

March 2015



Building the future for Composites

Duracomp 28/04/16

Presented by

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Overview

The National Composites Centre (NCC):

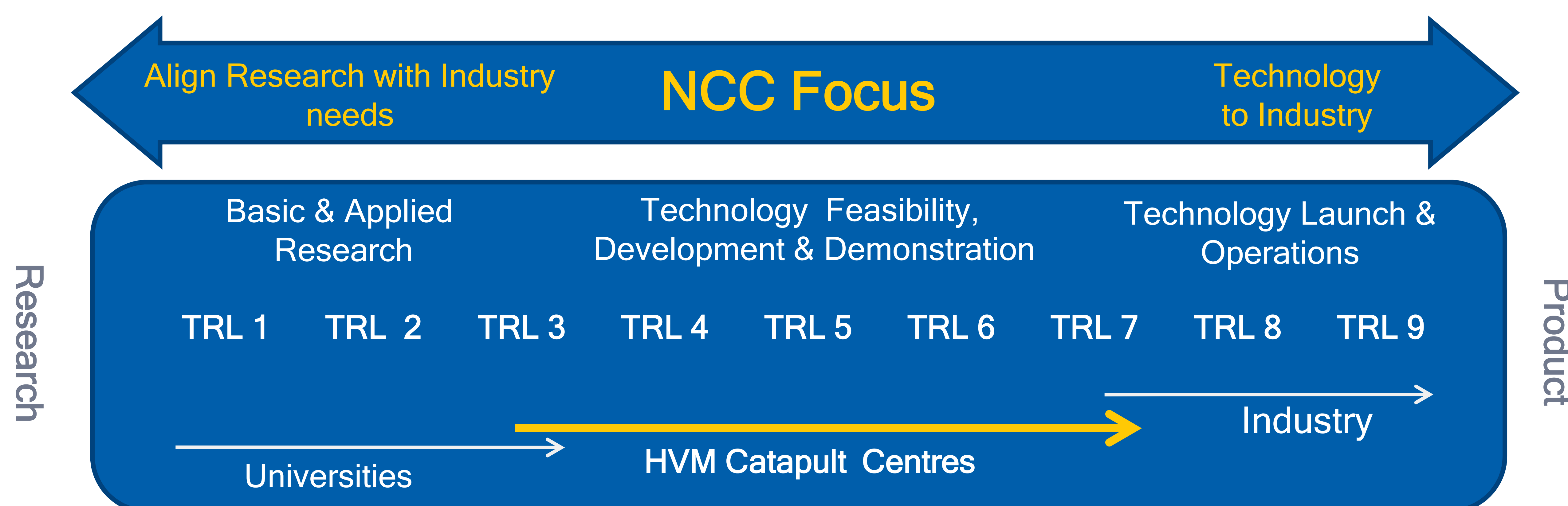
- Created as a result of the UK Composites Strategy, Nov 2009 & opened in Aug 2011
- Extended to include high volume manufacturing area, large assembly workshops and teaching & training facilities; the extension opened in Oct 2014.
- Open access, industrial scale, state-of-the-art, not-for-profit development facility
- Led by industry, used by industry, and hosted by University of Bristol
- Accessed through Tiered Membership models or general pay-per-use
- Part of the High Value Manufacturing Catapult Centre



