RadioNet support for engineering events
Application form

EVENT INFORMATION	
EVENT TITLE	Space Geodetic RF and Optoelectronic Instrumentation
EVENT PLACE	Madrid, University Carlos III
EVENT ORGANISER	Prof. Daniel Segovia Vargas
EVENT DATE	November 6-8, 2017
NO. OF PARTICIPANTS	60
TOTAL EVENT COST	3.000 €
OTHER SOURCES OF FUNDING	*DIFRAGEOS PROJECT, CAM (Madrid Region), SPAIN*
REQUEST *(max. 2,5 pages)*	
Requested contribution [EURO]	*1.500 €*
Use of the RadioNet contribution	*Financial assistance for speakers and attendees (1.000€), lunch and coffee break costs (400€), abstract worksheet printing costs (100 €).* *Financial assistance will be provided to invited speakers, firstly, and students, secondly.* *This workshop will comply with the ethical principles of the European Code of Conduct for Research Integrity.*
Topic	*The workshop aims to cover the development status of new instruments and devices (RF and Optoelectronics) for radio telescopes for earth and space stations all over the world to make highly accurate geodesic measurements (in the order of one millimeter for intercontinental measurements) and very high sensitivity astronomic observations. Different countries are currently starting different developments around the previous strategies by launching new geodesic stations that integrate new spatial geodesic techniques. Integrated for example in the field of the Global Geodesic Observation System (GGOS) in the International Association of Geodesic (IAG).* *High technological developments in RF and Optoelectronics instrumentation are needed. This proposal faces at these developments based on both high frequency electronic and/or optoelectronic approaches.* *Particularly, in order to provide radio telescopes with the required and improved techniques needed for geodetic VLBI, it is essential the design of new and high performance electronics in radiofrequency for antennas, receivers and accessory instrumentation. The design of these microwave components is a challenge for the international community in geodetic stations for the new standard VGOS. The design and construction of ultra broad band components (feeds, LNAs, vacuum windows,...), HTS filters prototype or auxiliary instrumentation (phase cal) will be a reference for new VLBI stations.* *In addition to the improvements in the microwave receiver, accessory instrumentation that allows getting better sensitivities, accuracy and calibration in astronomic and geodesic observations is needed. Optoelectronic techniques are*

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	an option for that purpose. *The required accuracies in determining the Earth position are not possible unless complementary techniques are introduced. Then the coordinated observation with techniques such as GNSS will make possible systematic errors. Then, optic accelerometers (based on electronic sensors and on photonic integrated circuits) could detect the movement of structures improving the performance of current accelerometers. These new optic accelerometers could be able to generate and distribute very high quality signals.* *We hope that all above will open new research lines in fundamental areas in the Science of Earth fields.*
Cross-disciplinary	*The workshop will cover two main topics: one related to the RF and the other to optoelectronic developments and techniques. Then, as a first cross-disciplinary goal, the synergies between two different fields will be explored by participants.*
Impact	*The workshop is focused to engineers involved in the state of the art space geodetic technological developments. It is expected that engineers from geodetic observatories and from collaborating institutions such as Universities and Companies will attend it.* *The main goal of the workshop is to cover radiofrequency and optoelectronics space geodetic techniques and developments, mainly VLBI, but also other related techniques could be included.* *It is expected that the workshop will show the state of the art of technological developments related to geodetic VLBI, such as broad band, phase cal generation or local tie between space geodetic techniques.* *Companies could also show the status of the measurement and characterization instrumentation and also the simulation tools that are needed for these developments.*
Ethics	*This workshop will comply with the ethical principles of the European Code of Conduct for Research Integrity*

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