

# Danish Aerospace

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COMPANY ANNOUNCEMENT

Odense, June 8<sup>th</sup>, 2021

Company Announcement no. 27 - 08-06-2021

## **ESA asks Danish Aerospace Company A/S for quote on extra E4D.**

Danish Aerospace Company A/S has formally been requested to make a offer for yet another flight model of the company's future E4D-multifunction exercise equipment, so there will be a spare model available when the equipment will go into the standard complement of exercise equipment for the astronauts on the International Space Station.

- Danish Aerospace Company A/S (DAC) is contracted to develop a flight- and three test models of the new multifunction/crosstrainer equipment for astronauts for the European Space Agency (ESA) called E4D - Enhanced European Exploration Exercise Device.
- ESA has now asked DAC to quote another flight model and spare parts through an Engineering Change Request (ECR).
- 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.
- E4D was supposed to initially be used as a technological demonstration model on the International Space Station (ISS) and thereby be a precursor for the subsequent versions to be used later, on the Moons Space Station - Lunar Gateway and manned expeditions to Mars.
- Now NASA has expressed a wish to also use the equipment operationally later on, e.g. for a full operational exercise equipment for all non-Russian astronauts on ISS. This means there is a need for an additional flight model, which can be held as a spare, should parts on the existing flight model need servicing or replacing.
- NASA and ESA will test and use E4D on ISS. The first flight model of E4D has an expected deployment in 2023 for initial testing before being taken into full operational service.
- DAC is currently working on a bid for ESA which normally leads to a contract, this is then expected to be signed by fall when ESA's internal processes have been completed.
- The final contract value is not yet known, however, is expected in the range of MEUR 1 or approx. MDKK 7.45.
- Should DAC receive this contract, it is not expected to affect the company's earlier announcement on turnover for 2021, as the additional model's delivery is targeted for 2023.

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*“That ESA asks for a quote on an additional flight model shows that E4D will no longer only be used to test the possibility for our new multifunction concept in space, but that E4D now also will be included as a fully operational device in NASA and ESA’s range of exercise equipment for the astronauts on ISS. Within a couple of years DAC will not only have one but two different operational exercise equipment on the Space Station as DAC already is contracted to deliver the new FERGO ergometer for NASA. This confirms that the investments DAC has made in development of new equipment for space and other extreme environments, e.g. E4D, has paid off.” explains Thomas A. E. Andersen, CEO of Danish Aerospace Company A/S.*

*He continues;*

*“If we close this deal for the additional model with ESA in the fall, it will ensure a good foundation for DAC in the coming years. It is fantastic to witness how well NASA and ESA have received our new concept with combining several types of exercises into one device, with E4D. Besides NASA and ESA, other potential clients have also started to show great interest in the equipment” says Thomas A. E. Andersen.*

## **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 for 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 DAC’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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