

# AGREEMENT FOR LOFAR2.0 HARDWARE DELIVERY BETWEEN THE ILT AND ISTITUTO NAZIONALE DI ASTROFISICA

**Purpose of the document:** *This agreement sets the financial arrangements made between the Stichting International LOFAR Telescope (ILT) and its partner Istituto Nazionale di Astrofisica (INAF) related to the specific role of INAF to contribute to the collective LOFAR2.0 hardware procurement, joint development and rollout.*

*The LOFAR2.0 project is managed and largely executed by the Netherlands Institute for Radio Astronomy (ASTRON) on behalf of the ILT. Specific arrangements between ILT and ASTRON related to their roles, in particular the collective hardware procurement, as well as the joint development and rollout processes, are covered in a separate agreement.*

**Status:**

*2022-08-22: v0.1: First draft by I. Bonati, J. Wubs, R. Vermeulen*

*2022-09-22: v0.2: I. Bonati: More details on hire-purchase of hardware and ownership added to Article 3, with reference to the Station Uniform Conditions of LOFAR ERIC.*

**Timeline for endorsement:** *This document will be presented for endorsement at an intermediate ILT Board meeting in late October or early November 2022 (exact date TBD).*

# AGREEMENT FOR LOFAR2.0 HARDWARE DELIVERY BETWEEN THE ILT AND ISTITUTO NAZIONALE DI ASTROFISICA

This Agreement for Delivery (hereinafter referred to as “the Agreement”) is made between:

- Stichting International LOFAR Telescope, (hereinafter referred to as “the ILT”), having its registered offices at Oude Hoogeveensedijk 4, 7991 PD DWINGELOO, The Netherlands, legally represented by Dr. René Vermeulen, director. The ILT exploits the distributed LOFAR Research Infrastructure, with contributing partners in multiple European countries.

and

- Istituto Nazionale di Astrofisica, (hereinafter referred as “INAF”), having its registered offices at Viale del Parco Mellini, 84 00136 Roma (Italy), legally represented by **Prof. Marco Tavani – President of the INAF -Istituto Nazionale Di Astrofisica**. INAF acts as on behalf of consortium “IT-LOFAR” which is a participant in the ILT with full voting rights on the ILT Board. INAF is furthermore [the designated Representing Entity for Italy participation in LOFAR ERIC<sup>1</sup>]or[intending to become the Collaborating Organisation for LOFAR ERIC in Italy].

hereinafter individually also referred to as “Party”, and jointly as “the Parties”.

Whereas

- The development project of hardware and software systems to enhance the capabilities of the LOFAR distributed Research Infrastructure (hereinafter referred to as “LOFAR2.0 Development”) is managed and largely executed by the Stichting Nederlands Wetenschappelijk Onderzoek Instituten / ASTRON (hereinafter referred to as “ASTRON”) on behalf of the ILT, based on scope, budget and deliverables agreed by the ILT Board with input from ASTRON and considering the commitments by <partner-acronym>. The combined project of development of LOFAR2.0 hardware and software (LOFAR2.0 Development), and the collective procurement and the roll-out thereof, will hereinafter be referred to as “LOFAR2.0 Project”.

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<sup>1</sup> The ILT has decided to work with government representatives in interested countries towards the formation of LOFAR ERIC (European Research Infrastructure Consortium), and to make LOFAR ERIC the legal successor of the Stichting ILT. At the time of signing of this contract, the application to form LOFAR ERIC is ongoing; the Step-1 application has been positively reviewed by the EC; the Step-2 application is planned for autumn 2022, and is expected to lead to a final formation decision by the EC in the first half of 2023.

- The ILT is, on behalf of its partners including <partner-acronym>, pursuing and facilitating the upgrade of existing LOFAR station(s) to LOFAR2.0 station(s), and the construction of new LOFAR2.0 stations.
- ASTRON is prepared, on behalf of the ILT or its legal successor, planned to be LOFAR ERIC, to consolidate procurement of hardware (hereinafter referred to as “LOFAR2.0 Hardware”) for upgrading existing LOFAR stations to LOFAR2.0 stations and for use in construction of new LOFAR2.0 stations and; to manage the roll-out of the requisite amounts of LOFAR2.0 Hardware for Istituto Nazionale di Astrofisica. The roll-out process requires collaboration with INAF.
- The ILT requires firm commitments from INAF on the financial contributions to the costs of the LOFAR2.0 Project, for consolidation into the ILT contract with ASTRON, that specifies the total quantities of hardware and other boundary conditions for contracts with LOFAR2.0 Hardware suppliers.
- The ILT, by statutes, has ASTRON as its operational organisation. The ILT aims to have LOFAR ERIC as its legal successor as soon as practical, and with very high probability before LOFAR2.0 Hardware roll-out is completed. In the present agreement, the ILT is therefore also acting within the boundaries of the LOFAR ERIC Financial Plan and Uniform Conditions for LOFAR stations, which have already been prepared with major joint development and procurement activities in mind. If relevant time scales allow, the Parties thus foresee that if there is any transfer of contracts and responsibilities from ASTRON, it will take place to LOFAR ERIC as the legal successor to the ILT.

