RadioNet support for **organisers** of technical events
Application form

EVENT INFORMATION	
EVENT TITLE	LOFAR Long-Baseline Busy Week
EVENT PLACE	Dublin, Ireland (webpage TBD)
ORGANISER'S INSTITUTE	University College Dublin Sean Mooney (sean.mooney@ucdconnect.ie)
EVENT DATE	02–06 December 2019
NO. OF PARTICIPANTS	11
TOTAL EVENT COST	€814
OTHER SOURCES OF FUNDING	UCD will waive the room booking fee.

REQUEST *(max. 2,5 pages)*	
Requested contribution [EURO]	€814
Use of the RadioNet contribution	€335.50 – coffee (€3.05 per cup for 11 people twice per day for 5 days) €478.50 – lunch (€8.70 per lunch for 11 people once per day for 5 days) Prices quoted from the UCD restaurant hospitality menu.
Topic	This workshop will bring together expert and novice radio astronomers to (i) learn how to produce high resolution images with LOFAR and (ii) implement the final details of the long-baseline pipeline. With this specialised pipeline, observations from an all-sky survey can be post-processed. During the week, there will be tutorials for novices and discussions with all interested parties on the large-scale processing of survey data. This workshop is useful for newcomers interested in analysing LOFAR long-baseline data and postprocessing the survey data at the highest resolution will be of scientific benefit to the community.
Relevance for RadioNet	There are three aspects in terms of the relevancy for RadioNet. Firstly, it is an opportunity for interested parties to learn how to reduce LOFAR long-baseline observations. They can attend the busy week and learn directly from experts in the field. Secondly, the infrastructure being developed (i.e the pipeline software), is a tool that already makes the data reduction straightfoward and it is freely available online. This busy week will give us an opportunity to add to improve the software greatly. Finally, we will use the final pipeline to produce a radio survey at 140 MHz with a resolution of 0.2", by post-processing observations already taken for the LOFAR Survey at 6" (which exclude the long-baselines). Such a data product will remain invaluable even in the era of the SKA.

RadioNet has received funding from the EU's Horizon 2020 research and innovation programme under grant agreement No 730562

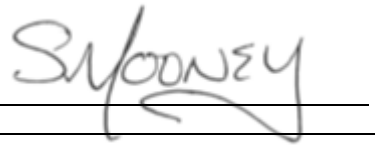
Impact	Reducing LOFAR long-baseline data, i.e. using the international stations, is technically challenging. It represents a steep learning curve for those wishing to reduce observations. The LOFAR Long-Baseline Working Group have been developing a pipeline to automate the process. Most of the pipeline has been written, and by the time of this meeting it is anticipated that we will be in the testing phase, where we work to make it robust to errors. This will increase the usability of the software. A version of the long-baseline pipeline is already the de facto method for reducing LOFAR long-baseline data, but the final release will be even more flexible. While this represents a vital tool for the RadioNet community, we will also use the pipeline to post-process the LOFAR Survey data. These data currently use the short baselines only, achieving 6 arcsecond resolution. We will produce a survey with the same sky coverage but with a resolution of 0.2", and the long-baseline pipeline is the tool to do that. Such a survey would have major scientific value to many radio astronomers, as it will contain fine scale structures.
Ethics	• There will be introductory talks on the first morning to provide an overview of the status of the current pipeline. These speakers will be invited speakers from the group who are experts on the topic. We will strive for gender balance on this speaker list. • As well as the core development team, new PhD students (or other interested parties) who wish to start analysing LOFAR long-baseline data can also attend. In this respect, minorities are particularly encouraged to apply. (One of the benefits of having the meeting in Dublin is that airfare is particularly inexpensive from most EU capitals, making it accessible for those with minimal funding.) • We will strive to be transparent in every respect and we will adopt the policies of open science. All the software being developed is freely available on GitHub.

Privacy Policy: *With signing this template and applying for RadioNet funding, I accept the Privacy Policy of RadioNet, which is based on the EU General Data Protection Regulation (GDPR).*

Place & Date:

Dublin, 01 February 2019

Signature of the applicant:



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