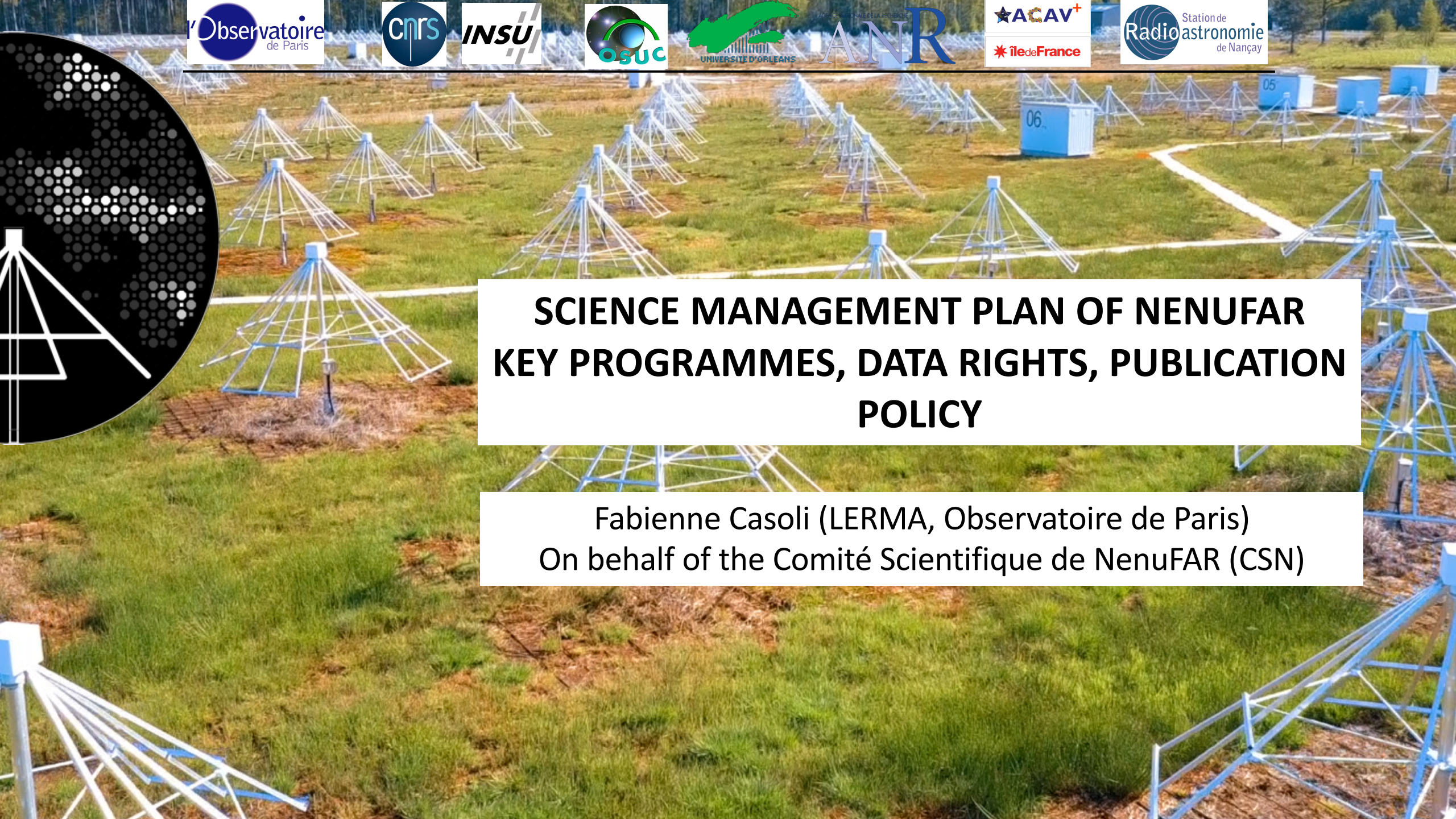

# SCIENCE MANAGEMENT PLAN OF NENUFAR
# KEY PROGRAMMES, DATA RIGHTS, PUBLICATION POLICY

Fabienne Casoli (LERMA, Observatoire de Paris)
On behalf of the Comité Scientifique de NenuFAR (CSN)

# Principles of NenuFAR's scientific exploitation

NenuFAR will be open to the entire national and international community after a transition period called "Early Science".

Early Science : from the second half of 2019 to the end of 2021 (LOFAR Super Station modes and imagery operational),

- shared-risks observations : NenuFAR will make its best efforts to provide the requested observations, but cannot commit to the result.

Start of operation : 2022 - 2024

- guaranteed scientific observations unless unexpected problems arise,

Routine: 2025

- targeted date for the end of commissioning operations.

