Opportunities in Turkey - Aerospace Defence

This document contains information about the new opportunities in Turkey, supporting an Aerospace customer. The roles involve working on an Aerospace Defence project, for up to 12 months. Candidates must be able to obtain SC clearance.

Positions available include:

**Engineering Integration**
- Systems Engineering
- System Safety
- Structural Analysis
- Structural Dynamics

**Air Vehicle Systems Engineering**
- Hydraulic Power System Design Engineer
- Landing Gear System Design Engineer
- Environmental Control System Design Engineer

**Flight Sciences**
- Aerodynamics Engineer
- Flight Dynamics Engineer
- Loads Engineer
- Aeroelasticity Engineer

**Avionics and Mission Systems**
- Software Design Engineer

If you or someone you know may be interested in one of the positions advertised, or would simply like to find out more information, please contact Dr Simon Hancock at simon.hancock@stirling-dynamics.com or call +44 (0)117 915 2524
Engineering Integration
Systems Engineering

RESPONSIBILITIES

• Definition, derivation, analysis, maintenance of functions and requirements from stakeholder sources,
• Allocation and apportioning of system functions and requirements to elements,
• Implementation of traceability,
• Generation of alternative architectural designs traceable to the requirements,
• Performance and support of trade studies to assess a range of architectural designs and justify the selection of the optimum solution,
• Performance of trade-offs involving conflicting demands from design specialisms.
• Selection and balance of design attributes (budgets) throughout the design process in support of specialty engineering needs.
• Identification, definition and management of TF-X System and element interfaces
• Planning and performance integration, validation and verification activities
• Support of assigned specialty engineering activities such as System Safety, Reliability, Maintainability and Certification.

REQUIRED QUALIFICATIONS

• BS or higher degree in mechanical, aerospace, electric and electronical, computer engineering
• Systems engineering experience in aviation development projects (preferably military fixed wing aircraft development project)
• Knowledge and experience about system engineering and product development processes and related standards (INCOSE SE Handbook, IEEE15288, MIL-STD-499,..)
• Experience in developing requirements, verification and validation of requirements
• Knowledge and experience in architecting and integrating complex systems.
• Knowledge and experience on process of airworthiness certification processes
• Knowledge or experience about the product life cycle, have an experience on maturity levels and management, have a comprehensive knowledge of tools and methods used in these issues
• Considerable experience in the relevant fields

PREFERRED ADDITIONAL QUALIFICATIONS

• Experience in Model Based System Engineering activities
• Knowledge and experience on aircraft and subsystem safety management, (SAE ARP4754 / 4761, DO178 / 254)
• MS or PHD degree on systems engineer, engineering management.
System Safety

RESPONSIBILITIES

- Definition and allocation of TF-X System and Subsystem safety targets,
- Planning and performance of Safety activities according to MIL-STD-882E
- Planning and performance of safety assessments such as Functional Hazard Assessment, System Safety Assessment, Particular Risk Assessments, Zonal Safety Assessments according to SAE ARP4761,
- Derivation of safety requirements for design,
- Assurance of safety compliance of design solution to safety targets
- Support of assigned specialty engineering activities such as Reliability, Maintainability and Certification.

REQUIRED QUALIFICATIONS

- BS or higher degree in mechanical, aerospace, electric and electronical, computer engineering
- Experience in military safety processes and procedures
- Expertise in MIL-STD-882 and SAE ARP4751
- Knowledge and experience in safety activities at system or platform level:
  - Performing Functional Hazard Analysis (FHA), Fault Tree Analysis (FTA), and Common Cause Analysis (CCA) according to SAE ARP 4761 or equivalent
  - Development and maintenance of safety arguments (e.g. Aircraft Safety Assessment (ASA)/System Safety Assessment (SSA)) across a product lifecycle
  - Hazard Identification and Risk Management in accordance with MIL-STD-882E or UK MoD Military Standard (Def-Stan 00-56) or equivalent
- Experience on a design project in the aviation and defense industry
- Knowledge and experience in process of certification processes and criteria
- Knowledge or experience Product Life Cycle Management processes
- Considerable experience in Safety Engineering

PREFERRED ADDITIONAL QUALIFICATIONS

- Knowledge or experience about the processes and standards of system engineering in the field of Aviation and Defense Industry
- Knowledge or experience about the principles of Aircraft Systems (propulsion systems, engine, flight control system, fuel, hydraulic, environmental control system etc.)
Structural Analysis

