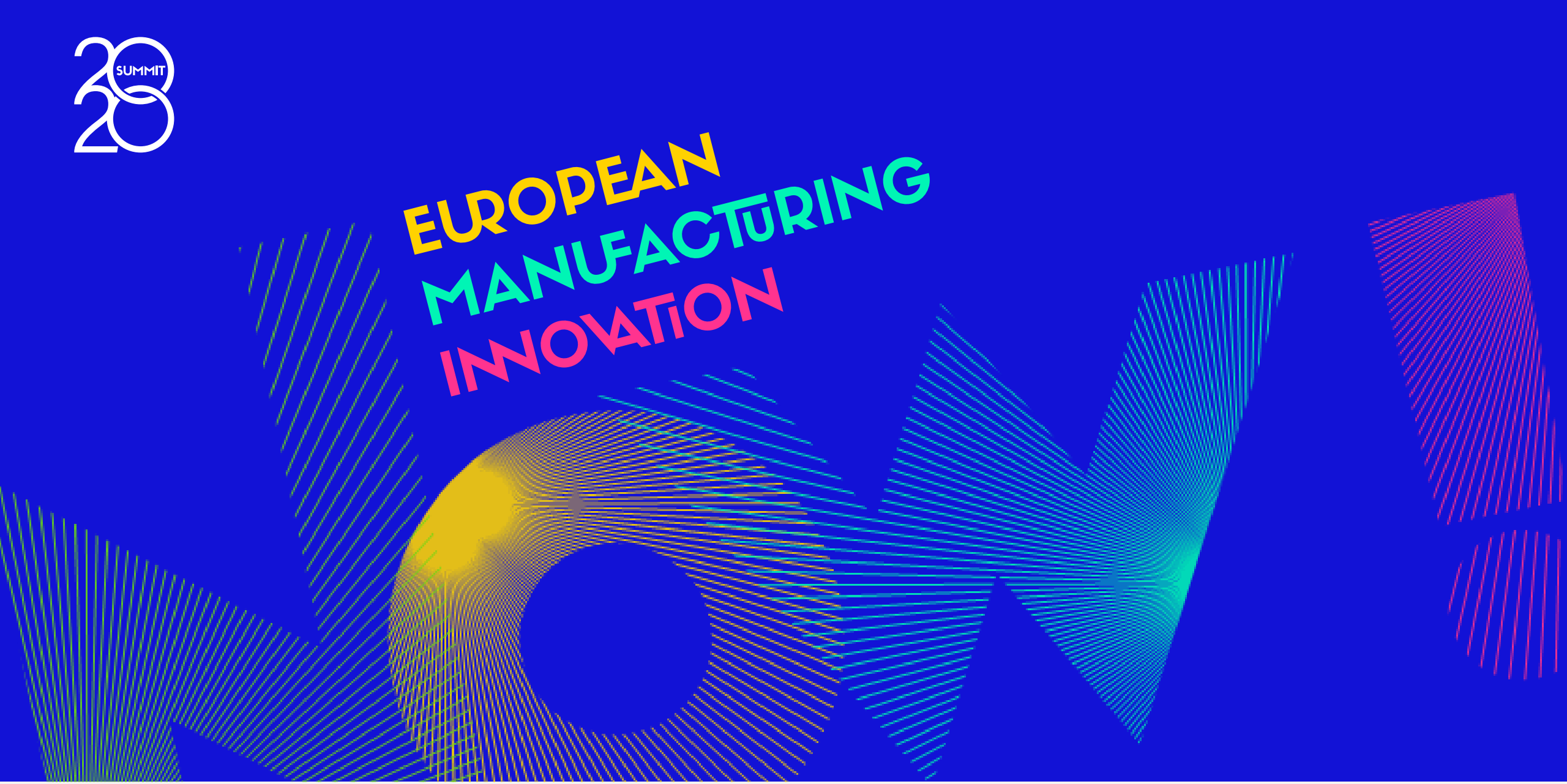

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AeroMC2

*Optimized **M**ultimaterial **C**onformal **C**hannel solution for thermal management of **Aero**nautic electric propulsion systems*

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Introduction

1

NEED FOR A CHANGE

- Climate change and environmental concerns are driving the change from fossil fuels and towards more sustainable mobility solutions
- Electric aircrafts can be an eco-friendly alternative, but their performance is currently limited by issues related to insufficient thermal management of the motors and batteries

13 CLIMATE ACTION

2

AEROMC2 SOLUTION

- Thermal management embedded into structural elements
- Hybrid Channeling: Simultaneous welding and channeling
- Leak-proof sub-surface channels with complex conformal paths
- Combines different materials, enabling to optimize physical and chemical performance
- Lightweight

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

3

EXPECTED BENEFITS

- Enhanced heat transfer efficiency
- Superior thermal dissipation rate
- Increased power output for electric motors
- Increased battery capacity thus extending flight range and service life
- Sustainable manufacturing