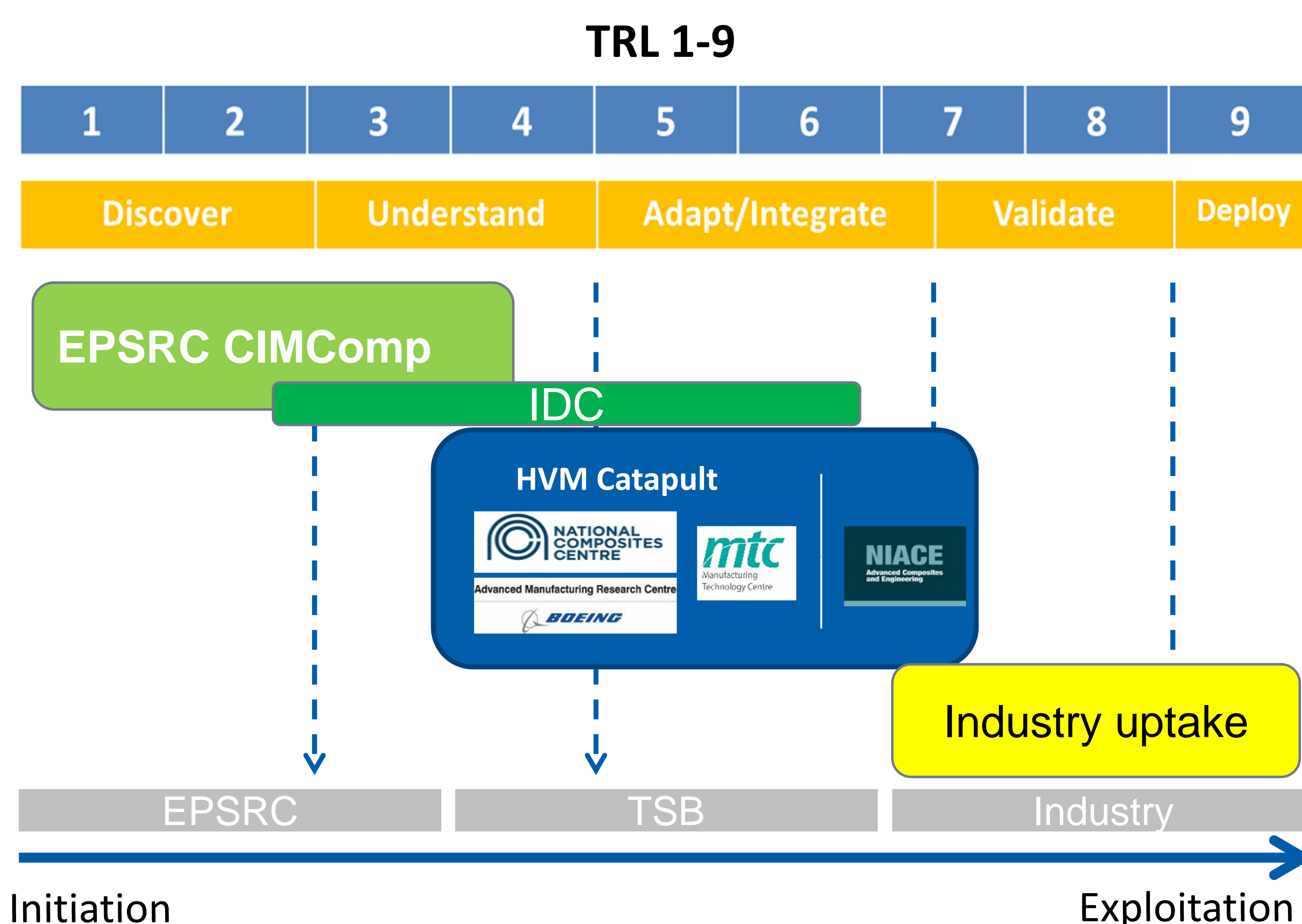
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The NCC Mission

