

Memorandum of Understanding for the LOFAR:UK Consortium

VERSION IV: Aug 11th 2006

This memorandum of understanding ("MOU") is between all the "core" and "associated" partners (as defined below) of the LOFAR:UK consortium. All partner institutes, departments and organization, and their members, agree to abide by the rules and structure outlined in this MOU and will notify all partners immediately if they wish to terminate this arrangement.

This is not a legal document but simply outlines rules and procedures for organizing the LOFAR:UK consortium.

Background

LOFAR (www.lofar.org) is a 21st century radio telescope that will use ~15000 omni-directional antennas to survey the northern sky. LOFAR is a Dutch-led project, but there is growing European interest and involvement, especially to increase the baseline of the telescope by adding stations of antennas far from the main core located in Holland. LOFAR starts preliminary operations in the summer of 2006, with the full European array coming online in 2010.

The LOFAR:UK consortium is a grouping of researchers and educators from UK university departments, research institutes, educational organizations, funding agencies and industry, who together plan to work with the main LOFAR team to construct and operate a number of LOFAR satellite stations within the British Isles. The LOFAR:UK consortium will also help to initiate and coordinate LOFAR scientific research, both within the UK and in collaboration with the whole LOFAR team.

Further details of the planned activity of the LOFAR:UK consortium can be found in accompanying documents in the Appendix of this MOU.

LOFAR:UK Organizational Structure

The LOFAR:UK consortium will be managed by the LOFAR:UK Management Council ("MC") which will be composed of representatives from the "core" partners (see definition below). Each "core" partner will have at least one MC representative, but "core" partners can request additional members of the MC based on their overall contribution to the LOFAR:UK consortium (see definition below). The MC will decide on all such requests for additional MC members. There will also be one additional member of the MC who will represent the interests of all the "associated partners". The "associated" partners will select their own representative, which will be ratified by the MC.

The MC will be chaired by the LOFAR:UK Project Leader who will be drawn from the membership of the MC and be elected into this position by the MC. The MC may also elect a Deputy Project Leader if it wishes, who again will be drawn from the MC membership. The MC

will further elect two Project Coordinators (PCs); one focused on science ("Scientific Coordinator") and the other focused on technology and technical issues ("Technical Coordinator"). These coordinator positions can be filled by anyone within the LOFAR:UK consortium, and they would sit on the MC as non-voting members.

All these positions will be renewed every two years through elections within the MC.

The Project Leader (PL), and Deputy PL, will be responsible for representing the interests of the whole LOFAR:UK consortium both internally (i.e. between partners and members of the consortium), and externally. The PL will be the main point of contact with funding agencies and the main LOFAR collaboration, and thus responsible for updating the whole LOFAR:UK consortium. The PCs will be responsible for motivating and organizing the LOFAR:UK science and technology programme, as well as organizing meetings and developing communication methods across the collaboration. The MC will define the exact roles of the PCs and PLs, and they will report directly to the MC.

The LOFAR:UK MC will meet regularly (face-to-face or electronically) and is responsible for overseeing the construction, operation and management of the LOFAR:UK. The MC will debate all aspects of the LOFAR:UK consortium including how the LOFAR:UK stations will be operated, the allocation of any LOFAR and LOFAR:UK observing time, and the archiving of data in the UK.

The MC has the power to mediate and coordinate efforts between partners of the consortium. The MC will operate by majority voting with each member of the MC having one vote. The PL (as chair of the MC) has the "deciding vote" if required. The MC will post regular minutes, taken by a designated member of the MC, of its meetings to the whole LOFAR:UK consortium.

The MC has the right to change the organization of the LOFAR:UK consortium as it wishes, and change all, or part, of this "MOU" after a full discussion with the partners and a vote.

Agreed Rules of Operation

We outline below general rules of operation for all members of the LOFAR:UK consortium.

1. All members of LOFAR:UK agree to announce to the whole LOFAR:UK consortium any proposals they plan to submit based wholly, or partly, on LOFAR data (both from the LOFAR:UK station and the whole of LOFAR), operations, technology and general information. This covers all types of proposals to funding agencies, private investors, industrial partners, private trusts, non-profit organizations, telescopes time allocation panels, observatories, satellites, national facilities, supercomputer centers, etc. These announcements will be sent to the whole team, via email, at least one month before submission of the proposal and do not constitute an "invitation to collaborate". The MC will mediate any conflicts or concerns. (*"If in doubt, announce it"*)
2. All public documents making use of LOFAR data and involving members of the LOFAR:UK consortium (journal papers, popular articles, webpages, conference

proceedings, technical reports etc.) should be sent to the whole LOFAR:UK consortium for review and comment on at least two weeks before submission and/or release to the public. If there are no unresolved problems with the submission, the authors are free to submit the document after this review period. The PL will resolve any issues with such documents, with help from the MC if required.

