Augsburg, March 2023

AdvanTec GmbH

VOCUS GmbH

AERO 2023

SafeBatt2Fly

A new, modular battery system for aviation applications will be on display at AERO 2023 with an innovative Battery Management System (BMS) from AdvanTec GmbH.

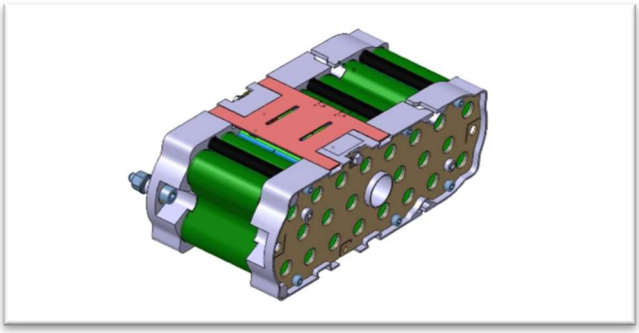
Project status SafeBatt2Fly

The technical structure of this battery system is designed in such a way that it can also be easily adapted to other applications in aviation, e.g. for electric drives for motor gliders, aircraft, UAM's, STOL'S, VTOL's etc. A world first in this development is the data transmission of the BMS modules to the monitoring and control unit, which is extremely light and also modular. The innovation developed by AdvanTec enables wireless bidirectional communication between the individual modules. This also means that there is no need for complex and fault-prone cabling of the modules and that defective or old modules can be replaced quickly and easily.

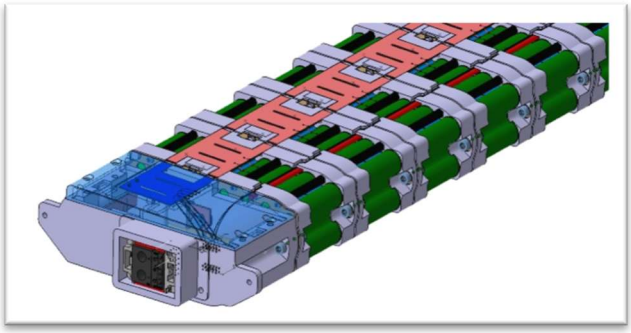
An innovative battery management system (BMS) developed is used here, which monitors the batteries during the charging and operating phases and regulates and records the processes. This ensures that the batteries are systematically monitored during the powered flight phases in order to be able to react accordingly in the event of a possible malfunction, and that the service life of the batteries is optimized or extended by careful handling of the charging cycles.

A second world first from SafeBatt2Fly is a redundancy system of the BMS that connects the battery modules, which ensures that all remaining intact modules in the string can continue to operate in the event of a failure of individual cells or modules.

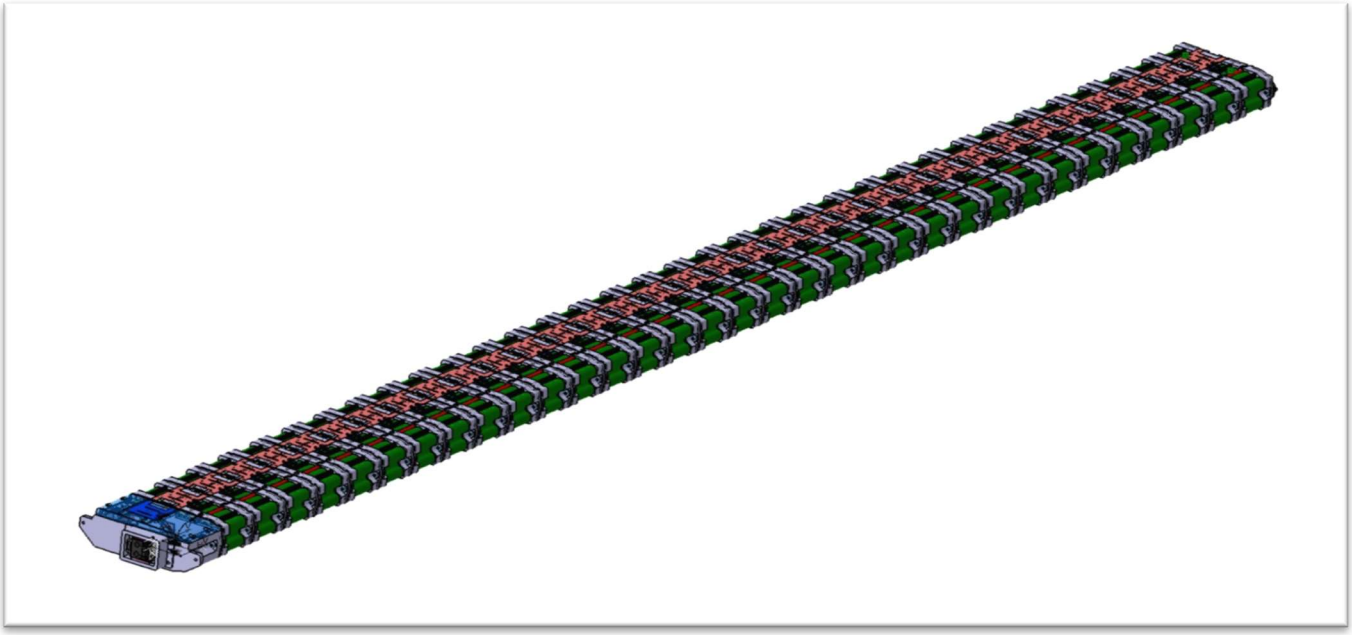
The weight of the new batteries, including the control electronics, which are housed in the two wings of the research aircraft, is around 80 kg. Flight testing of the new battery system is scheduled to begin in mid-2023. The prototype of the "SafeBatt2Fly" battery system will be completed in mid-2023 and integrated into the research aircraft. The power capacity on board the AT01 will be increased by a further 17 kWh to a total of 21 kWh of electrical energy. The range in level flight can thus be expected from 150 km to approx. 450 km at 110 km/h in calm air.



Singel modul © AdvanTec GmbH



First smodul © AdvanTec GmbH



Battery pack fort the wing AT01 © AdvanTec GmbH

Conclusion

Furthermore, it turns out that once again light aircraft construction, especially the gliding scene, is a pioneer of a technology that will also be found on a larger scale due to its wide-ranging research and innovation work in Aka-flight associations and many own projects from private initiatives, small and medium-sized companies. This work provides a valuable contribution to the important introduction of innovations in the areas of sustainability and eco-efficiency in this sector.

It remains exciting what the future will bring and which alternative transport systems, especially in aviation, will prevail. As developers, there are not only global players like Lilium and Volocopter, but also many interesting and enormously committed inventors, small and medium-sized companies and start-ups with many concepts and ideas that will enrich the world of aviation.

Further information:
www.advantecgmbh.de
www.vocus3.de

Kontact: AdvanTec GmbH: Stefan.Gorkenant@AdvanTecGmbH.de

Follow:

https://www.instagram.com/vocus3.de/