

Agreement regulating the contribution of IT-LOFAR Consortium to the central operations of the International LOFAR Telescope and the usage by the IT-LOFAR Consortium of the international LOFAR Telescope, as connected to membership of IT-LOFAR in the Stichting ILT.

PREAMBLE

This agreement is made between

- Stichting ILT (Oude Hoogeveensedijk 4, 7991 PD Dwingeloo, The Netherlands), hereinafter called "Stichting ILT", and
 - Istituto Nazionale di Astrofisica (viale del Parco Mellini 84, 00136, Roma RM, Italy), hereinafter called INAF, acting in representation of the forming IT-LOFAR Consortium, hereinafter referred to as IT-LOFAR,
- together referred to as "The parties".

The Stichting ILT aims at enabling integrated operation of the International LOFAR telescope with the goal of maximising the scientific productivity for the national consortia involved and for the global astronomy community.

INAF is the leading body for Astronomy and Astrophysics in Italy; it coordinates 16 research Institutes and Observatories spread on the Italian territory, and a network of associate scientists from Universities. INAF is aggregating IT-LOFAR, as a national consortium collecting INAF research Units as well as external groups from Italian Universities that are interested in the scientific exploitation of the LOFAR telescope. Memberships, goals, and other aspects of IT-LOFAR are internally organised to suit local needs. IT-LOFAR optimises the overall scientific return from LOFAR to the full Italian astronomy community, in accordance with the statutes and the policies set by the Board of the Stichting ILT. IT-LOFAR will be the conduit of all resources as contributed to the Stichting ILT by the individual Italian partners.

INAF has signed an agreement with ASTRON. It specifies a participation valued at € 400.000 in the development of upgrades of LOFAR within the LOFAR2.0 programme managed by ASTRON and overseen by the ILT Board. This development participation has been arranged to serve as a one-time fee for the entry of IT-LOFAR into the ILT. A second agreement with AstroTec Holding covers the purchase of one LOFAR2.0 station when available. In addition, IT-LOFAR has expressed the wish of pursuing funding to purchase a second LOFAR2.0 station in the future. With the present agreement on operational participation, IT-LOFAR wishes to complete the ILT statutory requirements to allow admission by the ILT Board as a full voting member, and to receive a share of the ILT observing resources, before having an operational LOFAR station. This agreement regulates the rights and obligations of the parties in conformity with the Stichting ILT constitution and the further policy of the ILT board. This agreement therefore defines the terms of the participation of IT-LOFAR in the activities of the ILT.

ILT Operations is hereinafter referred to as the team in the Radio Observatory at ASTRON, which is the coordinating operational entity responsible for the implementation of the functionality of the International LOFAR Telescope in accordance with the overall policies of the ILT Board.



Article 1. Membership and Representation of IT-LOFAR.

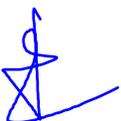
- 1.1** INAF is aggregating the IT-LOFAR Consortium at the time of signing of the present agreement. The president of INAF has confirmed its willingness to accept into IT-LOFAR partners in Italy willing to exploit LOFAR and to contribute to resources for LOFAR in Italy. A programmatic MoU has already been signed between INAF and the Università degli Studi di Torino (Dipartimento di Fisica).
- 1.2** The IT-LOFAR consortium will coordinate scientific, technical, and fund-raising aspects of the Italian participation in the ILT. To this end, IT-LOFAR will be open to incorporating any further Italian institutes where an interest in LOFAR may arise. IT-LOFAR will delegate one representative to function as voting member on the ILT executive board.
- 1.3** Changes in the membership of IT-LOFAR are an internal matter for IT-LOFAR, but the Stichting ILT should be informed of any changes forthwith. Such changes will not be reason for changing legal rights and obligations between Stichting ILT and IT-LOFAR, except where these relate to the number of stations.
- 1.4** INAF declares to be the coordinator and legal representative of IT-LOFAR and declares to be acknowledged as such by all members of IT-LOFAR. INAF will be the sole contact between IT-LOFAR and Stichting ILT for legal and financial issues. INAF accepts full responsibility for the annual contributions of IT-LOFAR to the Stichting ILT.
- 1.5** Transition of legal representation of IT-LOFAR.
The chairmanship of IT-LOFAR may rotate between the members in the future. However, a change of the legal representative towards the Stichting ILT requires prior written agreement with the Stichting ILT. A desired change should be announced by IT-LOFAR to the Stichting ILT at least six months before it is intended to take effect. Legal rights and obligations agreed between Stichting ILT and IT-LOFAR will not change in the event the legal representative will change.

Article 2. Duration of the agreement.