the Parties hereby agree the following:

## **1. Scope and budget**

- (1) The total budget, scope, and specific financial contributions to joint LOFAR2.0 Development and joint rollout processes have been agreed upon earlier by the ILT, as summarised in Table 3 in the Appendix; these budgets and scopes may be updated by decisions of the ILT Board. The value of FTEs provided in-kind to the execution of the LOFAR2.0 Development has been agreed by the ILT Board in accordance with the Financial Plan prepared for LOFAR ERIC. The specific contribution by INAF is set in proportion to its number of LOFAR stations existing or to be constructed (<one> stations as of September 2022).
- (2) <partner-acronym> agrees to participate in and reimburse the ILT to the full extent of its financial contribution in the cost of the LOFAR2.0 Development and joint rollout processes, as set by the ILT Board; current amounts are detailed in the Financial Plan of LOFAR ERIC and given in Table 3 of the Appendix.
- (3) The total costs of LOFAR2.0 Hardware items as of the date of signing of this Agreement are stated in Table 1 in the Appendix. Item costs based on binding quotes resulting from

a call for tender are considered fixed in the context of this Agreement. Other items are considered current best estimates and may still vary based on market conditions.

- (4) Following any update from ASTRON, the ILT will inform INAF on its contribution share in the purchase cost of the LOFAR2.0 Hardware.
- (5) In case of cost increases that are larger than 5% for any individual item, or if the total cost exceeds the budgeted contingency of 15%, the ILT Board will decide on a course of action under the recommendation of ASTRON, before any commitments to suppliers are made.
- (6) The scope of the consolidated LOFAR2.0 Hardware procurement is identified in Table 2 in the Appendix, which lists explicitly the hardware for INAF. Table 2 is based on the item costs in Table 1, and is drawn up according to the specific hardware and quantities committed by INAF through this agreement for its existing stations that are to be upgraded or its station(s) to be constructed, as well as the costs of its resultant share in the stock of spares to be procured for joint ILT use.
- (7) Specific further roll-out costs for LOFAR2.0 Hardware roll-out costs, separately listed in Table 1, related to individual stations, are current best estimates and subject to change according to local conditions.
- (8) INAF agrees to reimburse the ILT for the full cost of procured LOFAR2.0 Hardware and its rollout at its existing stations that are to be upgraded, or its to-be-constructed LOFAR station(s).
- (9) The total financial contribution by INAF to the ILT in Table 2 includes all payments due to suppliers, in particular including: any license fees the suppliers will have to pay to third parties, costs of design, packaging costs, safe transportation, assembly, configuration, insurances, documentation, Factory Acceptance Tests at the supplier's premise, warranties, customs duties and customs clearance costs, as well as any other costs, including the final SAT tests (Site Acceptance Test), that the supplier shall bear in order to perform this Agreement.

## **2. Payment scheme**

- (1) In the best financial interests of all ILT partners, including INAF, the ILT, and ASTRON, the reimbursement scheme from INAF to the ILT for LOFAR2.0 Hardware must appropriately track the terms and conditions of the suppliers. During its negotiations with suppliers, ASTRON will consult with the ILT and INAF before agreeing the specific payment terms and conditions.
- (2) The payment scheme for reimbursement by INAF to the ILT or its legal successor will be settled within 3 months of the signing of this agreement, taking into account INAF's contribution, credits, and liquidity.

- (3) The ILT or its legal successor will invoice INAF for the specific costs of rollout of LOFAR2.0 Hardware to its station(s) according to a payment scheme that will be agreed upon in the first quarter of 2023.
- (4) Invoices issued by the ILT or its legal successor in accordance with the agreed payment schemes will be paid by INAF within 30 days of receiving them.