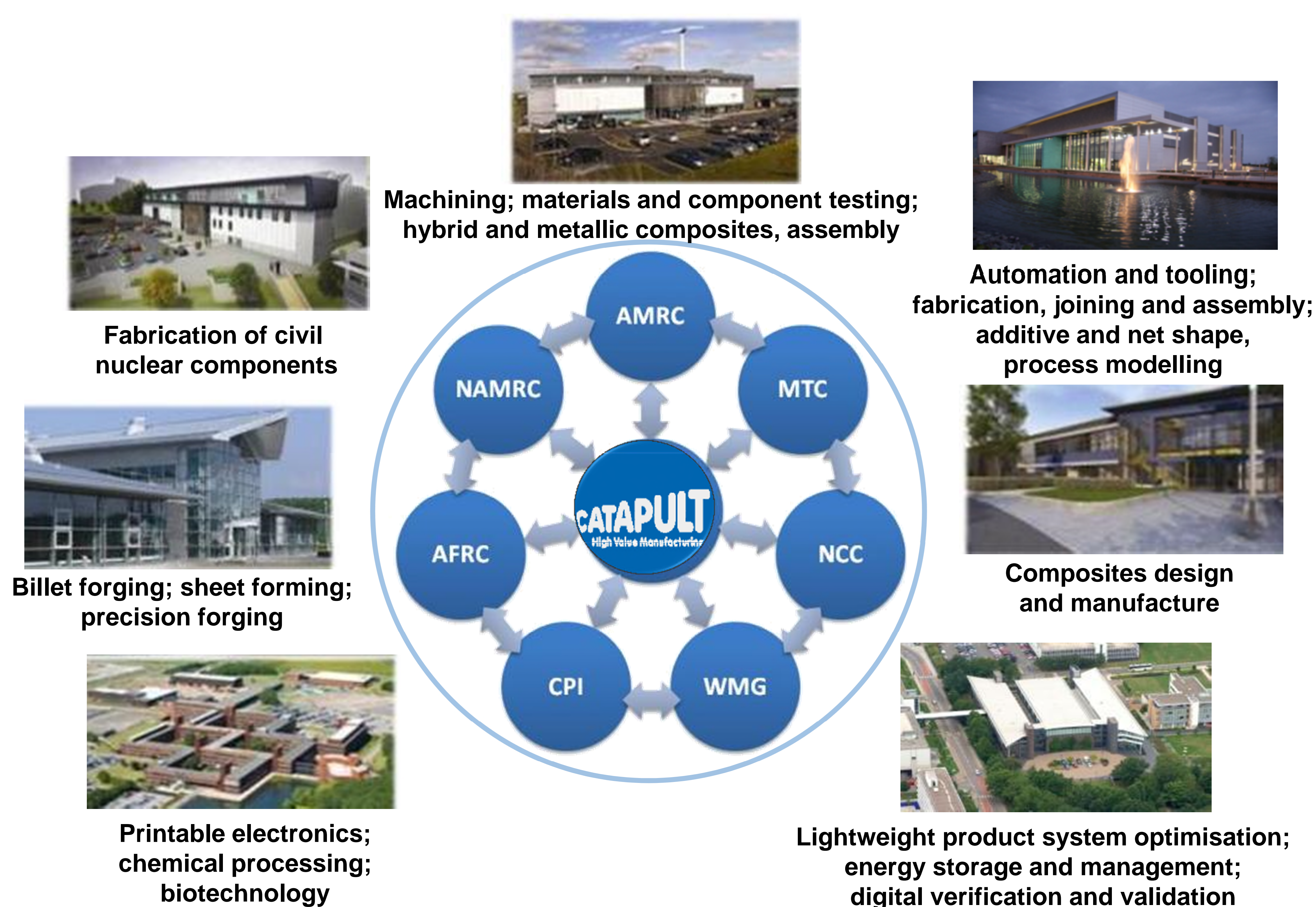
To accelerate the growth of UK industrial output by enabling design and manufacturing enterprises to deliver winning solutions in the application of composites



