reach

- Linking internationally to leverage relationships and boost activity on common goals
- Supporting secondments to build capability and support career development



UK-Aerospace Research Consortium International

The UK-ARC is committed under its Network Grant from the EPSRC to establish a new international exchange programme between the UK-ARCEarly career researchers (ECRs) and international research organisations, to create an international network of researchers and foster new collaborations. This closer engagement, cross-fertilization of expertise and the project development helps to strengthen UK university capabilities, enhances academic careers and delivers value to industry.

We want to know about your research needs and to help determine how UK-ARC universities can help you. Examples of secondments being supported by the UK-ARC



Understanding the wider aerospace requirements of Ceramic matrix Composites - A secondment at the Rolls-Royce University Technology Centre (RRUTC) based at the University of Virginia (UVA). UVA focuses on ceramic matrix composites (CMCs). The secondment will merge Swansea expertise in advanced mechanical testing and behaviour with UVA advanced characterisation techniques and experience in CMC environmental degradation.



Investigation of novel acoustic liners for propulsive noise mitigation - The secondment will investigate and better understand, design and development of novel liner configurations as an effective means for propulsive noise control. The secondment combines Bristol knowledge of design and manufacturing of liner materials and quantification of the material porosity and ONERA detailed acoustic and flow testing to support designs for lower engine noise.



Integration of novel aircraft and propulsion systems - The secondment builds on novel multi-fidelity modelling and design research at QUB linking with Technical University of Dresden (TUD) integration expertise for novel aircraft propulsion. The aim is to enable more informed performance evaluation and deeper understanding of the interaction between novel aircraft and propulsion systems.



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Scan to visit the website:





Engineering and
Physical Sciences
Research Council

Advancing UK Aerospace Research through University Collaboration

UK-ARC facilitates and promotes value-added aerospace research projects across university boundaries and with the sector. As a growing community with a net zero focus, UK-ARC connects experts and stakeholders, expands use of university research facilities and builds international collaborations.

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