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

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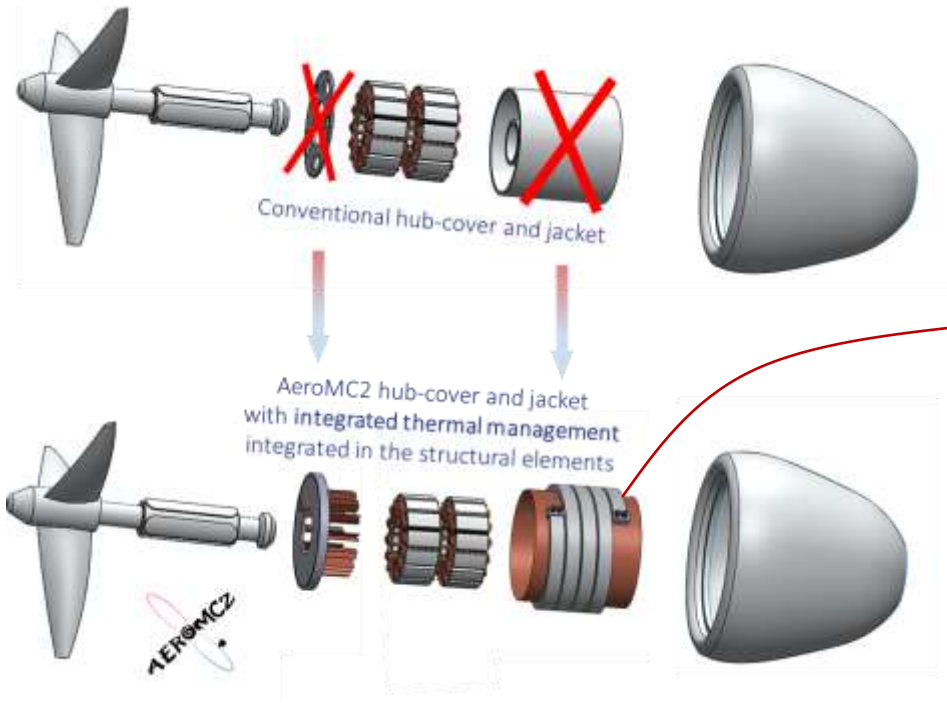
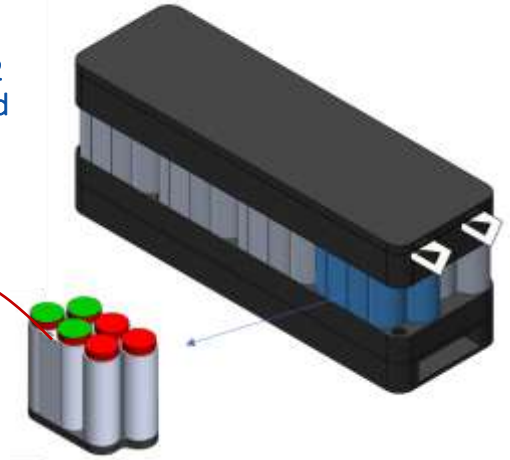
AeroMC2 Solution

Integrated thermal management solutions for aeronautic electric propulsion systems

- Replacing conventional structural components with the **AeroMC2 thermal management solutions integrated** into the structural components (providing improved thermal management, robust structure, **lower weight** and high reliability)



- Innovative modular Li-ion **AeroMC2** battery pack design with **integrated thermal management** system in the structural components, enabling **360° cooling** of all cells



Cross-section of the **Hybrid Channel**

- Replacing conventional structural solutions with the **AeroMC2** integrated **thermal management** solution