### **3. Ownership**

- (1) The legal successor to the ILT, LOFAR ERIC, is the intended initial owner of all LOFAR2.0 Hardware. If LOFAR ERIC is not established in time for the delivery of LOFAR2.0 Hardware, the ILT will become the intended initial owner.
- (2) The initial owner of the LOFAR2.0 Hardware will place amounts at INAF's LOFAR station(s) as listed in Table 2 in the Appendix, in accordance with the contributions to the joint hardware procurement made by the INAF.
- (3) The ILT will abide by the Uniform Station Conditions prepared for LOFAR ERIC. These include the stipulations of Articles 3.4 and 3.5 of this contract.
- (4) LOFAR2.0 Hardware will not be removed from INAF's LOFAR station(s), except for replacements due to malfunctions. It is available for any type of operation including standalone.
- (5) LOFAR2.0 Hardware ownership will be transferred to INAF after the depreciation period (typically 4 years). If the transfer is declined by INAF, the ILT or its legal successor shall retain LOFAR2.0 Hardware ownership and be responsible for its decommissioning.

### **4. Transition to LOFAR ERIC**

- (1) The ILT intends for LOFAR ERIC to act as the legal successor of the ILT.
- (2) Following the establishment of LOFAR ERIC, the ILT Board will transfer its LOFAR2.0 Project responsibilities, including all of its assets and liabilities, to the LOFAR ERIC Council as part of the first stage of the planned transition process from the ILT to LOFAR ERIC, approved by the Interim LOFAR ERIC Council.
- (3) The ILT will only transfer its assets and liabilities to LOFAR ERIC when the LOFAR ERIC Council has agreed to be bound to the full extent of this Agreement.

### **5. Governance and Reporting**

- (1) ASTRON manages and largely executes the LOFAR2.0 Project. Through decisions taken in the ILT Board, the ILT, on recommendation by ASTRON, sets, and if needed adjusts, the overall scope, budget, and deliverables of the LOFAR2.0 Project.
- (2) ASTRON will report to the ILT or to LOFAR ERIC as its legal successor on the progress of the LOFAR2.0 Project on a quarterly basis. Written reports shall be presented at ILT Board and LOFAR ERIC Council meetings. The ILT (or LOFAR ERIC) Director and the LOFAR2.0 Programme Manager will engage in monthly bilateral consultations to discuss the progress of the LOFAR2.0 Project.
- (3) If needed at any time, ASTRON will flag to the ILT (or LOFAR ERIC) Director issues for decisions, including any that might need to be taken by the ILT Board (or the LOFAR ERIC Council). Significant cost increases (in accordance with Article 1(2)) will be reported by ASTRON on the shortest possible notice.

## **6. Duration and termination**

- (1) This Agreement shall become effective from the date of signature and shall have retroactive effect for any confidential information disclosed prior to signature within the context of the collaboration.
- (2) This Agreement shall remain in force for as long as the LOFAR2.0 Development and roll-out remains to be completed and in any case not less than two years.

## **7. Disputes**

- (1) The Parties shall make all possible efforts to resolve any disputes arising from or in connection with this contract through amicable negotiations in the ILT Board or the LOFAR ERIC Council and by non-recourse to legal action.
- (2) If a Party opts to go to court, the dispute arising from or in connection with this contract shall be decided in accordance with the law of the national statutory seat of LOFAR ERIC (Dwingeloo, the Netherlands), including private international law. Any legal action under this contract shall be brought in the court of Assen, the Netherlands.

## **8. Amendments**

Amendments to this contract require a written agreement signed by the duly authorised representatives of both Parties for their validity and shall refer to this Agreement.

Date:

Date:

Name: Dr. René Vermeulen

Name: Prof. Marco Tavani

Function: ILT Director

Function: INAF President

Signature:

Signature:

### APPENDIX 1: DEFINITION OF SCOPE

Table 1: Cost estimate of the LOFAR2.0 Hardware as of the date of signing of this Agreement. For items with a checkmark under the column "Quote" the cost is the result of a formal tender.

Subsystem	Quote	Total cost per LOFAR2.0 station upgrade		
		NL Core	NL Remote	International
...				
Small items				
Contingency				

<b>Total</b>				X
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Table 2: Contribution for <partner-abbreviation> and total scope of agreement. Contributions to LOFAR2.0 Development have been agreed earlier by the ILT Board. Roll-Out cost are a current best estimate and may vary depending on local circumstances.

Partner	#Stations	Total value of contributions		
		Development	Procurement	Roll-Out (Local station costs)
<partner-name>	<stations>			
<b>Total</b>				...

Table 3: Overview of LOFAR2.0 development

#	Deliverable	Date