The fraction of time devoted to scientific observations will gradually increase between the beginning of "Early Science" and the beginning of routine operation, reaching 2/3 of the time (and therefore 1/3 for maintenance and optimization of the instrument).

# Key Programmes

- During the "Early Science" phase, about 8000 hours of scientific observing time will be devoted to Key Programmes (KP), *with the objective of maximizing NenuFAR's scientific production*.
- Scientific observations may be made on the commissioning time of the instrument for demonstration purposes (“Pilot programmes”)
- The duration of the Key Programmes is two years, renewable on request.

# Key Programmes

- Depending on the outcome of this call for proposals and the technical developments of the instrument, the KP call for proposals may be renewed, in particular after the acceptance of the imaging mode; these new calls will be open to the entire French and international community.
- During the "Early Science" phase, KP's proposals will be technically and scientifically evaluated by the CSN, assisted if necessary by external experts. The CSN will also monitor the good progress of the KPs.
- The list of KPs and their participants will be posted on the NenuFAR website.

# The CSN

**NenuFAR Scientific Committee**

The NenuFAR Scientific Committee (CSN) is appointed by the associated sponsors of the instrument: CNRS-INSU, Observatoire de Paris, Observatoire des Sciences de l'Univers en Région Centre/ Université d'Orléans.

Members: Fabienne Casoli, Stéphane Corbel, Laurent Denis, Michel Tagger, Gilles Theureau and Philippe Zarka

Its role is to prepare the routine scientific exploitation of NenuFAR, and it will therefore be active until this phase. During the "Early Science" phase, it examines the Key Programmes proposals and monitors their successful implementation.

# Key Programmes

- Depending on the outcome of this call for proposals and the technical developments of the instrument, the KP call for proposals may be renewed, in particular after the acceptance of the imaging mode; these new calls will be open to the entire French and international community.
- During the "Early Science" phase, KP's proposals will be technically and scientifically evaluated by the CSN, assisted if necessary by external experts. The CSN will also monitor the good progress of the KPs.
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# PI programmes

- PI programmes: at the end of the Early Science phase, the French and international scientific community will be invited to respond to calls for PI proposals, launched every six months, for which an international programme committee will be set up.
- PI programs have a maximum time span of one semester and should be complementary to the KPs.
- The distribution of observation time between KP and PI programs will change over time, with KPs being the majority at the beginning of operation, and PI programs becoming the majority at the beginning of routine operation. As an indication, KPs could represent 100% of the stand-alone observation time at the beginning of Early Science, going down to 25% at the end of 2024.

# Data policy

NenuFAR data will be made public after a proprietary period of one year after completion of the program, which means:

- For Key Programmes, at most one year after the completion of the two-year (or less) period of the KP. For some monitoring programmes requiring long observation periods, KP proponents may request (justified) amendments to this policy in their proposal; however, the ownership period may in no case exceed 3 years
- For PI programmes, a maximum of one year after the end of the observation semester concerned.

The NenuFAR project will be responsible for the data handling for archiving; access to the archived data will be via the Nançay data center.

# Different types of scientific programmes on NenuFAR

The scientific programs conducted on NenuFAR may be:

- Key Programs
- PI Programs
- Observations on DDT (Discretionary Director's Time), decided after a request to the NenuFAR PI and the NenuFAR Technical Director who will inform the CSN every six months; DDT must represent less than 5% of the observation time;
- ToO (Target of Opportunity) observations: these should, in principle, be requested as part of a PI programme or a Key Programme
- Observations in LSS (LOFAR Super Station) mode within the observation time defined by the Memorandum of Understanding of the International LOFAR Telescope (ILT),

# NenuFAr builders

Many people have contributed to the development and completion of NenuFAR. Among these, “NenuFAR builders” are those people that contributed more than one Full Time Equivalent (FTE). The list of NenuFAR builders will be maintained by the CSN. All scientific publications using NenuFAR data taken during the Early Science phase or the commissioning time may be cosigned by NenuFAR builders, upon their request.

Publications from NenuFAR's LSS mode will follow the rules specified in the International Lofar Telescope MoU.

# Aknowledgments

Publications based on NenuFAR data should include the following statement:

"This paper is based on data obtained using the NenuFAR radiotelescope. NenuFAR has benefitted from the following funding sources : CNRS-INSU, Observatoire de Paris, Station de Radioastronomie de Nançay, Observatoire des Sciences de l'Univers de la Région Centre, Région Centre-Val de Loire, Université d'Orléans, DIM-ACAV and DIM-ACAV+ de la Région Ile de France, Agence Nationale de la Recherche ".

# Reference document

- See astronomers page on NenuFAR website