

# Danish Aerospace

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COMPANY ANNOUNCEMENT

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## **Danish Aerospace Company A/S gets extended contract for E4D.**

Danish Aerospace Company A/S (DAC) has today signed an expanded and prolonged contract for the company's future E4D multifunction exercise equipment for future manned space flights.

- Danish Aerospace Company A/S (DAC) is currently developing a flight- and three test models of a multifunction/crosstrainer for astronauts for The European Space Agency (ESA) called E4D (Enhanced European Exploration Exercise Devices.)
- ESA has expanded and prolonged the contract for these developmental activities.
- The equipment must now meet a long list of additional requirements and include additional functions, supplemented with a number of specific software tools, which goals are to make it more user-friendly for NASA and ESA's flight surgeons and health specialists.
- The E4D equipment combines cycling, rowing, rope pulling and 30+ other weightlifting exercises in one machinery, which gives the astronauts a full body workout and a broader exercise flexibility in their daily training in space.
- NASA and ESA will test E4D on the International Space Station (ISS). The E4D flight model is expected to launch in 2023 and will be tested on ISS for 2-3 years.
- The expansion and prolongation of the contract is expected to run till 2025. The value is estimated at MDKK 4,1 and is a 16% increase of the contract value.

*"We are delighted that ESA has expanded on and prolonged the contract, as it adds extra functions to the equipment, as well as gives us the opportunity to supply additional software tools, which makes it more user-friendly for NASA and ESA's specialists. E4D and its multifunction elements have already generated great interest, not only with NASA and ESA, but also with private companies working with the commercial side of manned space travel.*

*This demonstrates that E4D is creating a unique foundation for future business potential within this field." states Thomas A. E. Andersen CEO of Danish Aerospace Company A/S.*

*He continues;*

*"I am very proud of this equipment which our creative engineers designed. It will be something completely unique within exercise equipment for astronauts and feature, among other things, a new*

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*type of exercise, tug-of-war, which has never-before been used in space. Variation in exercise is incredibly important for astronauts, so that many different muscle groups are continually used during their stay in space and furthermore, to give them variety to keep their motivation. E.g., a trip to Mars can take 6 to 8 months, so great exercise variety to pass the time is very essential.” says Thomas A. E. Andersen, CEO of Danish Aerospace Company A/S.*

The contract does not change the company's previous announced expectations for 2021.

## **Additional information**

Danish Aerospace Company A/S has developed the prototype of the new advanced exercise equipment called E4D (Enhanced European Exploration Exercise Devices) under contract with ESA.

NASA and ESA's EEDD-panel, (Exploration Exercise Device Downselect), evaluated DAC's E4D multipurpose equipment in the fall of 2019. It was compared to another US equipment in order to recommend which one NASA and ESA should continue to work on for future human travels to the Moon and beyond.

The prototype was tested over 7 weeks at NASA's Johnson Space Center in Houston, Texas. Among the 25 test subjects were 14 experienced astronauts from NASA, ESA and the Japanese Space organization JAXA. In total, 11 male and 3 female astronauts, all of which had previously flown in space and used existing exercise equipment on the International Space Station ISS, tested E4D. They represented one third of all active and available NASA astronauts.

The EEDD-panel, which consisted of 7 experts from NASA and 3 from ESA, unanimously recommended E4D as the equipment to explore further for Artemis, Lunar Gateway and manned Mars-missions.

The new exercise equipment is based upon Danish Aerospace Company's more than 30 years of experience with space ergometers and respiratory measuring equipment for human spaceflight.

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## **About Danish Aerospace Company A/S:**

Danish Aerospace Company (DAC) is a high-tech company operating in the area of advanced medical instrumentation and other engineering fields primarily within space applications.

Our products are based on many years of specialized research and development. These consist of developing, integrating, and applying new as well as established medical technologies to the challenges of functioning and remaining reliable in space. These products and services bring the potential of space research and experience from space operations down to Earth for the benefit of all mankind.

Danish Aerospace Company employs engineers and technicians who deliver full engineering, production and technical services for our customers. We have specialized in customer specific design, development, manufacturing, certification, maintenance, testing, and operations.

The company has developed five generations respiratory equipment for spaceflight, ergometers for astronauts, countermeasures, adapted several commercial medical equipment for spaceflight and has participated in the development of the minus eighty degree celsius freezers.

The Company's quality system is certified in obligation to BS EN ISO 9001:2015, BS EN 9100:2018 technical equivalent to AS9100D that is the acknowledged standard in the area.

**Note:** *This is a translation of the corresponding Company Announcement in Danish. In case of discrepancies between the Danish wording and the English translation, the Danish wording prevails.*

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