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| **Job Title:** | Research Fellow in Advanced Signal Processing Techniques for Future Satellite Communications Systems |

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| **Responsible to:** | Dr Farbod Kayhan |

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| **Responsible for:** | Not applicable |

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| Job Summary and Purpose: |
| To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator. |

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| Main Responsibilities/Activities |
| To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include laboratory experiments, computer-based simulations, library research, critical evaluation and interpretation.Using initiative and creativity to identify areas for development of new research methods and extend the research portfolio. Analysing and interpreting results of own research. Writing up results and preparing papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results and personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research.Continually update technical knowledge and skills, and translate knowledge of advances in the area into the research activity.To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control.To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder’s area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate. The post holder may occasionally be required to supervise more junior research staff.  |

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| **Person Specification**  |
| The post holder must have:A PhD degree (or equivalent) or close to completing a PhD degree in Electronic Engineering, Physics or other areas related to RF/Microwave Engineering. Postdoctoral research or industrial experience would be an advantage.The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.  |

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| **Relationships and Contacts** |
| Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder may work on original research tasks with colleagues in other institutions. |

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| **Special Requirements** |
| N/A |

### All staff are expected to:

* Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.
* Help maintain a safe working environment by:
* Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand
* Following local codes of safe working practices and the University of Surrey Health and Safety Policy
* Undertake such other duties within the scope of the post as may be requested by your Manager

**Addendum to Profile**

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| **Job Title:**  | Research Fellow in Advanced Signal Processing Techniques for Future Satellite Communications Systems |

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| Job Summary and Purpose: |
| This information sheet should be read in conjunction with the accompanying generic Research Role Profile and will be used for shortlisting processes. More specifically the post holder will be expected to:Work on the industrial collaborative project, “Space MIMO: Advanced signal processing techniques for satellite communications in 6G era.” The post holder will be part of a group that focuses on signal processing for satellite communications in 5G and 6G. |

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| Main Responsibilities/Activities |
| The post holder will be expected to develop and validate efficient algorithmic for current and future satellites, focusing on all aspects of the communications including ground station, space segment, payload and orbital design, displaying a high degree of autonomy. They will find novel solutions to complex problems, as defined by standardisation committees. The post holder will be expected to be able to set, define and work towards achieving targets, disseminate results and document work performed. |

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| **Person Specification**  |
| The post holder must have:* A PhD degree (or equivalent) or close to completing a PhD degree in Electronic Engineering, Physics, mathematics or other areas related to RF/Microwave Engineering. Postdoctoral research or industrial experience would be an advantage.
* Very strong expertise in advanced signal processing for wireless and/or satellite communication systems.
* Recent and strong research experience in the development of advanced physical layer algorithms and systems.
* Very good understanding of the theoretical and practical aspects of state-of-the-art physical layer and MIMO systems.
* Very good understanding of state-of-the-art transmitter and receiver architecture in wireless communications.
* Excellent track record of publications in highly ranked journals and conferences in at least one of the above fields.

**It would be desirable but not essential for the post holder to also have:*** Excellent programming skills.
* Prior experience in research on non-GEO satellites and satellite constellation design.
* Prior knowledge of different types of cooperative MIMO.
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| **Relationships and Contacts** |
| Direct responsibility to the principal / co-investigator or academic supervisor(s). There may be additional reporting and liaison responsibilities to the external project partner. |