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## 1 Document information

Name RadioNet3 Study Group: Organisation of Radio Astronomy in Europe. Terms of reference.

Type Report

WP 2 (QueSERA)

Authors Michael Garrett (ASTRON)

### 1.1 Dissemination Level

Dissemination Level		
<b>PU</b>	Public	X
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services)	
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	

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## 2 RadioNet3 Study Group: Organisation of Radio Astronomy in Europe.

In its interaction with policy makers, the obvious issue for European radio astronomy is the future of its structure as a whole. RadioNet3 as a project and a consortium is rather loosely organized and has no coordinated long-term perspective on the European scale. Especially with the advent of the SKA, a natural question to ask is whether a new legal entity for radio astronomy is required within Europe. The potential role of existing vehicles (e.g. the current ESKAC collaboration, ESO, or a future JIVE-ERIC) is also relevant here. The deliverables and milestones of this work package take the form of face-to-face meetings including invitations to relevant external parties as appropriate, plus a final position paper.

This will produce a roadmap for existing RadioNet3 facilities that

- Recognises the impact ALMA and the SKA will have in the field, and builds and responds to the current ASTRONET review process,
- Defines the future role of existing facilities in the Northern hemisphere (incl. VLBI),
- Identifies an appropriate model for SKA scientific (user) support, that incorporates lessons learned from the ALMA experience,
- Establishes a clear vision on how the European radio astronomy community should formally organise itself in the coming decade,
- Addresses the need for future European scale integrating activities beyond RadioNet3 and consider how these should be funded.

### 2.1 Background

1. The field of Radio Astronomy is changing rapidly. In Europe, major new telescopes such as ALMA, LOFAR and the SRT are in the commissioning phase, existing telescopes are benefiting from substantial upgrades (e.g. e-VLBI, e-MERLIN, PdBI-NOEMA etc.) and the SKA has entered the pre-construction phase. The field is widely considered to be flourishing around the world, and new regions are emerging to play an important role in its future course (e.g. China and South Africa).
2. Over the last 3 decades, different structures have been set up to organise and coordinate a wide range of key but specific activities in radio astronomy at a European level - these include the EVN & JIVE (VLBI), the ILT (LOFAR), ESKAC, ESO, IRAM, RadioNet, NEXPReS, GO-SKA (EC Framework Programmes) and most recently the SKA Organisation (SKA). In general, these structures have worked well and delivered in terms of organising the community and providing access to state of the art astronomical facilities.
3. The plurality of this multi-faceted approach has often provided added value to the community. The existence of many different radio astronomy organisations in Europe has led to a broad spread of both scientific and technical expertise. However, the inter-relationships between the various radio astronomy entities in Europe and their dependence on each other is complex. The lack of a tighter coordination of Radio Astronomy as a whole may already limit what can be achieved on the European scale, and future funding may require a more centralised approach. As radio astronomy activities are being reviewed externally by others, it makes sense for the

RadioNet community itself to also consider whether we can better organise ourselves in the future or whether the current diverse system is already the optimal approach.

4. A proper analysis of these questions requires a full understanding of the likely development of radio astronomy on a European and national scale. RadioNet has contributed to the ASTRONET road mapping process, and a focused review of long wavelength radio astronomy facilities conducted by ASTRONET is underway. Rather than to repeat these exercises, the Study Group will make as much use as possible of the current ASTRONET Radio Telescope review. However, its important that the RadioNet community has its own view on an agreed roadmap for Radio Astronomy in Europe. Understanding the future development of Radio Astronomy at both the national and European level is a pre-requisite before appropriate collaboration models can be fully assessed. This can be achieved also as part of our community's contribution to the ASTRONET roadmap update currently underway

## 2.2 Scope

The main objective is to formulate a clear vision for the organisation and coordination of European Radio Astronomy - a vision that should ensure sustainable growth in the field for at least the next 10 years and that can be agreed by the full radio (m/cm/mm) community.

Two key issues will be addressed:

- Understanding the roadmap for Radio Astronomy over the coming decade on both national and European scales,
- The future coordination of Radio Astronomy in Europe taking into account a diversity of approaches that may need to be applied across the full field.

## 2.3 Outputs

A Study Group will be established to produce a final position paper on the future coordination of Radio Astronomy in Europe. The Group will consider as input the Roadmap for existing RadioNet3 facilities with a particular focus on those that require collaboration on a European scale. During the lifespan of the Group, and to facilitate its deliberations, a number of working papers and policy briefs may be prepared for discussion at both Group and RadioNet3 Board level.

## 2.4 Organisation of Work

### *Study Group*

Membership of the Study Group will include: the RadioNet3 coordinator, the QueSERA Work Package leader and representatives of TNA facilities that are distributed or multi-national in scope (e.g. ESO, EVN, IRAM and ILT). Meetings of the Group will be chaired by the task leader and open to all RadioNet3 Board members. External Guests and other expert stakeholders (e.g. ESO, SKA, ASTRONET etc.) may also be invited to meetings at the invitation of the chair. The Group reports to the RadioNet3 Board. The RadioNet3 Board will approve by consensus any outcomes of the Group, in particular the position paper. The RadioNet3 Board will be required to approve the public dissemination of any outputs from the task.

*The Secretariat*

A secretariat will be provided by RadioNet- to support the Group in terms of meeting logistics etc. and to take minutes of the meetings. The Group will consult widely with funding agencies, the EC, existing governance bodies in Radio Astronomy, the Radio Astronomy community, individuals, organisations and any other relevant entities with a view to collecting information and generating ideas relevant to the work of the Group.

## 2.5 Timeline

The Group will complete its work by the approval by the Board of a final position paper in June 2015. Three face-to-face meetings of the Group will be organised during this period. Additional meetings may be organised by electronic means with varied participation, as appropriate. The Group may establish further working groups led by one or two members to prepare input on specific topics for its consideration. The Study Group will explore all possible opportunities to promote the outcomes of the work and to engage with the radio astronomy community.