- 2.1** This agreement has a duration of 5 years, subject to articles 2.2 and 2.3, starting from (date of signature). Thereafter it shall be automatically extended one year at a time for so long as the IT-LOFAR consortium is a participant in the Stichting ILT, unless either Party gives notice of intended termination at least 15 months before the extension is due to take effect. Stichting ILT will notify IT-LOFAR 3 months in advance of each automatic contract extension.
- 2.2** The agreement can be terminated in writing by either party. In that case, the period of notice is one year plus the remaining portion of the current financial year which must be at least 3 months. A financial year is understood to span from Jan 1st to Dec 31st.

The ILT Board, in conformity with the aforementioned ILT constitution and its further policies, will decide on any effects of such termination by IT-LOFAR on ILT participation, and any consequences that impact IT-LOFAR. Any such consequences are a matter for that consortium.

- 2.3** At the time when the first Italian LOFAR station becomes operational this contract will be substituted by a Station Contract between the station owner (INAF) and Stichting ILT.



Article 3. Emergency termination.

- 3.1** Under exceptional circumstances, where through no fault of its own (e.g. financial crisis, damage or failure rendering continuation impossible) IT-LOFAR cannot reasonably be expected to meet its obligations, the ILT Board will, at the request of IT-LOFAR, allow earlier termination or adaptation and will, in conformity with the aforementioned ILT constitution and its further policies, and in consultation with IT-LOFAR, decide on the effects, terms and consequences of such an emergency termination or adaptation. Consequences, if any, that impact the national consortium IT-LOFAR, of which INAF is member, are a matter for that consortium.
- 3.2** In the case that, due to circumstances beyond the control of INAF and IT-LOFAR, any or both agreements INAF-AstroTec (on future station purchase) and INAF-ASTRON (on development collaboration) mentioned in the preamble are terminated before completion, this contract will be terminated. Stichting ILT will not refund IT-LOFAR or INAF for the financial contribution paid until that point. However, the ILT will then open negotiations on a contract analogous to a station contract, to allow IT-LOFAR to preserve its membership including an alternative investment of equivalent value to that of the two present agreements of INAF with ASTRON and AstroTec.

Article 4. Financial contribution.

- 4.1** The approved ILT operational budget for 2018 sets a yearly contribution, including all expenses for personnel, operations, and material costs, of € 92.500 per LOFAR station. IT-LOFAR will make an ILT contribution corresponding to one station in cash, starting from the date of signature of this contract, regardless of not having an operational LOFAR station. For the first calendar year the annual fee will be prorated to the date of entry.
- 4.2** The ILT board will decide upon the adjustment to the annual contribution level at least 3 months in advance of any financial year, taking into account the operational goals and applicable yearly inflationary factors including increases in salaries and energy prices. If, however, the total adjustment amounts to an increase of 4% or more of the budget for the previous year, it shall be subject to renegotiation of this contract with IT-LOFAR on an equitable basis.

IT-LOFAR will be notified of the proposed annual budget by Stichting ILT at least 1 month prior to any decision of the board on the budget.

- 4.3** The ILT board may decide, at least 3 months ahead of a financial year, to value and accept one or more specific in-kind contributions to the ILT operations, for a given period, in partial fulfillment of the annual contribution during the relevant period to the ILT budget of IT-LOFAR.

Where a contribution is agreed by the Board to be made partially or wholly in kind, then the type, terms, and conditions of each in-kind contribution and the respective agreed value shall be listed in an attachment to this contract. Such an attachment shall be updated for every financial year.

If IT-LOFAR wishes to change the composition of its annual contribution, IT-LOFAR should consult with Stichting ILT at least 3 months prior to the date on which the board intends to fix the next annual operations budget. This will lead to a contribution package proposed for approval by the ILT Board as part of the next annual ILT operations budget.

- 4.4** The cash contribution is payable in equal quarterly sums within the first month of each quarter (except for the first quarter, for which the payment will be due in March), or in a single yearly



instalment within the month of March. Stichting ILT will issue an invoice to INAF at the appropriate time.

Article 5. Distribution of observation resources.

- 5.1** National consortia receive a guaranteed fraction of observation resources for the ILT for their national community based on the total contribution received from that nation. Allocated ILT observing resources include time to observe with the ILT station network using standard modes, and ILT online and offline processing and storage capacity to execute standard pipeline processing of the data streams, and to store the corresponding data products on the ILT archive facilities; all in accordance with ILT science policies.
- 5.2** IT-LOFAR will have the same rights and obligations with regard to ILT observing time as any other full member of the ILT, from the date of signature of the contract. The distribution of available observing resources, with shares for all members including IT-LOFAR and also including an Open Skies fraction, will be calculated as if IT-LOFAR were contributing one operational LOFAR station (under current Board policy, IT-LOFAR would receive 2% of the total available observing time). The number of hours depends on operating conditions, but is projected to result in about 48 hours for IT-LOFAR per semester; for the first year this will be prorated to the date of entry.
- 5.3** The ILT Board policy on time allocation encompasses single-semester projects, and also a long-term project queue; for the latter, proposals from the full community are jointly reviewed on science merit by an expert panel, whose allocations are endorsed by the ILT Board. There is Open Skies time in the long-term queue, and it must be supplemented by Consortium time. Those Consortia which have been members of the ILT less than 5 years, must assign at least 30% of their reserved access to the long-term queue for uniform allocation by the ILT PC; this fraction increases to 70% after 5 years of ILT membership. However, there is nevertheless a minimum number of hours guaranteed for each consortium to support single-semester projects. This minimum reserved amount, depending on the number of stations, is displayed in the following table:

Minimum reserved hrs per semester for members in the first 5 years

	hrs
1 station	32.0
2 stations	48.0
3 stations	64.0
4 stations	80.0
>=5 stations	96.0

Minimum reserved hrs per semester for members after 5 years

	hrs
1 station	12.0
2 stations	24.0
3 stations	32.0
4 stations	40.0
>=5 stations	48.0

IT-LOFAR will therefore be eligible to 32 hours of reserved access time for single-semester proposals during the first 5 years after signature of this contract and will participate in the endorsement by the ILT Board of the collective long-term time allocations. Consortia can, in any case, decide to assign more time to the long-term queue, even up to 100% of their reserved access time.

Article 6. Coordination.

The partners agree to review the status, progress, and prospects of the collaboration in periodic consultations among the partners. The partners agree to hold technical and operational consultations, and to set up the appropriate joint panels, as needed to conduct their collaboration.

Article 7. Liabilities.

No Party shall be liable to any other Party for any indirect or consequential loss or similar damage such as, but not limited to, loss of profit, loss of revenue or loss of contracts. The Parties shall be liable to each other, indemnify and keep each other harmless against all other claims, actions, demands, suits, damages, costs and direct losses arising in connection with any intentional or negligent act, omission or wilful misconduct of the party, its employees or other persons working under its responsibility in the performance of this agreement. A Party's aggregate liability towards the other Parties collectively shall be limited to one hundred thousand (100.000) EURO unless such damage is caused by a wilful act or gross negligence. The parties will inform each other of their insurance (or self-insurance) provisions for third party liability.

Article 8. Disputes.

The Parties shall make all possible efforts to resolve any disputes between them by non-recourse to legal action.

a) Any disputes that they cannot reach agreement on by negotiation shall be submitted to a meeting of the board of the Stichting ILT with the attendance of a representative of IT-LOFAR. If the board cannot agree unanimously on a settlement at this meeting then the issue shall be re-discussed at a second meeting, at least four weeks later. The board may then propose a settlement by majority vote.

b) If IT-LOFAR cannot accept this proposal, then either the Parties may together agree to go to binding arbitration or else each Party may opt to take the issue to court.

c) In the case of binding arbitration, the parties shall agree on the appointment of a chairman of an arbitration board. The chairman shall then appoint two further arbitrators. All members of the arbitration board shall have the professional qualifications and standing to determine the dispute, and shall be wholly independent of either party and shall have no interest, direct or indirect, in the outcome. The arbitration board shall follow the rules of procedure of the international chamber of commerce. The parties agree that the decision of the arbitration board shall be binding and final.

d) If a Party opts to go to court, it will do so in accordance with article 9.



Article 9. Applicable law and place of jurisdiction.

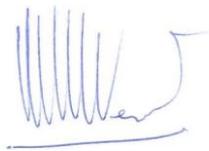
- a) Any legal action under this agreement shall be brought in the court of Assen, the Netherlands.
- b) It is agreed that Dwingeloo, the Netherlands, shall be the place of jurisdiction for all disputes arising from or in connection with this agreement (other than legal suit under a above).
- c) All disputes arising from or in connection with this agreement shall be decided in accordance with Dutch law, including private international law.

Article 10. Final provisions.

10.1 Amendments and additions to this agreement require written form for their validity. This also applies to the cancellation or amendment of this written-form clause. Verbal collateral agreements do not exist.

10.2 If a provision of this agreement is or becomes legally invalid or if there is any gap that needs to be filled, the validity of the remainder of the agreement shall not be affected thereby. Invalid provisions shall be replaced by common consent with such provisions which come as close as possible to the intended result of the invalid provision. In the event of gaps such provision shall come into force by common consent which comes as close as possible to the intended result of the agreement, should the matter have been considered in advance.

Signature:



Date: April 5th, 2018

Dr. R.C. Vermeulen
Director, ILT

Signature:



Date:

Prof. Nicolò D'Amico
INAF President
Acting as legal representative for IT-LOFAR

Initialized by

Signature:



Date: April 6th, 2018

Dr. Filippo Maria Zerbi
INAF Scientific Director