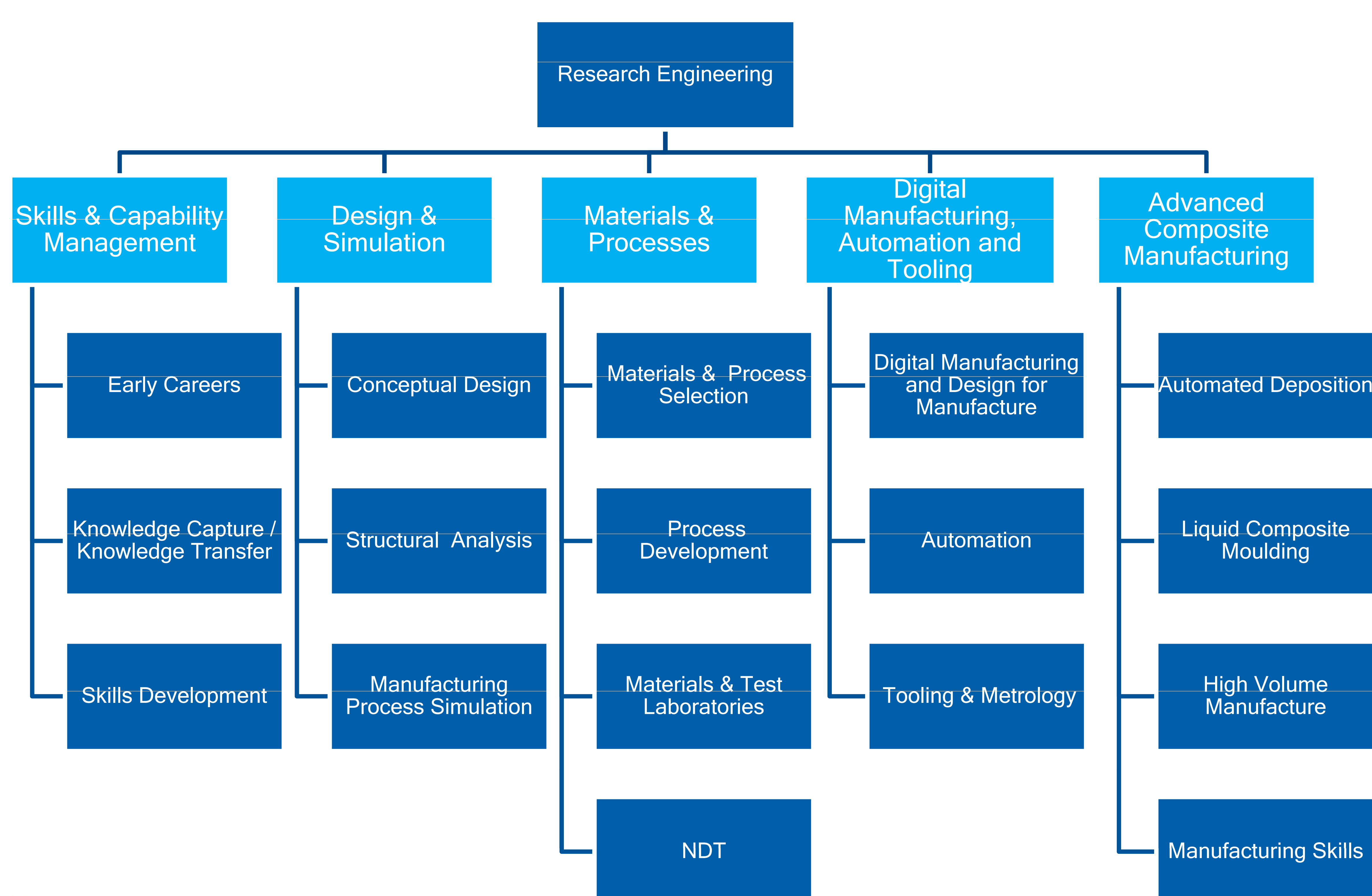
UK Technology Delivery Partners



Who are members of the HVM Catapult?



Research Engineering: Areas of Expertise



Membership & Access

Tier 1 Member

- Aimed at larger companies
- Define Core Programme & use IP
- Credit to spend in the Centre
- Individual membership of Board and Committees
- Influence on NCC & beyond
- Access to seats & rooms

Minimum Spend: £300k per annum

Tier 2 Member

- Aimed at medium sized companies
- Credit to spend in the Centre
- Collective membership of Board and Committees
- Collaboration with Industry & Academia
- Access to seat & rooms

Minimum Spend: £30k per annum

Associate Member

- Organisations who provide equipment/services in lieu of cash
- Individually customised
- Working with other Members

Cost: £ Fair value per annum

General Access

- Open to any size company
- Pay per use using published rates
- Escorted access to the NCC
- Can be used towards Membership minimum spend criteria.



NCC Current Membership

AgustaWestland A Finmeccanica Company	AIRBUS GROUP	GE	GKN	Rolls-Royce
QinetiQ	DASSAULT SYSTEMES	BAE SYSTEMS	CYTEC SOLVAY GROUP	WILLIAMS
AIC	MEGGITT	dyson	Altair	TENCATE materials that make a difference
SURREY SATELLITE TECHNOLOGY LTD	FORMAPLEX	3M	Ipeco COMPOSITES	LIMA Leading the way in Aerospace Composite Solutions
GÜDEL	Heraeus	esi get it right®	HEXCEL	EVONIK INDUSTRIES
sigmatex material innovation	AGC AeroComposites YEovil	Lucintel Insights that Matter	CORIOLIS COMPOSITES	subsea 7
G-COMPOSITE INTEGRATION™	ELG Carbon Fibre Ltd. RECYCLED CARBON FIBRE	KraussMaffei	Shell	MSC Software® Simulating Reality, Delivering Certainty™
DYMAG PERFORMANCE WHEELS	LMAT	N12 Making the Best Better™	Triumph Structures - Farnborough, Ltd. A Triumph Group Company	NPL National Physical Laboratory
INSPHERE		A.C. MARINE & COMPOSITES LTD		HUNTSMAN Enriching lives through innovation

Where are composites going?

