



## Position Description

<b>Position</b>	Senior Software Integration Engineer		
<b>Reports to</b>	Head of Systems and Electrical Engineer		
<b>Company</b>	<a href="#">Martin Aircraft Company Limited</a>	<b>Date:</b>	05/10/2017
<b>Location</b>	39 Ballarat Way, Wigram, Christchurch 8042		

### Primary Function of the Position

Ensure software products are developed and tested for intended purpose by contributing technical requirements, system designs, coding, and system integration for Flight Control System.

### Purpose

The Senior Software Integration Engineer, as part of the Systems Team, is responsible for developing, implementing and verifying. The role is focused on the avionic component development such as the flight control system, navigation system, data link and mission computers. The role holder will have contact with all internal staff, external contractors and suppliers, customers, industry experts and regulatory organizations.

He/she will be responsible for:

- System Requirements derivation
- Software Requirements development with Suppliers
- Code Development
- Code Reviews
- Hardware Integration and Test in verification of Unit requirements complied
- Developing, assessing and analysing design concepts in respect to feasibility, performance, manufacturing, reliability, risk and operation of the product
- Design, documentation and maintenance of system architecture
- Planning and executing product design testing in collaboration with the Design Substantiation and Flight Operations teams
- Developing technical solutions and working with external designers and companies on the delivery of subject matter design services

Key Performance Areas	Performance Expectations
<b>Systems engineering</b>	<ul style="list-style-type: none"> <li>• Plan, design, develop and verify aircraft flight and mission critical systems</li> <li>• Establishing and evaluating technical performance measures: performing studies, developing functional flows and defining system interfaces</li> <li>• Identifying and resolving problems</li> <li>• Utilizes own expertise and team input to make judgments on the technical approach to system development and verification</li> <li>• Requirements definition, testing and traceability matrix development</li> </ul>
<b>Avionics and Flight Control system design and development</b>	<ul style="list-style-type: none"> <li>• Development within internal resource or collaborating with external partner companies throughout the systems engineering lifecycle</li> <li>• Design of Integration of sensors/system command &amp; control and mutual support for multiple types of platforms within entire aircraft.</li> <li>• Deriving, allocating, and managing requirements for software &amp; hardware components</li> </ul>
<b>Product Design</b>	<ul style="list-style-type: none"> <li>• Work in conjunction with internal and external Subject Matter Experts (SME) on flight control system and software design.</li> <li>• Design and develop solutions that meet product requirements, in line with project requirements.</li> <li>• Software Code is built, structured and documented to enable effective verification and maintenance.</li> <li>• Internal and in-field events are assessed as they relate to product design.</li> <li>• All design calculations and design decisions are reviewed and documented.</li> <li>• Changes to impacting on designs are systematically assessed and managed.</li> <li>• Management is advised and recommendations made on product design matters.</li> <li>• COTS Products are identified, assessed, selected, and implemented to meet the requirements in the most effective manner</li> <li>• Changes to software (source and compiled code) are managed and traceable.</li> </ul>

Key Performance Areas	Performance Expectations
<b>Documentation</b>	<ul style="list-style-type: none"> <li>• Design activities are documented, and provide objective evidence in the design process.</li> <li>• Audit trails link design outputs with design inputs.</li> </ul>
<b>Design Quality Assurance</b>	<ul style="list-style-type: none"> <li>• Processes and procedures related to system and SW &amp; HW design are effective, follow required industry standards, are continuously improved and documented.</li> </ul>
<b>Health and Safety</b>	<ul style="list-style-type: none"> <li>• MACL's H&amp;S policy is followed and supported at all times.</li> <li>• All incidents are reported.</li> <li>• Hazard identification and risk mitigations for processes and equipment used by the Design Team are effective.</li> <li>• Unsafe equipment and/or unsafe work behaviour is addressed immediately</li> </ul>

#### Additional Information Relevant to the position

Promotional opportunities open:

- Other senior engineering roles
- Systems Team Lead
- Director of Engineering

Training opportunities include:

- Technology training
- Other relevant training to the position

#### Qualifications and Experience

- Relevant tertiary qualification (BE, BE honours, ME) in Software Engineering or related fields is required. This can be Aeronautical, Mechanical, Mechatronics or Controls Engineering
- A minimum of 5 years of experience in Software development, prefer extensive exposure to all layers / stacks
- Broad understanding of mechanical, electrical and electronics hardware, and manufacturing electronics technology
- Experience and background in system engineering of vehicles, aircraft or similar systems
- System Design and Integration experience. Creating system design options, system architectures, interfaces and integration approaches to achieve product requirements
- Engineering and Technology – Knowledgeable about engineering principles and processes involved in the life cycle of products

**Personal Qualities**

- Conscientious
- Self-motivated with attention to detail
- Self-managing
- Good listener with strong interpersonal skills

**Skills**

- Knowledge and experience working with CAN/RS485 communication Python scripting skills
- Knowledge and experience programming C and C++.
- Ability to program in Python.
- Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Operations Analysis — Analysing needs and product requirements to create a design.
- Critical Thinking — Using logic and reasoning to identify data, conclusions or approaches to problems.
- Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Writing – use language, pictures and numerical information to document effectively.

**Abilities and Behavioural Competencies**

- Able to plan a task or project realistically, allocating time to prioritise and provide for contingencies.
- Can look ahead and make contingency plans and develop alternative options.
- Can analyse very abstract, subtle and undefined problems and information.
- Can analyse information on a conceptual level, as well as displaying a detailed approach.
- Able to effectively work with a variety of people.
- Able to facilitate discussions on trade-offs and limitations.

**Young Company Requirement**

Note that MACL is still a small, young company. All members of the team have to be prepared to be flexible and support the Company in whatever capacity as necessary. It will also be necessary for the role holder

	to take a practical approach in supporting the development of the company and its products.
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**Key Selection Criteria:**

- 1) Experience in Software Design Development
- 2) Programming skills, to industry coding standards
- 3) Experience Software Requirements Writing
- 4) Embedded Hardware understanding
- 5) Personal and Interpersonal skills and abilities

**Health & Safety**

- 1. All staff must be conscious of potential safety problems at all times.
- 2. A Health and Safety Policy is in place within Martin Aircraft Company Limited. Instructions regards safety given by the Health and Safety representatives must be followed at all times.

**Non-Limitation Clause**

This job description is not intended to be a complete or limiting description of the functions that the employee may reasonably be requested to undertake both within and outside of the normal hours of work.

**ACKNOWLEDGMENT**

I have read and understand the above job description.

Employee Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_