RESPONSIBILITIES

- Supports the efforts to establish the challenging aircraft performance criteria by utilizing optimization methods and tools in order to obtain the most weight efficient, realistic and feasible structure,
- Utilises analytical methods, finite element and other analysis tools for supporting product design and verification of structural integrity throughout the product life cycle,
- Reviews and approves engineering drawings,
- Develops test plans, supports test execution and analyses/reports test results to validate and verify structural integrity,
- Develops/execute certification and qualification plans to substantiate and validate airframe structures against customer and certification requirements,
- Supports internal/external design reviews, critical milestones,
- Supports structural requirements derivation and documentation,
- Reviews, makes recommendations and approves reworks and repairs on manufacturing defects,

REQUIRED QUALIFICATIONS

- Graduation from Mechanical, Aircraft, Aerospace or Aeronautical Engineering departments
- Excellent experience in FEA tools such as(MSC PATRAN/NASTRAN, HYPERWORKS, ABAQUS in the last 5 years
- Deep knowledge in principles of Structural Analysis
- Being a good Excel and Word user and familiar with the Microsoft Excel VBA environment
- Considerable experience in the relevant areas

PREFERRED ADDITIONAL QUALIFICATIONS

- Being the user of the HYPERSIZER program
- Experience in aircraft structures
- Experience in structural optimization
Structural Dynamics

RESPONSIBILITIES

- Supports aircraft environmental zoning activities, guides and oversee system installation activities
- Performs structural dynamics analyses, including modal and transient, on system installations and aircraft components,
- Performs loads analysis for vibratory environments and communicate with other structural analysis groups,
- Performs multi-body dynamics simulations,
- Performs highly nonlinear explicit analysis for crash, bird strike, tire burst, FBO, etc.
- Develops test plans, supports test execution and analyses/reports test results to validate and verify dynamic models for structural integrity,
- Develops/executes certification and qualification plans to substantiate and validate airframe structures against customer and certification requirements,
- Supports internal/external design reviews, critical milestones,
- Reviews, make recommendations and approves reworks and repairs on manufacturing defects,

REQUIRED QUALIFICATIONS

- Graduation from Mechanical, Aircraft, Aerospace or Aeronautical Engineering departments
- Knowledge about Dynamic Analysis methods and approaches
- Knowledge about Fatigue and Damage Tolerance
- Considerable experience in the relevant areas

PREFERRED ADDITIONAL QUALIFICATIONS

- Master’s degree in Mechanical / Aviation Engineering
- Experience in military certification processes such as MIL-HDBK 516b
- Knowledge and experience of writing code in one of the languages like FORTRAN, Visual Basic, C, C ++
- Patran / Nastran knowledge (Preferably Hypersizer, HyperMesh, Abaqus, LS Dyna experience)
Air Vehicle Systems Engineering
Hydraulic Power System Design Engineer

RESPONSIBILITIES

- Performs system design and integration activities on hydraulic power system.
- Responsible for the hydraulic system design, integration and verification.
- Develops system design requirements and validation verification methods, qualification, certification with authorities,
- Manages system architecture development and functional allocation activities,
- Defines hydraulic power system and equipment technical specification,
- Performs system analysis as pump sizing, pressure losses etc,
- Performs system and equipment integration activities
- Defines system and equipment test requirements & analysing test results
- Performs system modelling and simulation activities,
- Provides support for system sub-contractor monitoring and management activities.

REQUIRED QUALIFICATIONS

- BS or higher degree in mechanical or aerospace engineering
- Experience and knowledge about fluidic systems, fluid mechanics, hydraulic power systems components such as pumps, accumulators, reservoirs, etc.
- Experience and knowledge about System Engineering processes
- Knowledge about modeling of physical systems in AMESIM (or similar) and / or MATLAB / Simulink environment
- Experience and knowledge about fluid mechanics, thermodynamics.
- Considerable experience in the relevant fields

PREFERRED ADDITIONAL QUALIFICATIONS

- Experience or knowledge about CATIA / NX and similar solid modeling software programs
- Experience or knowledge about Military and Civil Aviation Standards
- Experience in defense or aviation projects
- Experience in working with subcontractors
Landing Gear System Design Engineer

RESPONSIBILITIES

- Performs system design and integration activities on landing gear system including subsystems as brakes, steering and arresting hook,
- Responsible for the landing gear system design, integration and verification,
- Develops system design requirements and validation verification methods, qualification, certification with authorities,
- Manages system architecture development and functional allocation activities,
- Defines landing gear system and equipment technical specification,
- Performs system analysis as landing gear positioning, actuator sizing, brake sizing, tyre selection, etc,
- Performs system and equipment integration activities,
- Defines system and equipment test requirements & analysing test results
- Performs system modelling and simulation activities,
- Provides support for system sub-contractor monitoring and management activities.
- Performing the kinematic concepts of Nose Gear, Main Gears and Landing Gear Doors by using CATIA
- Performing the preliminary system architectures:
  - Extension/Retraction System
  - Brake and Anti-skid System
  - Steering System
- Preparing the Adams models for ground loads/attachment loads of the nose and main landing gear.
- Performing floatation analysis
- Performing dynamic taxi analysis (including landing, braking & ground handling)

