



# POSITION DESCRIPTION

<b>Position Title:</b>	Scientist: Signature Modelling for Virtual Environments – S&T Level 3
<b>Position Reference Number:</b>	ECRAD007b
<b>Division</b>	Aerospace
<b>Position Classification:</b>	S&T3-4 below
<b>Position Location:</b>	Fishermans Bend, Vic
<b>Security Level:</b>	NV 1
<b>Enquiries:</b>	Nigel Smith ( <a href="mailto:nigel.smith@dst.defence.gov.au">nigel.smith@dst.defence.gov.au</a> )

## Academic Disciplines

<input type="checkbox"/> Aerospace/ Aeronautical Engineering, Naval Architecture	<input type="checkbox"/> Chemical, Radiological, Biological, Food sciences	<input type="checkbox"/> Materials Science
<input type="checkbox"/> Computer Sciences, IT, Software Engineering, Telecommunications	<input type="checkbox"/> Mathematics and physics	<input type="checkbox"/> Psychology and Social Sciences
<input type="checkbox"/> Mechanical and Mechatronic Engineering (including robotics)	<input type="checkbox"/> Electronic/ Electrical Engineering	<input type="checkbox"/> Other

## Position Overview

Under limited direction and as part of teams, the successful applicant will be required to integrate high-fidelity aerospace infra-red (IR) signature models for aircraft and missiles into a variety of real-time simulation environments. These systems will be used for training and experimentation, through to operations analysis. The successful applicant will expand their extant knowledge of numerical modelling and/or virtual simulation, with skills specific to IR signatures and Defence virtual environments. The applicant’s team may be called upon to develop or refine Machine Learning techniques relevant to signature generation and exploitation in virtual environments.

## Position Duties

As part of a multidisciplinary team:

- Work collaboratively and operate as an effective team member undertaking research and development in areas appropriate to meet Defence stakeholder requirements;
- Support the development and implementation of software to appropriately integrate and exploit high-fidelity IR signature datasets in a range of different real-time virtual environments;
- Liaise scientifically and technically between those responsible for development and generation of IR signatures and those responsible for the development and operation of virtual environments;
- Compute aircraft and missile IR signature datasets for Defence partners;

## Other Requirements

Demonstrated knowledge and appropriate experience in some or all of the following areas:

- Numerical computation of physical processes (eg. CFD, FEA) preferably pertaining to aerospace signatures or propulsion;
- Virtual simulation of real-time real-world physical environments for training or experimentation;
- Development of computer software using conventional programming languages or scripts.

Appointees will be initially be engaged on a Baseline security clearance with an upgrade to a Negative Vetting (NV1) Security Clearance required upon commencement.