- Faster! – More parts, quicker, with shorter lead time to product
- Cheaper! – Lower materials costs, ‘lights out’ manufacturing
- Hotter! – Higher performance, new materials and coatings options
- Bigger! – Huge structures, huge loads, massive assemblies
- Deeper! – Going more places under-sea, and underground
- Tougher! – Taking on extreme durability challenges
- Smarter! – Composite products that look after themselves
- Greener! – Embracing eco, renewable, bio-sources, and bio-degradation
- Round again! – new methods to recycle and up-cycle
- New Places! – Just because composite materials can!
- As Engineers– your flights of fancy may create tomorrow’s new market

Going Faster!



Getting Cheaper!

Cost down? – Yes
but.....

Lets look at –

Installed Cost,
Environmental Cost,
Whole Life Cost,
Added societal benefits and functionality



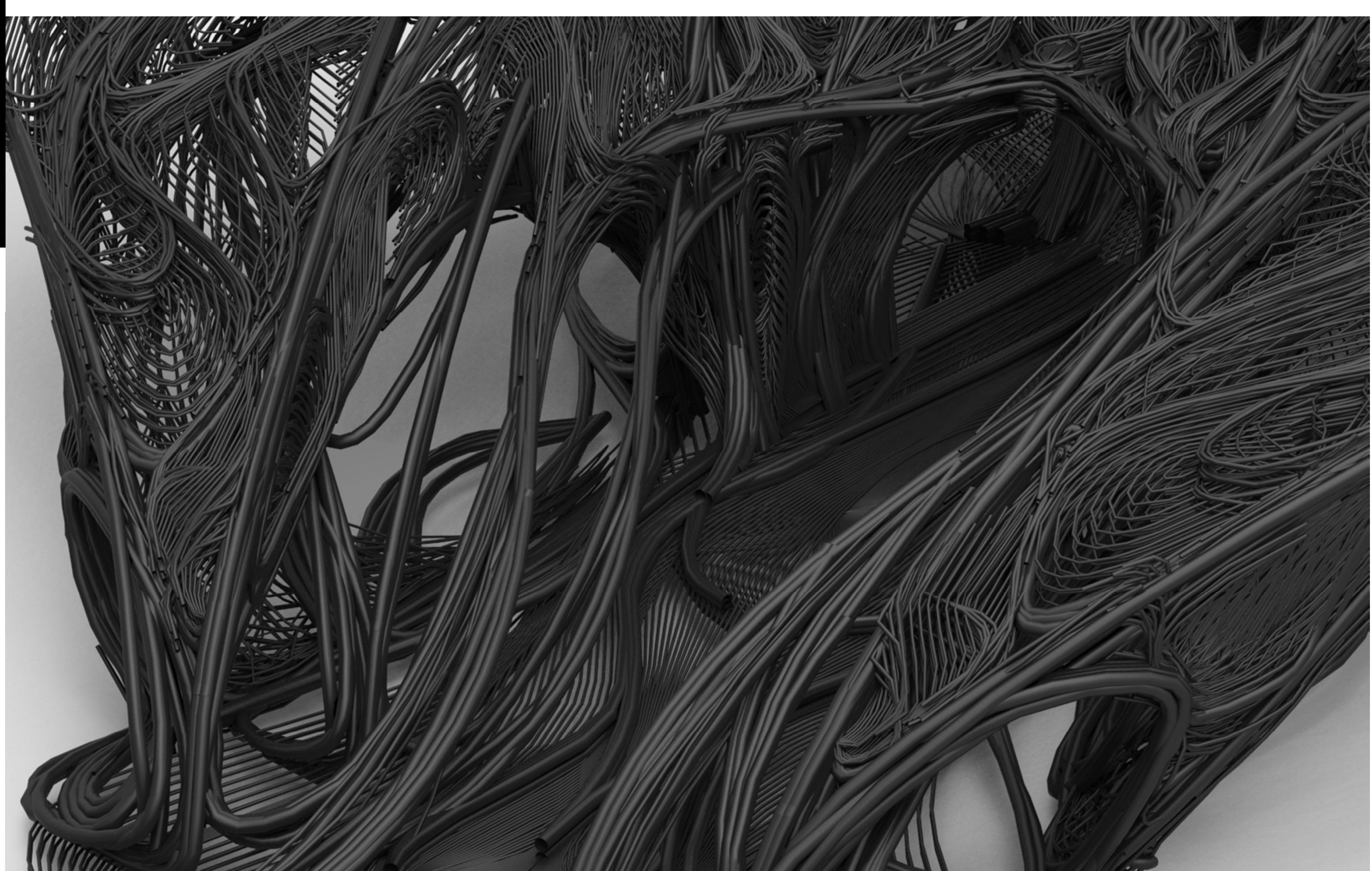
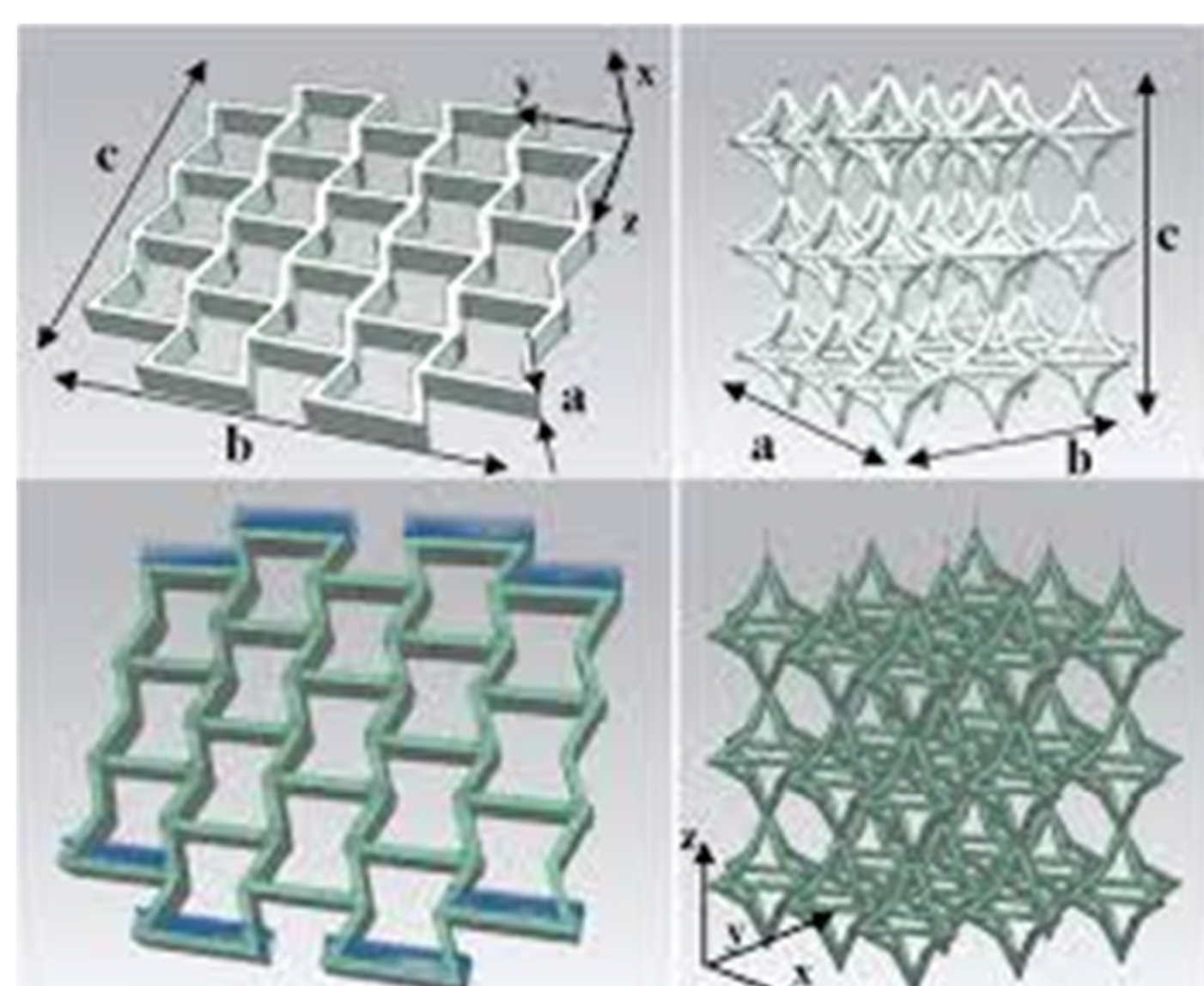
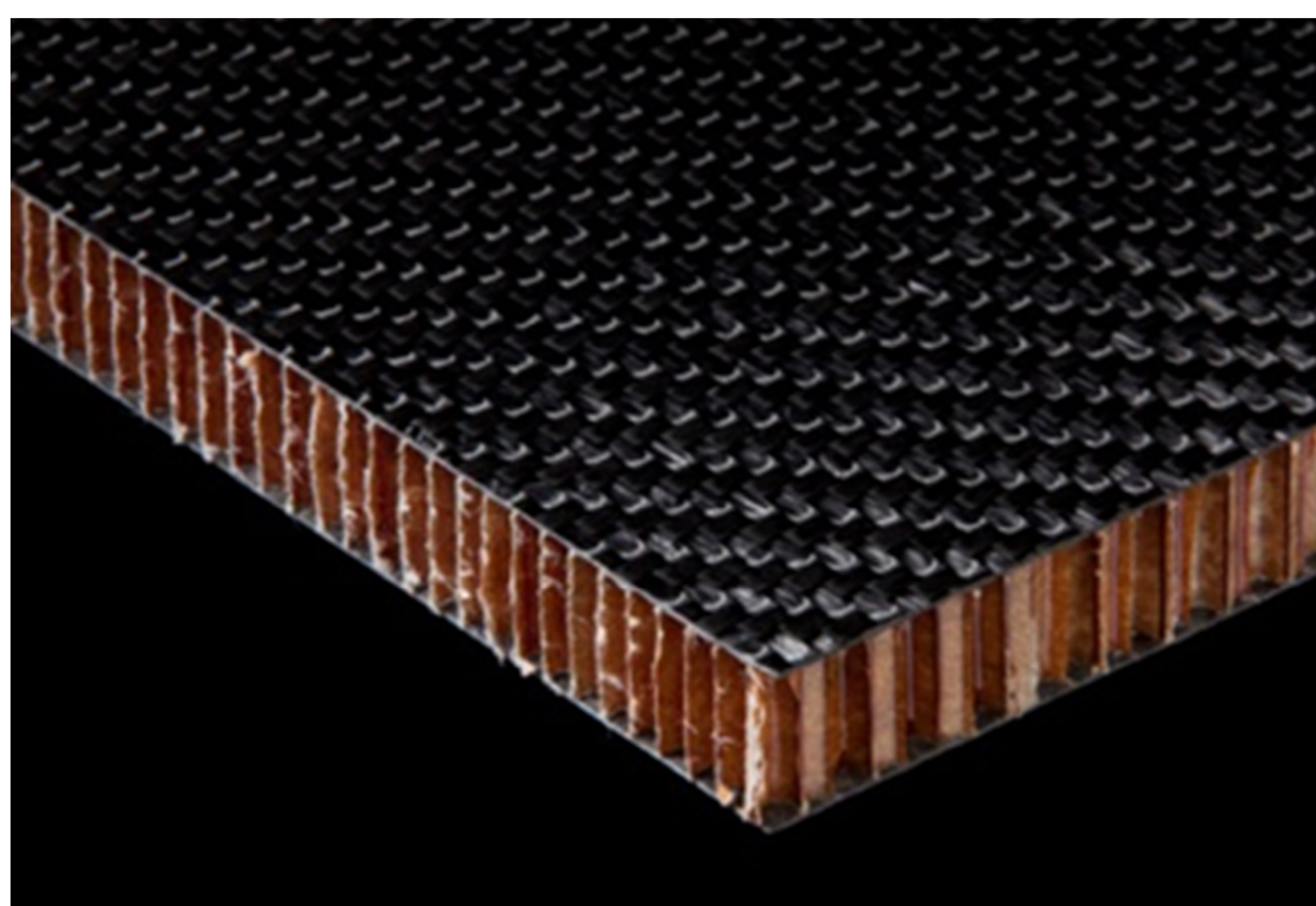
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Getting Lighter