REQUIRED QUALIFICATIONS

- BS or higher degree in mechanical or aerospace engineering
- Experience and knowledge about mechanical systems design and analysis, kinematics, machine theory, dynamics.
- Experience and knowledge about System Engineering processes
- Knowledge about modeling of physical systems in AMESIM (or similar) and / or MATLAB / Simulink environment
- Considerable experience in the relevant fields

PREFERRED ADDITIONAL QUALIFICATIONS

- Experience or knowledge about CATIA / NX and similar solid modeling software programs
- Usage of kinematic and dynamic modeling tools
- Experience or knowledge about Military and Civil Aviation Standards
- Experience in defense industry or aviation projects
- Experience in working with subcontractors
Environmental Control System Design Engineer

RESPONSIBILITIES

- Performs system design and integration activities of environmental control systems,
- Responsible for environmental control systems design, integration and verification,
- Develops system design requirements and their qualification,
- Performs system performance analyses and trade-off studies, validation methods with certification authorities,
- Manages system architecture development and functional allocation activities,
- Defines environmental control systems equipment technical specification,
- Performs system and equipment integration activities,
- Defines system and equipment test requirements & analyzing test results,
- Performs system modelling and simulation activities,
- Provides support for system sub-contractor monitoring and management activities.

REQUIRED QUALIFICATIONS

- BS or higher degree in mechanical, aerospace or mechatronic engineering
- Experience and knowledge about pressure, ventilation, heating or cooling systems or equipment
- Experience and knowledge about System Engineering processes
- Knowledge about modeling of physical systems in AMESIM (or similar) and / or MATLAB / Simulink environment
- Experience and knowledge about thermodynamics, heat transfer or fluid mechanics
- Experience in defense industry or aviation projects
- Considerable experience in the relevant fields

PREFERRED ADDITIONAL QUALIFICATIONS

- Experience in using Fluent, FLOEFD, STARCCM or similar CFD tools
- Experience or knowledge about CATIA / NX and similar solid modeling software programs
- Experience or knowledge about Military and Civil Aviation Standards
- Experience in working with subcontractors
Flight Sciences
Aerodynamics Engineer

RESPONSIBILITIES

• Undertake Aerodynamics activities including numerical and experimental aerodynamics, propulsion aerodynamics, aero thermodynamics and in-flight icing in accordance with project requirements, safety requirements, international standards, company practices and company rules.
• Identification of test requirements, prepare requests for tests, participate in tests and assessment of test results.
• Support activities related to determination of Acceptable Means of Compliance, authorship of Compliance Validation Documents and reporting non-compliance within the Airworthiness Certification context.

REQUIRED QUALIFICATIONS

• BS and preferably higher degree in aerospace engineering (aerospace/aeronautical engineering)
• Basic knowledge of fixed wing a/c design and analysis (External aerodynamics, Intake aerodynamics, Duct design and analyses,...)
• Experienced on CFD implementations (pre and post-processing, flow field analysis, solution algorithms, turbulence models etc)
• Comprehensive knowledge of flight dynamics and flight performance
• Comprehensive knowledge of dimensioning and placement of movable control surfaces that affect stability and controllability
• Comprehensive knowledge of determination of the geometric parameters that affect the stability and control characteristics of the aircraft on the main geometry of the aircraft
• Knowledge about the calculation methods of static and dynamic aerodynamic coefficients
• Considerable experience in the relevant fields

PREFERRED ADDITIONAL QUALIFICATIONS

• Knowledge or experience about CATIA (or CAD Modelling, aerodynamic surfaces, wing, fuselage, control surface layouts etc)
• Knowledge on static and dynamic stability,
• Knowledge on wind tunnel testing, pre-test activities (aerodynamic test surfaces, preparation of test matrices, preparation of request for test documents, etc.) and post-testing activities
Flight Dynamics Engineer

RESPONSIBILITIES

- Undertake Flight Dynamics activities including control law algorithm design, flight mechanics, air vehicle modelling and simulation and air data system design in accordance with project requirements, safety requirements, international standards, company practices and company rules.
- Perform engineering activities related to controller architecture, control law/algorithm design and perform analyses for flight quality.
- Support activities for determination of controller algorithms for flight control system. Development, modification and management of 6 DoF dynamic flight simulation models and integration of these with other systems and sub-systems. Perform analyses for air vehicle stability and control and control surface sizing.
- Determination of flight test requirements for the assessment and validation of stability and control characteristics and flight quality, prepare requests for tests and contribute to flight test planning.
- Support activities related to determination of Acceptable Means of Compliance, authorship of Compliance Validation Documents and reporting non-compliance within the Airworthiness Certification context.

