

## Position

<b>Title</b>	<b>Senior Mechanical Design Engineer</b>
<b>Department</b>	Group R&D
<b>Reporting to</b>	Group CTO
<b>Location</b>	Lincoln, Lincolnshire, UK

## Description

Alaris, the RF Technology Group, is expanding by opening a new R&D capability based out of our site in Lincoln, UK. A small, highly capable team will be established to work directly with the Group CTO on the most challenging design problems that the Group has to face and grow our product offerings in the RF and antenna system space.

We are looking for the best-of-the-best - motivated and energetic individuals - to work on the most exciting new antenna and RF technologies. You will be working with customers based all over the world and collaborating closely with engineers based in our various sites in Europe, the USA and Africa. If your passion is to tackle difficult problems with an innovative and energetic spirit and to work with likeminded people, then this is the place for you!

As a senior mechanical design engineer, you will team up with RF and antenna engineers on the design of antenna and RF subsystems for a variety of platforms and environments. Our products are used in a diverse range of applications ranging from high reliability communications systems, aerospace and defence applications and medical treatments. Many of the products we develop will be deployed in extreme environments such as submarine, tracked vehicles, aerospace, naval and space-borne platforms.

We are looking specifically for individuals with a track record of solving difficult engineering problems with an innovative approach and who exhibit a high degree of personal resilience as the role will be demanding. You will be designing from concept stage right through to seeing final delivered products alongside electronic engineers in a collaborative whiteboarding environment. Hands-on, practical prototyping skills and a wide background in structures, aerospace, composites, adhesives and electronic enclosure design will come in very useful as well as a fast hand using tools such as CAD and FEA.

## About the Alaris Group

Founded in 1997, is a global radio frequency (RF) technology Group. The Group prioritises the creation of its own products and safeguarding its intellectual property. It delivers technologically advanced solutions and products to various sectors, including defence, aviation, marine, wireless, industrial, healthcare, research communities, and government institutes. The Group strives to become a dependable technical advisor and partner in the RF technology field, as reflected in its subsidiaries' customer-focused approach.

An acquisitive group, currently based in South Africa and until recently listed in the JSE, the group is currently exploring the opportunity to relocate its holding company to the UK with a possible relisting on the LSE AIM in the future to assist drive its growth strategy.



## Hard Requirements

<b>Education (minimum)</b>	Bachelor's degree in mechanical engineering
<b>Education (ideal)</b>	Masters in mechanical engineering
<b>Work experience</b>	15 years+
<b>Experience (required)</b>	<ul style="list-style-type: none"> <li>• Product design experience in defence related applications</li> <li>• Design for environmental requirements such as vibration, shock, humidity, ingress protection.</li> <li>• Environmental qualification, testing of products and product verification.</li> <li>• Mastery of CAD tools, e.g. Solidworks / Inventor or similar.</li> <li>• Working with suppliers, e.g. machinists, toolmakers.</li> <li>• Experience working directly with customers in a consultative, collaborative fashion</li> </ul>
<b>Experience (ideal)</b>	<ul style="list-style-type: none"> <li>• Structures</li> <li>• Electromechanical design, servos, mechanisms, etc.</li> <li>• Aerospace</li> <li>• Composites</li> <li>• Shipborne and maritime products</li> <li>• Space related equipment</li> <li>• Design of healthcare related equipment</li> <li>• Enclosures (thermal, ingress, corrosion considerations)</li> <li>• Mechanical design of electronic products</li> <li>• Design for electromagnetic considerations</li> </ul>
<b>Computer literacy (required)</b>	MS Office / Windows Solidworks or Autodesk Inventor
<b>Computer literacy (ideal)</b>	MATLAB FEA tools
<b>Language(s)</b>	English

## Soft Requirements

<ul style="list-style-type: none"> <li>• A flair for product design</li> <li>• High degree of personal accountability and initiative</li> <li>• Mission-oriented, can-do approach</li> <li>• Innovative and creative problem solver</li> <li>• Assertive nature</li> <li>• Professional approach, comfortable dealing with customers and senior management</li> <li>• Flexibility – prepared to work longer hours when critical work needs to be completed</li> <li>• Work well under pressure and adhere to deadlines</li> <li>• Attention to detail</li> <li>• Wide ranging experience and interests</li> <li>• Hands-on practical skills in fabricating prototypes, building models, welding, machining and general DIY</li> <li>• Comfortable working in a collaborative environment with engineers in different disciplines</li> </ul>
---

## Key performance areas, weights and tasks

<b>Mechanical design of RF/Antenna and system products and related equipment</b>	40%	<ul style="list-style-type: none"> <li>Initial product concept development and validation of specifications in collaboration with electronic engineers.</li> <li>Assistance with proposal generation, concept CAD and pre-sales analysis on mechanical aspects.</li> <li>Detailed product design and CAD modelling</li> <li>Analysis for strength, vibration, wind drag, thermal behaviour etc. as needed using approximations and/or specialised software tools</li> <li>Design iteration between electrical and mechanical requirements.</li> <li>Optimisation of designs</li> <li>Detailed modelling and production of drawings for fabrication and instructions for assembly.</li> <li>Jig, fixtures and tooling design and realisation as needed.</li> <li>Specialised test equipment development (e.g. positioning mechanisms, strain testers, etc) and realisation as needed.</li> </ul>
<b>Working with suppliers and partners</b>	10%	<ul style="list-style-type: none"> <li>Review of mechanical drawings / CAD for production</li> <li>Identifying new suppliers as needed for new or specialised fabrication or testing requirements.</li> <li>Working with suppliers as needed for special requirements or to manage specialised processes (e.g. composite radome fabrication or specific testing requirements).</li> <li>Working with suppliers and partners on environmental and mechanical verification testing as needed.</li> </ul>
<b>Prototyping, construction of models, fixtures and related equipment</b>	15%	<ul style="list-style-type: none"> <li>Working together with electronic engineers on prototype construction, fault finding and design adjustments as needed.</li> <li>Assembly of jigs or fixtures, or specialised test equipment as needed.</li> <li>Occasional assembly of production units for specialised low volume high value products.</li> </ul>
<b>Product testing and qualification</b>	15%	<ul style="list-style-type: none"> <li>Managing environmental and mechanical testing and product verification to specifications.</li> <li>Fault finding and design updates.</li> </ul>
<b>Industrialisation</b>	10%	<ul style="list-style-type: none"> <li>Design review and finalisation</li> <li>Manage design handover to production partners / sister companies for serial production.</li> <li>Training as needed to assemblers or engineering and technical staff in sister companies to support serial production and future product design maintenance.</li> </ul>
<b>Reporting and writing</b>	10%	<ul style="list-style-type: none"> <li>Technical reports detailing simulation and test results for customer consumption.</li> <li>Drafting of assembly instructions.</li> </ul>

5 January 2024