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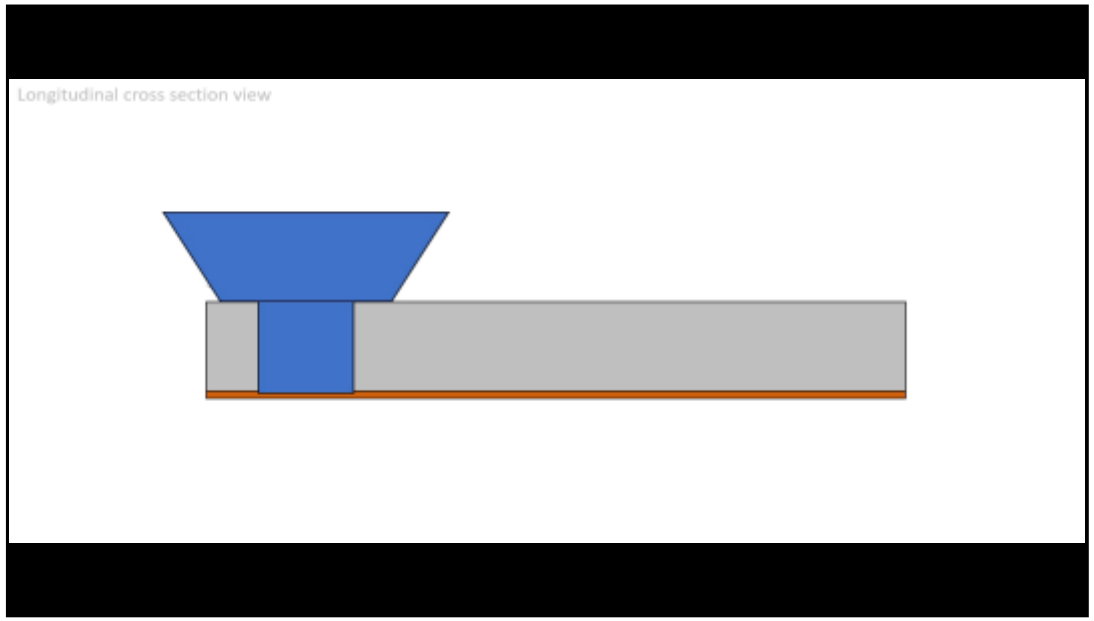
Enabling technology - HC



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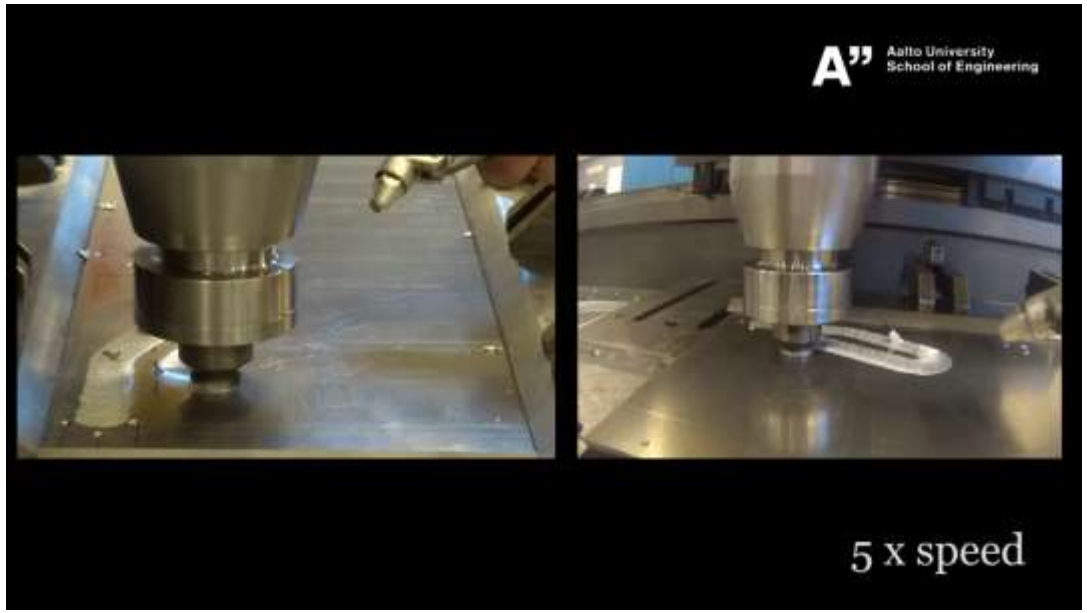
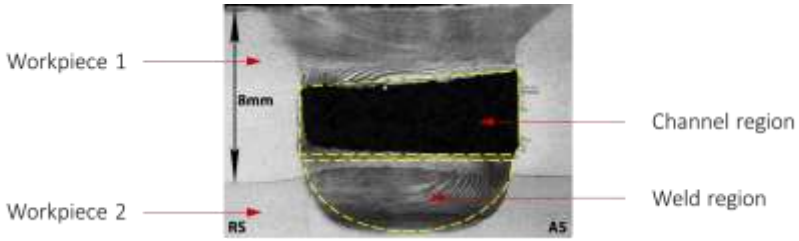


- Channels can follow **free paths in any direction** (x, y, and z)
- **Simultaneous** channeling and welding
- Internal surface promotes turbulent flow and **increases heat transfer**
- Creates **physical continuity** between **dissimilar materials**
- Enables **structural** components with **integrated thermal management**



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Competitive advantages

The **AeroMC2 integrated thermal management and structural** solutions for **Electric Motors** and **Battery Packs** open up the opportunity for electric aircrafts to reach **higher performance levels, longer range** and **improved reliability**.

Robust: Very high **Burst pressure (420 bar)**

Efficient: Up to **50% higher** cooling power*

*Compared to conventional solutions

Lightweight: Integrated thermal management and structural solution in one component

Optimized: Fast response rate to sudden peaks in temperature

Sustainable: Produced by the HC sustainable manufacturing process

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Thank you for listening

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