REQUIRED QUALIFICATIONS

- BS and preferably higher degree in aerospace engineering (aerospace/aeronautical engineering)
- Comprehensive knowledge of flight dynamics and flight performance
- Comprehensive knowledge of dimensioning and placement of movable control surfaces that affect stability and controllability
- Comprehensive knowledge of determination of the geometric parameters that affect the stability and control characteristics of the aircraft on the main geometry of the aircraft
- Knowledge about the calculation methods of static and dynamic aerodynamic coefficients
- Considerable experience in the relevant fields

PREFERRED ADDITIONAL QUALIFICATIONS

- Experience in military fixed wing aircraft development projects
Loads Engineer

RESPONSIBILITIES

- Undertake Loads related activities including development of loads models, perform static, dynamic and ground loads analyses, selection of identification criteria for critical load conditions, determination of loads envelopes and identification of critical loads conditions in accordance with project requirements, safety requirements, international standards, company practices and company rules.
- Identification of test requirements, prepare requests for tests, participate in tests and assessment of test results.
- Support activities related to determination of Acceptable Means of Compliance, authorship of Compliance Validation Documents and reporting non-compliance within the Airworthiness Certification context.

REQUIRED QUALIFICATIONS

- Knowledge about aerodynamics
- Knowledge about aircraft statics, rigid body dynamics (6 DOF), and aircraft maneuver
- Knowledge about Shear Moment Torsion diagrams
- Knowledge about programming (one of Matlab/Excel VBA/Python)
- Knowledge about classical control and modern control
- Knowledge about CFD post-processing by paraview or tecplot

PREFERRED QUALIFICATIONS

- Knowledge about Nastran/FLDS
- Knowledge about Finite Element Analysis
- MSc in flight mechanics, aerodynamic or computation solid mechanics
- Knowledge about vibration
Aeroelasticity Engineer

RESPONSIBILITIES

• Undertake Aeroelasticity related activities including aeroelastic modelling, performing modal analysis, flutter, divergence, control surface effectiveness and control surface reversal analyses in accordance with project requirements, safety requirements, international standards, company practices and company rules.

• Establish requirements for ground vibration tests, prepare requests for tests, participation in tests and assessment of test results. Support activities related to determination of Acceptable Means of Compliance, authorship of Compliance Validation Documents and reporting non-compliance within the Airworthiness Certification context.

REQUIRED QUALIFICATIONS

• Knowledge about aerodynamics
• Knowledge about aircraft structures
• Knowledge about dynamic finite element analysis
• Knowledge about structural dynamics and vibration
• Knowledge about programming (one of Matlab/Excel VBA/Python)
• Knowledge about classical control and modern control

PREFERRED QUALIFICATIONS

• Knowledge about Nastran/FLDS
• Knowledge about mass properties and fem mass modelling
• MSc or Phd in flight mechanics, aerodynamic or computation solid mechanics
Avionics and Mission Systems
Software Design Engineer

RESPONSIBILITIES

- Develops software requirements and validation verification methods, qualification, certification with authorities,
- Perform Software development and design activities,
- Responsible for the software design and verification,
- Manages software architecture development and functional allocation activities,
- Defines software specifications,
- Prepare related software plans,
- Performs software integration activities,
- Defines software test requirements and analysing their results,
- Performs modelling and simulation activities,

REQUIRED QUALIFICATIONS

- Graduation from Electrical and Electronics, Electronics, Electronics and Communication or Computer Engineering departments
- Knowledge about software development processes and models
- Experience in C, C++ programming
- Knowledge about model based software development
- Knowledge about object oriented design methods and design templates
- Experience in real time operating system and embedded software
- Experience in software analysis, unit testing
- Knowledge and experience about ARINC-653 and POSIX

PREFERRED ADDITIONAL QUALIFICATIONS

- Knowledge and experience about DO-178B / C
- Experience in safety critical software development in aviation projects
- Knowledge and experience about software verification processes and methods
- Knowledge about software framework architectures
- Knowledge about automation and script languages (Groovy, Python, Perl etc.)