3. All science and technical projects involving LOFAR:UK (both partly and wholly) should be announced to the whole LOFAR:UK consortium well in advance of the project beginning. This includes research studentships, postdoctoral fellowships, visitors, sabbaticals etc.
4. Membership of the LOFAR:UK consortium will be defined to include all permanent staff at "core partner" institutes, departments and organizations, Students supervised by these staff (at the "core partners") are also members by virtue of their supervisors membership. All temporary staff (Postdoctoral researchers, postdoctoral fellows, visitors, part-time staff) are not automatically members of LOFAR:UK and their membership will be considered by the MC on a case-by-case basis. Likewise, members from "associate partners" will be voted into the consortium on a case-by-case basis by the full MC. Members from non-partner institutes, departments and organizations will be considered by the MC on a case-by-case basis and can be added to the LOFAR:UK consortium.
5. All members of the LOFAR:UK consortium agree to abide by these rules and the decision of the MC.

Definitions

- A "core" partner is an institution, department or organization that has stated their clear intention, by signing this MOU, to provide the LOFAR:UK consortium with significant resources. Such resources include one (or more) of the following:
 1. An initial financial investment of £50k for the purchase of the LOFAR:UK stations. Lower amounts will be considered after a full discussion with the MC. *This is a "one-off" payment with no requirement for further financial contributions.*
 2. A contribution to the operations of the LOFAR:UK stations, including maintenance of the equipment and software (personnel costs), running costs (electricity), rental costs (internet usage). The MC will decide the overall equivalent monetary value of such contributions and decide if it constitutes the required level for "core" partnership. *Such contributions can be in addition to, or instead of, the initial financial investment above.*
 3. Any significant "in-kind" contributions, including the donation of land to host LOFAR:UK stations; donation of expertise of key personnel to help in the construction, maintenance and operation of LOFAR:UK; donation of equipment or other resources critical to the construction, maintenance and operation of LOFAR:UK. The MC will decide the overall equivalent monetary value of such contributions and decide if it constitutes the required level for "core" partnership. *Such contributions can be in addition to, or instead of, the initial financial investment above.*

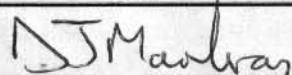
Each "core" partner will have at least one representative on the LOFAR:UK MC. Additional members of the MC can be requested based on providing further resources than those outlined above. This could include, but is not limited too, a greater than £50k initial investment, or more than one of the above mentioned contributions, etc. The MC will decide on such requests for additional members of the MC.

- An "associated" partner is any institute, department or organization that has expressed an interest in joining LOFAR:UK and would like to remain involved. This could include partners interested in:
 1. Raising money to help them become core partners (as defined above).
 2. Provide in-kind scientific personnel and expertise.
 3. Helping in the scientific exploitation of the LOFAR data, including data storage, management and distribution, software development.
 4. Broadening the scientific base of the LOFAR:UK consortium to include other research disciplines, e.g. inter-disciplinary research.
 5. Becoming industrial partners to explore possible spin-offs of the technology.
- A "member" of the LOFAR:UK consortium is anyone determined to be a legitimate member of the consortium either via their host "core" partner or via approval from the MC. Membership can also be removed by the MC. All members of LOFAR:UK have the same rights, which will be defined elsewhere in this document.

Signatures

The table below lists the signatures of this MOU, all of whom have read this document and agree to abide by the rules and management structure outlined herein for the LOFAR:UK consortium. This MOU only covers the formal creation and organization of the consortium and does not cover:

- Regulations required to administer any financial transfer and interactions between the partners, members and other organization. The MC will consider such issues in the future.
- Negotiations required with the main LOFAR collaboration to determine the nature of their collaboration with the LOFAR:UK. The MC and project leader will start such negotiations and make recommendations to the whole LOFAR:UK consortium in the future.

Core Partners	Department	Authorized Signature	MC Representative
UNIVERSITY OF SHEFFIELD	PHYSICS & ASTRONOMY		PROF. V. S. DHILLON

PROF. D. MOWBRAY
HEAD OF DEPARTMENT