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Hotter!



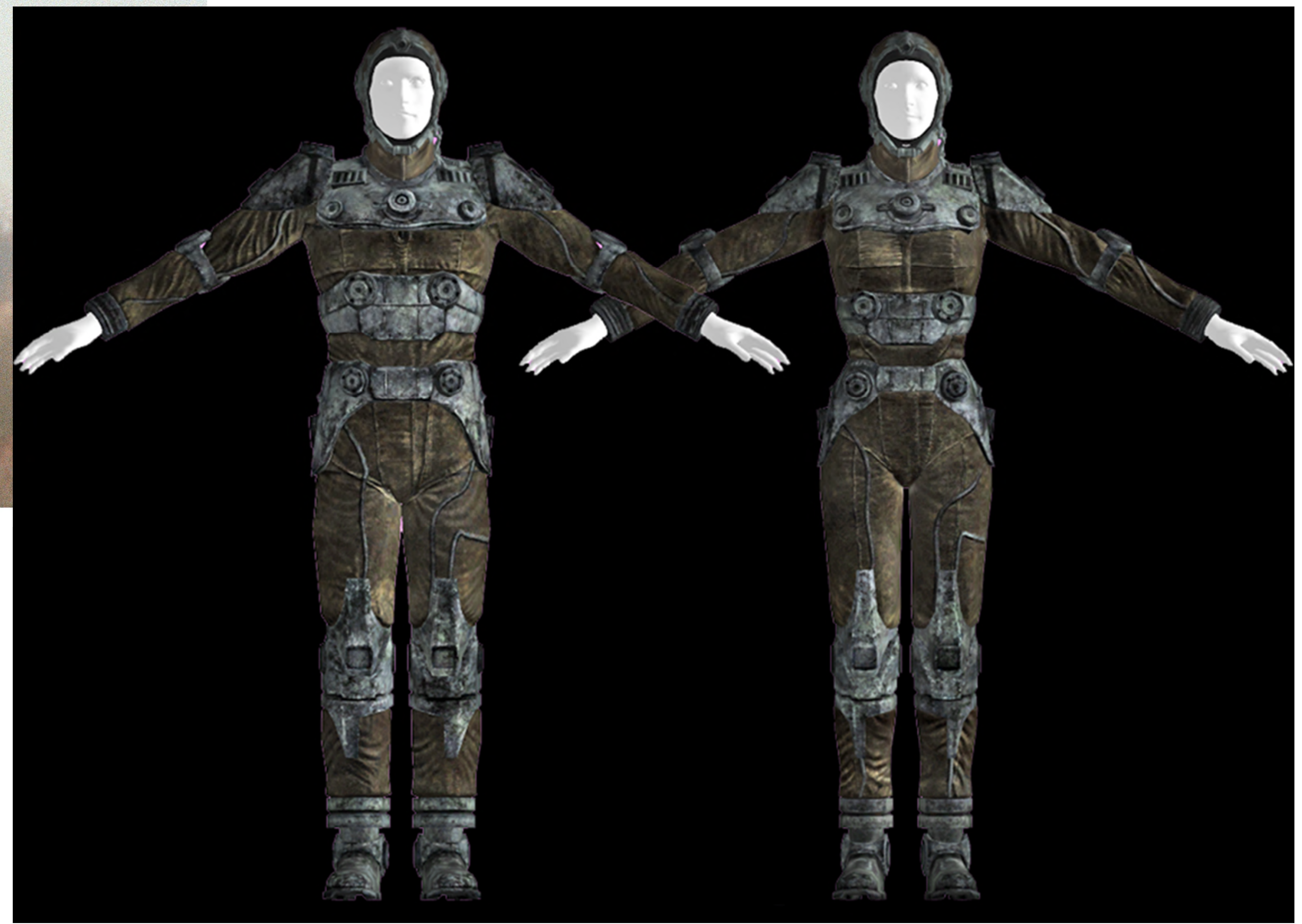
Bigger!



Tougher!



AH-64D



Deeper!



Smarter!



Greener!



Going –around again!



The Confidence Challenge

Composites have some good track history in resisting harsh environments
BUT

The scientific basis for their selection has often been missing

The actual service conditions weren't well defined

The degree of structural 'redundancy' was often very high

The long term performance data wasn't captured

Where data exists its often very task specific, client confidential, and inaccessible to new market entrants

Going – New Places?



Where do composites fit in your future?

Come and talk to NCC?



The NCC in action



- Open-Access Equipment
- Training
- Working with Industry



- ✓ Innovation Accelerated
- ✓ People Developed
- ✓ Solutions Delivered



Simple Offer Is 'Come and Talk'

- **'Soft' Business/Technical Advisory Offers**
 - Sufficient manpower to respond quickly – initially for free
 - Informed referrals and information - including to supply chain B2B, funding, training and linking to useful external service providers
 - Free web-based tools to help decision making and planning
- **'Access to...' Engineering and Facilities Resources**
 - Virtual Manufacture Offers
 - Physical Composites Manufacturing Offers
- **Easy to Understand 'Menu' – with clear prices**



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The National Composites Centre is...

- Bringing Industry & Academia together
- World-Class Facilities, People and Knowledge
- An Open Innovation Environment
- The National Composites Strategy in Action
- Part of UK's High Value Manufacturing Catapult

...a key resource for UK Manufacturing



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