Marie Skłodowska-Curie Fellows in Real Time GNSS Positioning Research

Applications are invited for the above Early Stage Researcher (ESR) posts as part of an exciting MARIE SKŁODOWSKA-CURIE ACTIONS Innovative Training Network (ITN) funded by the EU Framework Programme for Research and Innovation HORIZON 2020, entitled **"TREASURE" - T**raining, **RE**search and **A**pplications network to **S**upport the **U**ltimate **R**eal time high accuracy **E**GNSS solution. EGNSS stands for European Global Navigation Satellite Systems and the research will aim at developing advanced models and algorithms to achieve real time high accuracy positioning through the integration of all available GNSS systems, such as the American GPS, the Russian GLONASS, the new European Galileo and the Chinese BeiDou.

We are looking for outstanding and highly motivated scientists who will form a critical mass of top experts in this field in Europe and therefore become high flyer candidates for future employment in related industry and academia.

Candidates must have a background in a numerate discipline such as Mathematics, Physics, Engineering or a closely related subject, together with a keen interest in areas including Physics, Geophysics, Mathematics, Statistics, Modelling, Forecasting, Electronics, Signal Processing, Geodesy, Surveying, Mapping, Navigation, Imaging, Data Management, Data Assimilation, Geo-informatics, Remote Sensing, and Telecommunications. An ability to publish research papers and to present work at seminars, workshops and conferences is required. Experience in IT and computer programming, as well as a willingness to travel and undertake fieldwork, are essential for these posts. Excellent communication and teamwork skills are also fundamental to the success of this project, which will include additional training that will equip the fellows for research careers in the modern academic world and prepare them for interaction with industry.

Salary will be within the range: approximately € 26,000 to € 38,000 per annum (depending on location and family status).

These 13 posts are available on fixed-term contracts for 36 months with a start date in either June or September 2017, depending on the host institution (see table below). All candidates must comply with the Marie Sklodowska-Curie Actions eligibility requirements (please see page 58-60 on http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-msca_en.pdf). In summary, candidates:

- Must be within the first four years (full-time equivalent) of their research career
- Must not yet have been awarded a doctoral degree
- Must carry out trans-national mobility and not have resided or carried out their main activity (work, studies, etc.) within the host country for more than 12 months in the three years immediately prior to recruitment (short stays such as holidays are not taken into account).

Successful candidates are expected to enrol on a PhD programme at the host institutions (or at the Universities designated in the table below if the host institution is not an academic organisation).

For further information please contact Professor Cathryn Mitchell, TREASURE Recruitment Manager (email: c.n.mitchell@bath.ac.uk) or Dr Marcio Aquino, TREASURE Coordinator (email: marcio.aquino@nottingham.ac.uk), with the keywords "TREASURE APPLICATION" in the subject line.

To apply please first send a CV to Professor Cathryn Mitchell, Dr Marcio Aquino and to the specific host institution contact person (see table below) indicating which position you are applying for, observing the Marie Skłodowska-Curie Action rules for mobility. Subsequently, formal applications must follow the application process of the individual institutions. The first round of applications will be assessed after 31 January 2017. The final **closing date for applications will depend on the host institution.**

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TREASURE comprises a consortium of leading Universities and Research Centres in Europe, with associated partners from top European industry stakeholders, as well as industry and academia from as far afield as Australia, Brazil, Canada, Hong Kong and the US. TREASURE industrial partners will play a central role in the project and all researchers will be expected to undertake secondments which will facilitate meaningful interaction with them.

Collectively, GNSS (Global Navigation Satellite Systems) includes systems such as the US Global Positioning System (GPS) and the Russian GLONASS, as well as the new, under development systems like China's Beidou and, most importantly, Europe's Galileo. Galileo is what we call the European GNSS (EGNSS) and is to be fully operational around 2020. GNSS have a multi-billion Euro world-wide industry - the EC has predicted an annual global market for GNSS of €300bn by 2020.

Although GNSS is routinely used in smartphones and in-car navigation with an accuracy of a few meters, it can deliver positioning accuracy of centimetres in real time if advanced techniques and error modelling are employed, especially if different systems (e.g. GPS, GLONASS, Galileo, Beidou) can be used in combination, in what is known as 'multi-GNSS'. TREASURE will provide coordinated multi-sectoral and multi-disciplinary cutting-edge research that will address this through an integrated programme of academic and industrial training which will include introduction to real-life applications of high-accuracy GNSS positioning and relevant topics related to the different projects to be undertaken by the individual ESRs. The training will also include a comprehensive set of summer schools, workshops and secondments.

TREASURE's host institutions, Universities providing the PhD training and project titles are listed below with the corresponding ESRs they will recruit:

Host/website/contact	Fellow	Start date	University providing PhD training/Project
University of Nottingham, UK www.nottingham.ac.uk/ngi marcio.aquino@nottingham.ac.uk	ESR7	**Sep/2017**	University of Nottingham/Ionospheric scintillation sensitive tracking models and mitigation tools
	ESR8	**Sep/2017**	University of Nottingham/Real time PPP and RTK algorithm development
Politecnico di Torino, Italy http://www.polito.it fabio.dovis@polito.it	ESR5	**Sep/2017**	Politecnico di Torino/Carrier-based software receiver
	ESR6	**Sep/2017**	Politecnico di Torino/Interference detection and mitigation
Istituto Nazionale di Geofisica e Vulcanolog, Italy www.ingv.it giorgiana.defranceschi@ingv.it Vincenzo.romano@ingv.it	ESR1	**Jun/2017**	University of Salento/TEC and Scintillation modelling and forecasting
	ESR11*	**Sep/2017**	University of Salento/ICT Technical Feasibility Study
University of Bath, UK www.bath.ac.uk c.n.mitchell@bath.ac.uk	ESR2	**Jun/2017**	University of Bath/Ionospheric Tomography and data assimilation
	ESR3	**Jun/2017**	University of Bath/Travelling Ionospheric Disturbance (TID) Modelling and Mitigation
Delft University of technology, The Netherlands www.tudelft.nl A.A.Verhagen@tudelft.nl	ESR4	**Jun/2017**	Delft University of technology /Tropospheric models
Fugro Intersite, The Netherlands www.fugro.com Hans.Visser@fugro.com	ESR9	**Sep/2017**	Delft University of technology /Fast and reliable multi-GNSS PPP with integer ambiguity resolution
Geo++GmbH, Germany www.geopp.de martin.schmitz@geopp.de	ESR10	**Sep/2017**	Leibniz Universität Hannover/Improved high accuracy RTK positioning
Noveltis SAS, France www.noveltis.com Arnaud.Ginestet@noveltis.fr	ESR12*	**Sep/2017**	Toulouse Business School/Market introduction of the TREASURE conceptual prototype
Deimos Engenharia SA, Portugal www.elecnor-deimos.com pedro.silva@deimos.com.pt	ESR13	**Jun/2017**	Instituto Superior Tecnico/Real Time provision of high accuracy orbits and clocks

* A broader range of background topics will be considered to assess candidates for these posts, including qualifications in business studies and marketing depending on the post